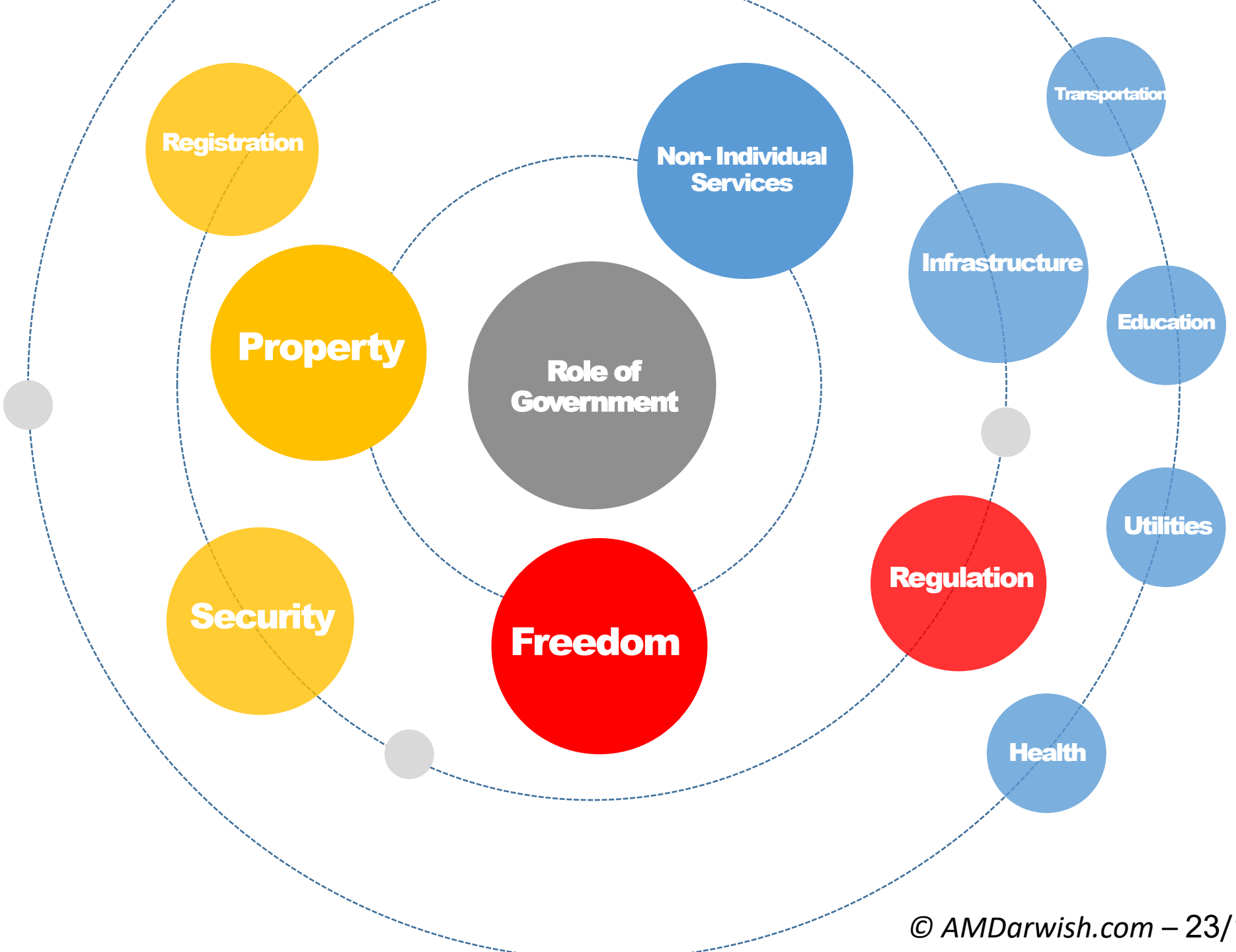
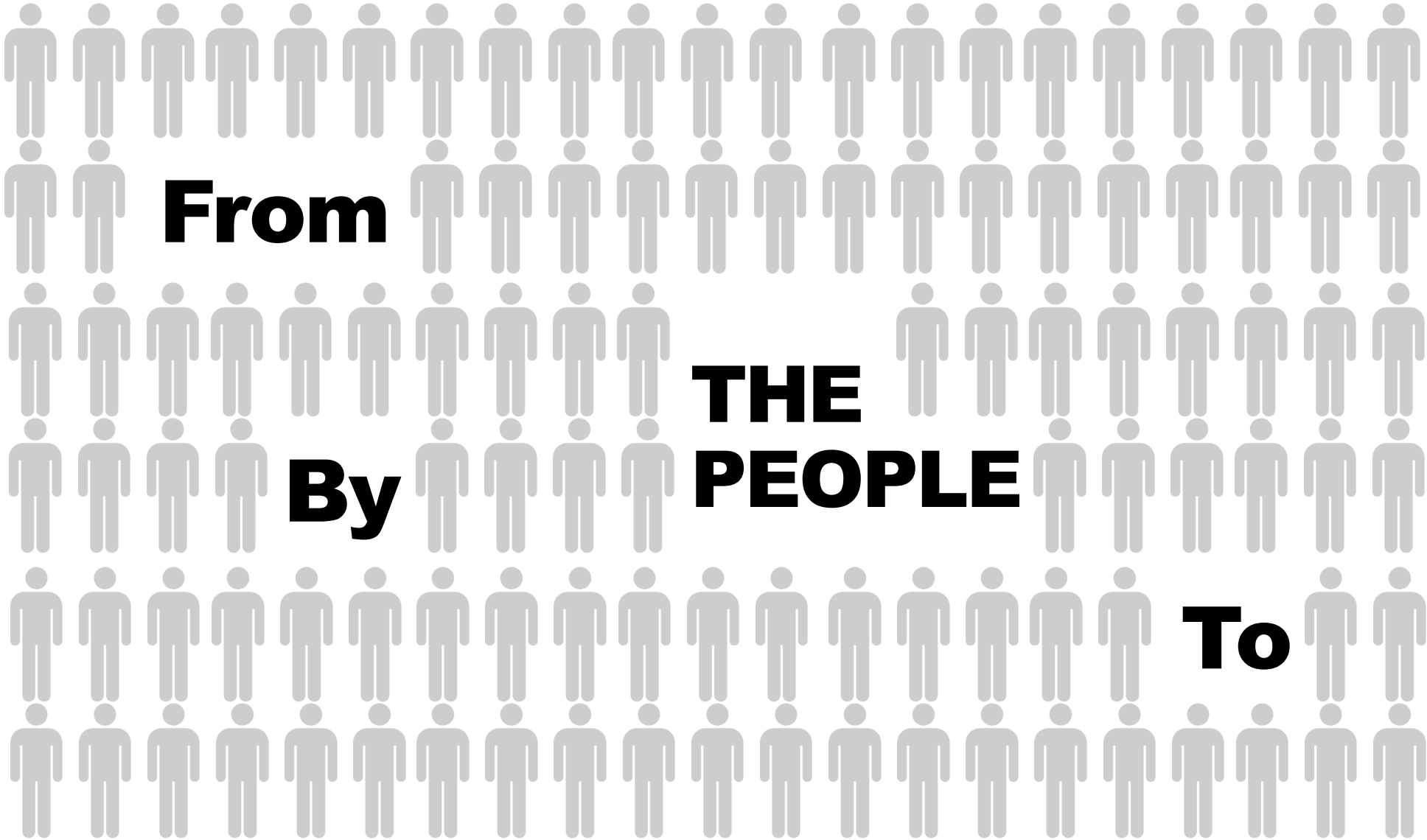
Technology
vs.
Corruption

Dr. Ahmed M. Darwish

Do we really need Government ?


Registration
Non- Individual Services
Transportation
Infrastructure
Education
Property
Role of Government
Security
Freedom
Regulation
Utilities
Health


From
By
THE
PEOPLE
To



- **Better Infrastructure**
- **Faster Accessible Services**
- **More Participation in Decision Making**

Corruption

Everywhere

In every sector

Think? Encroachment on other authorities

God must have a reason, but the issue is... what are the acceptable percentages

Cycle

Precaution / Prevention – Investigation / Detection – Deterrence / Accountable Example

Corruption of the Executive Authority
Administrative Corruption

- **Issuing laws or decisions for the benefit of specific groups**
- **Announcement and awarding of government contracts**
- **Employee profiteering**
- **Negligence and indifference in the management of public facilities**

Contributing Factors

Value System
Separation between worship and transactions
Social acceptance of unjustified payments

Oversight
The independence of regulatory bodies is a recent development
Competition between regulatory bodies and overlapping jurisdictions
Unavailability of reports from regulatory agencies
Weak oversight by parliamentary and local councils

Legal Procedures
Lengthy trial procedures
Lack of sufficient protection for witnesses and whistleblowers in corruption cases
The legal framework to prevent conflicts of interest is a recent development

Structure of the Public Service Law 25]
Separation between violations and penalties
Combining administrative and criminal penalties
Appointment and promotion systems in public service
Salary and wage structure

Work Environment
Lack of precise definition of tasks and duties in government agencies
Government bureaucracy and complex procedures
Absence or weakness of self-monitoring
Centralization and individualism in public affairs management
Lack of transparency in public affairs management
Accountability for steps rather than for outcomes

Counteracting Factors

- **Digital Transformation**
- **Regulating disclosure and information circulation (Right to information)**
- **An active role for civil society (whistleblowers)**
- **Indirect media campaigns (issued verdicts – encouraging reporting)**

Concepts

The Transactors

The Investor
The Citizen

The Corrupt and the Corrupter
The difference between a bribe and a gift
Who is the one under duress?

We are looking to protect the clean, respectable investor

If the act of bribery is not proven, they should not be a party

The responsible authority (decision-maker)

The difference between political and criminal responsibility - Penal Code

Penal Code

Article 115 Profiteering
Every public official who obtains or attempts to obtain for himself, or obtains or attempts to obtain for another, without right, a profit or benefit from an act of his office shall be punished with temporary hard labor.

Article 116 Damaging Public Funds
Every public official who intentionally harms the funds or interests of the entity in which he works or with which he is connected by virtue of his work, or the funds or interests of others entrusted to that entity, shall be punished with temporary hard labor.
If the damage resulting from his act is not serious, he may be sentenced to imprisonment. 57]
116 C Intentional breach of contracts - imprisonment (a criminal penalty for a contractual dispute - i.e., a civil dispute)
Breach of the United Nations Convention signed in the sixties and ratified in the eighties 60]

Question
Political Accountability or Criminal Accountability

(even if he did not profit or profit others - either high treason or madness) !!

Law on the Trial of Ministers

1. High treason or disloyalty to the republican system.
2. Violation of the provisions of the Constitution.
3. Conduct or action that would affect the prices of goods, real estate, government securities, or securities listed on the stock exchange or tradable in the markets with the intent of obtaining a personal benefit or for others.
4. Exploiting influence, even by illusion, to obtain a benefit or personal advantage for oneself or for others from any public authority, body, company, or institution.
5. Intentional violation of laws or regulations that results in the loss of a financial right of the state or another public legal person.
6. Action or conduct intended to influence judges or any body legally authorized with jurisdiction in judiciary or fatwa.
7. Interference in the election or referendum process or their procedures with the intent of influencing the result of either, whether by issuing orders or instructions contrary to the law to the competent officials or by taking illegal measures.

Governance

Rules	Guarantee
Vision	Mission
Efficiency	Effectiveness
Transparency	Right to Information
Prediction	Stability
Participation	Majority
Accountability	Responsibility
Rule of Law	Legislative Justice

First Question:
What is the required economic growth rate?

Approach One: Job Opportunities
Approach Two: Per Capita Income
Approach Three: Social Safety Net System

Second Question:
Can this required growth be achieved?

Third Question:
How can Egyptian and foreign investments be attracted in an organized framework?

Towards an integrated system for state management...
Separation between
The Executive Authority
And the Regulatory/Oversight Bodies
And the General Commissioner (Board of Grievances - Ombudsman)

Guidance by the rules of the Organisation for Economic Co-operation and Development (OECD)

Creating a system for Regulatory Impact Assessment

Public Policy Recommendations

At the Job Level	At the Administrative Unit Level	At the State Management Level
Transitioning to human resource development	Reducing the number of administrative units.	Redefining the role of government.
Focusing on creating a generation of leaders to achieve change.	Transitioning to working with a system of dynamic structures.	Adopting good governance as the basis for the work system.
Sectoral division of jobs	Introducing modern management systems.	Activating and maximizing the role of civil society.
Developing the legislative system for public service.	Adopting developed mechanisms for public financial management	Moving towards decentralization and activating the role of local authorities
Achieving financial and psychological satisfaction for the employee	Creating new investment models for contracting.	Focusing on core tasks and purchasing services.
Reviewing accountability and responsibility systems.	Simplifying work cycles to increase the efficiency of transaction execution.	Attracting the informal economy.
	Making services available through new channels.	
	More mechanisms to achieve integrity.	
	Disseminating citizen relationship management systems.	
	Supporting swift justice mechanisms.	
	Completing and linking national databases.	

First: At the State Management Level

- Redefining the role of government
- Adopting good governance as the basis for the work system in the administrative apparatus.
- Activating and maximizing the role of civil society in providing services and participating in management and oversight.
- Moving towards decentralization and activating the role of local authorities
- Focusing on core tasks, purchasing auxiliary services, and separating production units.
- Providing accessible and suitable services to attract the informal economy to contribute to the formal economy.

Second: At the Administrative Unit Level

- Reducing the number of administrative units
- Transitioning to working with a system of dynamic structures
- Introducing modern management systems and mechanisms to cope with change
- Adopting developed mechanisms for public financial management
- Creating new investment models for contracting, managing, and operating projects
- Simplifying work cycles to increase the efficiency of transaction execution
- Making services available through new channels
- More mechanisms to achieve integrity.
- Disseminating citizen relationship management systems
- Supporting swift justice mechanisms
- Completing and linking national databases

Third: At the Job Level

- Transitioning to human resource management system mechanisms and developing performance measurement and evaluation methods and incentive mechanisms.
- Focusing on creating a generation of leaders to achieve the required change.
- Sectoral division of jobs to allow for multiple employment and promotion mechanisms suitable for each group.
- Developing the legislative system for public service.
- Modifying the role of the Central Agency for Organization and Administration to become the regulator and monitor of the function.
- Developing methods for filling positions.
- Introducing new job models (part-time work - production-based work).
- Developing methods for joining the civil service, such as a public service exam.
- Emphasizing transparency and merit in joining the service through advertisement and comparison.
- Establishing easier mechanisms for entering and leaving jobs to allow for the use of some expertise.
- Solving some current problems such as leave, etc.
- Achieving financial and psychological satisfaction for the employee through a new salary structure and a new job ladder.
- Reviewing accountability and responsibility systems to achieve discipline in the administrative apparatus.

Observations 2011 & 2020

Perseverance

We do not need this number

The Volume

A clear error in classification

Solving the problem of economic slowdown

Failure to adopt new human resources models

Pricing the certificate... pricing the job

Dynamic structures programs/projects... departments

Isolated silos

focus on the unit and adherence to procedure versus quality and ease Example (extracting death certificates – submitting birth certificates for schools – submitting a birth certificate for pensions)

Change happens when another party benefits or under pressure

Card-based points of sale

Remote work

Classical structures

Natural and cultural heritage - environment - culture and youth - ...

Institutions are stronger than the people's choices

100 pounds on every car that can have a radio installed

What is created is not abolished

Agricultural Reform

Fundamental errors in governance models

Implementation – Oversight – Regulation

Complaints system - Board of Grievances

1. Policy Reform, Performance Measurement and Performance Management

Key Questions:

- What reforms are currently underway to strengthen policy formulation and coordination?
  Cosmetic – for the sake of formalities – under pressure - …
  No RIA units
  Still based on top person in charge

- Are there effective regional examples that should be documented and disseminated?
  Yes, but scarce

- How are practices for performance measurement and management evolving throughout the region? Where are they working well, where are they not, and why?
  Mostly Implementation KPIs
  Sometimes Operational KPIs
  Rarely Impact KPIs

2. HR Management in the Public Sector; Enhanced Productivity; Improved Value for Money

Key Questions:

- Why do Arab governments receive a relatively low return on their considerable investments in human capital?
  Old fashioned hiring schemes
  Queue promotion schemes
  No investment in HR
  Performance evaluation is a complicated culture

- How can meritocracy be strengthened in government?
  Via a clear performance evaluation system aided by external independent auditing (otherwise queue promotions will be the safest to avoid nepotism)

- Which Arab countries have implemented significant reforms in HR management? What types of reforms have been most effective?
  Introducing contracting .. **Being tenure kills motivation**

- How can we best measure government productivity?
  Audit RoI of projects

3. Economic Management: Regulatory Policies, Reducing State Capture and Ensuring a Level Playing Field

Key Questions:

- What are the most pressing barriers to entrepreneurship in MENA, and how can they be alleviated? What are examples of best practice that can be disseminated?

  One size does not fit all .. can not treat startups like micro like small ..

  Must implement RIA to avoid collateral damage !!

- How can MENA governments best support economic diversification?

  Give space for private sector to breath and grow

- How can MENA governments strengthen implementation and provide greater consistency in how the rules are implemented?

  Start by applying the rules on SoEs

  Independent Regulator

- How can business associations better protect the interests of entrepreneurs and small investors?

  Government does not see them a strong ballot box influencer

  Parliament is pro-goverenment

4. Anticorruption and Transparency

Key Questions:

- What types of corruption is most prevalent and pernicious in various Arab countries?
  - **Biased Decrees or Regulatory Framework**
  - **Government Procurement & Project Awarding**
  - **Benefiting from your Public Position**
  - **Negligence**
- How effective are Arab legal and institutional frameworks in combating corruption?
  - **Legal Process is slow**
  - Institutional Framework exists .. needs empowerment
  - **Multi-auditing and monitoring and .. (good practice)**
- What kinds of *suo motu* disclosures can MENA governments pursue? Where is the low hanging fruit?
  - **Digital Transformation**
- How can Right to Information legislation be best supported and advanced? How can the implementation of existing RTI regimes be strengthened?
  - **Security culture and political cover to avoid unrest .. prevails**

Priorities

1. Establishing Regulatory Impact Assessment (RIA) Units
2. Train on how to establish Impact Key performance Indicators (KPIs)
3. Work on Culture change. Public that are complaining about quality of service are the same who are calling to keep old HR systems for employment and promotion
4. Advocate for independent Regulators
5. Make sure Sate Owned Enterprises (SoEs) abide to same private sector rules and fair competition
6. Advocate for the activation of the Right to information specially for budget and auding transparency
7. Continue aggressively on the digital transformation. Avoid trying to fit old government structures to new disruptive technologies

Next Level

القطاع	القطاعات الفرعية أو القطاعات المتشابكة
الدفاع	الإنتاج الحربى
الخارجية	
العدل	
الشئون القانونية والبرلمانية	
المالية	
الداخلية	الأمن العام، قواعد البيانات القومية، الأمن الوطنى
التطوير والتنمية	التطوير المؤسسى، قواعد البيانت القومية، التعاون الدولى، التنمية الاقتصادية، المحليات
التعليم	التعليم الأساسى، التعلم الفنى، التعليم العالى
العلوم والتكنولوجيا	الاتصالات، التنمية التكنولوجية، البحث العلمى، الابتكار والابداع
الصحة	الأسرة والسكان، البيئة
شبكة الأمان الاجتماعى	
الزراعة	
الرى	
الاسكان	المرافق
النقل	الطرق، الطيران، الانتقال
الطاقة	الكهرباء، البترول، الطاقة المتجددة، الثروة المعدنية
التجارة والصناعة	التجارة، الصناعة، الثروة المعدنية، الاستثمار، الشركات المملوكة للدولة
السياحة والتراث	السياحة، الطيران، التراث الطبيعى، التراث الحضارى
العمل والتنمية البشرية	
التنمية المجتمعية	الثقافة، الاعلام، الشباب، الرياضة، المرأة، الأمومة والطفولة
هيئات ذات طبيعة خاصة	الأوقاف، التأمينات، قناة السويس، محور قناة السويس، سيناء، التواصل مع المجتمع المدنى، ...
الأجهزة تنظيمية	...، الاتصالات، الأمان النووى، المنشآت الصحية، النقل، الاعلام، المياه والصرف الصحى، ...
ديوان المظالم (الامبودسمان) – المجالس ذات الطبيعة الخاصة	حقوق الإنسان، التمييز، التوظف، ...
الجهات الإسلامية (الأزهر – الأوقاف – الإفتاء)	الجامعة، المعاهد، المساجد، العلاقات الدولية، المجلس الأعلى، قطاع البر، هيئة الأوقاف، دار الإفتاء
الكنيسة	
الرقابة المالية	البنك المركزى، الرقابة المالية، الجهاز المركزى للمحاسبات
مكافحة الفساد	الرقابة الإدارية، ...
البرلمان	
القضاء	

الهدف	البرنامج	المشروع	المشروع الفرعى
مواطن صحته جيدة متوسط عمره 80 سنة	رعاية الأم الحامل		
	رعاية الطفل الرضيع (0–2)	متابعة التطعيمات	
		التأكد من نصيب الطفل من لبن الأطفال	تغذية الأم المرضع
			توزيع ألبان الأطفال
	رعاية الطفل قبل المدرسة		
	رعاية الطفل بالمدرسة	الكشف الدورى والمتابعة	
		الوجبة المدرسية	
		ممارسة الرياضة	
	التغطية التأمينية		
	بيئة خضراء	هواء نظيف	تقليل العوادم
			تخطيط عمرانى / صناعى
		ماء نظيف	رقابة محطات التنقية
			استكمال الصرف الصحى
		شوارع نظيفة	جمع القمامة
	البرامج المتخصصة	رعاية المسنين	
		القضاء على التهاب الكبد الوبائى	العلاج والمتابعة
			البحث العلمى
		الفشل الكلوى	وحدات غسيل
			ماء نظيف (C15)
مواطن مثقف يتابع ما يدور فى العالم			
مصر منارة الثقافة بالشرق الأوسط			
مصر المركز التجارى الأول بالشرق الأوسط (لوجستيات)			
مصر تؤمن احتياجاتها الغذائية			
		السمك كبروتين بديل	مشروعات مزارع
			ثقافة تناول الأسماك كطعام متكرر
		اتفاقيات تجارة متكافئة	

الهدف	البرنامج	المشروع	المشروع الفرعى
مواطن صحته جيدة متوسط عمره 80 سنة	رعاية الأم الحامل		
	رعاية الطفل الرضيع (0-2)	متابعة التطعيمات	
		نصيب الطفل من لبن الأطفال	تغذية الأم المرضع
			توزيع ألبان الأطفال
	رعاية الطفل قبل المدرسة		
	رعاية الطفل بالمدرسة	الكشف الدورى والمتابعة	
		الوجبة المدرسية	
		ممارسة الرياضة	
	ا لتغطية التأمينية		
	بيئة خضراء	هواء نظيف	تقليل العوادم
			تخطيط عمرانى / صناعى
		ماء نظيف	رقابة محطات التنقية
			استكمال الصرف الصحى
		شوارع نظيفة	جمع القمامة
	البرامج المتخصصة	رعاية المسنين	
		التهاب الكبد الوبائى	منع العدوى
			العلاج
			البحث العلمى
		الفشل الكلوى	وحدات غسيل
		الحصوات الكلوية	ماء نظيف

Goal, program, project, sub-project in a health example

One national goal is broken down into programs, projects and sub-projects so that every activity can be traced back to the outcome it serves.

Goal	Program	Project	Sub-project
A healthy citizen with an average life expectancy of 80 years	Care for the pregnant mother		
	Infant care (age 0–2)	Vaccination follow-up	
		Child's share of infant formula	Nutrition for the breastfeeding mother
			Distribution of infant formula
	Pre-school child care		
	School child care	Regular check-ups and follow-up	
		School meal	
		Physical exercise	
	Health insurance coverage		
	Green environment	Clean air	Reducing exhaust emissions
			Urban and industrial planning
		Clean water	Monitoring of water treatment plants
			Completing the sewerage network
		Clean streets	Garbage collection
	Specialised programs	Elderly care	
		Viral hepatitis	Infection prevention
			Treatment
			Scientific research
		Kidney failure	Dialysis units
		Kidney stones	Clean water

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شخص طبيعى (مواطن أو مستثمر) أو اعتبارى (شركة)	متخذ القرار
قنوات تقديم الخدمة	المتابعة وقياس الأداء
الخدمات	إدارة الموارد
قواعد البيانات القومية	
شبكة الحكومة	
البنية الأساسية	
البنية التشريعية والتنظيمية	

Layers of the e-government architecture

1. **Decision-maker and service user**

   The user is a natural person (citizen or investor) or a legal person (company).

2. **Performance monitoring and service channels**

   Monitoring and performance measurement sit next to the channels that deliver services.

3. **Resource management and services**

   Back-office resource management supports the services offered to users.

4. **National databases**

   Shared registers that every service draws on.

5. **Government network**

   Secure connectivity linking all government bodies.

6. **Infrastructure**

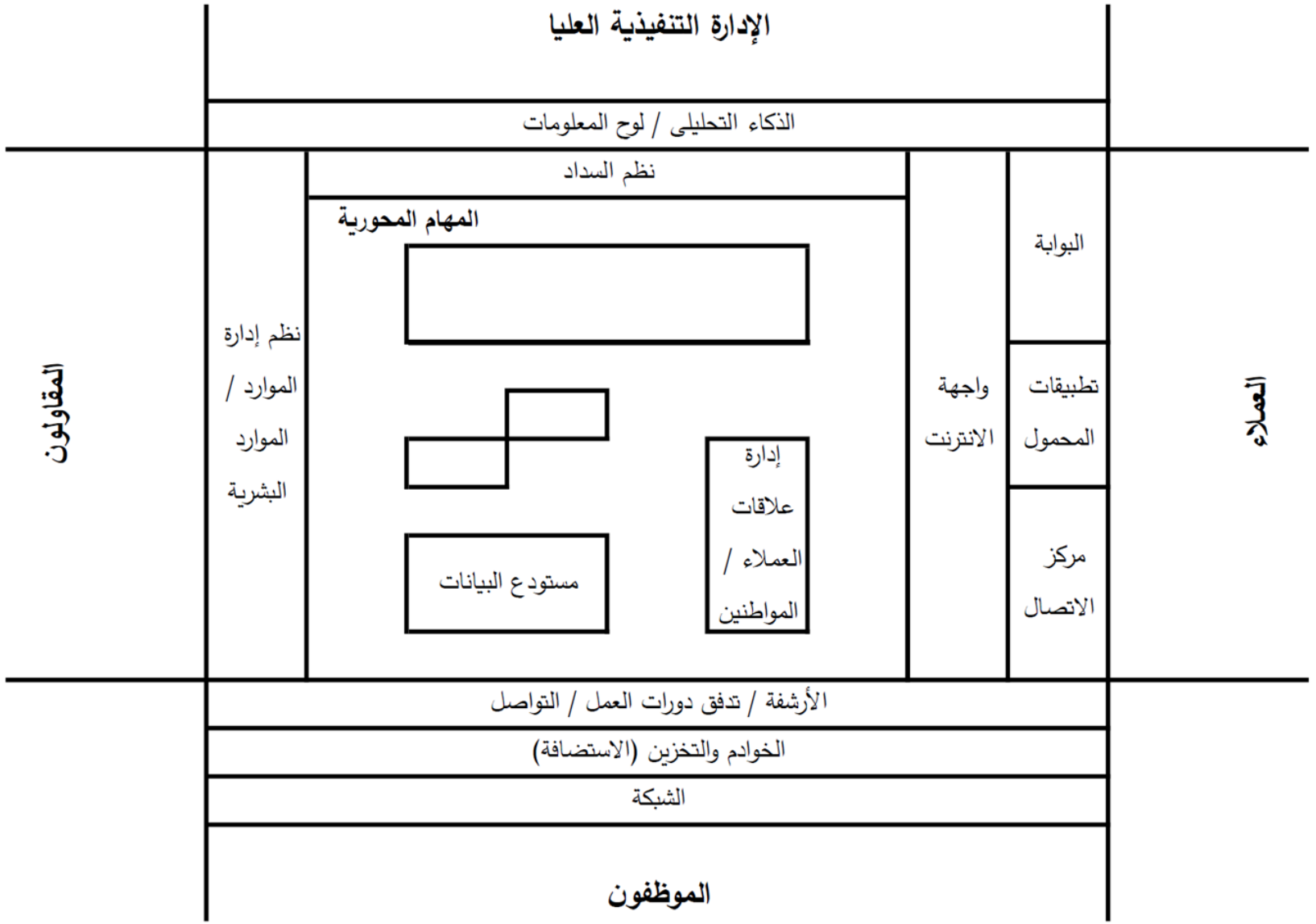
   Hardware, data centres and basic IT.

7. **Legislative and regulatory framework**

   The laws and rules that make the whole stack legal and binding.

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البنية المعلوماتية



Information architecture of an organisation

Management layer

- Senior executive management
- Analytical intelligence and information dashboards

Core functions

- Payment systems
- Enterprise resource planning (ERP) and HR systems, also used by contractors
- Customer / citizen relationship management (CRM)
- Data warehouse

Customer channels

- Internet interface
- Web portal
- Mobile applications
- Contact centre

Foundations (run by employees)

- Archiving, workflow and communication
- Servers and storage (hosting)
- Network

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General Background

Budget

Budget Deficit

Public Debt

Trade Balance

Monetary Reserve

Inflation

Minimum and Maximum Wages

جانب الاستخدامات	جانب الموارد
(1) الأجور وتعويضات العاملين	(1) الضرائب
(2) شراء السلع والخدمات	(2) المنح
(3) الفوائد	(3) الإيرادات الأخرى
(4) الدعم والمنح والمزايا الاجتماعية	
(5) المصروفات الأخرى	
(6) "شراء الأصول غير المالية (الاستثمارات)"	
المصروفات = (1)+(2)+(3)+(4)+(5)+(6)	الإيرادات = (1)+(2)+(3)
(7) حيازة الأصول المالية المحلية والخارجية	(4) المتحصلات من الإقراض ومبيعات الأصول المالية
(8) سداد القروض المحلية والخارجية	(5) الاقتراض وإصدار الأوراق المالية بخلاف الأسهم
الاستخدامات = المصروفات + (7)+(8)	**الموارد = الإيرادات + (4) + (5)**

How the state budget is structured

The budget has a resources side and a uses side. Revenues and expenditure are the core; financing items are added below them.

Resources side	Uses side
(1) Taxes	(1) Wages and employee compensation
(2) Grants	(2) Purchase of goods and services
(3) Other revenues	(3) Interest
	(4) Subsidies, grants and social benefits
	(5) Other expenditure
	(6) Purchase of non-financial assets (investments)
Revenues = (1) + (2) + (3)	Expenditure = (1) + (2) + (3) + (4) + (5) + (6)
(4) Proceeds from lending and sales of financial assets	(7) Acquisition of domestic and foreign financial assets
(5) Borrowing and issuing securities other than shares	(8) Repayment of domestic and foreign loans
Resources = Revenues + (4) + (5)	Uses = Expenditure + (7) + (8)

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Performance Indicators

Implementation

Operation

Impact

The accumulation of complexities in procedures has become a burden on the future of the service (the beneficiary) and on the budget, which has led to:

Prolonging the time to deliver the required service

The need to impose higher taxes and fees







1990 ميكنة - شبكات
eGov
Electronic .. Efficiient .. Effective

2000 بحث في قواعد البيانات
RIA
دراسة ألأثر التشريعى

2010 ذكاء اصطناعى – بيانات ضخمة
sGov
Smart .. Seamless

2020 حوكمة
From Government to Governance

Four decades of digital government



Automation and networks

eGov: Electronic .. Efficient .. Effective

Database search

RIA: regulatory impact assessment (study of the legislative impact)

Artificial intelligence and big data

sGov: Smart .. Seamless

Governance

From Government to Governance

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The Prevailing Culture

Isolated Silos

Immersed

How dare you teach me my job?



Fears of Digital Transformation

User's Fears:

Increased fraud: The digital and technological revolution has also led to the development of online fraud and scams.

Loss of privacy:

The power of the digital platform that stores large amounts of displayed information has the potential for illegal tracking of customers' activities and personal advantages.

If individuals are not careful with the application, there is a high probability that this will lead to the collection of their abundant personal information, which turns into the creation of an illegal profile, and this data is used for dishonest purposes such as sharing it with market agencies without the user's knowledge.

Employee's Fears:

The belief that employees may lose their jobs this way.

The Impact of Technologies
On Business Models and Preventing Corruption

#Trending

In daily use

- # Network
- # Cloud
- # Mobile
- # FinTech
- # Digital Signature
- # Geo-Data

Growing fast

- # Big Data – Analytics
- # Computer Vision
- # IoT
- ➢ AI
- ➢ Block-Chain
- # Drones

Coming soon

- # Circular Economy
- # Quantum Computing
- # Nano Robots
- # Batteries (New Gen)
- # Web3
- # Math Modeling of Human Body Organs

 # Security & Protection

Connected Society

Fiber
Wireless
.
.
4G
5G

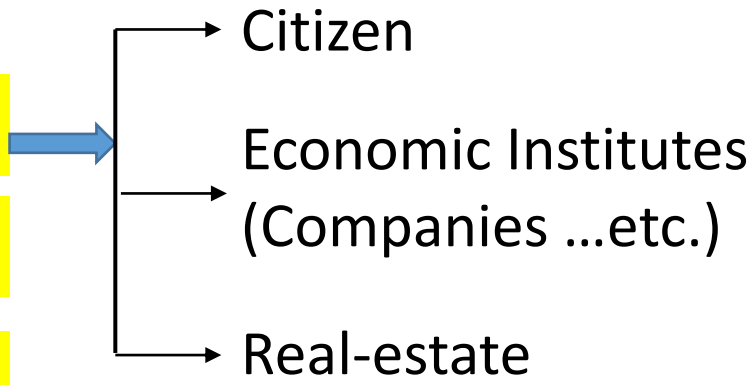


Personalized Experiences | Mobile Citizens – Worker - Leaders - Social Connections

Courtesy of Microsoft

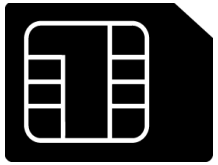
Ingredients

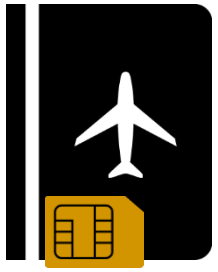
- National ID
- National Databases
- G2G Network
- GIS & Geo Data
- Governance



- **e-ID**
- **Digital Identity**
- **Government-to-Government (G2G) database linking**

Usage
- ID Cards
- Passports

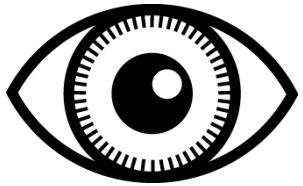


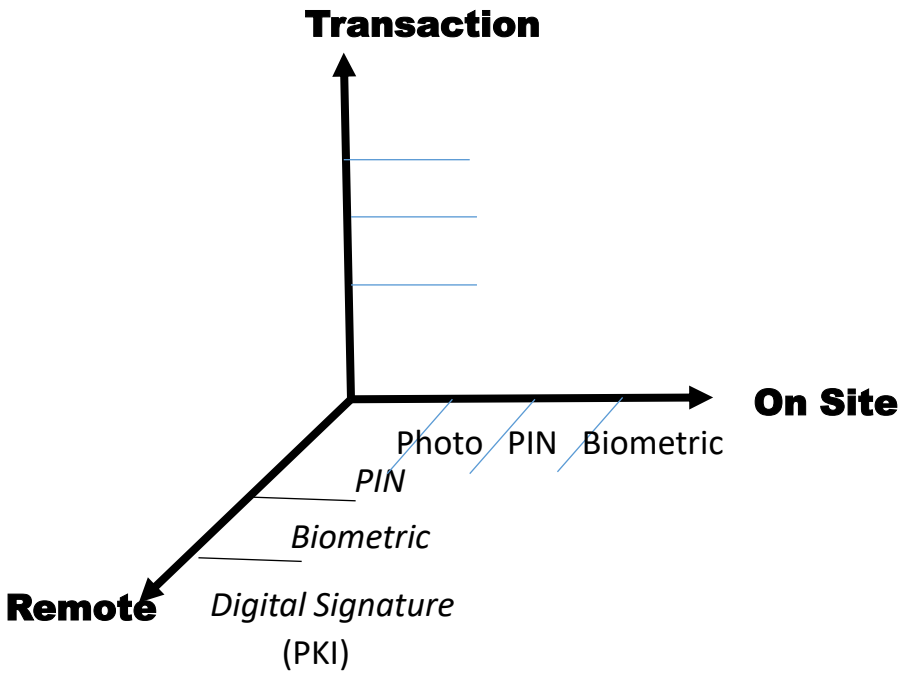


Transactions
- E-Signature
- Time Stamp one time



Biometric
- fingerprint
- Retina scanning





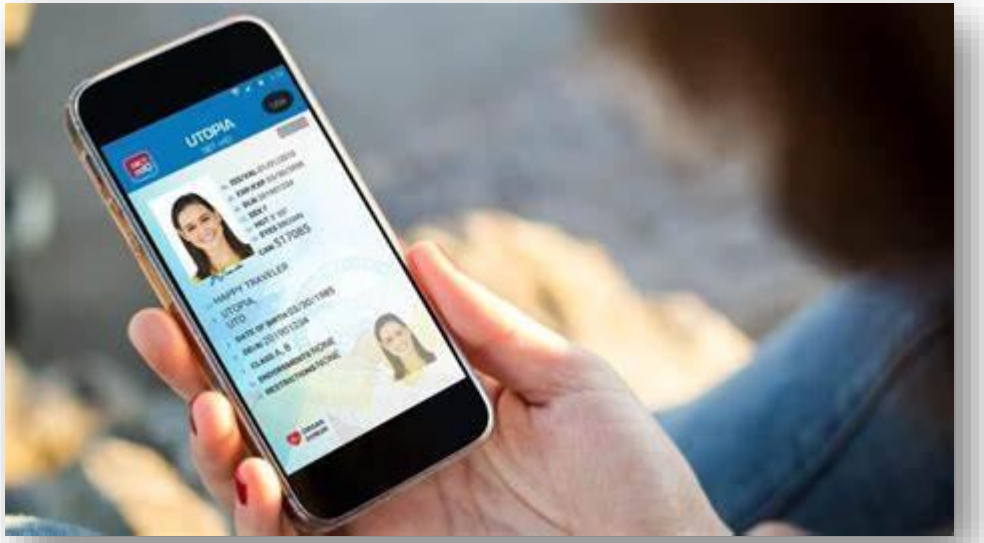
Apps
- Bidding - Courts
- G2G (National Databases)

Digital Identity

- What is Digital Identity?
- How to use Digital Identity?
- What is required from the user?
- Digital Identity services

What is Digital Identity?

- Digital identity is the national digital identity for all users, including citizens, residents, and visitors, allowing users to access services of government agencies and other service providers.
- Digital identity also offers easy solutions for accessing services via smartphones without identifying the user through traditional methods like a password or username, as well as the ability to digitally sign documents and verify their authenticity without needing to visit service centers.
- Activating digital identity can include the following services and benefits:
- A secure and unified digital identity.
- A unified login to all government websites and their services from your mobile phone
- Digitally signing, verifying, and authenticating documents
- Storing and sharing digital documents
- Creating and updating a unified user profile
- Providing personalized and direct services to individuals



How to use Digital Identity

The ID Pass application is available on mobile application platforms, and a user can register through simple steps that include:

Scanning their national ID card
Verifying their mobile phone number
Registering their email address.
Then setting a password for the identity.

The service provider creates a unit to assist applicants with their requests to ensure technical issues are resolved during and after registration, such as:

A unified phone number to answer inquiries and provide technical support.
Creating a number of direct links, such as “inquire about how to create and upgrade a digital identity account”.
Creating pages for frequently asked questions.

What is required from the user

- To generalize the concept of digital identity and use its services and capabilities with high efficiency, the user (citizen) must have the following:
- The user is confident and capable of using technology and IT tools
- Uses and knows the skills and services of financial and monetary technology and electronic payment services
- Is literate in reading and writing, and thus in electronic symbols and texts
- Is sufficiently aware of the security challenges and vulnerabilities in information and communication technology and ways to protect against them
- Uses information and communication technology as a good user who is honest, has integrity, and ethical behavior
- Works to spread the use of information and communication technology in a way that is beneficial to those around them. Respects and works for the privacy of data circulation

Activating Faceprint in the Digital Identity Application:

The “Digital Identity” application uses biometric faceprint technology to register users, where a verified account can be created in less than minutes without needing to visit government service centers, whereas the registration process used to take longer and required a visit to a service center to complete.

The “Digital Identity” application provides the user with the ability to securely access various websites and applications of governmental, semi-governmental, and private entities nationwide, and to benefit from the services of both public and private entities.

The faceprint adds more security measures to the Digital Identity application, making it a secure national identity for citizens.



Digital Identity Services

Digitally Signing and Sharing Documents

The digital identity allows its users to request an electronic copy of official documents and use them securely to conduct transactions and request services from providers. This feature is distinguished by reducing the use of paper and the number of personal visits to centers, thus saving time and effort.
This feature can also operate according to blockchain technology, which provides the highest levels of security and tracking.

Digital Wallet

The digital identity application often contains a digital wallet for saving and exchanging digital documents with government departments, and for using them to complete transactions quickly without the need to submit paper documents.

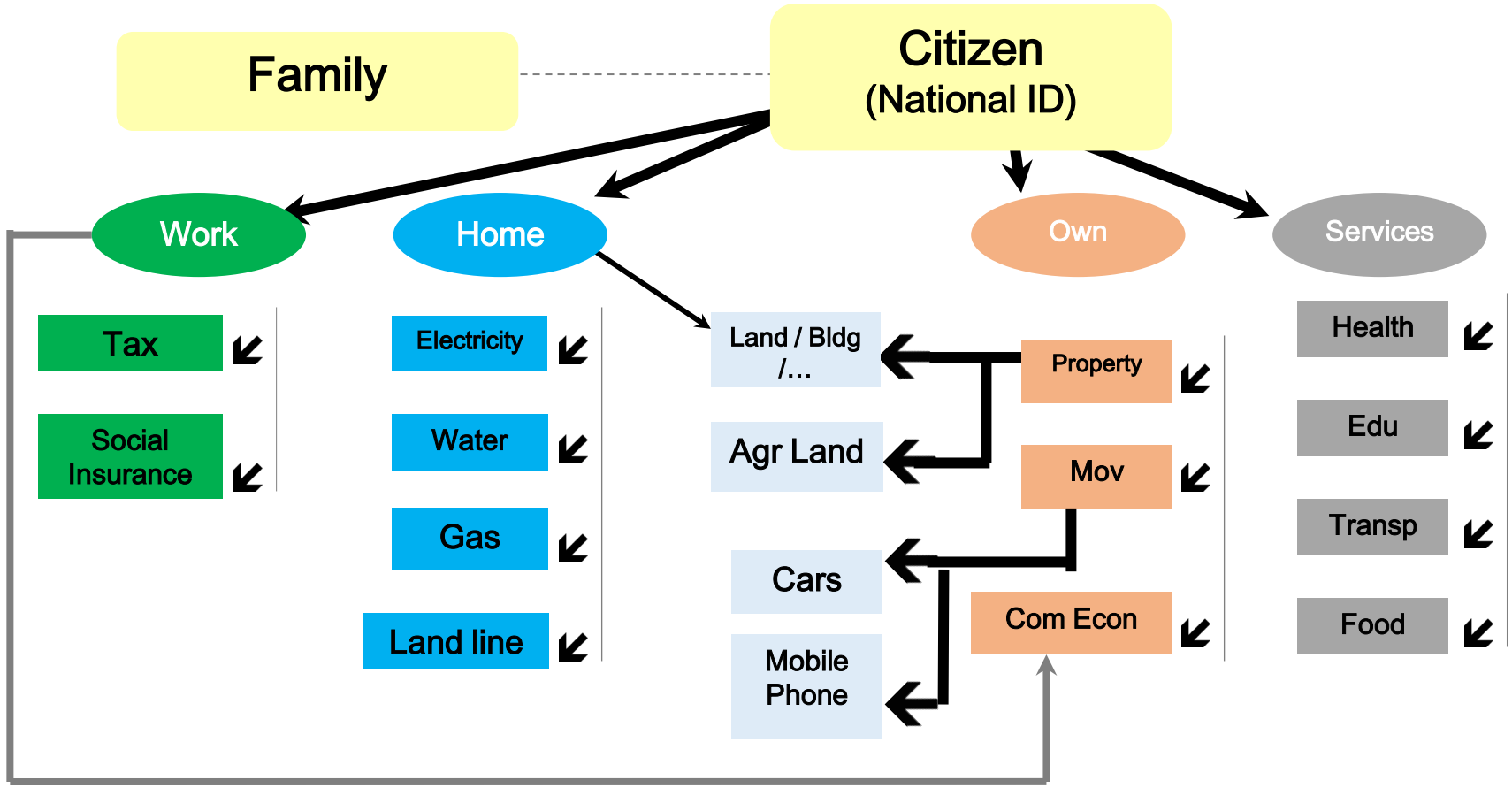
Digital Signature

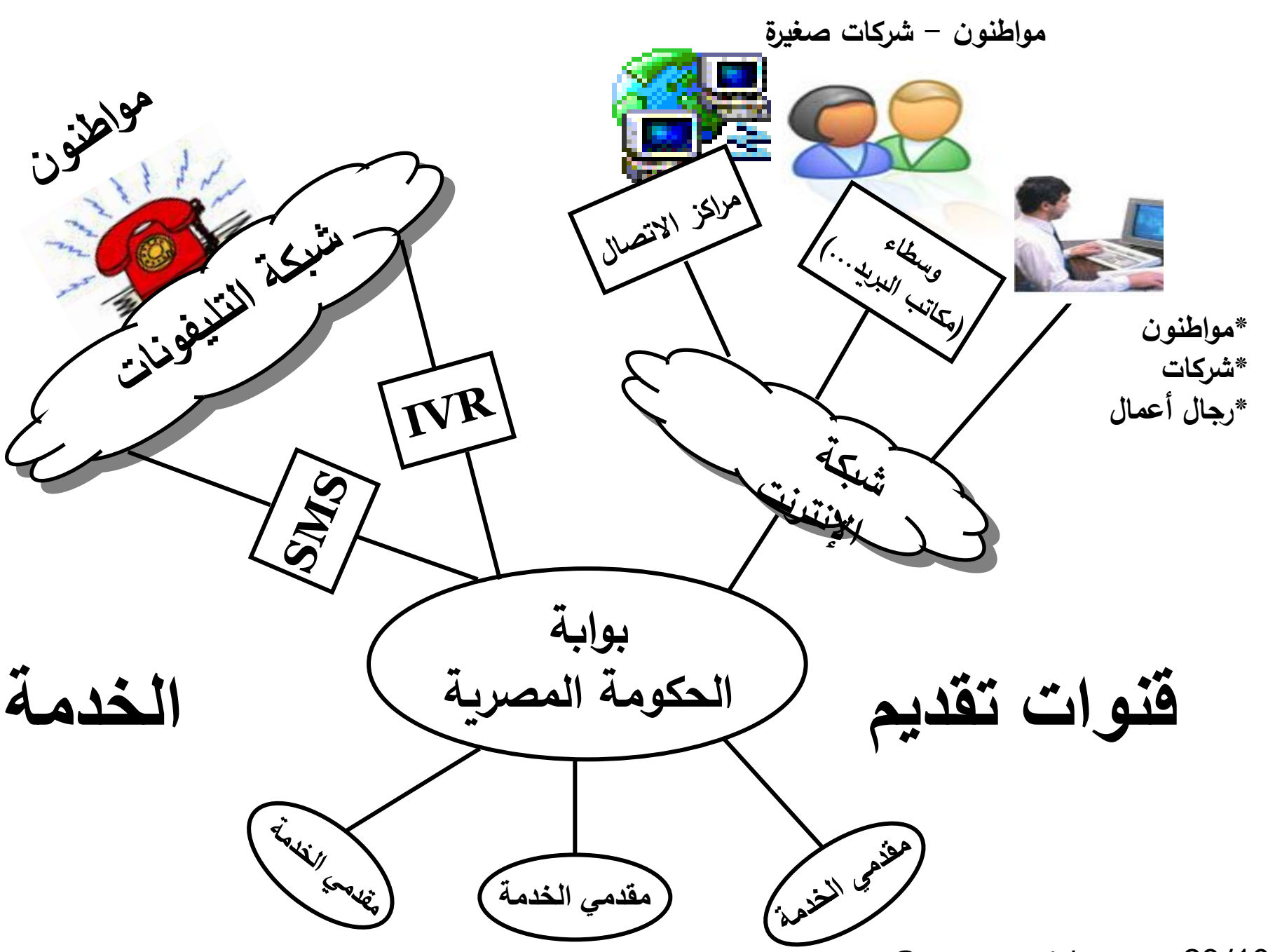
A signature can be used digitally on official documents and transactions using the digital identity with ease.
You can sign through the application, upload the document, sign it, and share it.
You can also instantly verify any signed document that has been shared with the user through the application or on the dedicated website.

Protecting Your Privacy and Digital Identity

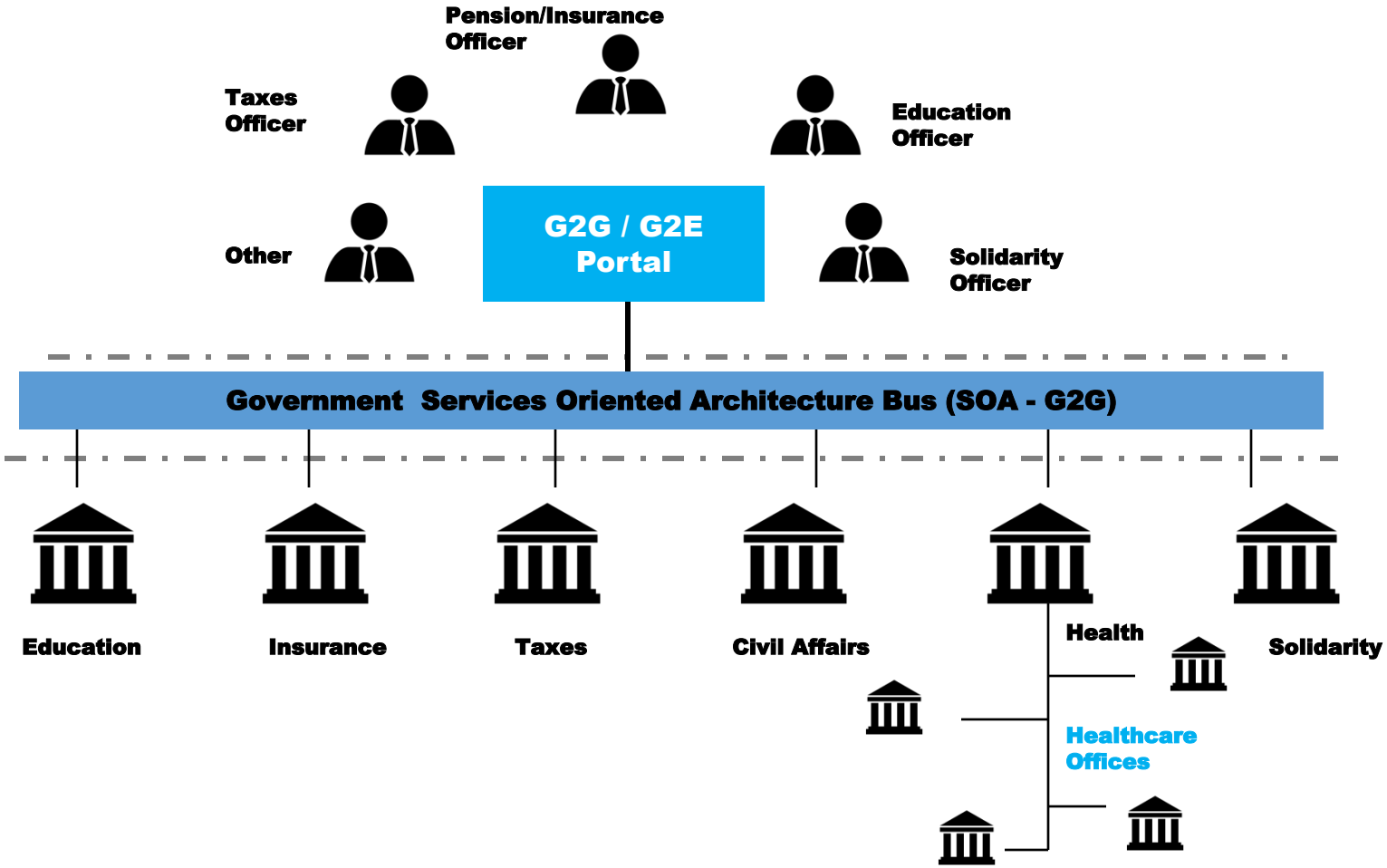
This process is done by issuing a number of laws to protect privacy and individuals and their digital identity, so that the laws include a law for the protection and security of electronic information and its services, as well as combating rumors and various electronic crimes.

Sample Example National DBs




مواطنون – شركات صغيرة
مواطنون
شبكة التليفونات
مراكز الاتصال
وسطاء
(مكاتب البريد...)
IVR
SMS
شبكة الإنترنت
*مواطنون
*شركات
*رجال أعمال
بوابة
الحكومة المصرية
قنوات تقديم الخدمة
مقدمي الخدمة
مقدمي الخدمة
مقدمي الخدمة

Service Oriented Architecture
Government to Government Bus





Governance



How to avoid Big Brother ?





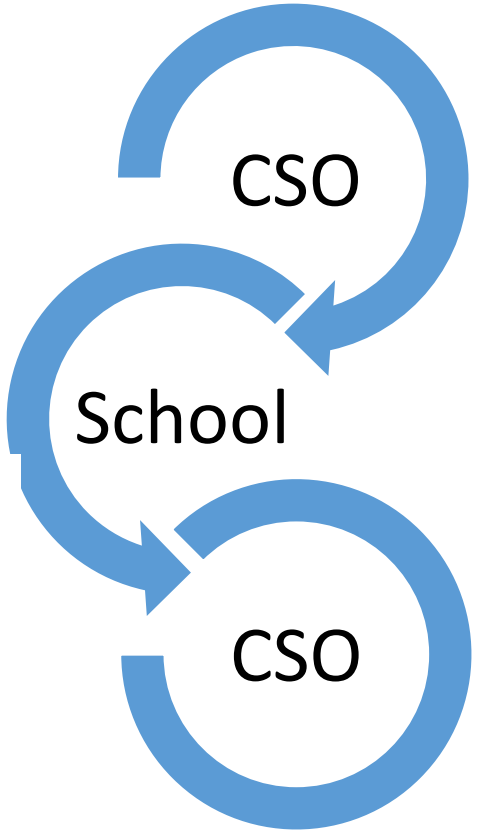
Distributed approach

No one can get hold of several pieces of information

NO More Running Around







TWO THIRDS

of documents presented to government

are issued by government !!

Digital Transformation 101 ☺

- You don’t need to present a document to a government entity that is produced by another government entity

- You encourage your private and NGO entities to be accredited to connect with government

Examples

Applying to school .. Why do you need a birth certificate

Applying for a job .. Why do you need a university transcript

Renewing car license .. Why do you need a traffic violation clearance

Renewing national ID .. Why do you need a stamp from workplace or syndicate

Settling your pension .. Why do you need a birth certificate

…

List is very long !!

Social Safety Nets

Family Card

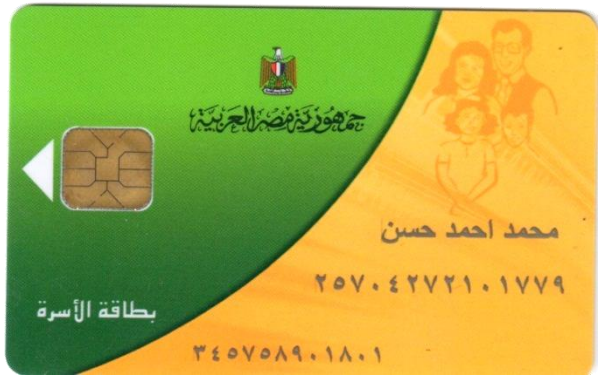
- Social Safety Nets is a major concern Egypt. Subsidy was 9% of the GDP until 2 years ago and is getting as high as 11% this year
- 14 Million families (4 Quintiles of Society !!)
- EMV Sim-based card
- Capable of carrying 8 applications

Health services

Energy

Transportation

...



Artificial Intelligence



What is the Currency of Knowledge?

The currency of the 20th century was physical goods

The currency of the 21st century has become ideas

The economy opens its doors to innovation and creativity

Large companies no longer have a monopoly on reach

80% of corporate profits are linked to information

Who wants to deal with the government?

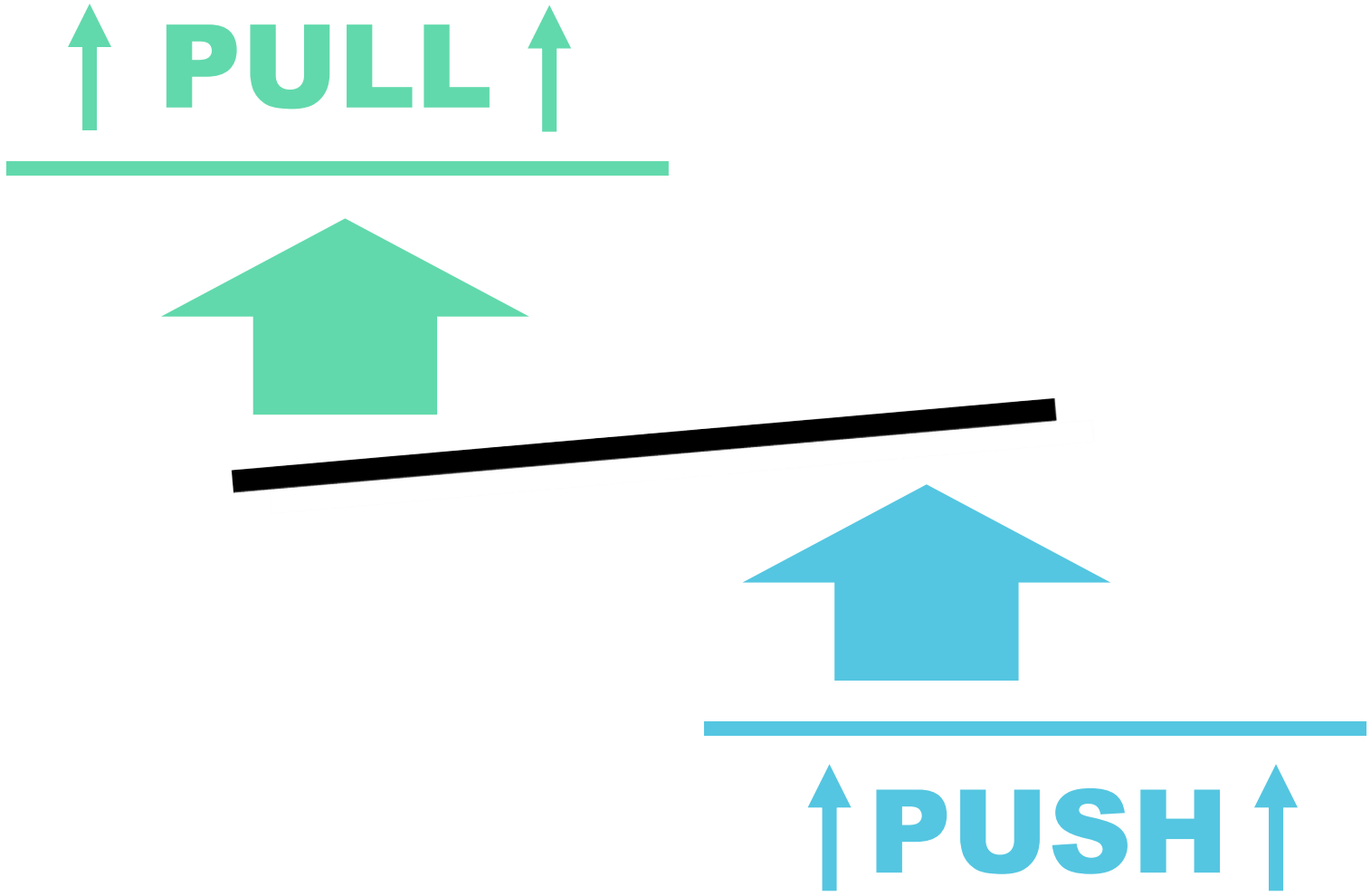
close to none!!

If government can guarantee that regulatory issues are taken care of without the citizens and investors noticing, this will be a major success.

Artificial Intelligence

An intelligent way to anticipate citizen needs and provide them before request.




PULL
PUSH

Seamless invisible Government is composed of a set of agencies working together as a single entity, generating integrated responses to community needs.

STAKEHOLDER SATISFACTION		Citizen Satisfaction with Digital Services (via survey)
		Business Satisfaction with Digital Services (via survey)
END-TO-END DIGITAL OPTIONS		Services that offer e-payment options (inbound and outbound)
		Services that are prefilled with Government-verified data
		Services that offer digital options for wet ink signatures
END-TO-END DIGITAL TRANSACTIONS		Percentage of transactions completed digitally from end-to-end
		Percentage of payments (inbound and outbound) completed via e-payments
DIGITAL CAPABILITIES		Number of public officers trained in data analytics and data science
		Number of public officers with basic digital literacy
TRANSFORMATIVE DIGITAL PROJECTS		Number of transformative digital projects
AI, DATA AND DATA ANALYTICS		Percentage of Ministry families that use AI for service delivery or policy making
		Number of high-impact data analytics projects
		Core data fields in machine readable format, and transmittable by APIs
		Time required to fuse data for cross-agency projects

Seamless Integrated Government

SINGAPORE GOVERNMENT TECH STACK (SGTS)

A better, smarter and faster platform for building digital applications

BETTER EXPERIENCE

Develop a more seamless, consistent and connected experience across government digital services.

SMARTER PROCESS

Enable easier exchange of data across the government for richer insights that will help with policy and solution development as well as monitoring of operations.

FASTER ROLLOUT

Faster deployment of solutions without the need to develop infrastructure from scratch



DIGITAL SERVICES

Easy-to-use, accessible and secure digital government services that improve lives of citizens and business.

MICROSERVICES

Reusable common services that agencies utilise to build applications such as the National Digital Identity for authentication.

MIDDLEWARE

Software services such as APEX (API Gateway) and WOGAA (analytics) that allow for rapid development, deployment, testing and monitoring.

HOSTING PLATFORMS

Scalable hosting containers with secure connectivity.

Infographic courtesy of the Government Technology Agency


مستقبل الخدمة (شخص طبيعي (مواطن/مستثمر) أو اعتباري (شركة أو ...))
قنوات تقديم الخدمة
الشراكة وخدمات القيمة المضافة
المتابعة وقياس الأداء
الخدمات
إدارة الموارد
قواعد البيانات القومية
شبكة الحكومة
البنية الأساسية
البنية التشريعية والتنظيمية
شبكة المديرين التنفيذيين للمعلومات
لجنة التشريع والتنظيم

e-Government architecture with its governance bodies

Service recipient

- Natural person (citizen or investor) or legal person (company or other)
- Performance monitoring and measurement
- Partnership and value-added services
- Service delivery channels

Shared government platforms

- Resource management and services
- National databases
- Government network
- Infrastructure and the legislative and regulatory framework

Governance bodies

- Network of executive information officers (government CIOs) spanning all layers
- Legislation and regulation committee overseeing the legal framework

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Procurement Portal

What talk can we have about supporting small and medium-sized enterprises if government agencies do not adhere to the simplest assistance for these companies, which find themselves forced to buy all newspapers to track tender news, then go around to government agencies and pay thousands of pounds to buy brochures that they may not even apply for after reading their details.

Jobs Portal

Cloud

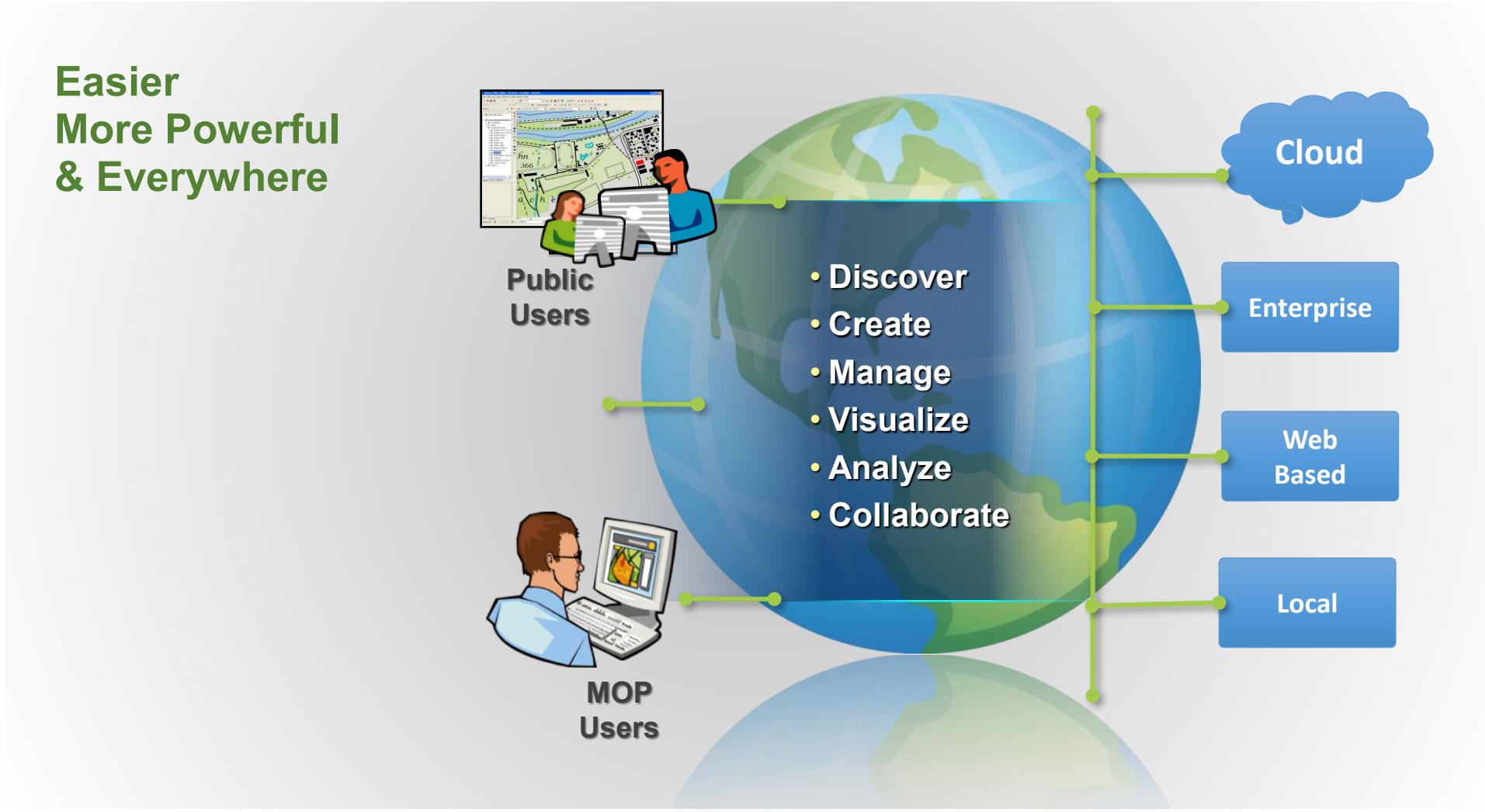


Mobile



FinTech

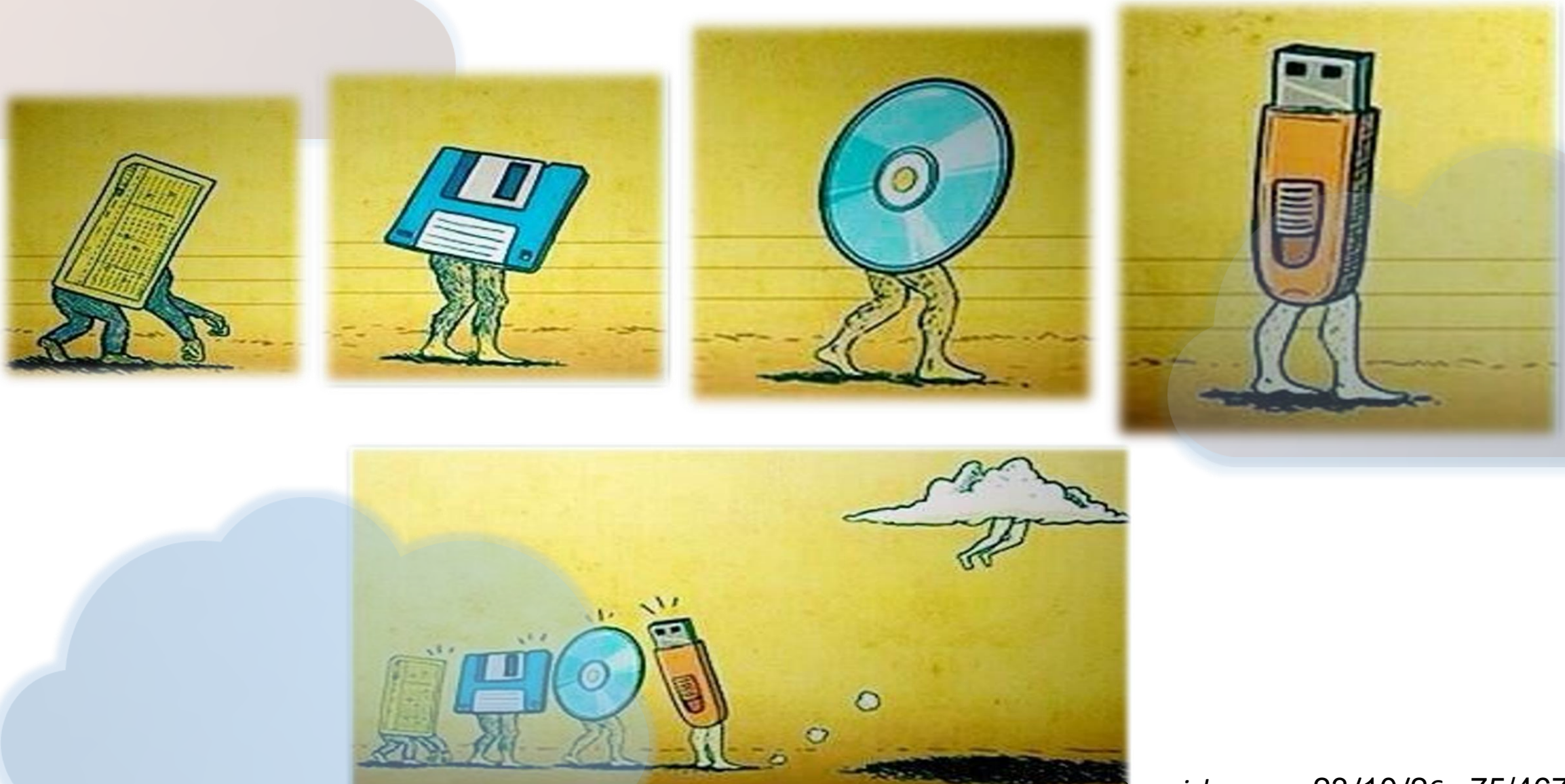
A complete System



Cloud Computing

Contribution by Reem Raafat &
Abdel-Kader Nowaisy

Evolution

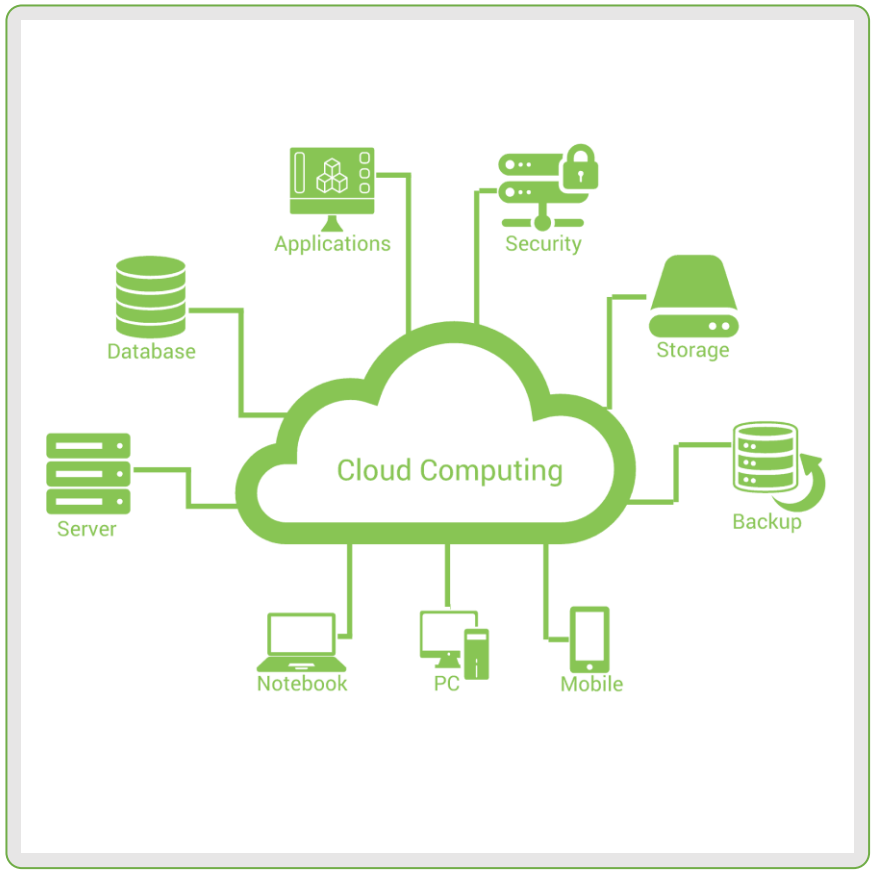


What is cloud computing?

Cloud computing

Renting information technology instead of buying it. Rather than investing heavily in databases, software and hardware, organisations access computing power over the internet (the cloud) and pay for what they use.

- Processing and storage move from the organisation's own devices to the cloud: a server reached over the internet
- IT software therefore changes from a product you own into a service you subscribe to



Cloud computing connects applications, security, databases, storage, backup and servers to any device

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Basic components of cloud computing



Clients

The end users and their devices (laptops, PCs, phones) that access cloud services.



Data centres

Facilities housing the servers that store data and run applications.



Distributed servers

Servers placed in different locations around the world and working together as one service.

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Characteristics of cloud computing

On-demand self-service

Users get computing capacity when and where they need it, without a human operator.

Broad network access

Services are reachable over the internet from phones, tablets, laptops and workstations.

Rapid elasticity and scalability

Capacity grows or shrinks automatically as demand changes.

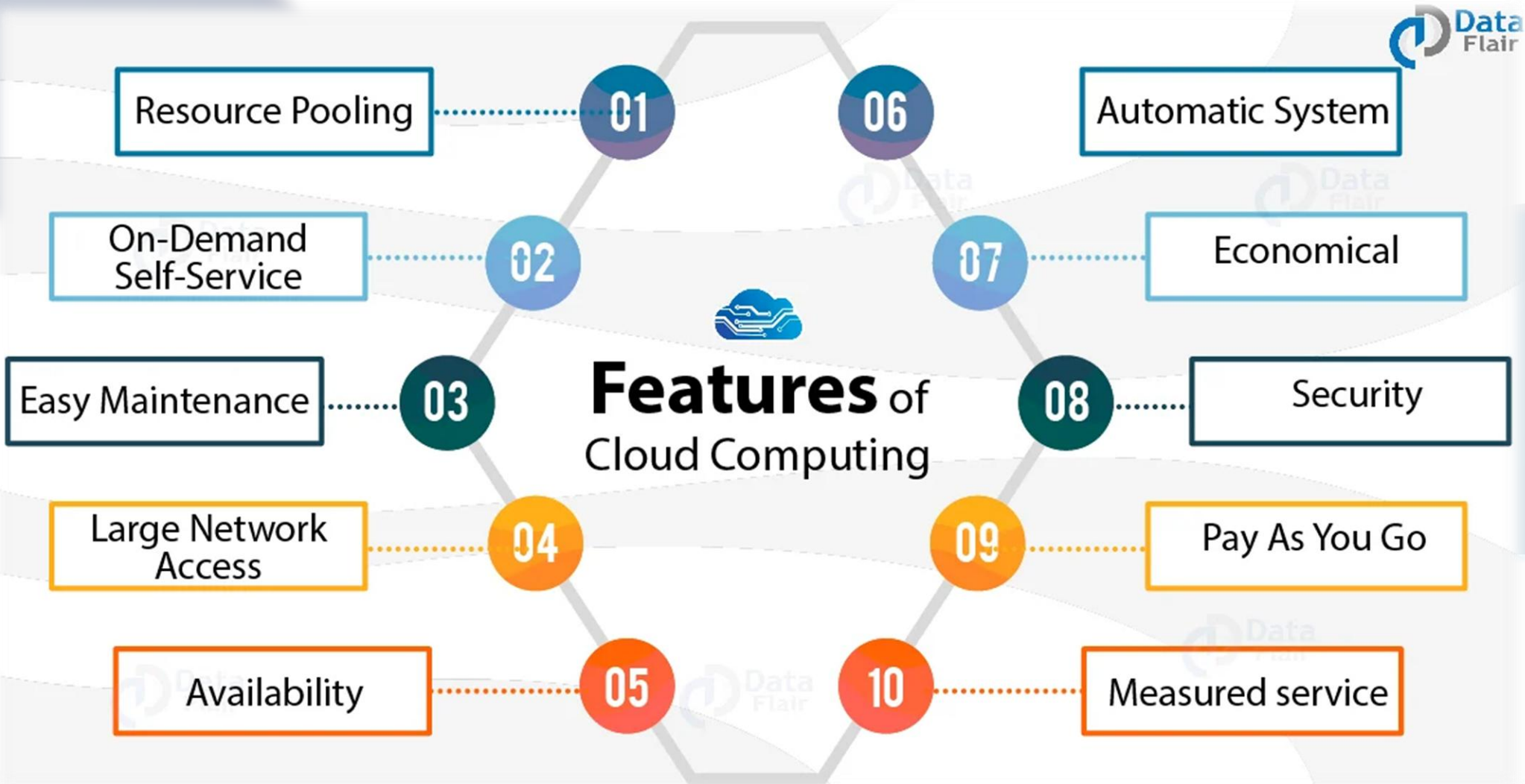
Multi-tenancy and resource pooling

The provider pools physical and virtual resources, owned or leased, and shares them among many users.

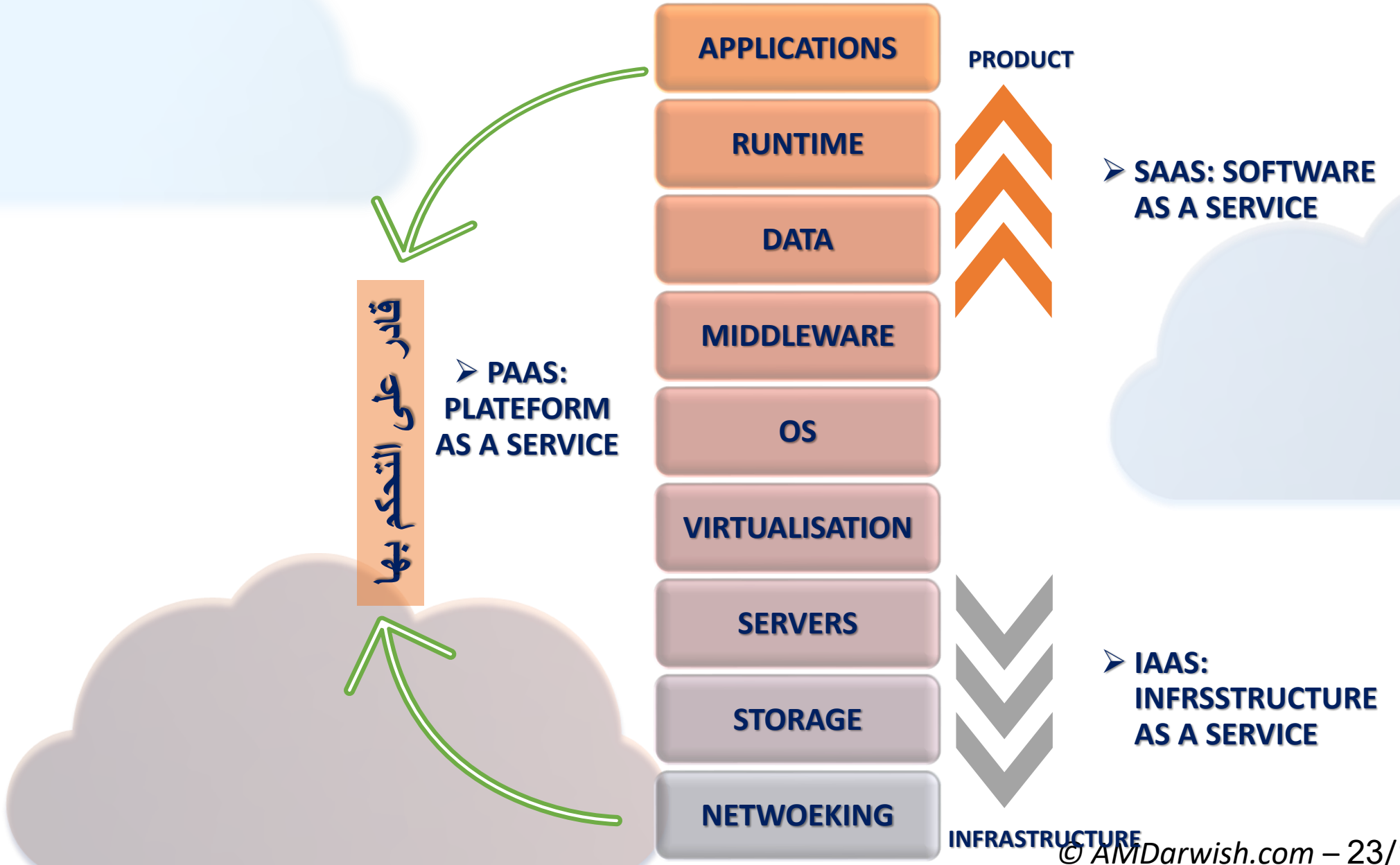
Measured service

Usage of storage, processing, bandwidth and active accounts is metered and reported.

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Data Flair
Resource Pooling
01
On-Demand Self-Service
02
Easy Maintenance
03
Large Network Access
04
Availability
05
06
Automatic System
07
Economical
08
Security
09
Pay As You Go
10
Measured service
Features of Cloud Computing

خدمات السحابة



خدمات السحابة



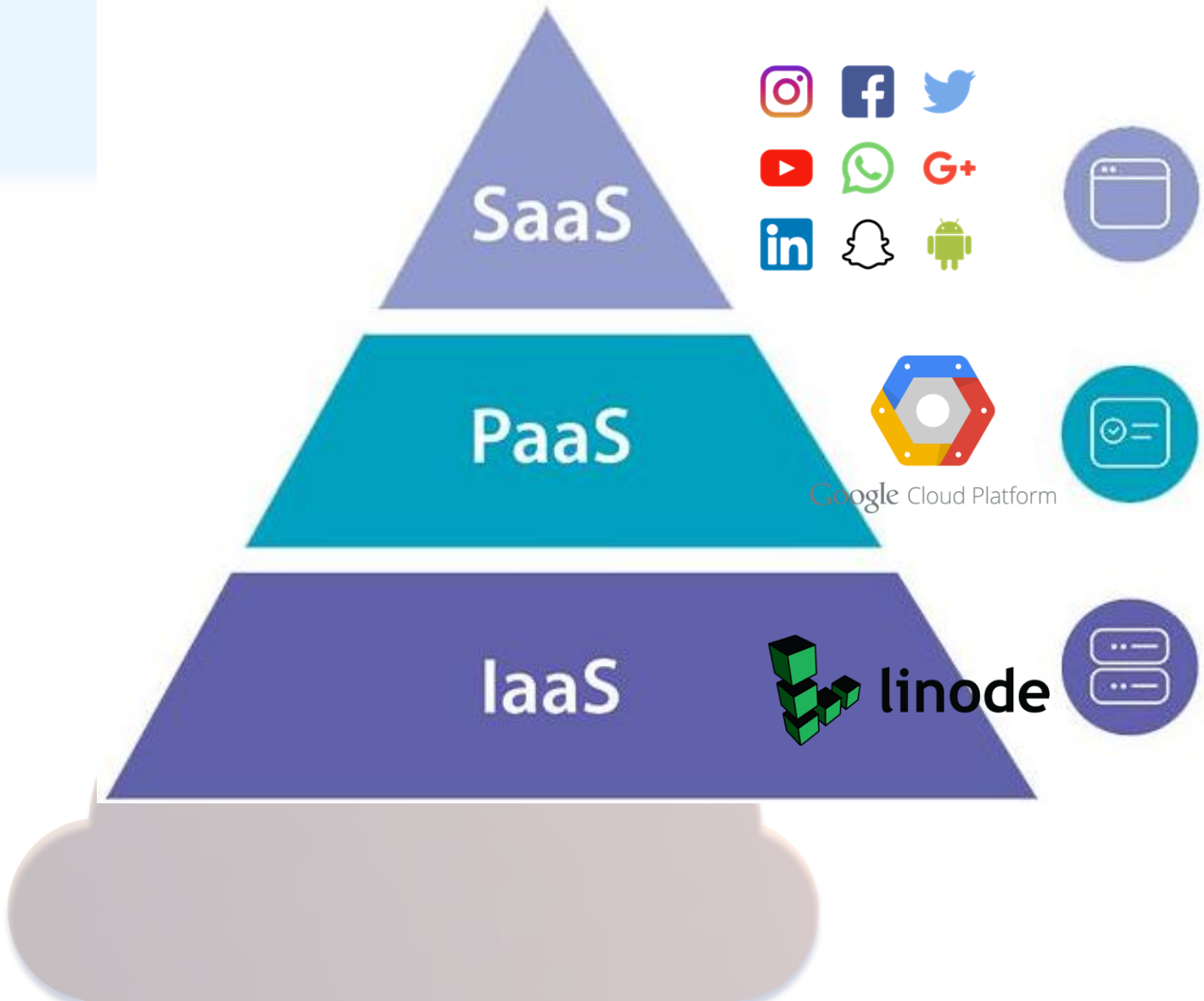
Cloud service models and who manages each layer

Moving from the traditional model to SaaS, the provider takes over more layers and the user manages fewer.

Layer	Traditional (on-premises)	IaaS	PaaS	SaaS
Applications	User	User	User	Provider
Security	User	User	Provider	Provider
Databases	User	User	Provider	Provider
Operating systems	User	User	Provider	Provider
Virtualisation	User	Provider	Provider	Provider
Servers	User	Provider	Provider	Provider
Storage	User	Provider	Provider	Provider
Networking	User	Provider	Provider	Provider
Data centres	User	Provider	Provider	Provider

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خدمات السحابة



البرمجيات كخدمة
Software as a Service
البرمجيات ،لظم التشغيل والتطبيقات
الخوادم، التخزين، الشبكات
المستخدم النهائي

المنصات كخدمة
Platform as a Service
لظم التشغيل والتطبيقات
الخوادم، التخزين، الشبكات
مطورين التطبيقات

البنية التحتية كخدمة
Infrastructure as a Service
الخوادم، التخزين، الشبكات
مهندسين البلية التحتية والشبكات

The three cloud service models



SaaS – Software as a Service

Provider runs everything: software, operating systems, applications, servers, storage, networks. For end users. Examples: Gmail, Zoom, Netflix, Microsoft 365, YouTube, Facebook.



PaaS – Platform as a Service

Provider runs operating systems, servers, storage and networks. For application developers. Examples: Google Cloud Platform, Google App Engine, Force.com, Microsoft Azure.



IaaS – Infrastructure as a Service

Provider runs servers, storage and networks only. For infrastructure and network engineers. Examples: Linode, Amazon Web Services, Google Cloud.

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Benefits of cloud computing

Cost saving is the headline benefit: no heavy upfront investment in hardware and software, and you pay only for what you use.

Scalability

Add or remove capacity as the organisation grows or demand changes.

Flexibility

Work from any device, any place, with services that adapt to new needs.

Reliability

Large providers keep services running with redundancy and backup.

Protection

Security and data protection managed by specialist provider teams.

Rapid deployment

New applications and services can be launched in hours rather than months.

Sharing and collaboration

Teams work on the same data and documents at the same time.

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Sample Companies Providing Cloud Services







Google Cloud Platform

Alibaba Group
阿里巴巴集团

ORACLE
CLOUD

IBM Cloud

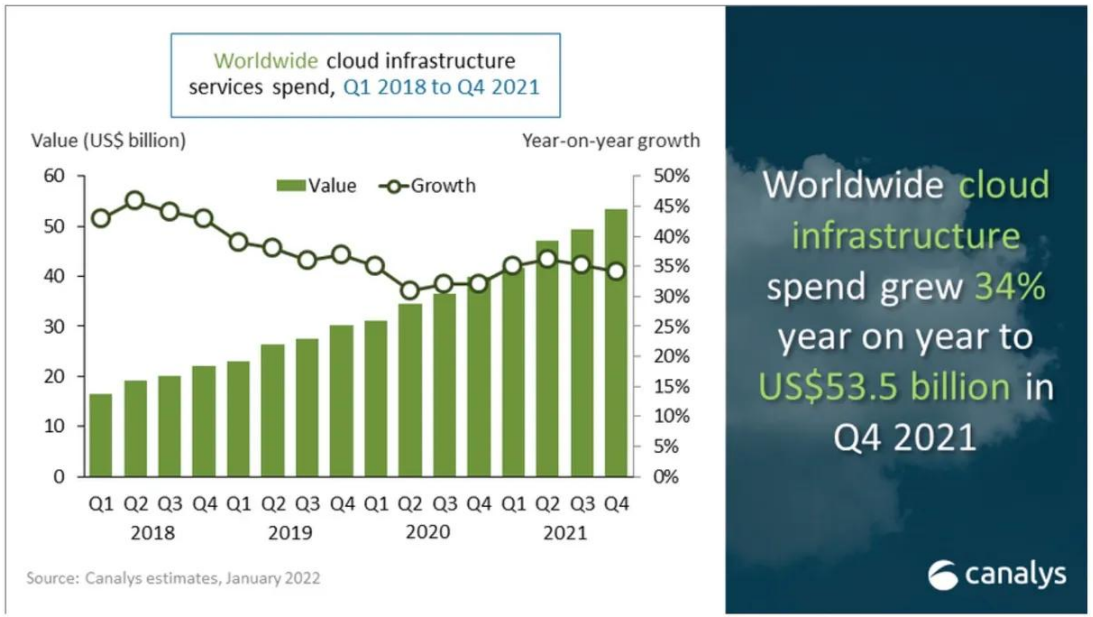
DigitalOcean

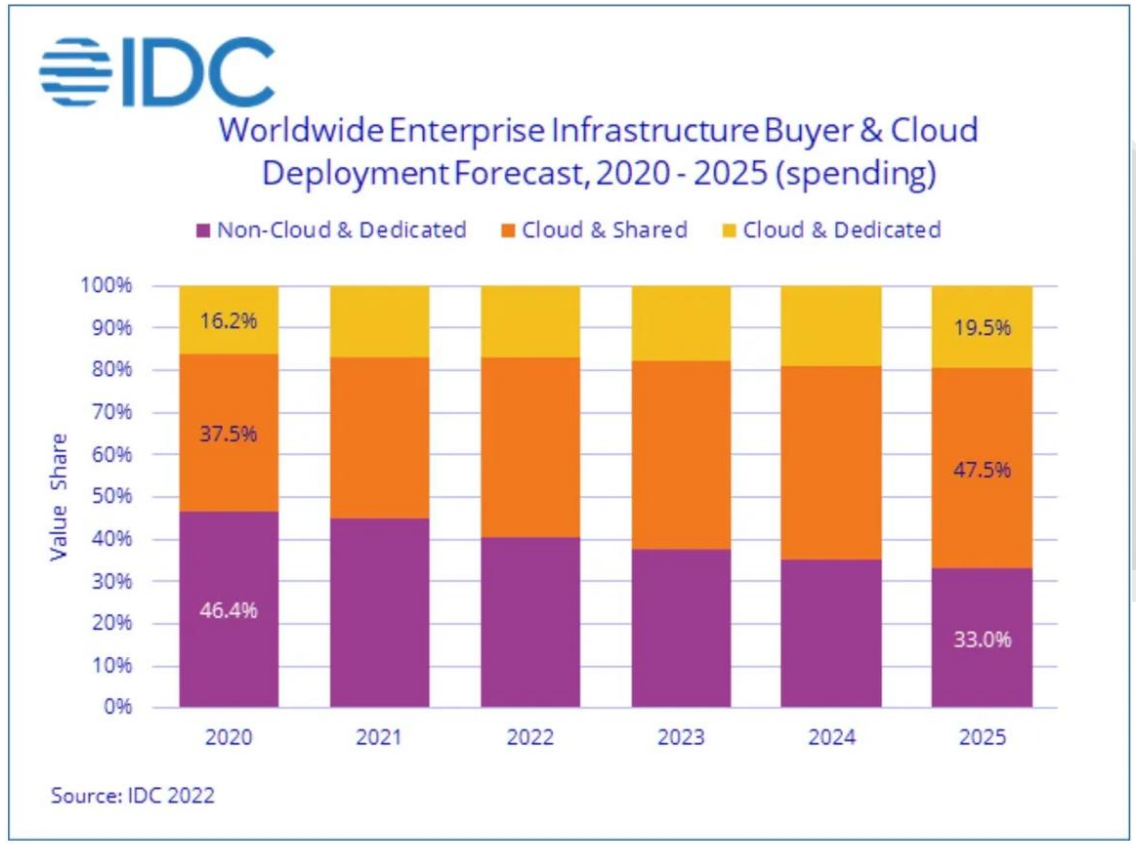


OVH.com

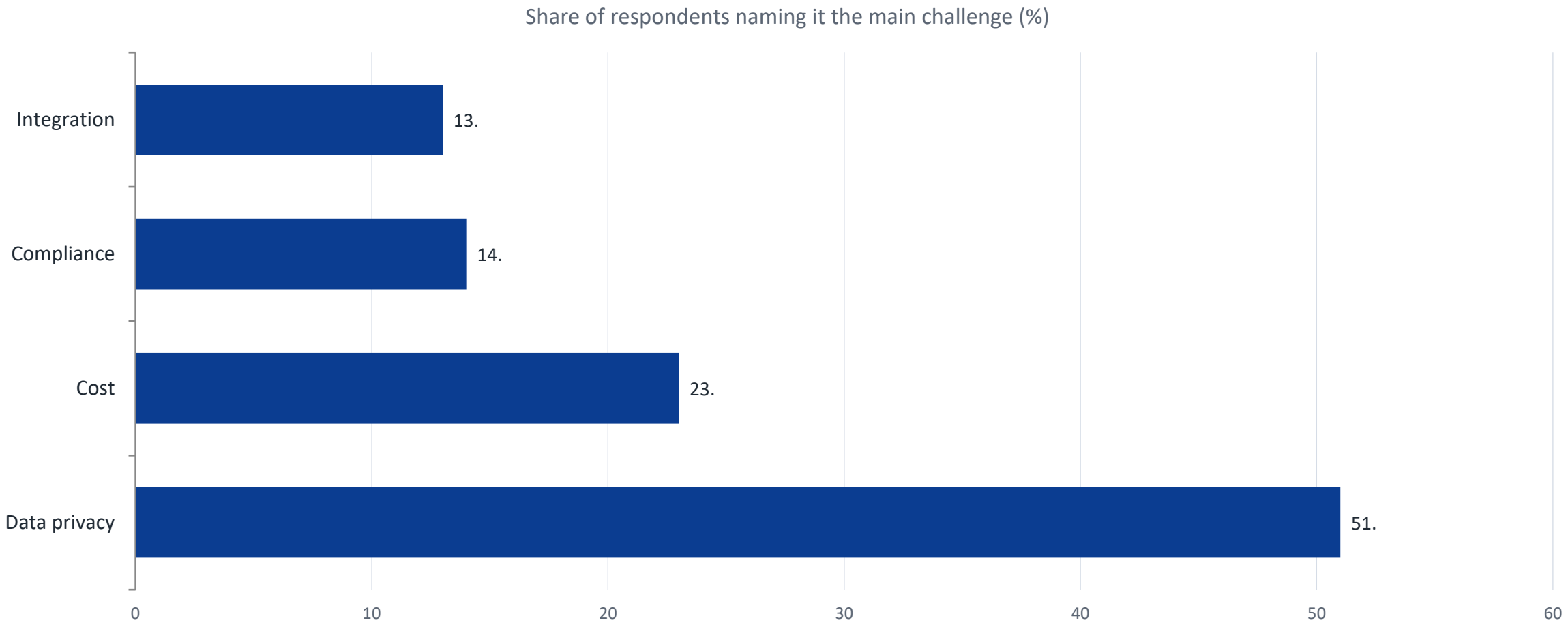
linode

OneDrive


Worldwide cloud infrastructure services spend, Q1 2018 to Q4 2021
Value (US$ billion)
Year-on-year growth
Value
Growth
60
50
40
30
20
10
0
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
2018
2019
2020
2021
Source: Canalys estimates, January 2022
Worldwide cloud infrastructure spend grew 34% year on year to US$53.5 billion in Q4 2021
canalys


IDC
Worldwide Enterprise Infrastructure Buyer & Cloud Deployment Forecast, 2020 - 2025 (spending)
Non-Cloud & Dedicated
Cloud & Shared
Cloud & Dedicated
Value Share
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
16.2%
37.5%
46.4%
19.5%
47.5%
33.0%
2020
2021
2022
2023
2024
2025
Source: IDC 2022

Risks of cloud systems



Source: Refinitiv survey of 300 financial institution chief technology officers, chief information officers and chief data officers

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Digital Signature

What is an electronic signature?

Electronic signature (Egyptian legal definition)

Whatever is placed on an electronic document in the form of letters, numbers, symbols, signs or otherwise, having a unique character that identifies the signer and distinguishes them from anyone else.

- Definitions differ from country to country in mechanism, tools, legal weight and whether use is compulsory
- The unique link to the signer protects the recipient from fraud by the sender
- It can belong to a natural person or to a legal person (as a seal)
- Unlike a paper signature, it is bound to the document itself



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Public key infrastructure

Public key infrastructure (PKI)

Encryption with one key, and decryption with a different key.

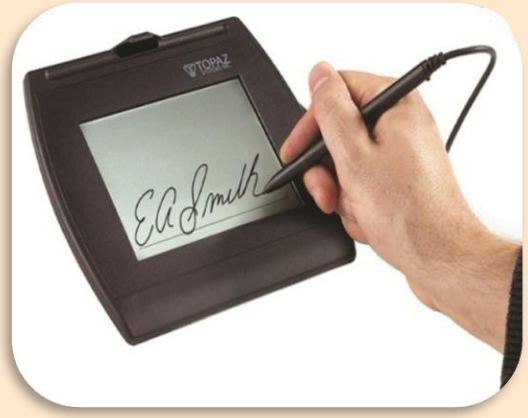
- Two mathematically linked keys are used instead of one shared secret
- What one key locks, only the other key can unlock

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هل هذه توقيعات الكترونية؟









التوقيع عن طريق الإنترنت

التوقيع عن طريق الماسح الضوئي

التوقيع بالقلم الإلكتروني

التوقيع الرقمي

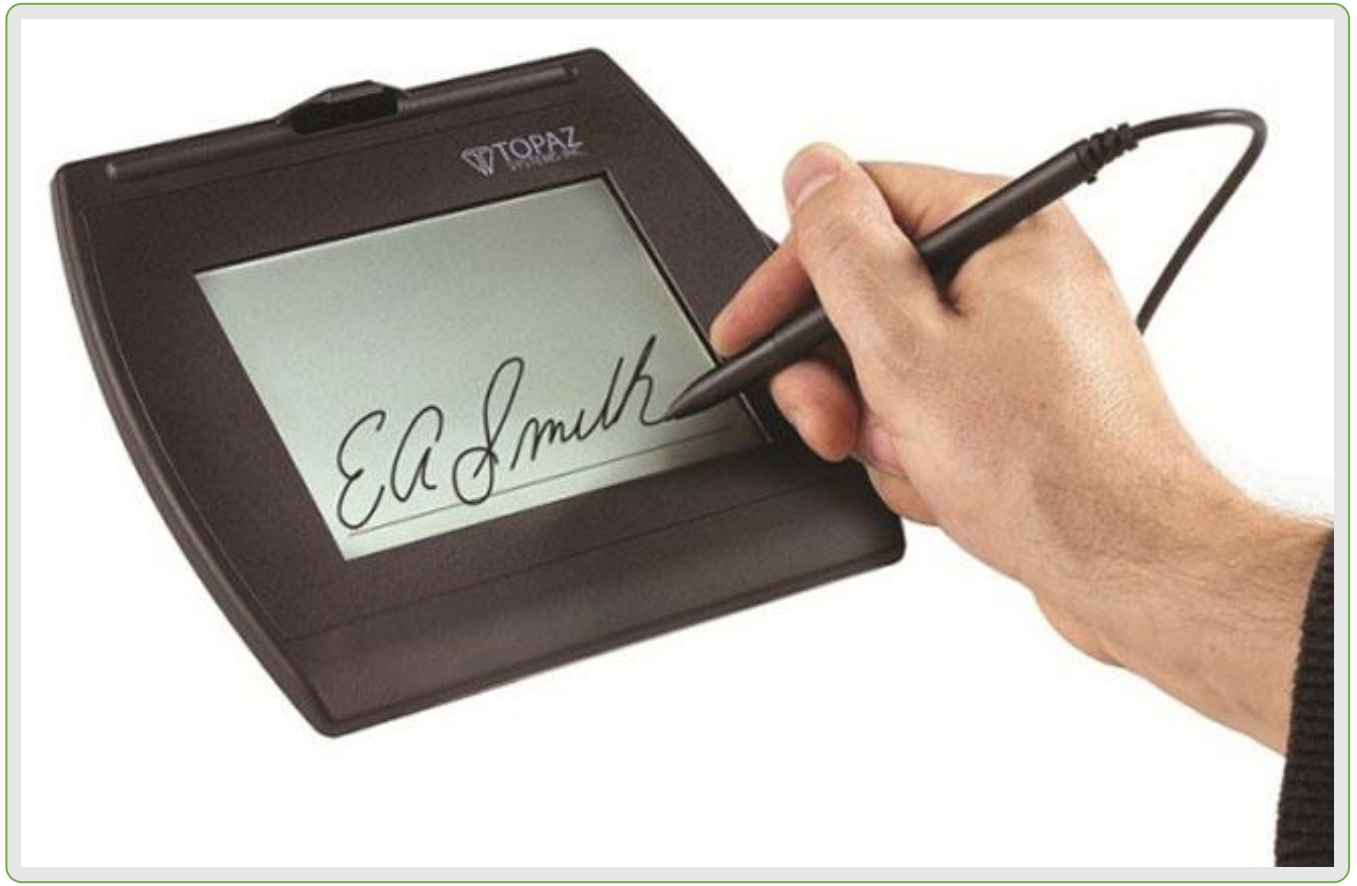
او

الكودي

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Are these electronic signatures?

- A handwritten signature captured on a signature pad
- Discussion: does a picture of a signature meet the legal definition on the previous slides?



Signature pad with stylus

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شروط التوقيع الالكتروني



1. أن يحدد الموقع توقيعه بشكل متميز وليس له شبيه
2. يجب أن يكون للموقع حق التحكم في المفتاح الخاص الذي تم استخدامه لإنشاء التوقيع الالكتروني .
3. يجب أن يكون التوقيع قادراً على تحديد ما إذا تم التلاعب بالبيانات المصاحبة له بعد توقيع الرسالة.
4. في حالة تغيير البيانات المصاحبة يجب الغاء صلاحية التوقيع .

Conditions of a valid electronic signature

1. Unique to the signer

The signature identifies the signer distinctly and has no look-alike.

2. Signer controls the private key

The signer must have sole control of the private key used to create the signature.

3. Detects tampering

The signature must reveal whether the data attached to it was altered after signing.

4. Invalid if data changes

If the attached data is changed, the signature must be cancelled and lose its validity.

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Advantages of the electronic signature

- Raises security and privacy for people transacting online, especially in e-commerce
- Identifies sender and receiver electronically and confirms that people and information are genuine
- Helps institutions protect themselves from counterfeiting and forged signatures
- Allows deals to be concluded remotely without the parties being present, which supports and secures e-commerce
- Signed content (data, information and messages) can be preserved
- Confirms the time at which a signed message was made



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Obstacles to implementing the electronic signature

Administrative

- Many administrative leaders do not know the term or believe in this new way of managing
- They cannot let go of traditional management and its principles
- An intellectual groundwork is needed in every department
- Multiple management systems inside one institution mean each department sees it differently

Financial

- Large funds are needed for the IT infrastructure that the system requires
- Limited budgets make equal access to telecom network services difficult
- Technical maintenance of e-signature software is a recurring problem
- Little money is left to train staff or hire highly skilled IT experts

Legal

- A large legislative gap governs the e-signature system
- Existing provisions are scattered, inconsistent and limited to a few fields
- Administrations cannot provide a protected electronic work environment with clear legal terms
- The legislator has not defined how far electronic correspondence counts as evidence

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How e-signature law developed in Egypt

2004 – E-Signature Law No. 15 of 2004

- Egypt's first legislation regulating electronic transactions
- Legalises drafting, exchanging and storing documents electronically
- Protects the rights of the parties and guarantees the credibility and legality of e-transactions
- Before this law, electronic writing and signatures had no legal weight as evidence in court

2017 – New Investment Law

- Issued as the digital transformation began
- Electronic incorporation procedures apply to companies under this law
- Competent authorities must recognise electronic signatures, documents and forms prepared by technological means
- They must also accept electronic payment for all their dues

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وبموجب هذا القانون اصبح عدد الشركات التي تقدم الخدمة في مصر أربع شركات بالإضافة إلي سلطة التصديق الإلكتروني الحكومية التابعة لوزارة المالية والتي تقدم خدمات التوقيع الإلكتروني بين الجهات الحكومية ..

- ❑ الشركة المصرية لخدمات التوقيع الإلكتروني وتأمين المعلومات Egypt Trust
- ❑ شركة مصر للمقاصة والإيداع والقيد المركزي MCDR
- ❑ شركة فيكسد مصر للحلول الرقمية وأمن المعلومات Fixed Misr
- ❑ شركة الدلتا للأنظمة الإلكترونية El-Delta

يتطلب استخراج شهادة التوقيع الإلكتروني التوجه إلى إحدى الهيئات المرخصة من هيئة تنمية صناعة تكنولوجيا المعلومات مثل شركة Egypt trustوشركة مصر للمقاصة، وذلك بعد تجهيز بعض المستندات الضرورية وهي:



- ✓ صورة البطاقة الضريبية
- ✓ صورة إثبات الشخصية للمدير المسؤول
- ✓ صور صحيفة الاستثمار أو عقد الشركة
- ✓ صورة المستخرج الرسمي للسجل التجاري

بعد تقديم كافة المستندات وملء نموذج الطلب، يجب على الممول سداد الرسوم المطلوبة، والتأكد من توقيع الطلب من المدير أو ممثل الشركة والتصديق على ذلك بخاتم البنك.

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Who issues e-signature certificates in Egypt

Licensed providers under the law

- Egypt Trust – Egyptian Company for E-Signature and Information Security Services
- Misr for Central Clearing, Depository and Registry (MCDR)
- Fixed Misr for Digital Solutions and Information Security (FEDIS)
- El-Delta Electronic Systems
- Plus the Government Certification Authority under the Ministry of Finance, serving signatures between government bodies

Documents needed for a certificate

- Apply to a body licensed by ITIDA, such as Egypt Trust or MCDR
- Copy of the tax card
- Copy of the responsible manager's identity document
- Copy of the investment gazette or the company's articles, and the official commercial register extract
- Then pay the fees; the application must be signed by the manager or company representative and certified with the bank's stamp

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Electronic signature devices

The state offers taxpayers several signing devices that make signing invoices easier; which one you need depends on volume and number of computers.

USB Token

Received after registering in the e-invoice system. Installed on the ERP software, it signs up to 90 invoices per minute.

PCI HSM

For volumes above 90 invoices per minute when signing is done from a single computer.

Network HSM

Lets the whole organisation sign from several computers at once, saving time and simplifying procedures.

USB token, PCI HSM card and network HSM appliance

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E-signature in digital transformation and anti-corruption

Despite its many benefits, the e-signature is still not widely used in commercial transactions. Five reasons explain why digital transformation strategies should include it.

Better customer experience

Customers expect to sign digitally from anywhere.

Safer than paper

Harder to lose, forge or tamper with than paper documents.

Compliance

Required by law in many industries and sensitive processes.

Lower operating costs

No paper, printers, ink or filing.

Higher employee productivity

Less time handling documents, more time on real work.

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Reasons 1 and 2, lower costs and higher productivity

Lower operating costs

- Integrating e-signature into business removes spending on paper, pens, printers, ink and folders
- The result is a large saving in the company's overhead costs

Higher employee productivity

- E-signatures save money and time otherwise spent processing documents, fixing errors and redrafting
- Employees can use that time for more valuable work, such as improving customer relationships

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Reasons 3 to 5, experience, security and compliance

Better customer experience

Customers expect digital services wherever they are in the world, including signing documents; nobody wants to print paper.

Safer than paper

Paper is hard to track and easy to lose or forge; e-signatures add GPS, timestamps and encryption against tampering.

Compliance

In many industries and sensitive processes the e-signature is a legal requirement; non-compliance brings heavy penalties and fines.

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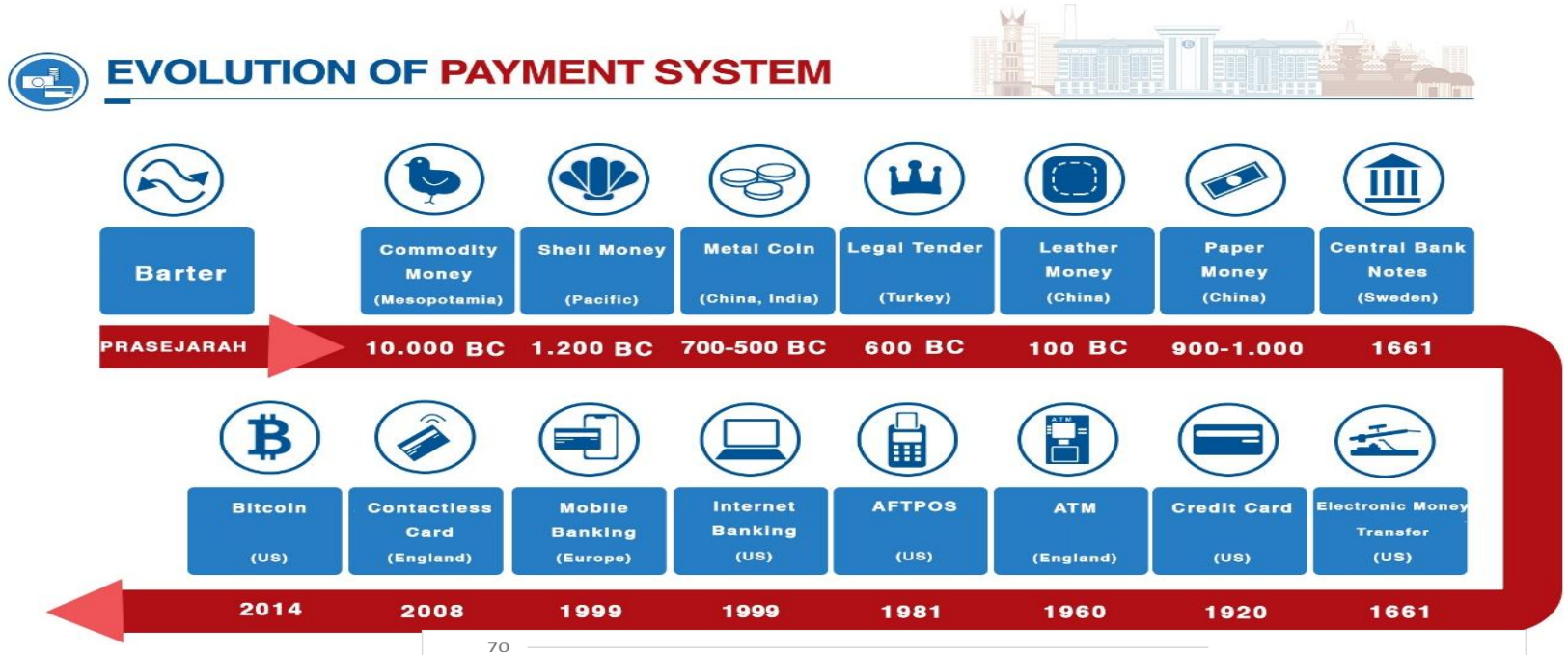
FinTech

Contribution by
Mohamed Ahmed Magdy
Aleya Mamdouh
Ismail El-Dahshan

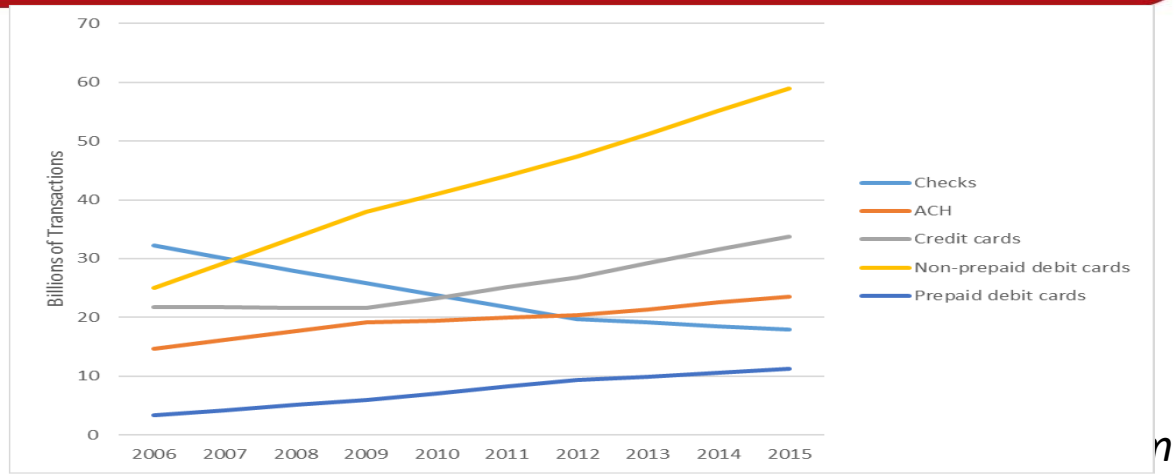
Payment Service Provider …

Payment System Operators …

- **<u>The Evolution of Payment system though the Ages</u>:**



Source: *The Federal Reserve Payments Study: 2018 Annual Supplement*, p. 3, https://www.federalreserve.gov/newsevents/pressreleases/files/2018-payment-systems-study-annual-supplement-20181220.pdf.



Financial technology

Technology has spread so widely that it is now a basic part of everyday life, and banks have moved to take advantage of it.

- **Technology everywhere** Worldwide adoption of digital technology has made it a core part of how people live and work.
- **Banks respond** Banks use financial innovations to offer more advanced banking services to their customers.
- **A broad field** FinTech spans blockchain, payments, exchange, research, digital money, online banking, investment and crowdfunding.



The main areas of FinTech

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Digital banking services

Digital banking

Digital banking services involve a high degree of process automation and web-based services. They may use application programming interfaces (APIs) that let services be composed across institutions to deliver banking products and transactions.

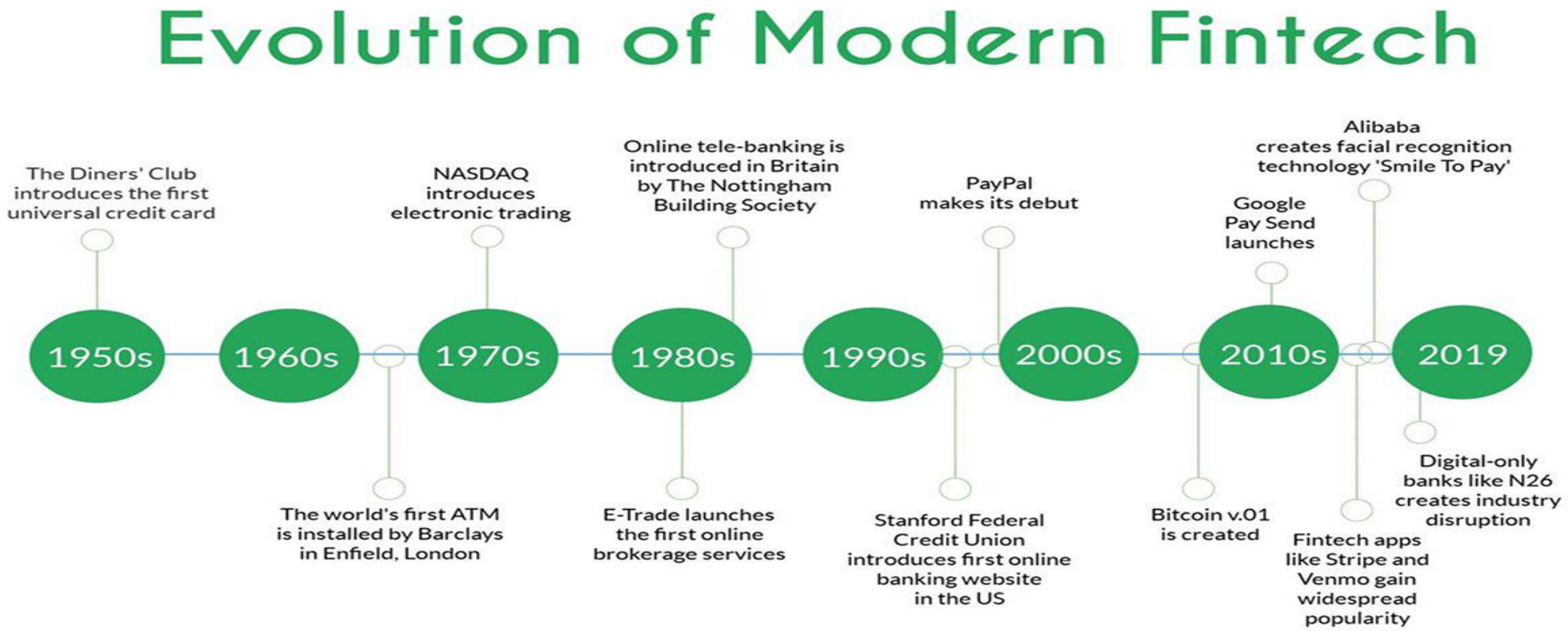
- Users can reach their financial data through desktop, mobile and ATM channels
- Automation replaces manual, branch-based steps
- APIs let banks and partners plug services together



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ما هي التكنولوجيا المالية؟

Fintechهو المصطلح الذي يصف مجموعة التقنيات المالية المصممة لتعزيز وأتمتة استخدام وتقديم الخدمات المالية .إنه يغير طريقة ادخارنا واقتراضنا واستثمارنا للأموال من خلال جعل المعاملات المالية الرقمية أسهل وأبسط ، دون الحاجة إلى بنك تقليدي.



(Source: Abhishek Soni/Medium.com, 2019

What is fintech, and how did it evolve?

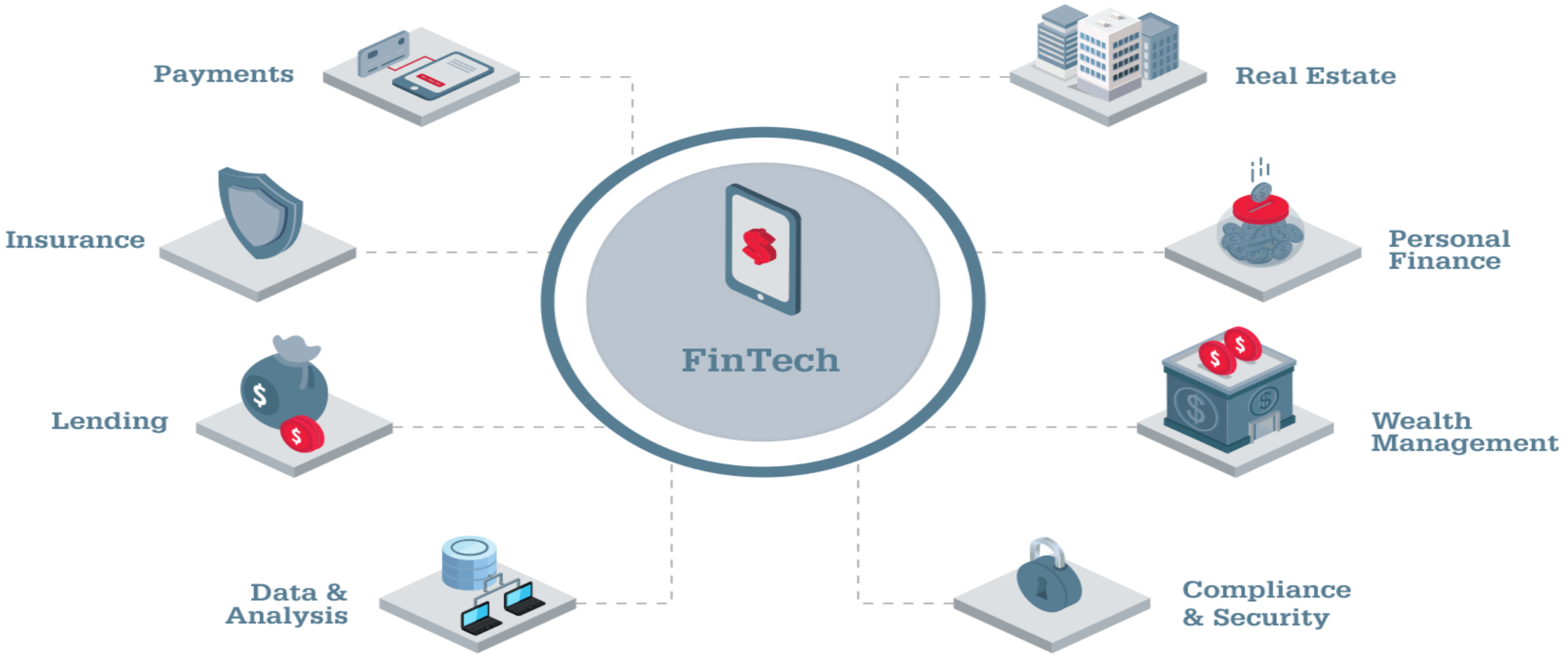
Fintech describes the set of financial technologies designed to improve and automate the use and delivery of financial services. It changes how we save, borrow and invest by making digital transactions simpler, without a traditional bank.

1950s	The Diners' Club introduces the first universal credit card
1960s	The world's first ATM is installed by Barclays in Enfield, London
1970s	NASDAQ introduces electronic trading
1980s	Online tele-banking in Britain (Nottingham Building Society); E-Trade launches the first online brokerage services
1990s	Stanford Federal Credit Union introduces the first online banking website in the US
2000s	PayPal makes its debut
2010s	Bitcoin v.01 is created; Stripe and Venmo gain widespread popularity; Google Pay Send launches
2019	Alibaba's 'Smile To Pay' facial recognition; digital-only banks like N26 disrupt the industry

Source: Abhishek Soni / Medium.com, 2019

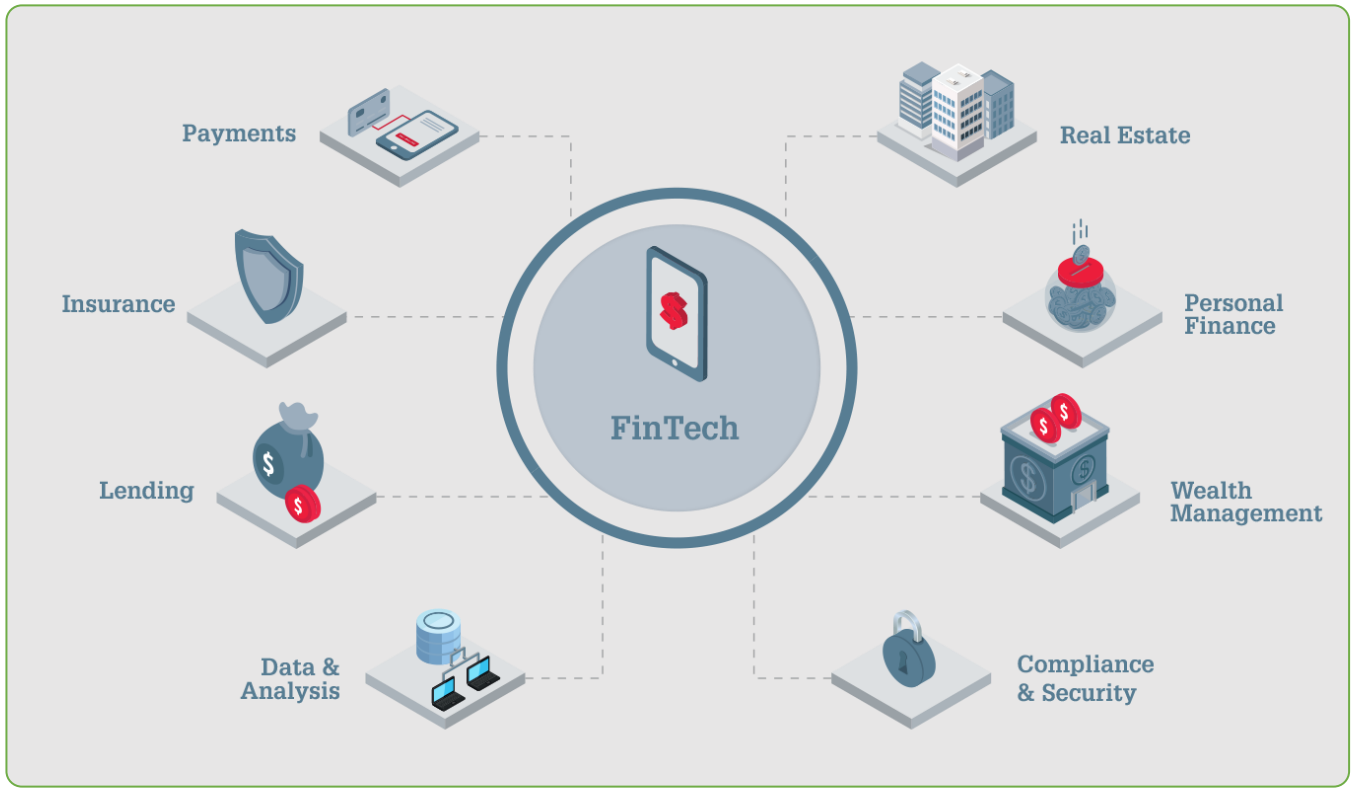
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التطبيقات المختلفة



Where fintech is applied

- Payments, lending, insurance and personal finance
- Real estate and wealth management
- Data and analysis; compliance and security



Eight application areas of FinTech

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The concept of fintech

What fintech means

- Using technology to deliver financial services; it grows naturally where finance meets modern technology
- Technical solutions improve how financial services are managed in different business situations, and can create new business models
- Fintech firms develop innovative financial products through intensive use of information technology
- Typical services: electronic payments and e-wallets
- Money transfer, insurance, lending and financing, investment services and trading platforms

Main fintech segments

- Mobile banking and mobile payments
- Cryptocurrency and blockchain
- Insurance
- Trading
- Banking as a Service (BaaS) and global FinTech solutions

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✓- خدمات المدفوعات الإلكترونية
مفاهيم



- المدفوعات الإلكترونية هو أحد الطرق الحديثة التي يتم استخدامها في عملية توريد الدفعات النقدية من خلال شبكة الإنترنت لتكون الأداة الناقلة للأموال من حسابات الدافعين أو المشترين إلى حسابات البائعين،
- الاستردادات والمدفوعات الضريبية، وأقساط شركات التأمين، وتوزيعات الأرباح على المساهمين، والتحويلات المالية الخاصة بالعمليات الائتمانية، ومدفوعات القروض، وتحويلات الخصم، إلى غير ذلك من العمليات المالية الأخرى.
- عمليات الدفع الدورية التي أصبحت تُدفع إلكترونيًا بشكل تلقائي، كما ساهم وجود المدفوعات الإلكترونية مع مرور الوقت إلى ظهور ما يعرف بغرفة المقاصة الإلكتروني

Electronic payment services

Electronic payments

Electronic payment is a modern way of delivering cash payments over the internet. The network becomes the channel that carries money from the accounts of payers or buyers to the accounts of sellers.

- Covers refunds, tax payments, insurance premiums, dividends to shareholders, credit transfers, loan payments and debit transfers
- Recurring payments are now made electronically and automatically
- Over time, e-payments led to the rise of the electronic clearing house



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✓التكنولوجيا المالية – WHY?

1. الشمول المالي

"تطبيقات التكنولوجيا المالية ساعدت ملايين من العملاء من الاندماج المالي"

1. تعزيز نمو الناتج المحلي الإجمالي GDP

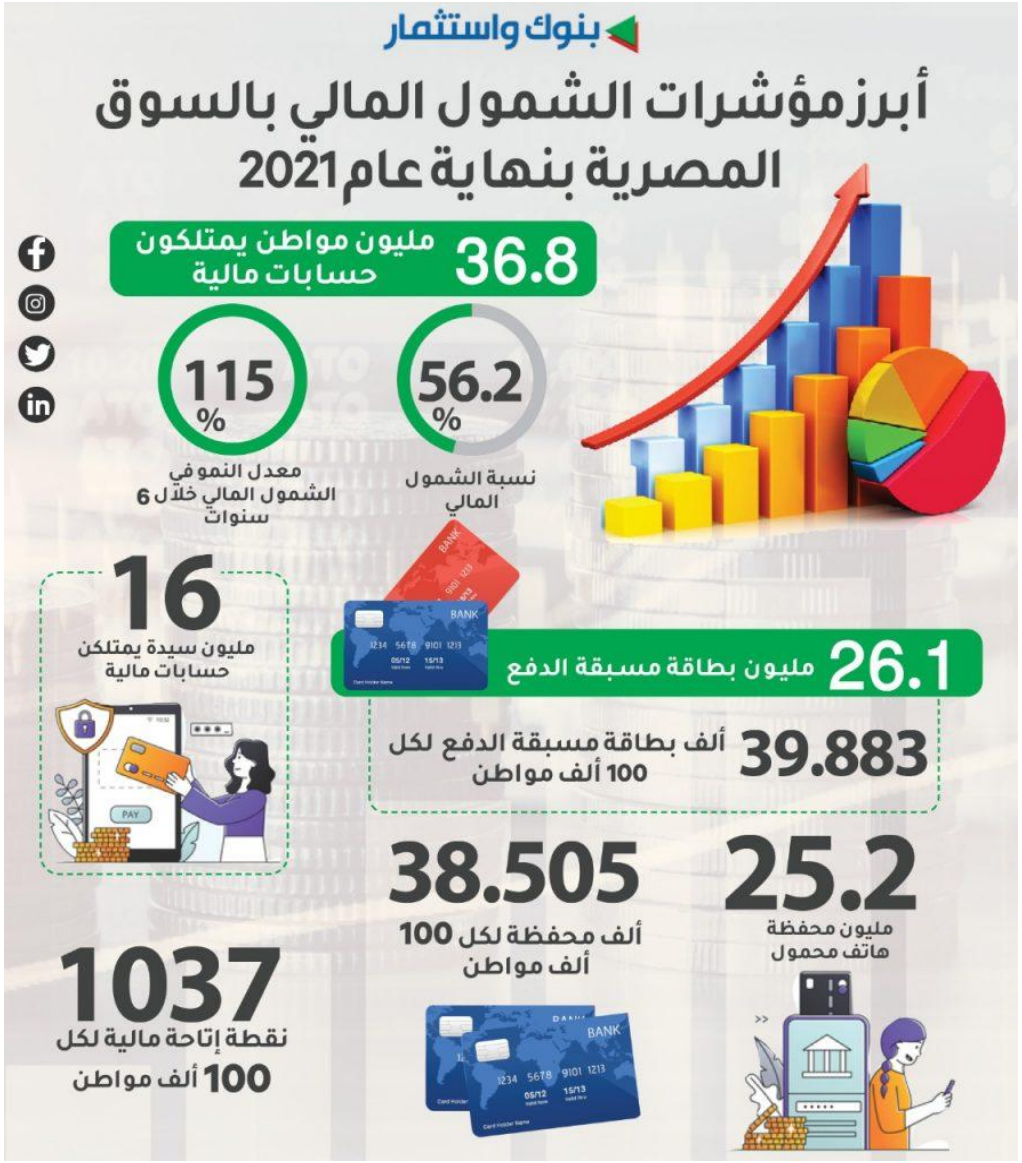
"نمو الناتج المحلي الإجمالي من خلال سهولة وصول افراد المجتمع إلى مجموعة كبيرة ومتنوعة من المنتجات والخدمات المالية والتسهيلات الائتمانية سواء افراد او شركات"

1. تعزيز فرص الامتثال بالقوانين الدولية والتعاون بين البنوك

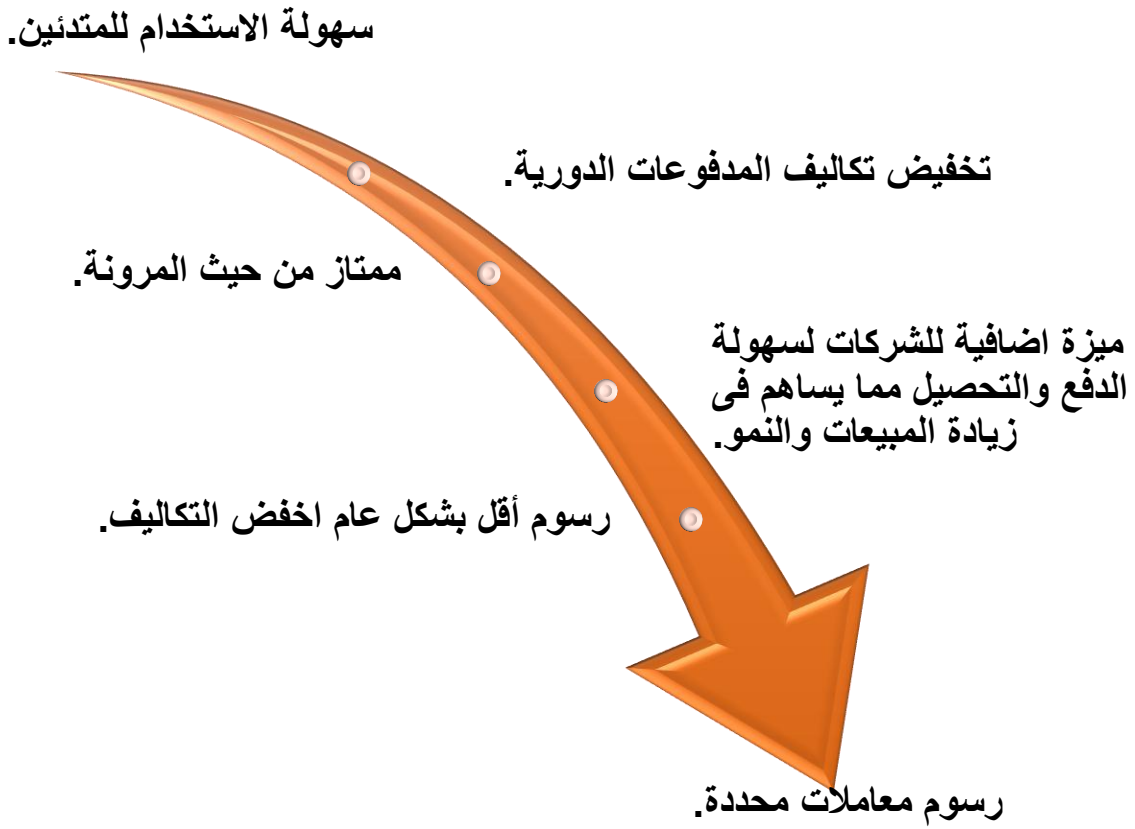
" زيادة وسهولة التعاون بين البنوك للامتثال بالقوانين المصرفية العالمية."

1. خفض التكاليف والزمن اللازم للعمليات المصرفية.

"اتمتة عدد من العمليات المصرفية Automation Process والاستغناء عن التدخل البشري قدر الإمكان في تلك العمليات، اذ تمكن التكنولوجيا المالية البنوك من تقديم خدمات مصرفية منخفضة التكاليف ومريحة وآمنة وسهلة الوصول بالنسبة للعملاء وذلك مقارنة بالمعاملات المالية التقليدية."



إيجابيات استخدام نظم خدمة الدفع:



Payment service providers and payment system operators

Advantages of using payment service systems.

Easy for beginners

Simple to use even for first-time users.

Highly flexible

Excellent in terms of flexibility.

Lower fees

Fees are generally lower, which reduces overall costs.

Cheaper recurring payments

Cuts the cost of regular, repeated payments.

Extra edge for companies

Easier paying and collecting, which helps increase sales and growth.

Defined transaction fees

Fees for specific transactions are known in advance.

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Benefits of electronic payment services

1. **Greater economic efficiency**

2. **Financial protection**

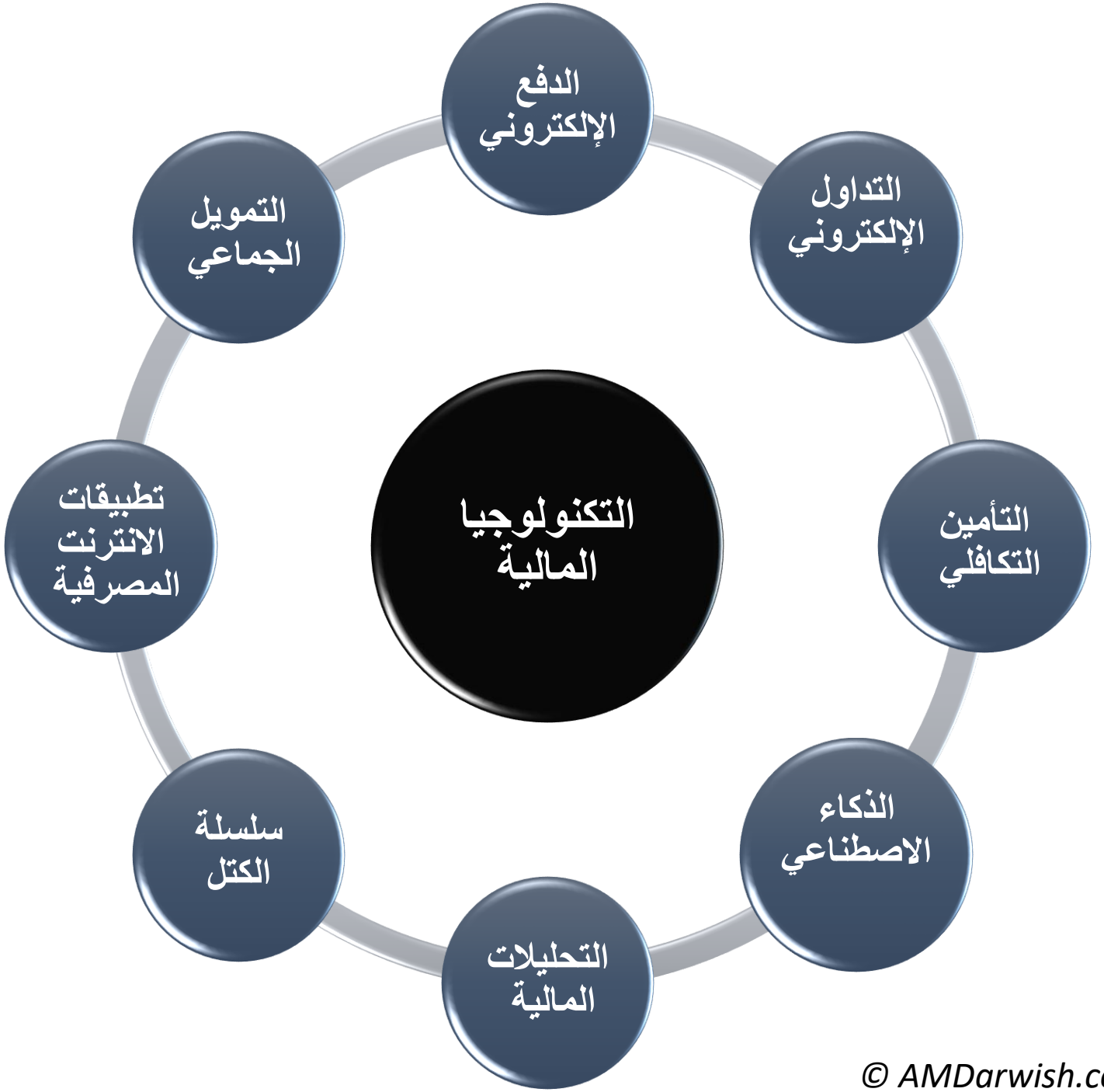
3. **Support for emergency relief operations**

   Aid can be paid out quickly and traceably.

4. **Lower costs**

5. **Saving time and effort**

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التكنولوجيا المالية
الدفع الإلكتروني
التداول الإلكتروني
التأمين التكافلي
الذكاء الاصطناعي
التحليلات المالية
سلسلة الكتل
تطبيقات الانترنت المصرفية
التمويل الجماعي

The fintech landscape

Services

- Electronic payment
- Electronic trading
- Takaful (cooperative) insurance
- Crowdfunding

Channels and technologies

- Internet banking applications
- Artificial intelligence
- Financial analytics
- Blockchain

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Online banking, e-trading and e-payment compared

Criterion	Online banking applications	Electronic trading	Electronic payment
Definition	Bank applications for managing bank accounts over the internet	Buying and selling products and financial assets over the internet	Transferring money or paying electronically
Tools	Banking applications of banks and financial institutions	Electronic trading platforms and electronic exchanges	Credit cards, prepaid cards, digital wallets and e-payment applications
Goal	A safe, convenient way for customers to manage their bank accounts	Faster, easier buying and selling of financial assets and products	Safe, fast payment and transfer of money

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Online banking, e-trading and e-payment compared

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أنواع السداد الالكتروني ✓

1. البطاقات مسبقة الدفع
2. البطاقة الائتمانية
3. البطاقات المصرفية



SELECT ME





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Types of electronic payment (1 of 3)

Card-based instruments.

Prepaid cards

Loaded with money in advance; spending is limited to the stored balance.

Credit cards

The issuer lends the cardholder money up to a limit, repaid later.

Bank (debit) cards

Linked directly to a bank account; payments draw on the account balance.

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أنواع السداد الالكتروني ✓

1. البطاقات الذكية
2. الحسابات البنكية والمواقع الالكترونية
3. الحوالات المصرفية







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Types of electronic payment (2 of 3)

Account- and chip-based instruments.

Smart cards

Cards with an embedded chip that stores data and secures the transaction.

Bank accounts and websites

Paying directly from a bank account through online banking or payment websites such as ePay.

Bank transfers

Moving money from one bank account to another electronically.

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أنواع السداد الالكتروني ✓

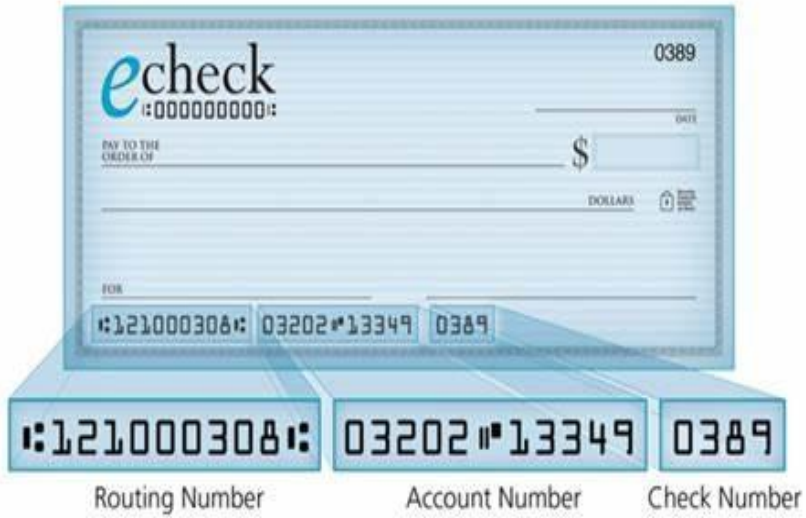
1. شركات التحويل
2. الشيكات الالكترونية
3. .....

SELECT ME

شركة تحويل الأموال ويسترن يونيون

WESTERN UNION

MONEY TRANSFERS



Types of electronic payment (3 of 3)

Transfer companies and electronic cheques.

Money transfer companies

Specialised operators such as Western Union move money between people and countries.

Electronic cheques

A digital version of a paper cheque carrying routing number, account number and cheque number.

New instruments

The list stays open: QR-code payments, mobile wallets and other instruments keep appearing.

An electronic cheque (eCheck) with routing, account and cheque numbers

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Digital banking

Digital banking is the digitization (or moving online) of all the traditional banking activities and programs services that were historically were only available to customers when physically inside of a bank branch. This includes activities like

Money deposits, withdrawals and transfers

Checking and savings account management

Balance enquiries and managing savings accounts.

Loan management

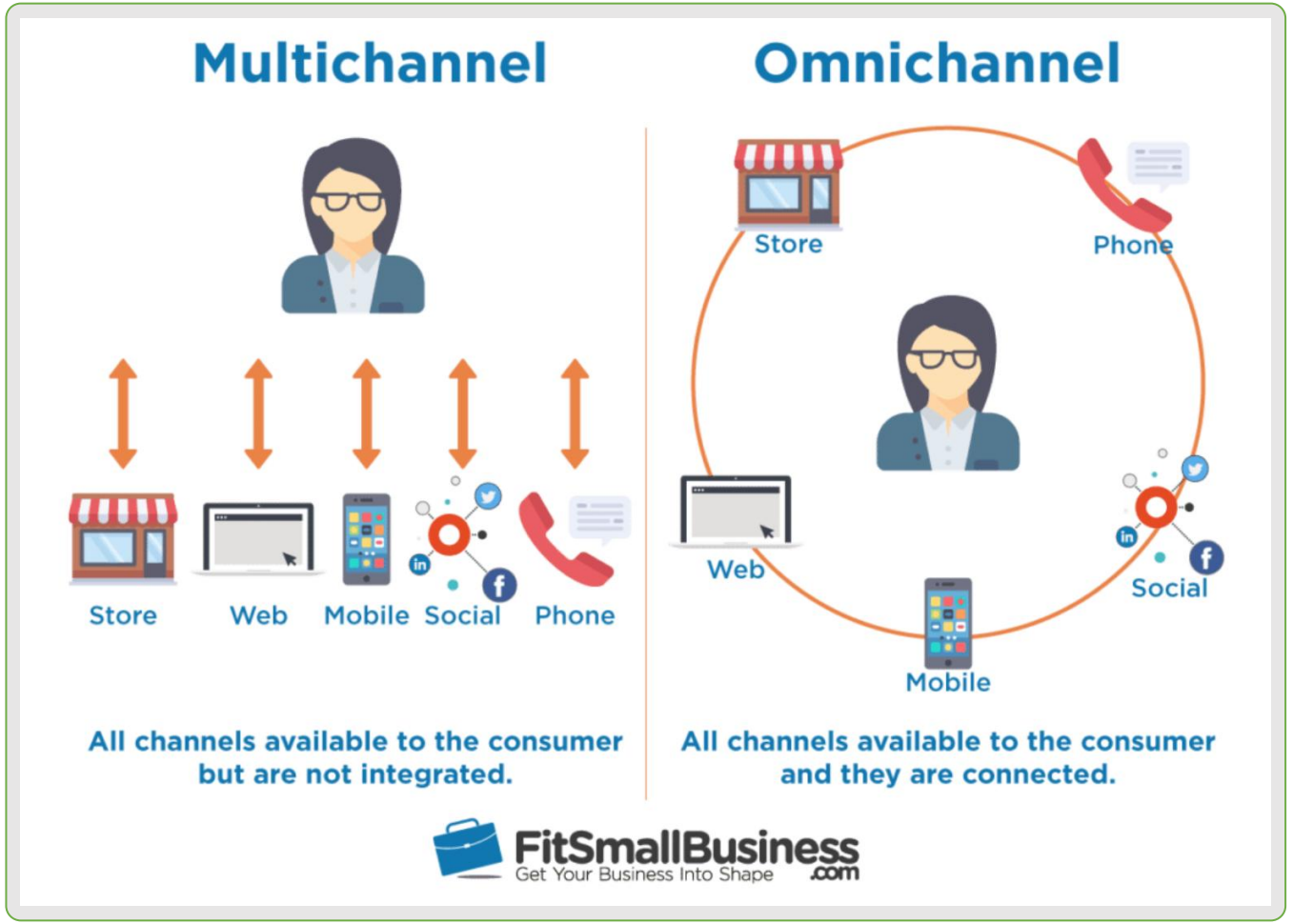
Bill pay

Account services

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Multichannel vs omnichannel

- Multichannel: all channels are available to the customer, but they are not integrated. The focus is any time, any place, any device.
- Omnichannel: all channels are available and connected. The focus is a seamless, high-quality customer experience.



Multichannel: channels side by side. Omnichannel: channels connected around the customer.

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Developing procedures

- For financial institutions, the question is how far they can deal with the new entrants (fintech firms)
- At the same time, digitisation has renewed banking business models
- Migrating customers away from the branch is also a challenge
- Start by serving mobile-app customers



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Digitising procedures

Straight-through processing (STP)

An automated process carried out entirely through electronic transfers, with no manual intervention. Common uses are payment processing and the processing of securities trades.

- No re-keying of data between systems
- Faster, more accurate settlement with fewer errors



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The basic pillars of fintech

Five conditions a fintech sector needs to grow.

Demand

Individuals and companies want advanced financial services.

Access to funding

Fintech companies, especially start-ups, can raise finance easily.

Skilled talent

Outstanding technical staff are available.

Supportive regulation

A suitable framework of laws and regulations.

Infrastructure

Appropriate technical and financial infrastructure.

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Risks of fintech

1. Data breaches

Sensitive customer data is exposed to possible breaches; banks and fintechs must manage and monitor cyber risk effectively.

2. Third-party dependence

Banks rely on more outside firms, raising data-security and privacy risk; monitoring risk management done by third parties is the key challenge.

3. Unexpected market events

Over-reaction to a sudden market shock can cause serious liquidity and solvency problems for fintechs and financial institutions.

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FinTech Risks



- Acquisitions & IPOs
- Fraud
- Credit risk

- Data loss
- Privacy challenges and regulation, e.g. GDPR
- Access to big data

- Attraction and retention of global talent
- Wellbeing and performance of staff
- Staff competency/ conduct

- Business disruption and systems failures
- Reputational risk
- Cyber attacks

- Evolving regulation & mandatory insurance requirements, e.g. PSD2 & Electronic Money Directive
- Governance processes
- Professional negligence

Instant payments – huge opportunity, financial-crime risk

The opportunity

- Sellers and buyers exchange money and buy services in seconds
- Funds reach the payee's bank account almost immediately instead of after several business days
- Fast transactions are a common demand in the new economy, especially with greater mobility
- Millennials and younger customers want to pay any time, anywhere, from their mobile devices

The risk

- Instant processing makes financial crime such as money laundering and fraud harder to detect
- Criminals want to move money as fast as possible through many accounts at different international banks to hide its source
- Nothing does this faster than instant payments
- How can a bank spot laundering in real time when monitoring runs in batches, let alone more complex crime?

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Kenya's fintech ecosystem in 2022

- **Regional power** Kenya is a force not only in East Africa but across Africa and the Middle East and Africa (MEA) region.
- **Silicon Savannah** Nairobi's strong tech ecosystem acts as a regional hub; multinationals, especially in tech and fintech, have invested heavily, boosting FDI.
- **Microsoft and Visa** Microsoft opened an Africa Development Centre (ADC) office; Visa launched its first African innovation hub, the Visa Innovation Studio.
- **National Payments Strategy 2022–2025** The Central Bank of Kenya targets a secure, fast, efficient and collaborative payment system that supports inclusion and innovation.
- **M-Pesa since 2007** Launched by Safaricom and Vodafone; mobile money on basic phones via USSD drove financial inclusion in Kenya, East Africa and beyond.
- **Scale and inclusion** 1.9 trillion mobile-money transactions worth over US$55 billion in 11 months of 2021 (+20% on all of 2020); 37.6 million transactions a day worth KES 176 billion (US$1.49 billion). Inclusion rose from 26% (2006) to at least 83% (2022).



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نظرة عامة على قطاع التكنولوجيا المالية في مصر

- صدر قرار السيد رئيس الجمهورية رقم 89 لسنة 2017 بإنشاء المجلس القومي للمدفوعات في فبراير من ذات العام برئاسةٍ سيادته وعضوية السيد الدكتور رئيس مجلس الوزراء، والسيد محافظ البنك المركزي المصري، وعددٌ من مَمِثلي الوزارات والهيئات المعنية بالتحول إلى مجتمع أقل اعتمادً ا على أوراق النقد، والذي وضع إطار علمي ممنهج لهذا التحول.

ويستند إطار العمل الذي حدده البنك المركزي للتوجه بمصر نحو التحول إلى مجتمع أقل اعتمادً ا على أوراق النقد على 9 ركائز أساسية:



Egypt's fintech sector overview

Presidential Decree No. 89 of 2017 created the National Payments Council in February 2017. The CBE framework for a less-cash society rests on these pillars.

Layer	Elements of the CBE framework
Roof	National Payments Council
Goals	E-commerce; e-government
Pillars	Digital identity and e-KYC; financial literacy; consumer protection; government payments and collection; banking agents
Foundations	Cybersecurity; fintech and innovation; acceptance channels and payment instruments; law and regulation; financial market and infrastructure

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What are payment services and payment systems?

PSP – United Kingdom

- Services from companies that contract with online merchants so customers can buy goods or services through online banking facilities, instead of another payment method

PSP – Singapore

- A 'payment service provider' means any person who provides a payment service

Payment system – World Bank

- All activities, processes, mechanisms, infrastructure, institutions and users related to payment in a country or wider area (such as a common economic zone), enabling institutions and people to transfer funds

Payment system – United Kingdom

- A system operated by one or more persons in the course of business to enable persons to make transfers of funds, including a system designed to facilitate transfers using another payment system

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Types of payment service in Singapore and the UK

Singapore – activities needing a standard payment institution licence

- Domestic money transfer service (e.g. Fawry)
- Cross-border money transfer service (e.g. PayPal)
- Merchant acquisition services (e.g. Amazon)
- E-money issuance (e-wallets, e.g. Vodafone Cash)
- Digital payment token services (e.g. Bitcoin) and money-changing services

United Kingdom – payment services

- Services allowing cash to be placed in or withdrawn from a payment account
- Transfers from the customer's payment account to the beneficiary's payment account
- Direct debits from the customer's account with their consent
- Standing orders (a series of payments made by the provider to the beneficiary after the payer's approval)
- Money remittance (transfers without creating any payment account), e.g. postal money orders

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Payment system licensing in India and Singapore

India – types of payment system

- Regulated under the Payment and Settlement Systems Act, 2007
- No one may run payment services without a licence from the Reserve Bank of India
- Card payment networks
- ATM networks
- Cross-border money transfer (inward only); money transfer and electronic payment systems

Singapore – three licensing considerations

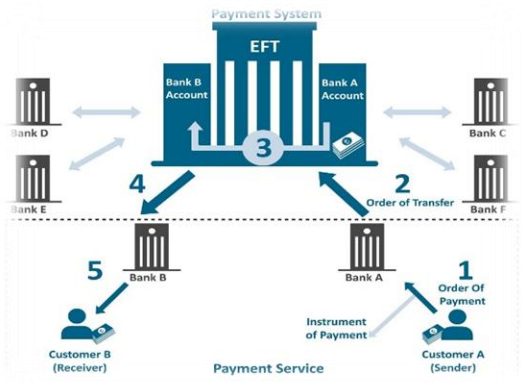
- Fast and secure
- Stability against financial risks
- Satisfying service users and offering new solutions

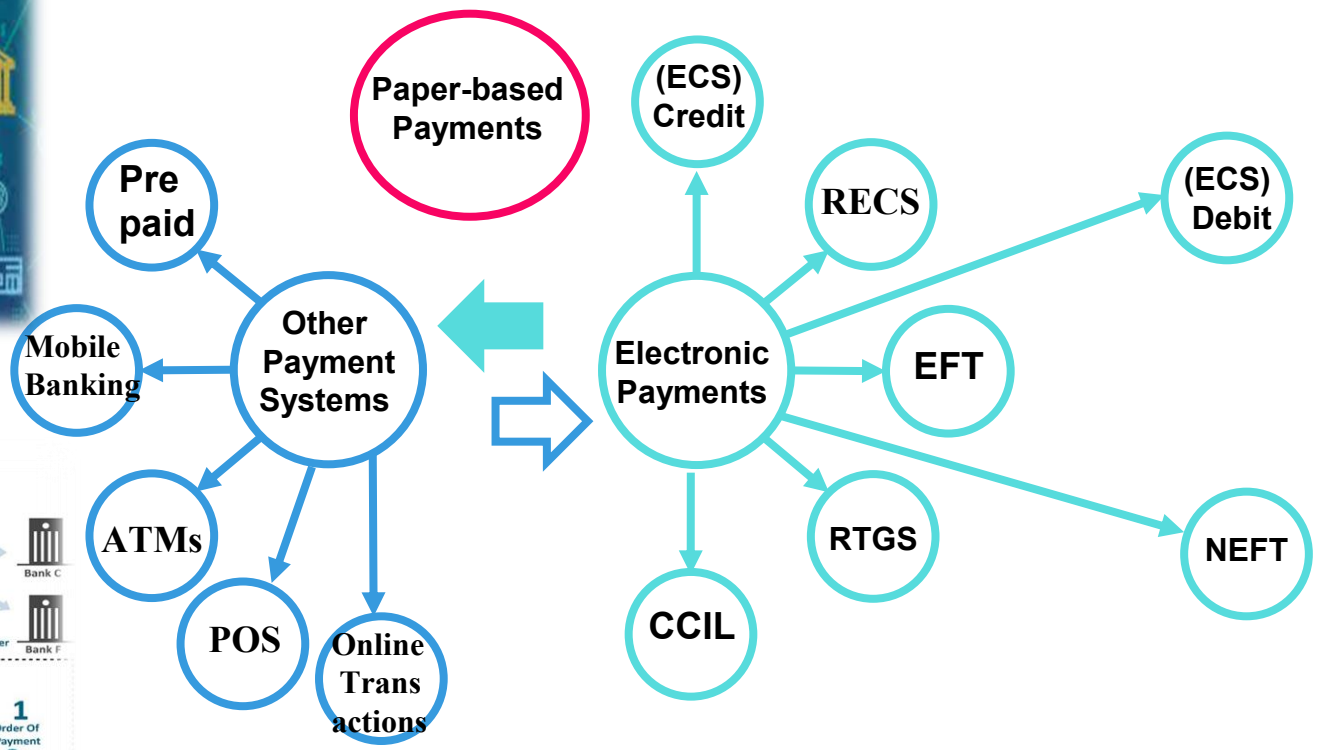
Banking payment systems: retail (cash, paper, credit, e-payments), large value, inter-bank and inter-country

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TYPES OF PAYMENT SYSTEM (INDIA)







How e-payments support governance and fight corruption

1. **Transparency and accountability**

   Every payment leaves a traceable record.

2. **Less cash**

   Fewer cash transactions mean fewer untraceable deals.

3. **Easier reporting and communication**

   Suspicious activity can be flagged and shared quickly.

4. **Fighting corruption**

   Digital trails make misuse of funds harder to hide.

5. **Fewer bribes and kickbacks**

   Less cash and more records reduce opportunities for bribery.

6. **Easier tax collection**

   Recorded transactions widen the tax base and simplify collection.

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Data analytics in fintech governance

Big data and risk assessment

Combining data from many sources gives better risk assessments, more financial certainty, cash-flow management and competitive pricing.

Better security

Big data helps build reliable fraud-detection systems that spot unusual transactions and alert customers to threats.

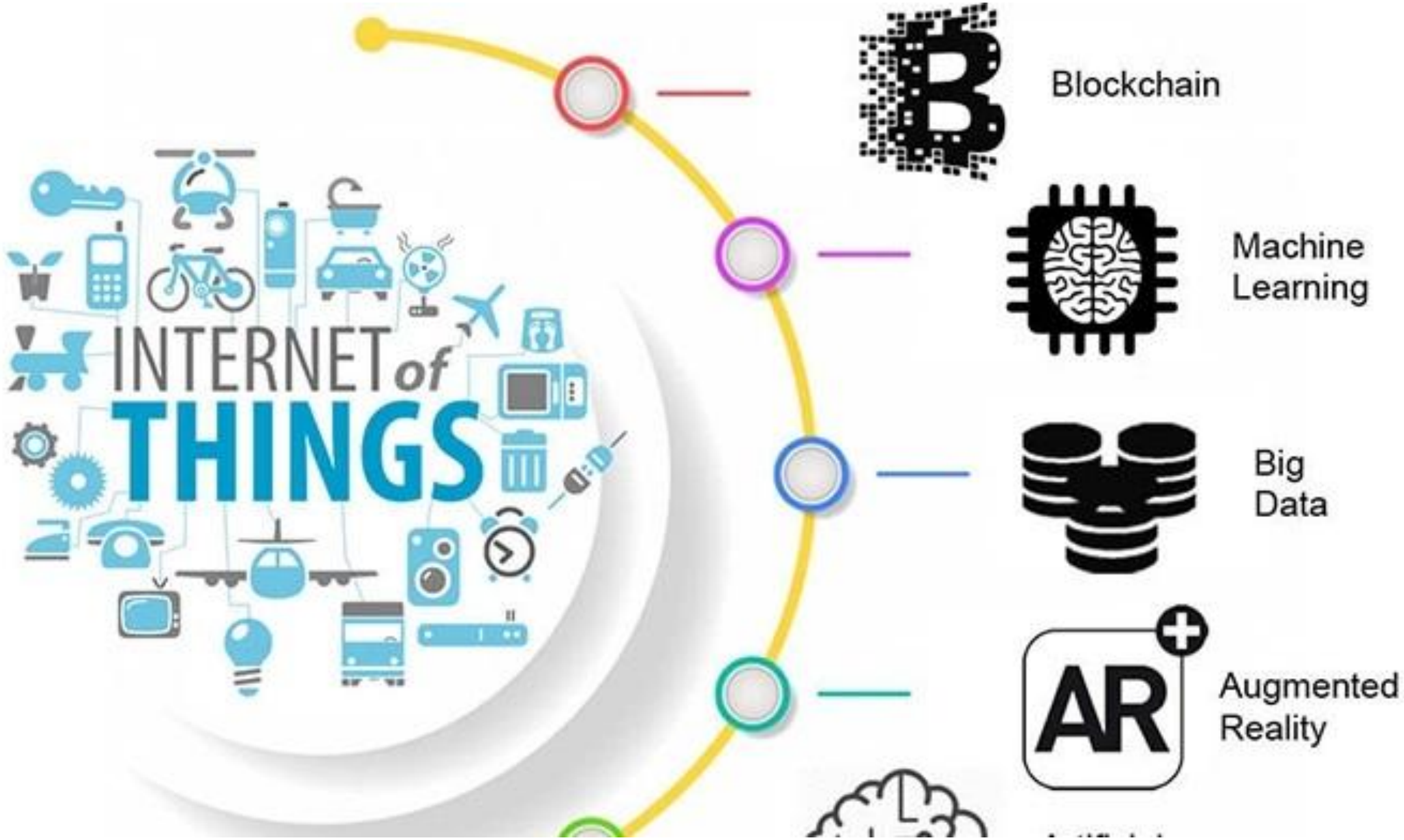
Precise fraud detection

Accurate systems detect fraud in individual transactions, a sophisticated way to find and stop suspicious activity.

Customer targeting

Detailed user profiles and precise segmentation tailor services to individual needs.

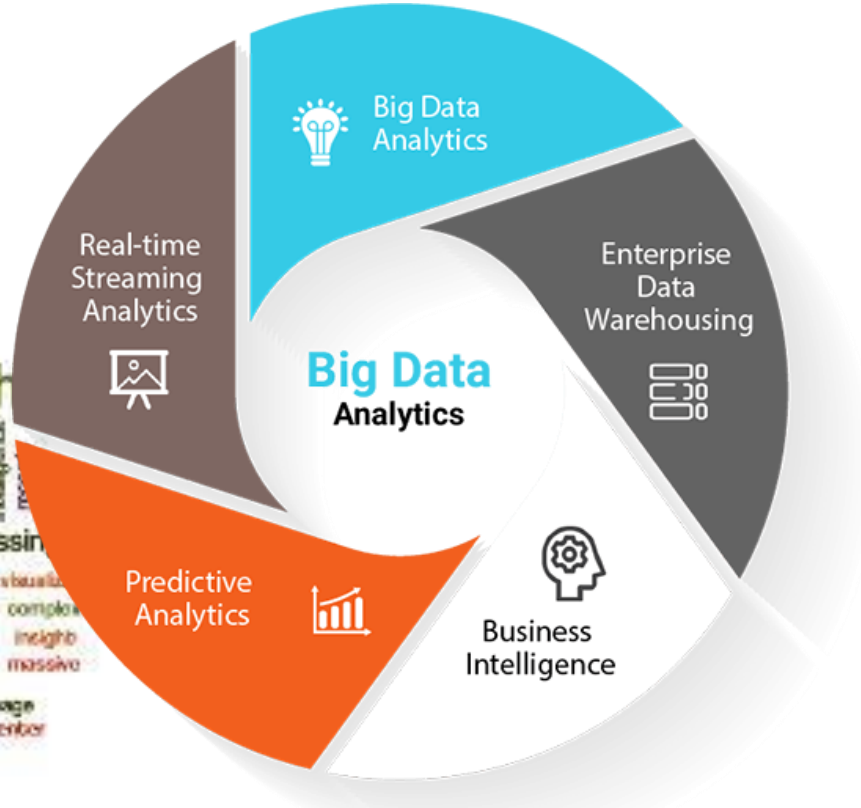
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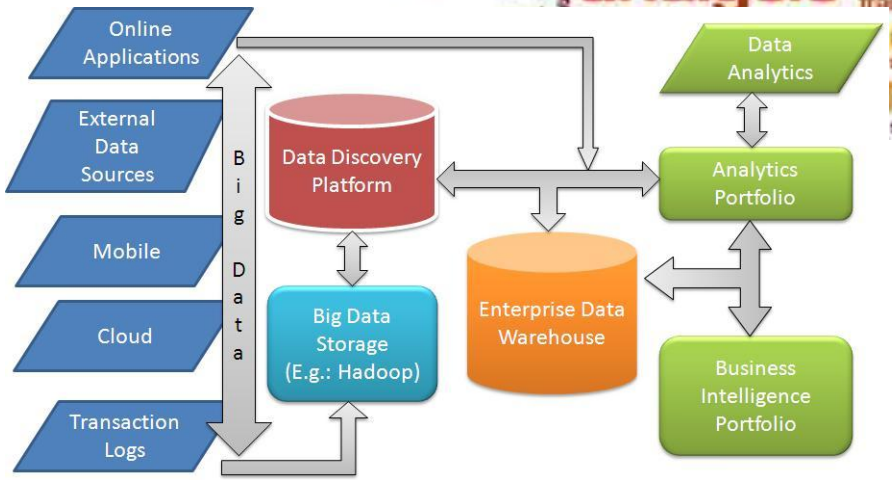

INTERNET of THINGS
Blockchain
Machine Learning
Big Data
AR
Augmented Reality

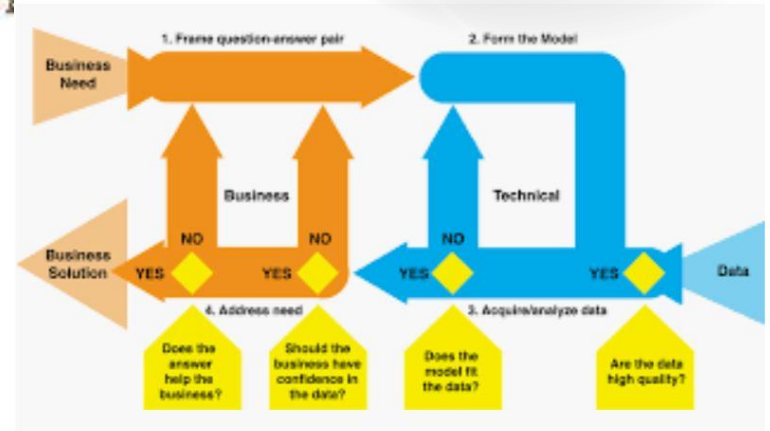
Big Data & Analytics

البيانات الضخمة والتحليل



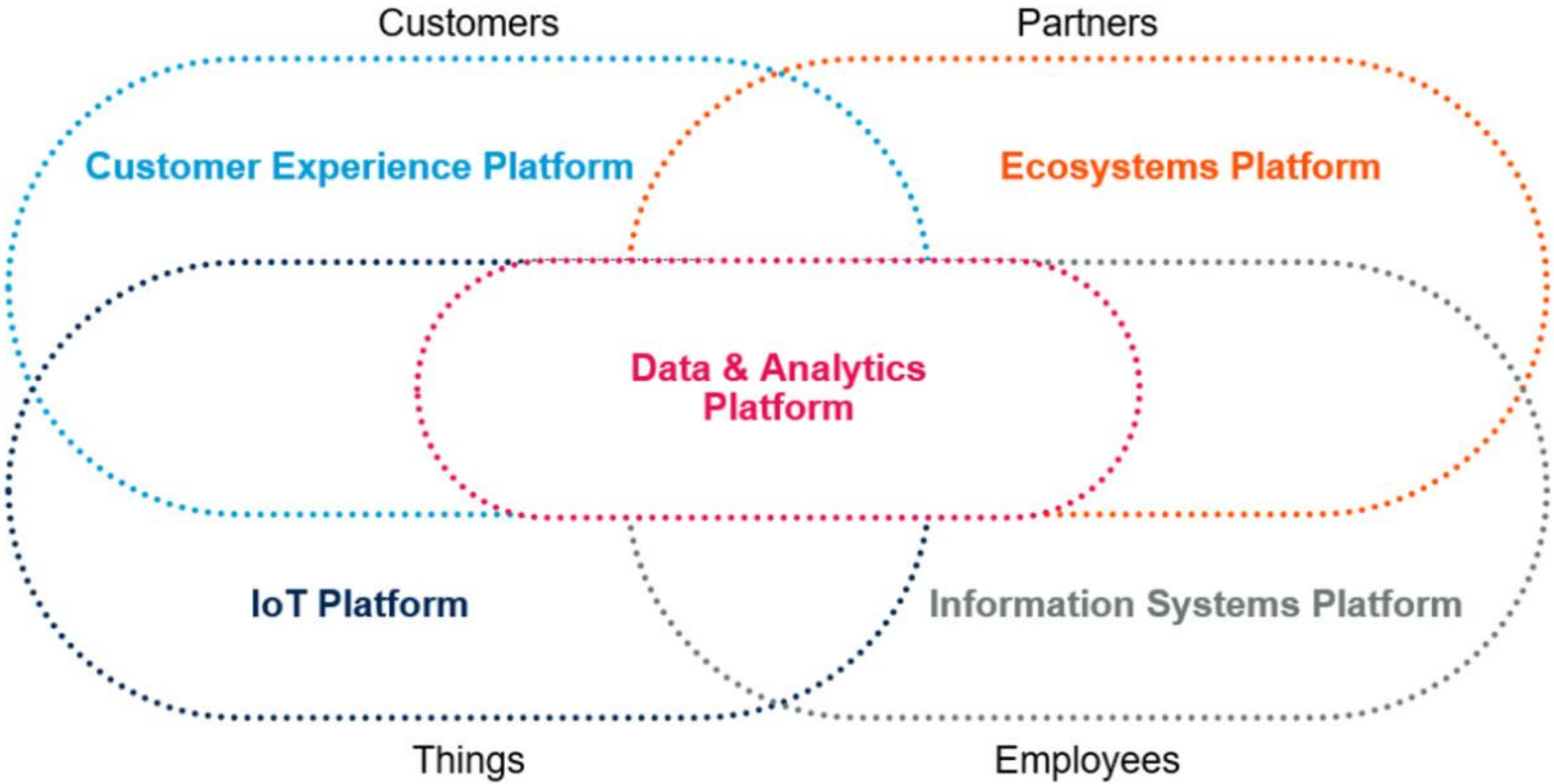






4 Pain Points of Big Data - McKinsey ...

Subplatforms of the Digital Business Platform



Source: Gartner
ID: 376740

Three types of data analytics

Data analytics is the process of collecting, cleaning and modelling data to discover useful information for professional, data-driven business decisions.

Descriptive analytics

The most straightforward category; it breaks huge information into smaller, more valuable pieces of data.

Predictive analytics

Uses historical data to forecast future trends with machine learning, forecasting and pattern matching to learn causal links in data.

Prescriptive analytics

Goes a step further: it predicts what is likely to happen and recommends the best response after weighing the options.

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Big data analytics: contents

1 **Introduction**

What big data is and a simple definition of big data analytics

2 **History and evolution of big data analytics**

3 **Uses of big data analytics**

4 **Best big data tools**

5 **Technologies that help you get the most value from your information**

6 **Applied case: the banking sector**

7 **Why banks use big data**

Commercial banks and regulators (central banks)

8 **Recommendations**

9 **References used**

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What is big data?

Big data

A collection of data so large, and growing so fast over time, that no traditional data tool can store, analyse or process it efficiently. Big data has one or more of these features: very large volume, high velocity, and great variety.

- **Volume** very large amounts of data
- **Velocity** data arrives and changes at high speed
- **Variety** many different formats and sources
- **Big data analytics (simple definition)** using advanced analytical techniques on very large and varied data sets, whether structured or unstructured

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History and evolution of big data analytics

Before 2000

Basic analytics

Decades before anyone said "Big Data", companies examined figures in data tables by hand to spot insights and trends.

Early 2000s

The idea of big data appears

Organisations realised that if they collected all the data flowing into their business, they could analyse it and gain great value.

Today

A core tool for every organisation

Big data analytics is essential for organisations of all sizes across many industries, giving deep insight into customers and operations that was never possible before.

Coming years

More applications ahead

As the field keeps developing, we can expect many more uses of this technology.

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Uses of big data analytics

There are many ways big data analytics can improve businesses and organisations. For example:

Understand customers

Analyse customer behaviour to improve their experience with the organisation and so raise customer satisfaction.

Predict trends

Forecast future trends so the organisation takes better business decisions.

Improve marketing

Understand which campaigns work and which do not.

Raise efficiency

Find weak points in operations and fix them.

Detect fraud

Spot fraud and other misuse as early as possible.

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Best big data tools

"Big Data is the next big thing!" Five widely used tools:

Apache Spark

Fast engine for large-scale data processing and analytics.

Apache Hadoop

Framework for storing and processing huge data sets across many computers.

Google Cloud Platform

Cloud services for storing, processing and analysing big data.

MongoDB

Database built for large volumes of unstructured data.

Sisense

Business intelligence platform for analysing and visualising data.

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Technologies that get the most value from your data (1)

No single technology covers big data analytics. Advanced analytics can be applied to big data, but in practice several technologies work together. For example:

- **Cloud computing** delivering services over the internet, including data storage, servers, databases, networks and software.
- **Data management** data must be of high quality before it can be analysed reliably, especially when data flows in continuously.
- **Data mining** examines large amounts of data to answer complex business questions. It sifts through noisy, repetitive data to find what matters, then uses it to assess likely outcomes and speed up informed decisions.

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Technologies that get the most value from your data (2)

Data storage

- Includes data warehouses and data lakes
- Must hold huge volumes of data so users can access and use it as needed
- Data lake: holds large amounts of raw data in its original format; ideal for unstructured big data
- Data warehouse: stores large amounts of structured data

Predictive analytics

- Uses data, statistical algorithms and machine-learning techniques
- Estimates the probability of future outcomes based on historical data
- Goal: the best possible assessment of what will happen in the future
- Common uses: fraud detection and risk assessment

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Applied case: the banking sector

- Banking is the engine that powers economies, countries and organisations, and it produces huge volumes of data every second.
- Every transaction leaves a trace and creates data once thought useful only to auditors, for accounting and audit purposes.
- When big data showed its real potential in other fields such as healthcare, banks began combining "worthless" and "old" data to reach new, valuable insights.
- In 2008, big data techniques helped banks and financial institutions face the challenges of the crisis, which drove the rise of big data in banking.
- Banks now use big data across all their operations, changing banking services for the better worldwide and moving developing economies from heavy cash transactions to digital ones.

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Why commercial banks use big data (1)

Commercial banks use these advanced technologies to reach new information, such as market trends and customer preferences, that improves results through more effective marketing, new revenue opportunities and better efficiency.

- With an effective strategy, these technologies give banks a competitive advantage.
- The next slides show the returns banks gain from big data analytics.
- **Analysing customer feedback effectively** big data tools read comments and complaints to give banks their customers' questions, feedback and concerns, and help them respond in time.
- Customers stay with a bank when they believe it values their feedback and responds to them immediately.

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Why commercial banks use big data (2)

Customer segmentation

- Lets banks target customers better through the most suitable marketing campaigns
- Campaigns are then designed to meet customer needs more clearly
- Banks can classify customers on different criteria, such as preferred credit-card spending
- Banks can track every customer transaction

Decisions on lending

- Lending is one of the most important decisions in banking
- The bank must choose a customer with the creditworthiness and finances to repay the debt
- Banks therefore need historical data about the customer
- In Egypt this is provided through the credit bureau I-Score

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Why commercial banks use big data (3)

Detection and prevention of fraud

- One of the hardest challenges facing banks today is detecting fraud and stopping suspicious transactions
- Big data in banking services helps ensure no unauthorised transactions take place
- Banks monitor customer spending patterns and flag unusual behaviour
- Result: fraud is prevented and customers feel safer

Compliance with regulations

- Regulatory compliance becomes more effective and efficient with big data analytics
- Banks can manage and track how regulatory instructions are applied
- This reduces the risk of financial penalties from the regulator

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Why regulators (central banks) use big data

- Regulators use these advanced technologies to see the risks facing the banking market, at the level of one bank or of the whole banking group in the country.
- Banks under central-bank supervision use them to reduce or prevent those risks, securing their continuity, development and better results.
- The Bank for International Settlements (BIS) showed in a recent study that central-bank statisticians must carefully consider big data techniques.
- The aim is to pick a large, good-quality, non-random sample that represents the whole sector, so that risks banks face, or may face, are identified.
- The studies also showed that central banks using these applications can supervise commercial banks more tightly, assess inflation, and monitor the market more effectively.

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Asset Management

إدارة الأصول

Why asset management matters in government

The problem statement that opens this section:

- Government units, especially service units, suffer from weak control over their fixed assets.
- The root cause is the lack of a coding and documentation system for assets.
- The problem gets worse when control focuses only on quantities, using store ledgers, and ignores the value of the assets.



Problem

نموذج (٦) مخازن حكومة

اسم الجهة : _____

محضر جرد الأصناف

مخزن _____ رقم _____

تاريخ الجرد : / /

اسم صاحب العهدة : _____

رقم الصنف	اسم الصنف	الوحدة	الموجود من واقع الجرد	حالة الصنف *	الرصيد الدفتري	حالة الصنف *	الزيادة	العجز	سعر الوحدة	القيمة

توقيع كاتب الشطب _____ توقيع صاحب العهدة _____ توقيع لجنة الجرد _____ مدير المخازن _____ رئيس المصلحة _____

* جديد / مستعمل / صالح للاستعمال / كهنة أو خردة .



نموذج (١) مخازن حكومة

اسم الجهة : _____ إذن إضافة ☐☐ الرقم المسلسل : _____

المجموعة : _____

مخزن : _____ رقم : _____

وارد من : _____

التاريخ : / /

* سند الإضافة : _____ بتاريخ : / /

رقم الصنف	اسم الصنف	الوحدة	الكمية	سعر الوحدة	القيمة	حالة الصنف **	ملاحظات

فقط مبلغ : (_____) ...

كاتب الشطب : _____

استلمت الأصناف المبينة بأعلاه وتم إضافتها فى دفتر عهدة المخزن ... أمين المخزن

يعتمد ،

مدير المخازن

* فاتورة - إذن ارتجاع - إذن صرف - كشف الزيادة - شهادة إدارية

** (١) جديد (٢) مستعمل (٣) قابل للإصلاح (٤) كهنة وخردة

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The problem: paper-based store records

Government stores still run on handwritten forms:

Items inventory record (Form 6)

A paper table of item number, name, unit, physical count, book balance, shortage, surplus, condition, unit price and value, signed by hand.

Addition permit (Form 1)

A Ministry of Health paper form recording items received into the store, with quantities, prices, value and condition.

Overloaded storekeepers

Staff buried in paper files; no quick way to know what the organisation owns, where it is, or its condition.

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Problem


حراميها
حاميها
مسؤول
B.o


PROTECT
PRESERVE
KEEP
Maintenance
to Maintain, Keep, Preserve & Protect

The problem: weak custody and no maintenance

"Its guardian is its thief"

- A well-known Egyptian saying: the person entrusted with assets may be the one who misuses them
- Without records and accountability, custodians cannot be held responsible
- The law can only act when assets are properly identified and tracked

Maintenance: maintain, keep, preserve and protect

- Assets need planned maintenance, not just repairs after breakdown
- No maintenance system means shorter asset life and higher cost
- Protection of public assets is part of good governance

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Tangible and intangible assets

Tangible assets

- Physical items you can touch
- Blood-pressure monitor
- Television screen
- Smoke detector and fire extinguisher
- Air-conditioning unit

Intangible assets

- Non-physical assets that still have value
- Ideas, patents and intellectual property
- Brands and trademarks
- Examples: Microsoft, Nike, Pepsi, McDonald's, Apple, Facebook, Mercedes-Benz

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أصول ملموسة











أصول غير ملموسة





Importance of the asset management system

- Assets are money: every building, machine and device represents public funds
- Knowing what you own is the first step to protecting it



Assets equal money

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Importance of the asset management system

> **Putting fixed assets under an integrated coding system gives full control, in both quantity and value, and limits misuse, tampering and financial corruption.**

Control over quantity alone (store ledgers) is not enough; control over value is what protects public money.

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No maintenance system means huge losses

1

Contractors miss periodic maintenance dates

No one checks that service companies carry out scheduled maintenance on time.

2

No control over reporting breakdowns

Faults are not reported as soon as they happen, so small problems grow.

3

Higher costs for the organisation

The organisation is forced into expensive repairs or replacing machines and equipment.

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Objectives of asset inventory and coding (1)

Accurate, up-to-date register

Keep a precise and current record of all assets inside the organisation.

Correct accounting

Make sure assets are counted correctly in stock-takes and in the financial accounts.

Store follow-up

Monitor the work of stores across the organisation's sites.

Accountability and control

Improve accountability and strengthen oversight.

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Objectives of asset inventory and coding (2)

Timely, accurate reports

Ensure management receives accurate reports at the right time.

Preventive maintenance system

Set a defined system for planned preventive maintenance.

Corrective maintenance system

Set a defined system for repairs when faults occur.

Asset movement tracking

Track each asset's movements, where it is, and its transfer from one place to another.

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Benefits of asset and maintenance management

Longer asset life

Well-maintained assets last longer.

Better cost control

Spending on assets becomes visible and planned.

Higher productivity

Equipment is available when it is needed.

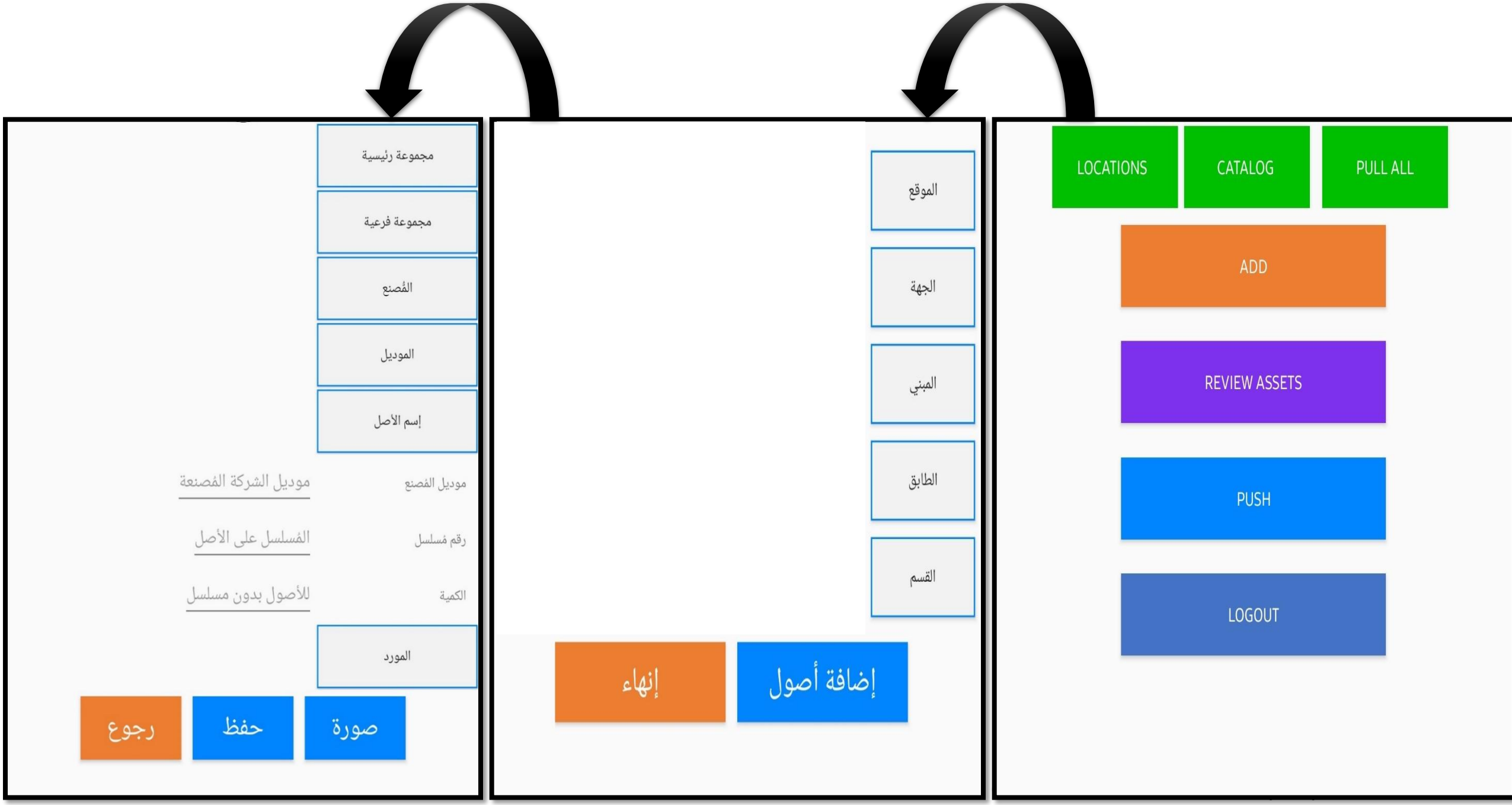
Lower spare-parts inventory cost

Planned maintenance means fewer parts held in stock.

Less downtime

Fewer unexpected breakdowns and faster repairs.

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LOCATIONS
CATALOG
PULL ALL
ADD
REVIEW ASSETS
PUSH
LOGOUT
الموقع
الجهة
المبني
الطابق
القسم
إضافة أصول
إنهاء
مجموعة رئيسية
مجموعة فرعية
المُصنع
الموديل
إسم الأصل
موديل المُصنع
موديل الشركة المُصنعة
رقم مُسلسل
المُسلسل على الأصل
الكمية
للأصول بدون مسلسل
المورد
صورة
حفظ
رجوع

Example: a mobile app for asset inventory

1

Main menu

Locations, Catalog, Pull all; Add; Review assets; Push; Logout.

2

Choose the location

Site, entity, building, floor and department; then Add assets or Finish.

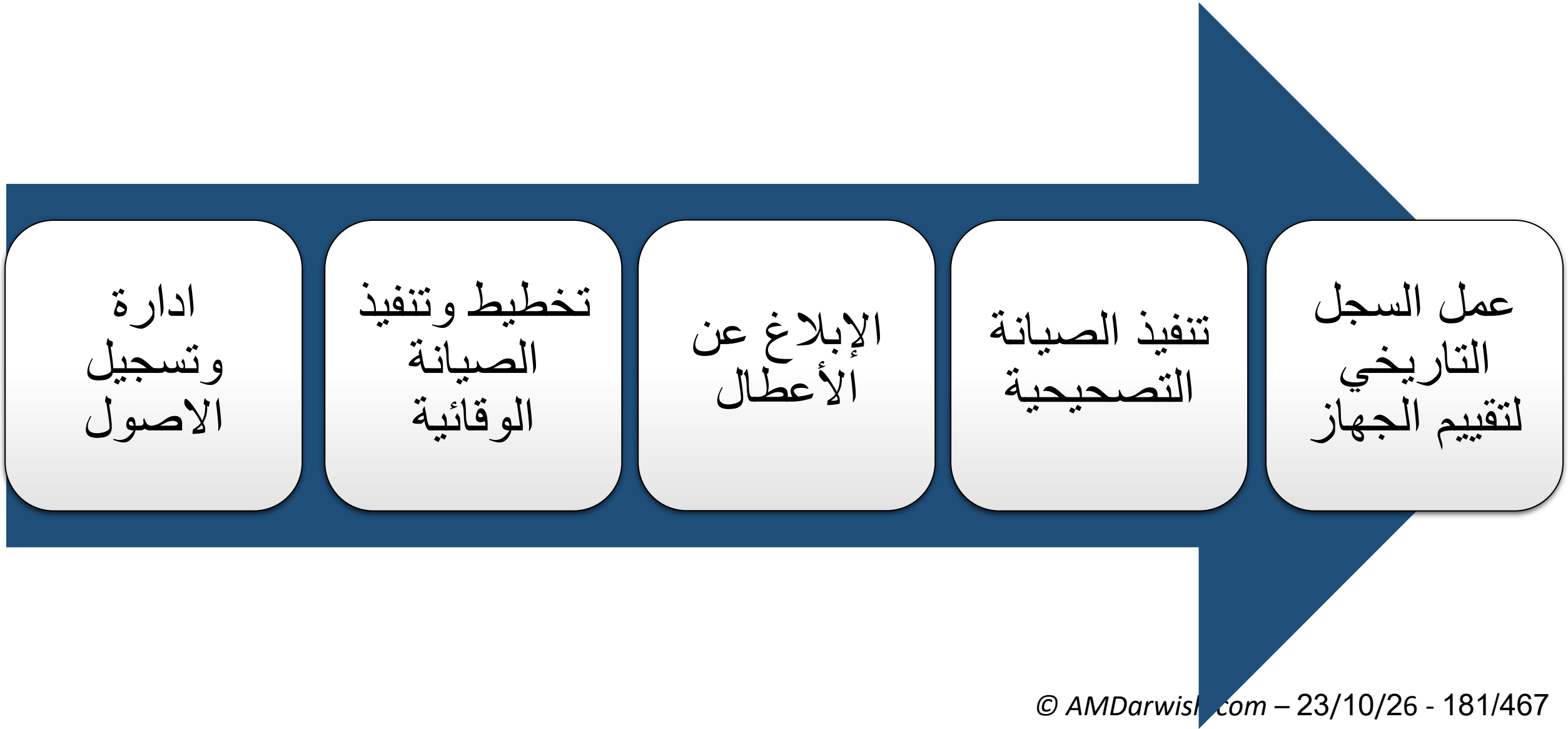
3

Record the asset

Main group, sub-group, manufacturer, model, asset name, serial number, quantity (for assets without serials), supplier; Photo, Save, Back.

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إجراءات منظومة صيانة الأصول



Procedures of the asset maintenance system

1. Manage and register assets
2. Plan and carry out preventive maintenance
3. Report breakdowns
4. Carry out corrective maintenance
5. Build a history record to evaluate each device

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رقم الجهاز : 66010100003

إسم الجهاز : Monitoring Systems, Physiologic

القسم : Incubators

الرقم المسلسل:

رقم الجهاز : 66010100002

إسم الجهاز : Monitoring Systems, Central Station

القسم : Incubators

الرقم المسلسل:

Example: QR-code asset tags

Each asset gets a printed label with a QR code and its key data:

Field	Tag 1	Tag 2
Device number	66010100002	66010100003
Device name	Monitoring Systems, Central Station	Monitoring Systems, Physiologic
Department	Incubators	Incubators
Serial number	(blank)	(blank)

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Recommendations

1. **Apply an asset inventory and coding system in all government bodies**

2. **Amend the Government Stores Regulation**

   Add articles on the importance of coding and on preventing corruption in stores.

3. **Set a fixed timetable to end the use of paper store ledgers**

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Finance

Basic Functions:

- Chart of accounts
- Budget
- Account segments
- Journal entries
- Journal vouchers
- Recurrent Transactions
- Exchange rates
- Multiple currencies
- Deposits
- Cheques
- Credits
- Receipts
- Banks and Reconciliation
- Deferred payments
- Financial Consolidation
- Financial Closure Statements
- Financial reports

Accounting

Basic Functions

- General Ledger
- Accounts Payable
- Accounts Receivable
- Cost Centers

Supply / Chain (Procurement)

Basic Functions

- Purchase quotations
- RFP follow-up Process: Link purchasing documents and view document trails for audit and research purpose.
- Purchase orders: create single or multiple purchase orders and goods receipts
- Purchase deliveries
- Purchase returns: Manage returns, special expenses, and multiple currencies
- Purchase credit notes
- Landed costs
- Vendor Database
- Taxes
- Invoices
- Deliveries
- Detailed Pricing reports

Assets Management

Basic Functions:

- Asset Master data
- Capitalization
- Retirement
- Transfer
- Depreciation run
- Asset Revaluation

Inventory

Basic Functions

- Item Management: Coding – Serial and Batch numbers – ability to link to bar code readers - ..
- Minimum stock purchase planning
- Item Queries
- Price lists
- Transfer between warehouses
- Receipt to stock
- Release from stock
- Stock transactions
- Warehouse Transfers
- Serial number tracking
- Batch Management
- Inventory Counting
- Pick and pack

Human Resources

CRM (Customer Relation Management)

BI (Busnisss Intelligence)

Manufacturing

Distribution

GRC (Governance / Risk / Compliance)

GIS

Geo Data

نظم المعلومات الجغرافية

مشروع سد الفجوة القومية بالرعاية الصحية لحديثي الولادة والمبتسرين



Modular Maternity Hospital Optimized Locations
Annual Capacity per Hospital 2000-3000 Birth cases
(Overview of most of Egypt)



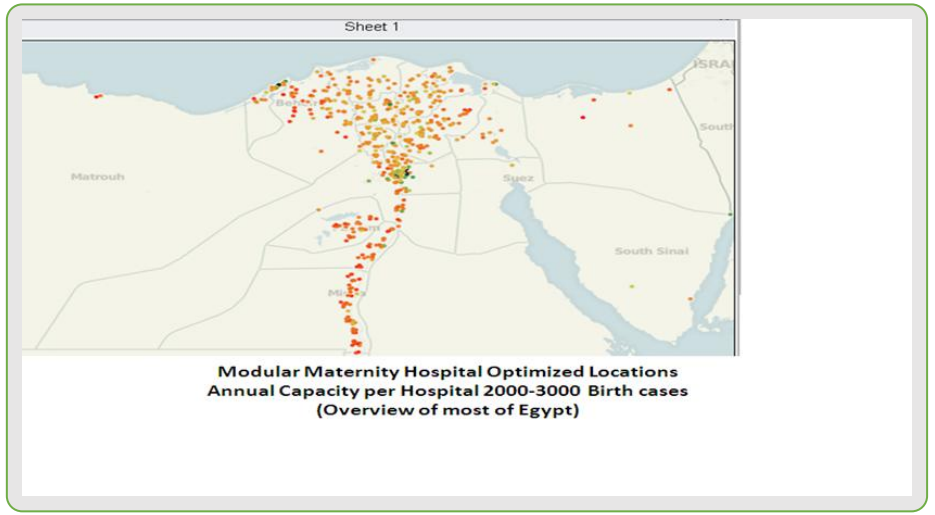
- يوجد فجوة خدمية بقطاع رعاية حديثى الولادة والمبتسرين

- تتمثل تحديات سد الفجوة على مستوى الجمهورية:
  - ✓ توفير أعداد الحضانات وتجهيزاتها
  - ✓ توزيع جغرافي عادل لمراكز الخدمة
  - ✓ توفير أعداد كافية من المتخصصين

Closing the national gap in newborn and premature-baby care

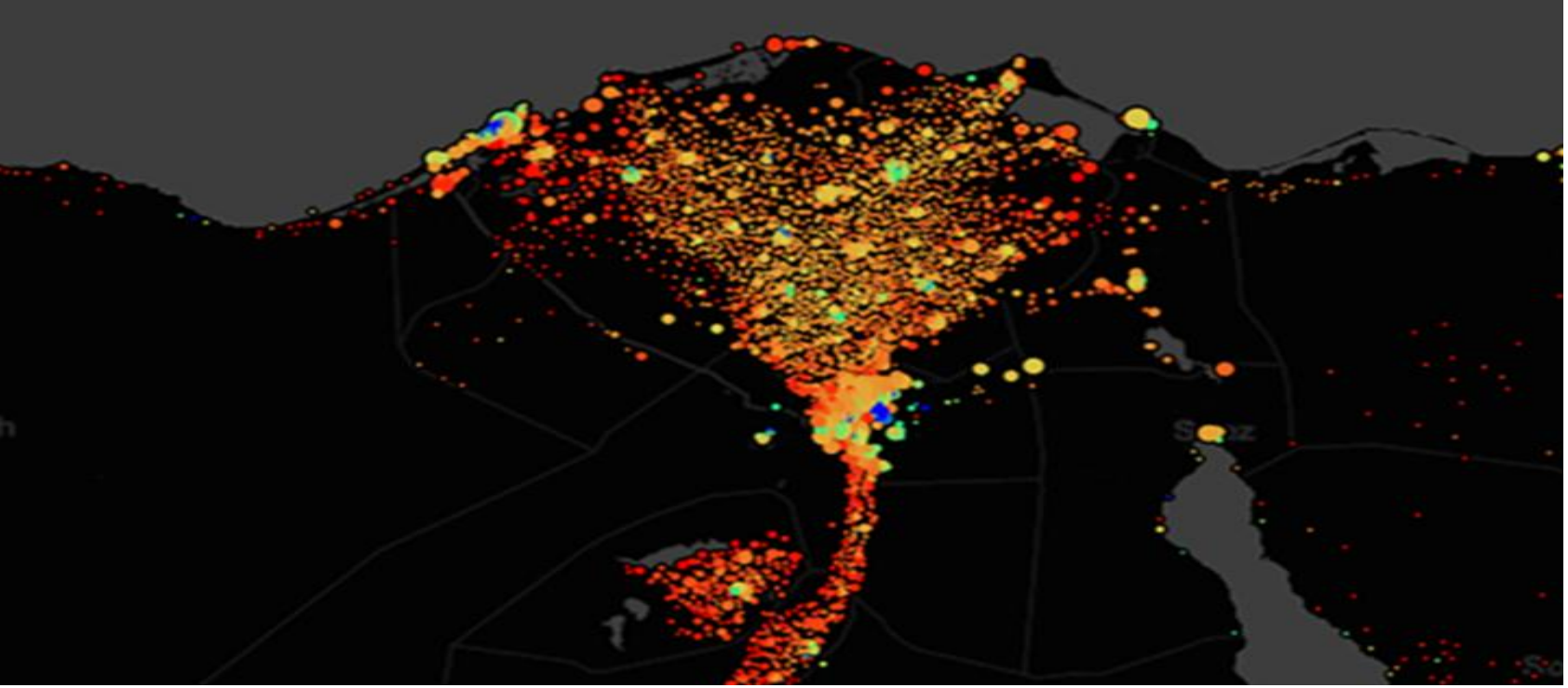
A national project to close the service gap in neonatal intensive care (incubators) across Egypt.

- **The problem** There is a clear service gap in care for newborns and premature babies.
- **Challenge 1 - capacity** Provide enough incubators and the equipment that goes with them.
- **Challenge 2 - geography** Distribute service centres fairly across the whole country, not only in big cities.
- **Challenge 3 - people** Train and deploy enough specialised doctors and nurses.



Optimised locations for modular maternity hospitals, each with an annual capacity of 2,000-3,000 births (overview of most of Egypt)

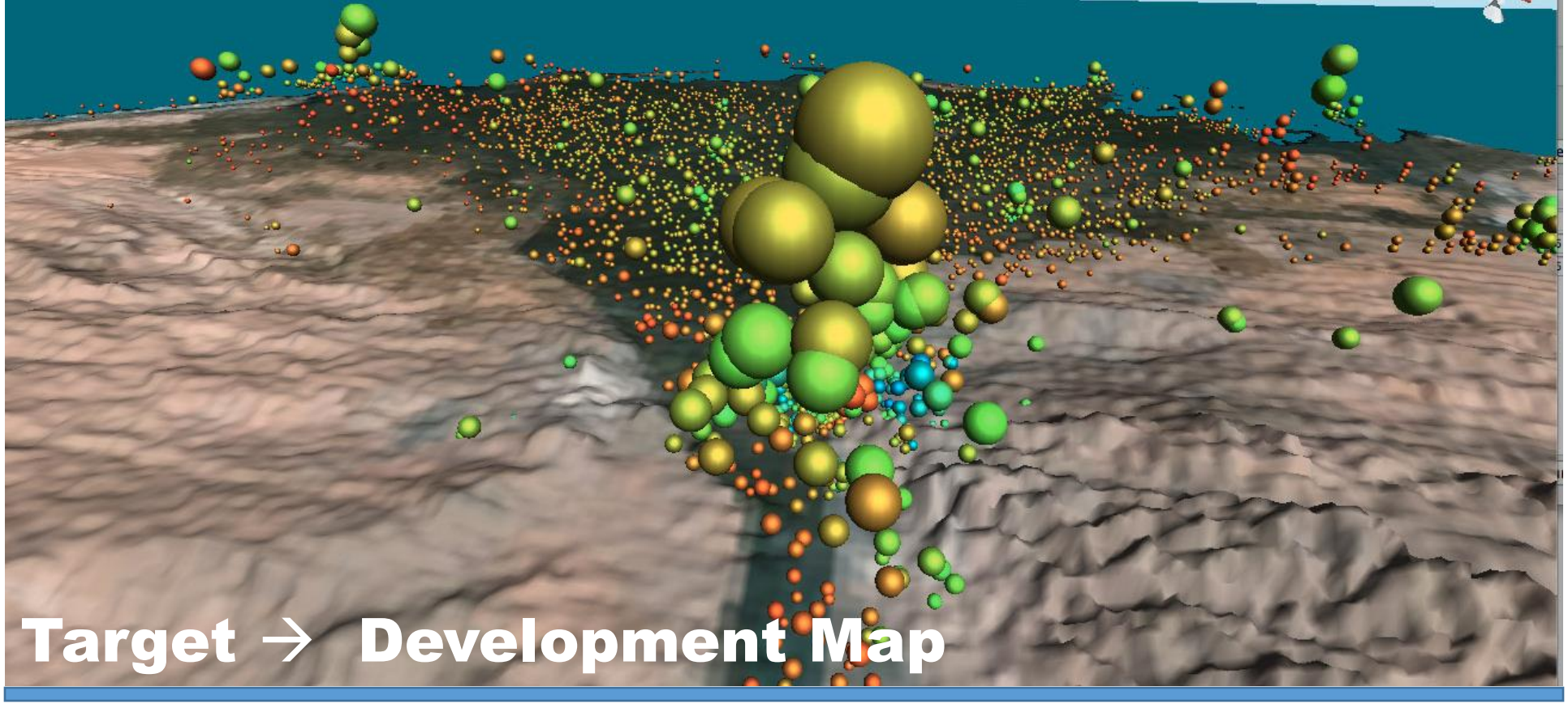
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Analysis and Decision Model Building First
Mapping is a by-product

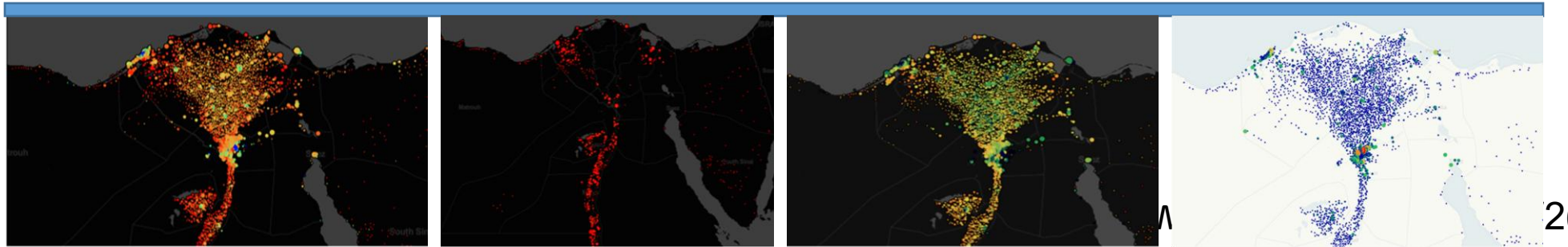


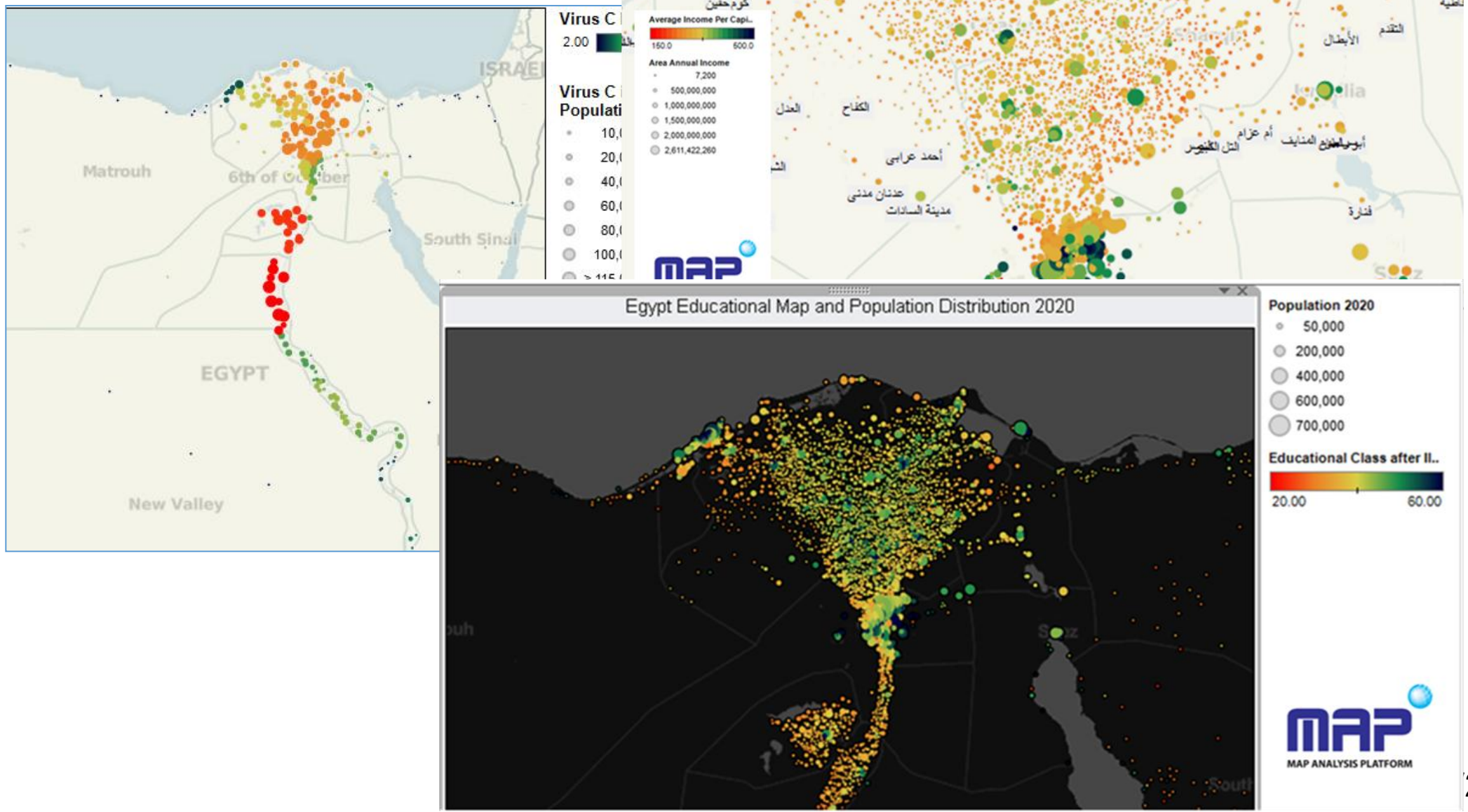
Mapping & Visualization First, Analysis is a customization



Endless Possibilities
Optimum Decision making

Citizen Satisfaction




Matrouh
6th of October
South Sinai
EGYPT
New Valley
ISRAEL
Virus C
2.00
Virus C
Populati
10,
20,
40,
60,
80,
100,
Average Income Per Capi..
150.0
600.0
Area Annual Income
7,200
500,000,000
1,000,000,000
1,500,000,000
2,000,000,000
2,611,422,260
MAP
الشهابيه
الرصيف
أبوالمطامير
أكتوبر 6
كوم حفين
العدل
الكفاح
أحمد عرابى
عدنان مدنى
مدينة السادات
التقدم
الأبطال
أم عزام
التل الكبير
أبو المنايف
فنارة
Egypt Educational Map and Population Distribution 2020
Population 2020
50,000
200,000
400,000
600,000
700,000
Educational Class after II..
20.00
60.00
MAP
MAP ANALYSIS PLATFORM

Building our nation on sound foundations

Four conditions the lecturer sets for development that is planned well.

Clear goals

Development goals are clear to everyone, in the spirit of the UN Millennium Development Goals.

Integrated effort

Development efforts are joined up so that the Egyptian citizen gets the maximum return.

Knowledge-led

Knowledge and science lead the development effort, not guesswork.

Social justice

Development efforts deliver social justice: fair outcomes for all regions and groups.

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How the integrated planning system fits together

Coordination points

- One coordination point in each body
- Ministries of Finance, Planning, Education, Health
- Ministries of Transport, Housing, Utilities
- Other government bodies

Stacked map layers

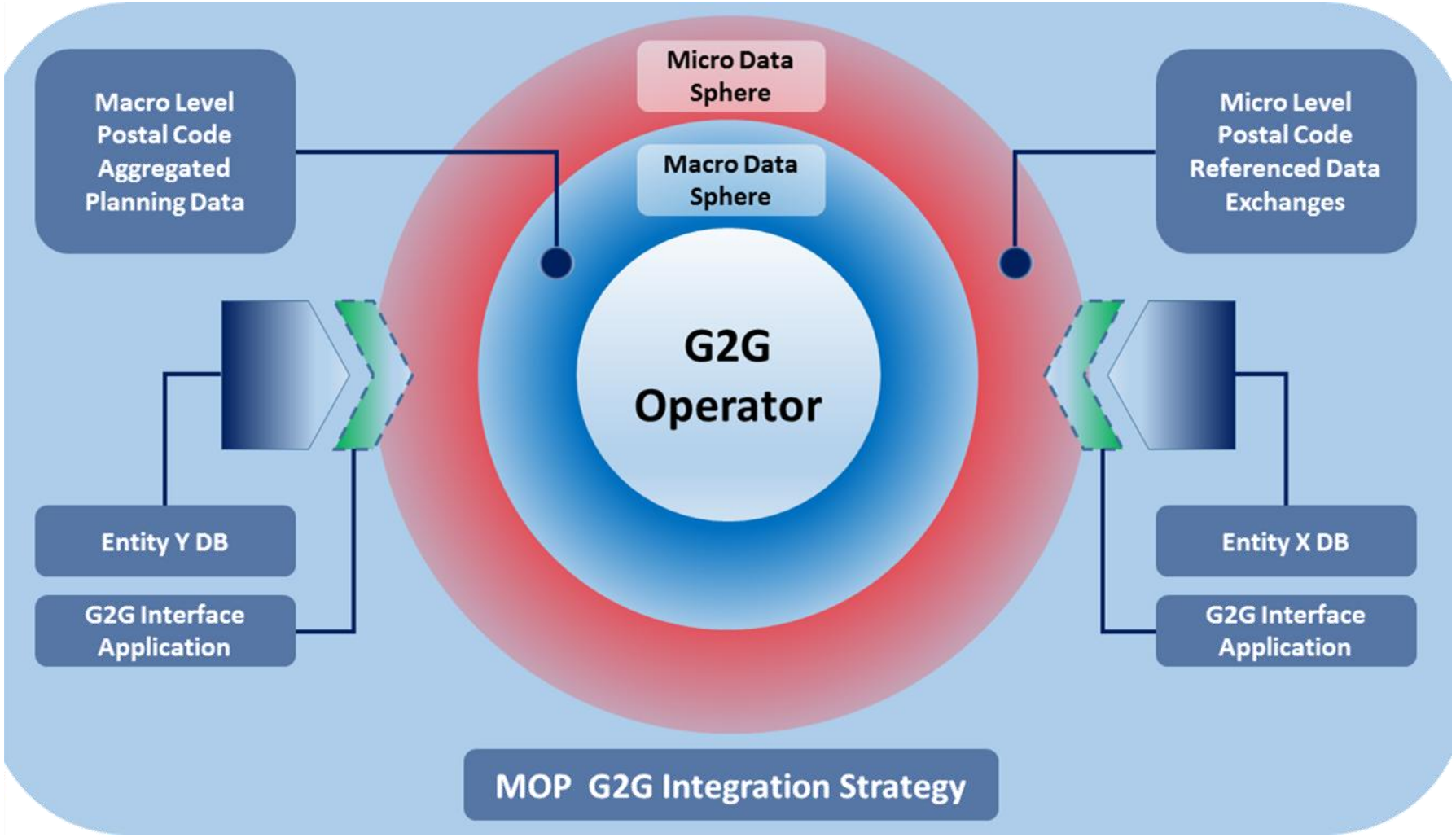
- Each ministry supplies one geographic layer
- All layers sit over the same map of Egypt
- Drilling down at one point shows every service there
- Gaps and overlaps become visible

Shared databases

- Project follow-up system
- Database of needs and resources
- Database of planned and in-progress projects
- Database of existing projects

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بيانات تخطيطية مجمعة



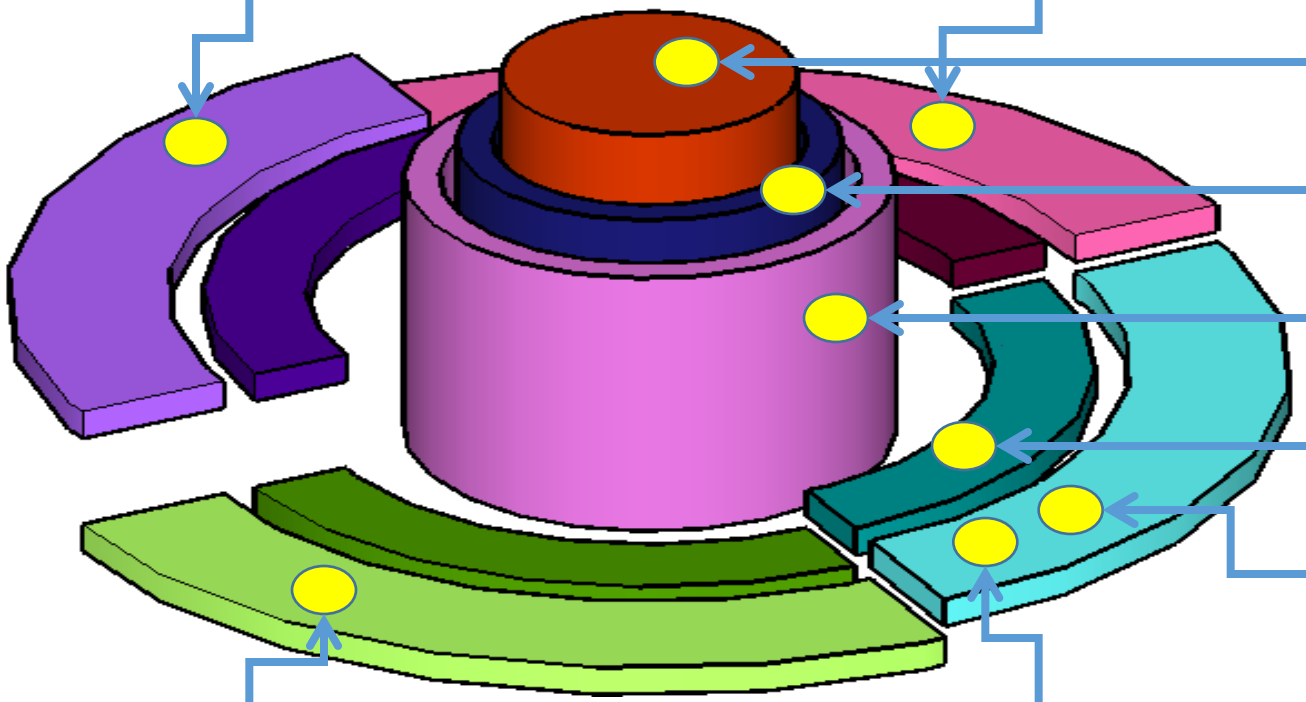
بيانات فردية مؤمنه (لا يتم تداولها أو رؤيتها، نشرها

إستراتيجية التكامل مع شبكة البيانات الحكومية

National Macro Data Integration

Education Layer

Health Layer



Core Data Model

Software Architecture and Data Integration Department

Operations Research and Mathematical Conceptualization Department

Data Transformation and Abstraction Team

Global Data from Alliances/Collaboration

Agriculture, Irrigation, Layer

Urban Planning Layer

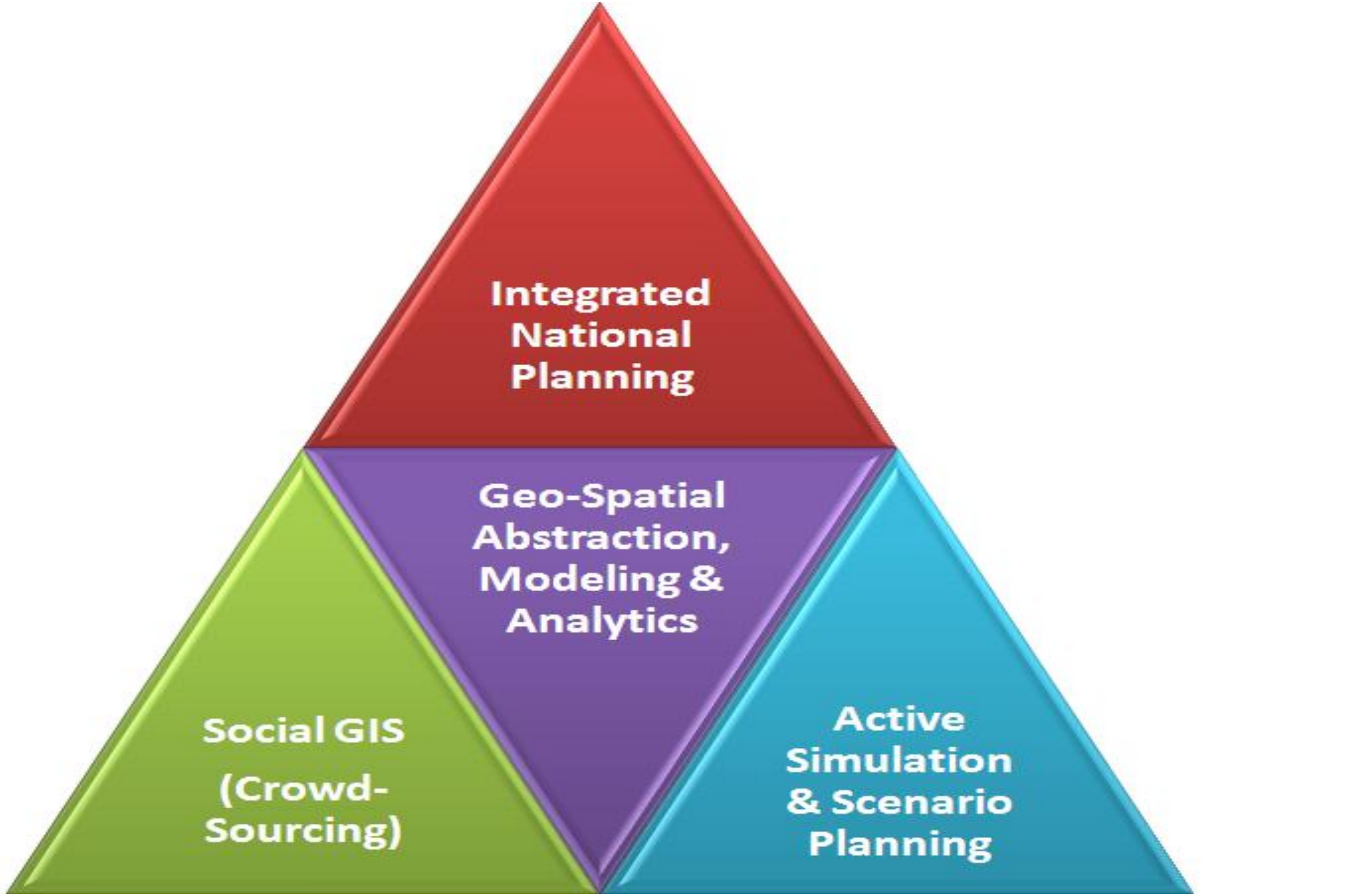
Inward Information Flow

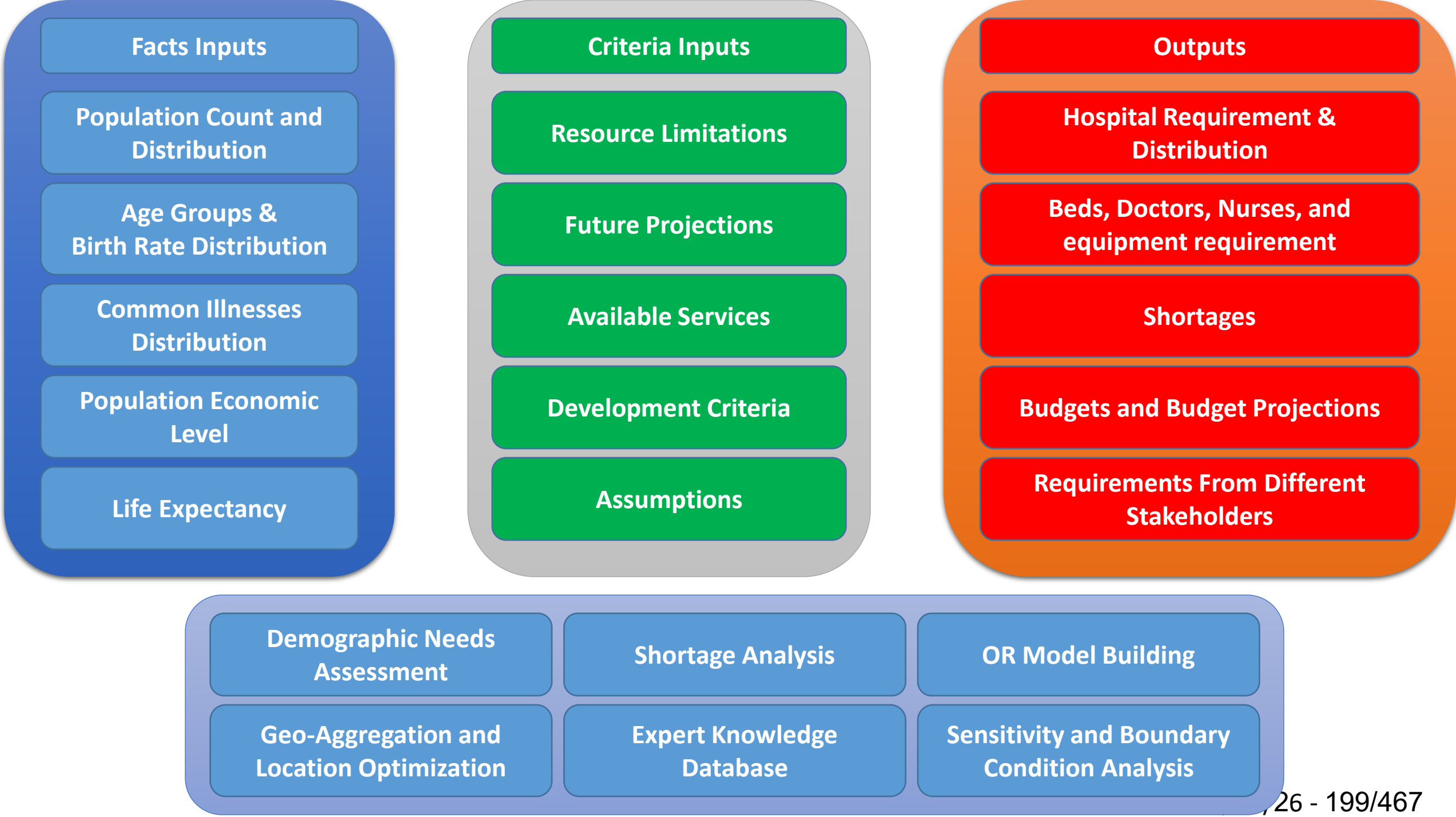
More Layers Can Be Integrated As Project Develops

Decision Models

Data Abstraction, Integration, and Analytical Model Building

Other Databases + GIS + Expert Knowledge


Integrated National Planning
Geo-Spatial Abstraction, Modeling & Analytics
Social GIS (Crowd-Sourcing)
Active Simulation & Scenario Planning


Facts Inputs
Population Count and Distribution
Age Groups & Birth Rate Distribution
Common Illnesses Distribution
Population Economic Level
Life Expectancy
Criteria Inputs
Resource Limitations
Future Projections
Available Services
Development Criteria
Assumptions
Outputs
Hospital Requirement & Distribution
Beds, Doctors, Nurses, and equipment requirement
Shortages
Budgets and Budget Projections
Requirements From Different Stakeholders
Demographic Needs Assessment
Shortage Analysis
OR Model Building
Geo-Aggregation and Location Optimization
Expert Knowledge Database
Sensitivity and Boundary Condition Analysis

Advantages

- Scientific national strategy planning
- Quick evaluation and response to National or sub-National Demographic analysis.
- Analyzing demographic service shortages and stress levels
- Agile criteria-based Decision Making
- Developing risk mitigation strategies and “what if” scenarios
- Macro scale development planning

National Census Support and Analytics

Educational Planning

Health Care Planning

Food Supply

National Logistics Planning

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National Policy Analysis

Subsidy and Impact Evaluation

National Budget Geographic Distribution

Transparency and Fairness

National Demographic Risk Evaluation and Risk Mitigation Strategies

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Scope of work of the Ministry of Planning

1. **Prepare the plan**

   Draft the economic and social development plan and the studies behind it.

2. **Present to parliament**

   The plan goes to the People's Assembly.

3. **Debate and approval**

   Parliament discusses the plan and adopts it.

4. **Ministries propose projects**

   Ministries and implementing bodies submit proposed projects under the plan.

5. **Feasibility and fit**

   Each project is checked for feasibility and alignment with the overall development direction.

6. **Core planning tools**

   The planning data model and simulators support the analysis (Planning System Core Elements).

7. **Implement and measure**

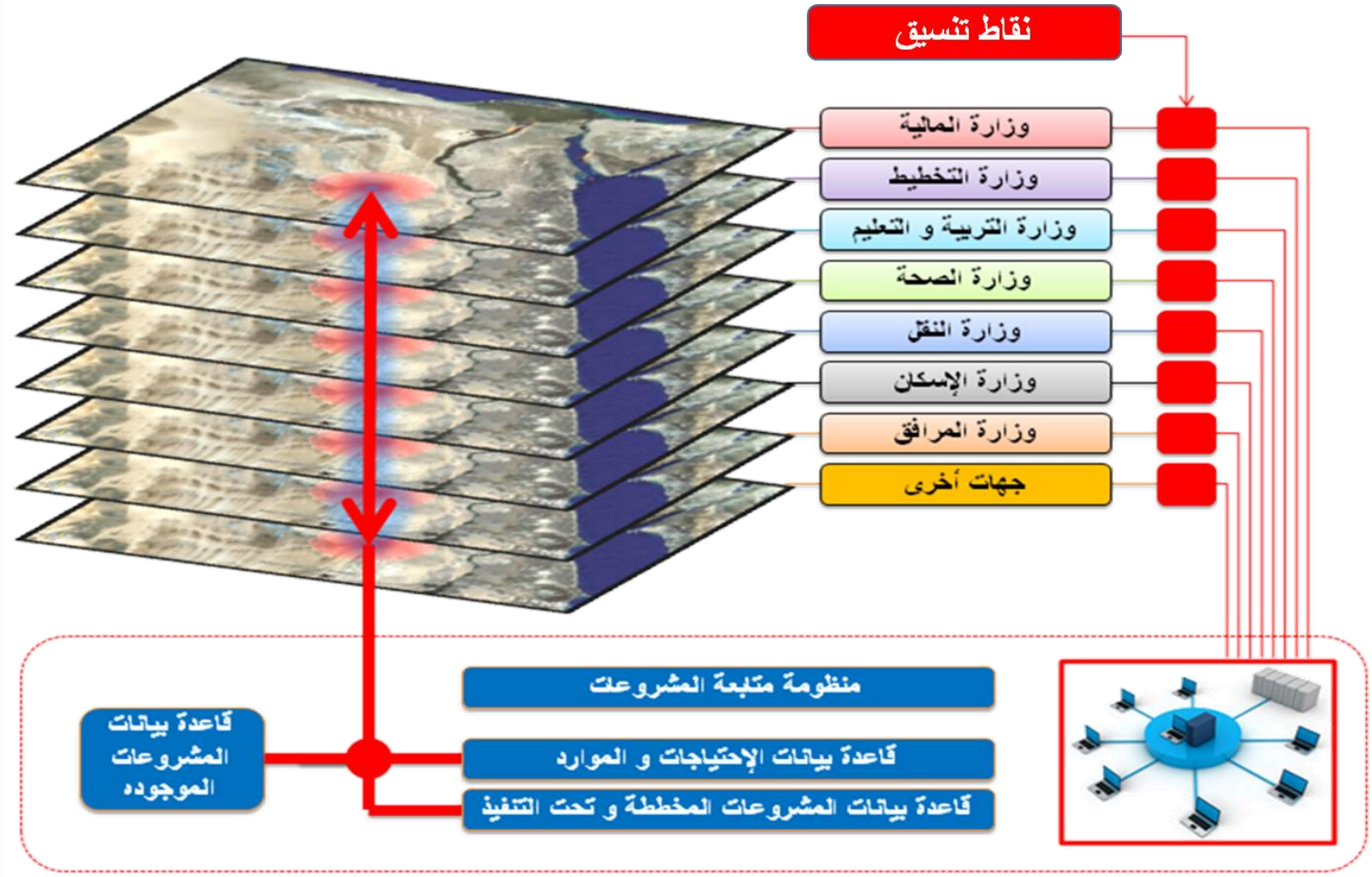
   Execute within a sustainable framework that meets strategic goals, tracked with clear indicators.

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مشروع تكامل البنية المعلوماتية لمنظومة التخطيط

الهدف: إنشاء منظومة تكنولوجية متقدمة
لدعم القرار التخطيطي تضمن رؤية واضحة للدولة
لمواردها المختلفة من أرض وسكان واحتياجاتها وأهدافها
وتضمن تنسيق العمل الحكومي بشكل فعال ومستدام

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نقاط تنسيق
وزارة المالية
وزارة التخطيط
وزارة التربية و التعليم
وزارة الصحة
وزارة النقل
وزارة الإسكان
وزارة المرافق
جهات أخرى
قاعدة بيانات المشروعات الموجوده
منظومة متابعة المشروعات
قاعدة بيانات الإحتياجات و الموارد
قاعدة بيانات المشروعات المخططة و تحت التنفيذ

نطاق عمل وزارة التخطيط

إعداد خطة التنمية الاقتصادية و الاجتماعية و دراسات متعلقة بها

عرض على مجلس الشعب

مجلس الشعب

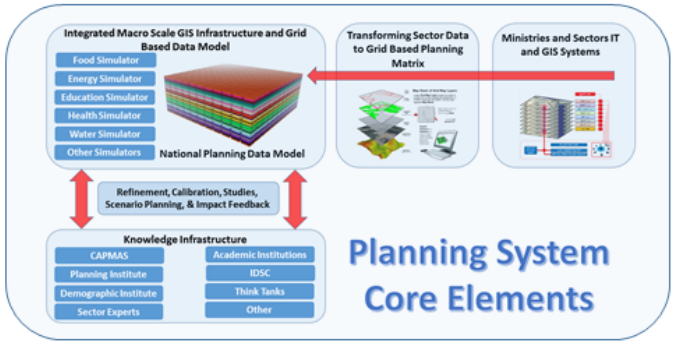


مناقشة الخطة و إعتمادها

الوزارات و جهات الإسناد

مشروعات مقترحة

دراسة الجدوى و تقييم التوافق مع التوجه التنموى العام



تنفيذ ذلك ضمن إطار مستدام يحقق الأهداف الإستراتيجية للتنمية و قياس و متابعة ذلك بمؤشرات واضحة

مشروع إمتداد الترقيم البريدي

الهدف: ضمان وضوح أماكن السكان لكل شركاء التنمية

Postal-code extension project

Postal-code extension project

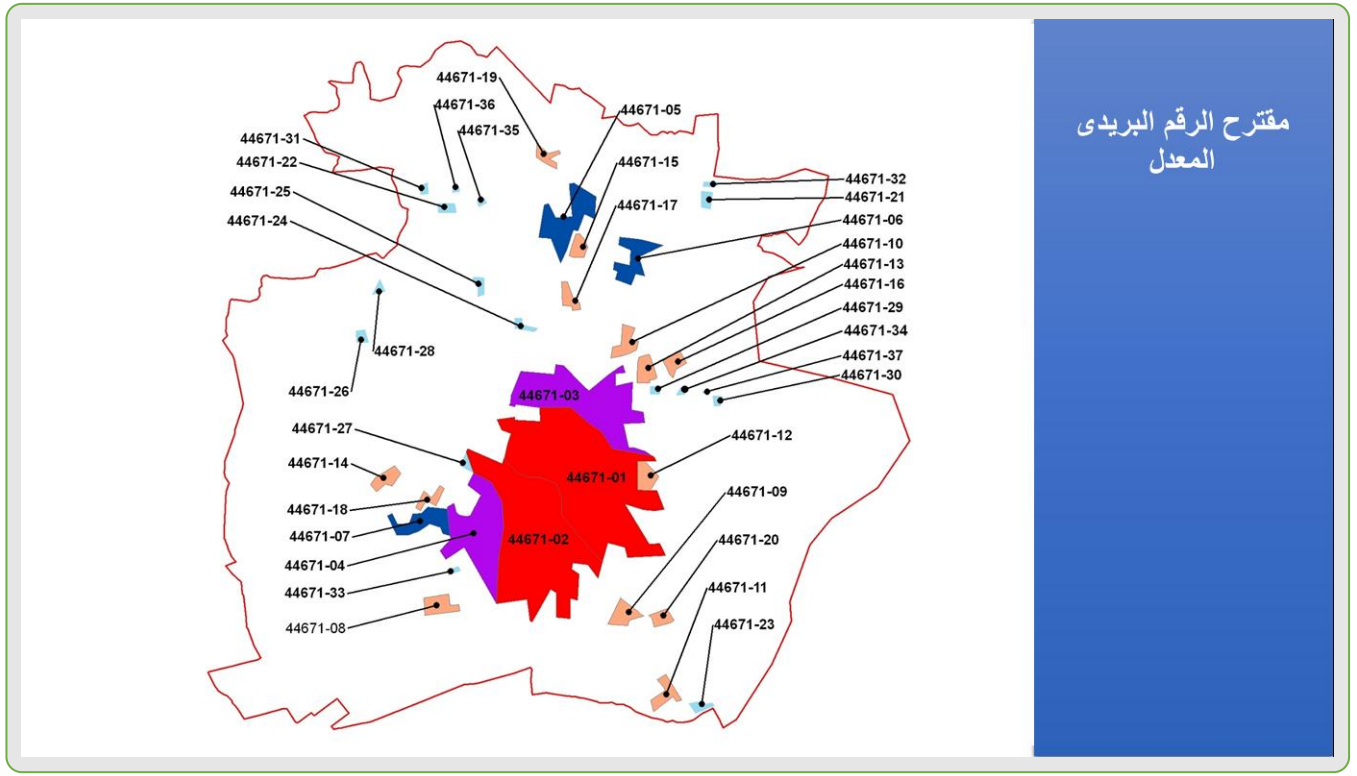
Objective: make sure that where people live is clear and unambiguous for every development partner.

- A finer postal code lets planners link residents, needs and projects to precise places
- The same code can be shared by all ministries, utilities and service providers
- It becomes a common key between geographic data and tabular (statistical) data

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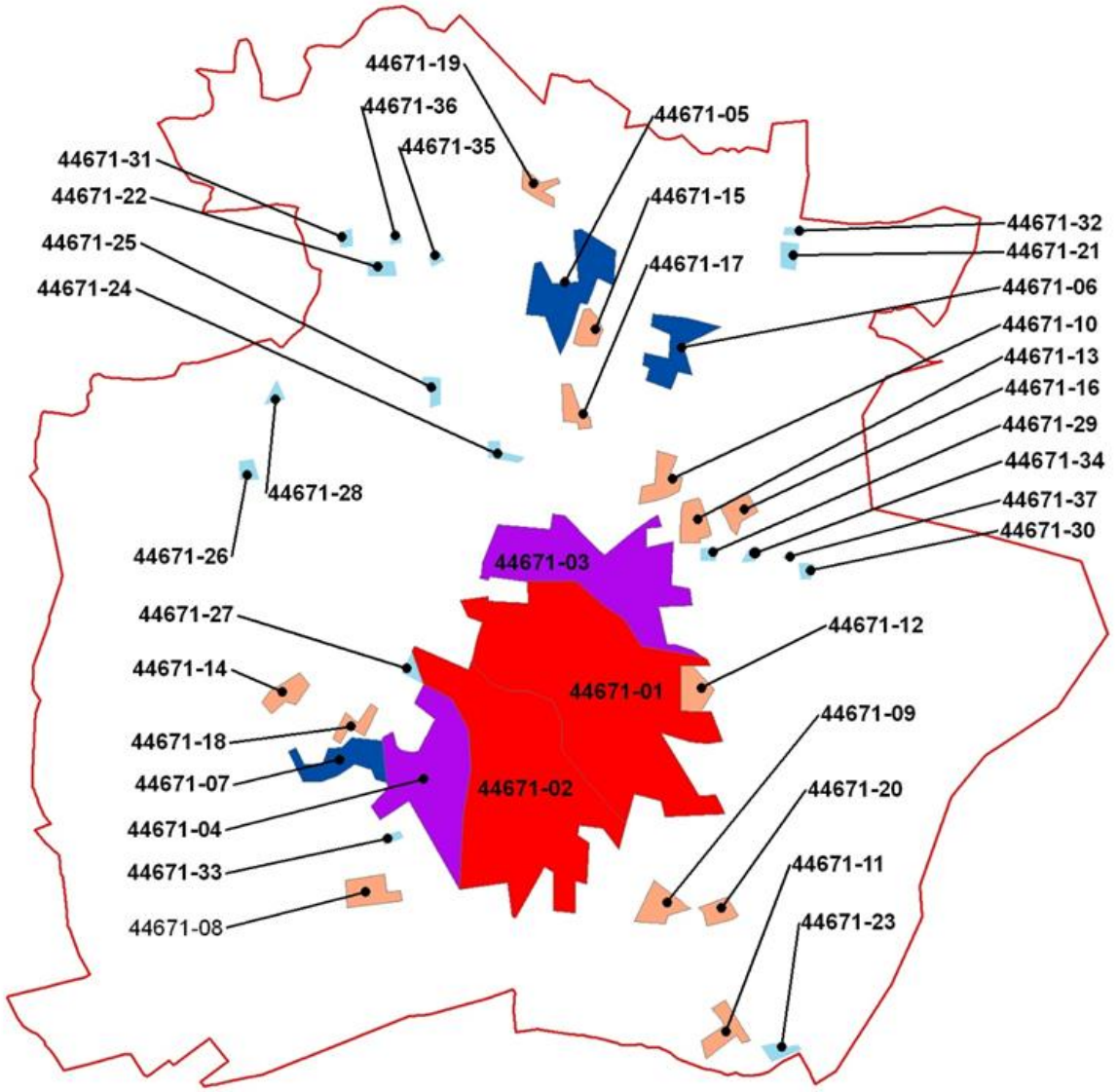
Proposed revised postal code for one district

- The existing district code 44671 is extended with a two-digit suffix (44671-01 to 44671-37)
- The dense urban core gets codes 01, 02 and 03; each outlying village gets its own code
- Every resident can now be located to a specific sub-area for planning and service delivery



Proposed revised postal code map for a district (code 44671); the red boundary is the district, coloured shapes are built-up areas

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مقترح الرقم البريدى
المعدل

مشروع البوابة الجغرافية للمعلومات الحكومية

المرحلة الأولى: توزيع المشروعات الحكومية
المرحلة الثانية: خرائط الاحتياجات التحليلات

Geographic Portal for Government Information

Phase 1 - distribution of government projects

- Put every government project on the map
- Show the public where money is being spent
- Allow follow-up of project progress by location

Phase 2 - needs maps and analytics

- Map the gap between services available and services needed
- Add analysis and indicators on top of the project data
- Support decisions on where the next project should go

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Geographic Portal for Government Projects

> **It's your right to know**

— Ministry of Planning, Egypt - launch of the Geographic Portal for Government Projects, 7 December 2013

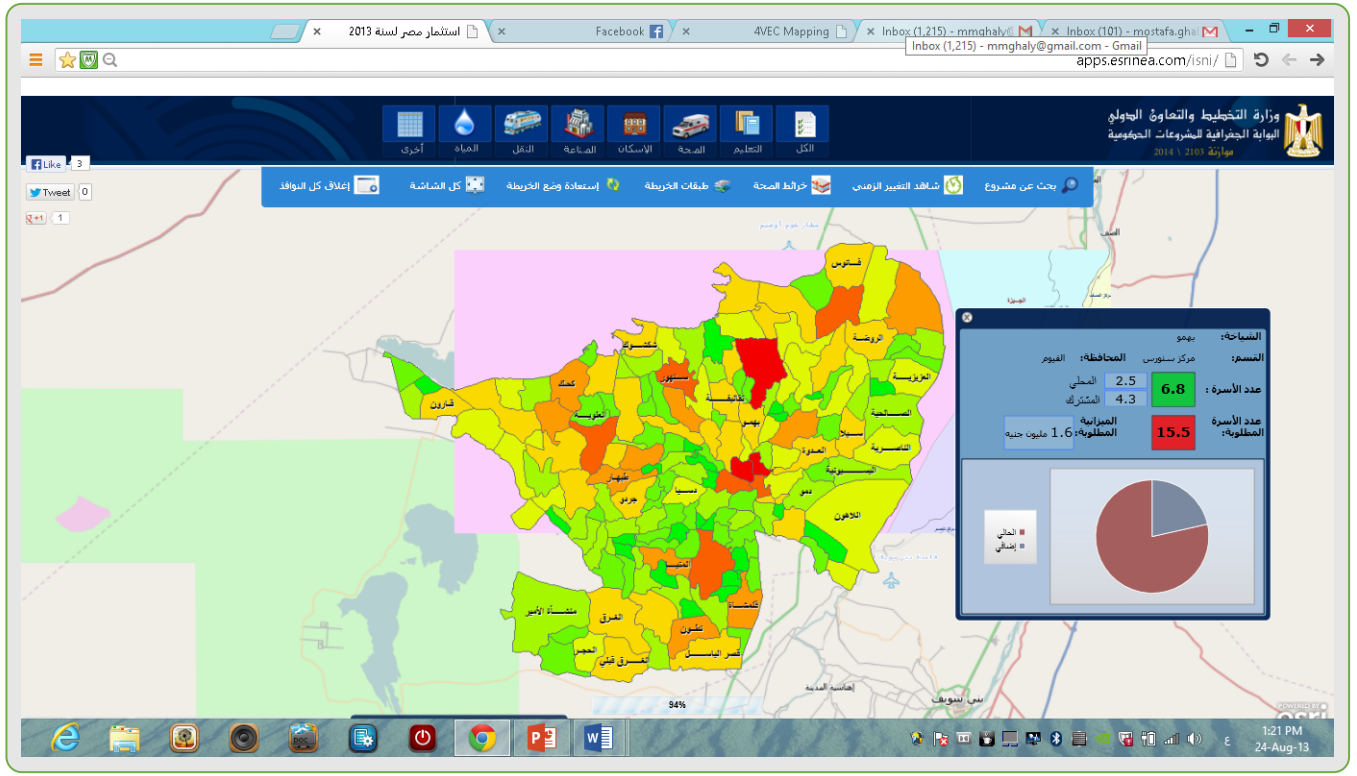
http://gis.mop.gov.eg/MOP/



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The portal in use: a health needs map

- Each village is coloured by how far it is from the service standard: green is covered, red is the largest gap
- Clicking a village opens its card: here a village in Sinnuris district, Fayoum governorate
- Hospital beds available 6.8 (2.5 local + 4.3 shared) against 15.5 required; budget needed EGP 1.6 million
- Toolbar: search for a project, view change over time, health maps, map layers, reset view, full screen



Screenshot of gis.mop.gov.eg (Arabic interface) - needs map with a village pop-up and a pie chart of current versus additional need

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من حقك تعرف

البوابة الجغرافية للمشروعات الحكومية



http://gis.mop.gov.eg/MOP/

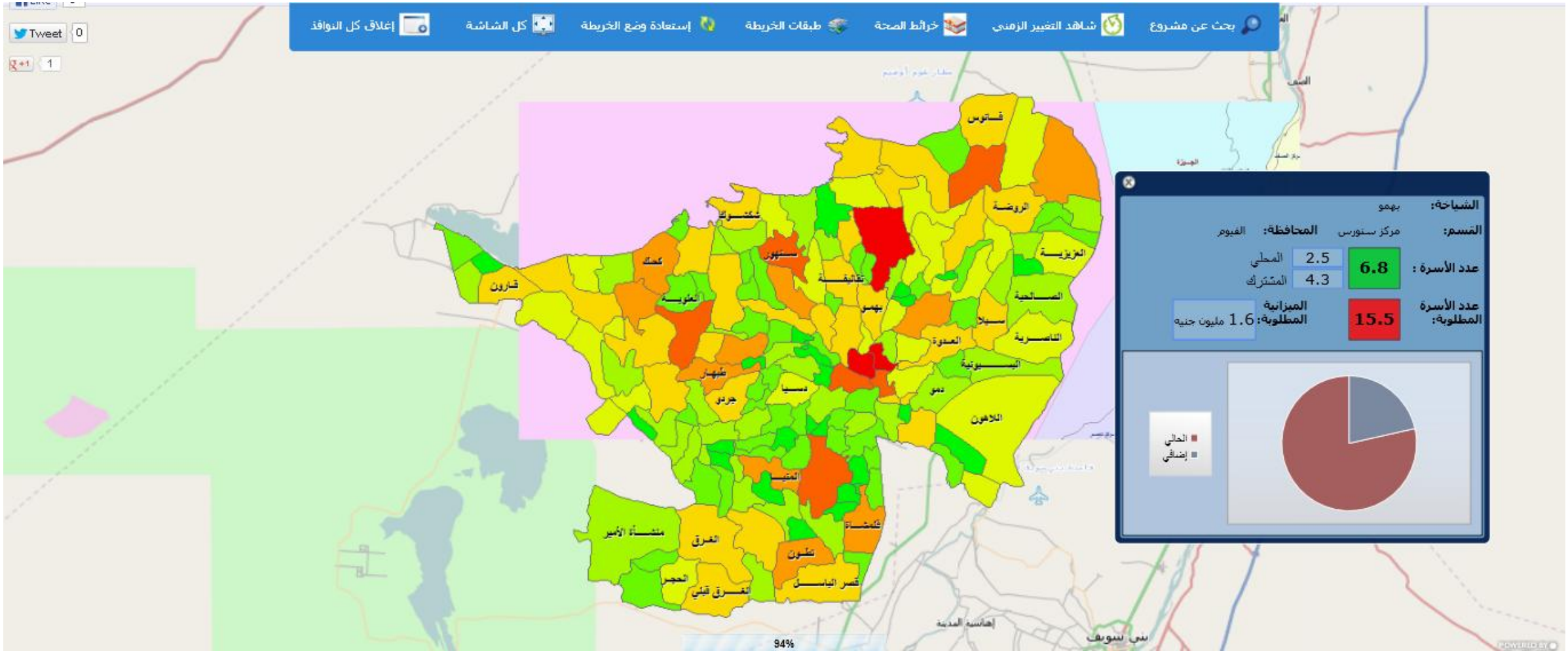
7 ديسمبر 2013

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من حقك تعرف

وزارة التخطيط

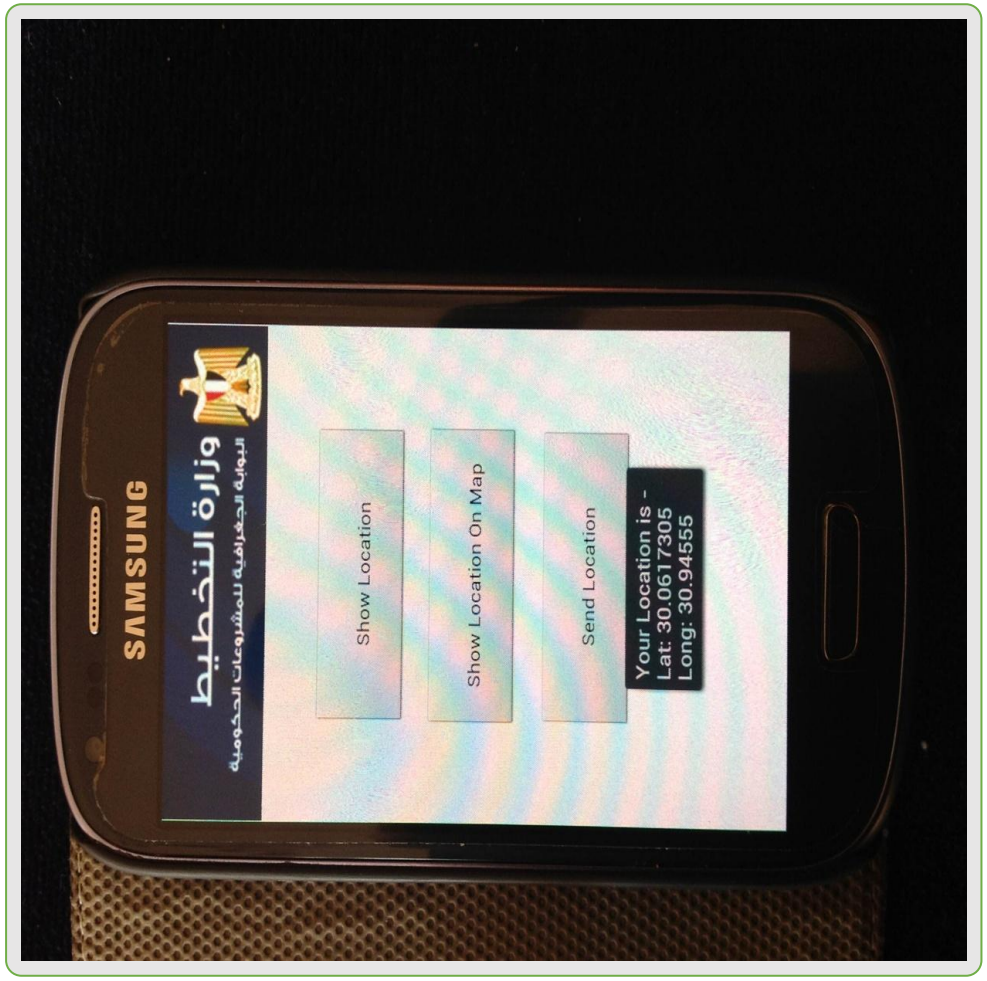
البوابة الجغرافية للمشروعات الحكومية



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Mobile app for reporting project locations

- Three functions: Show Location, Show Location On Map, Send Location
- The phone's GPS reads the position, e.g. latitude 30.0617305, longitude 30.94555
- The send form adds an authorisation code, a point code and a point rating before upload
- Field staff can therefore confirm where a project really is and how it is progressing

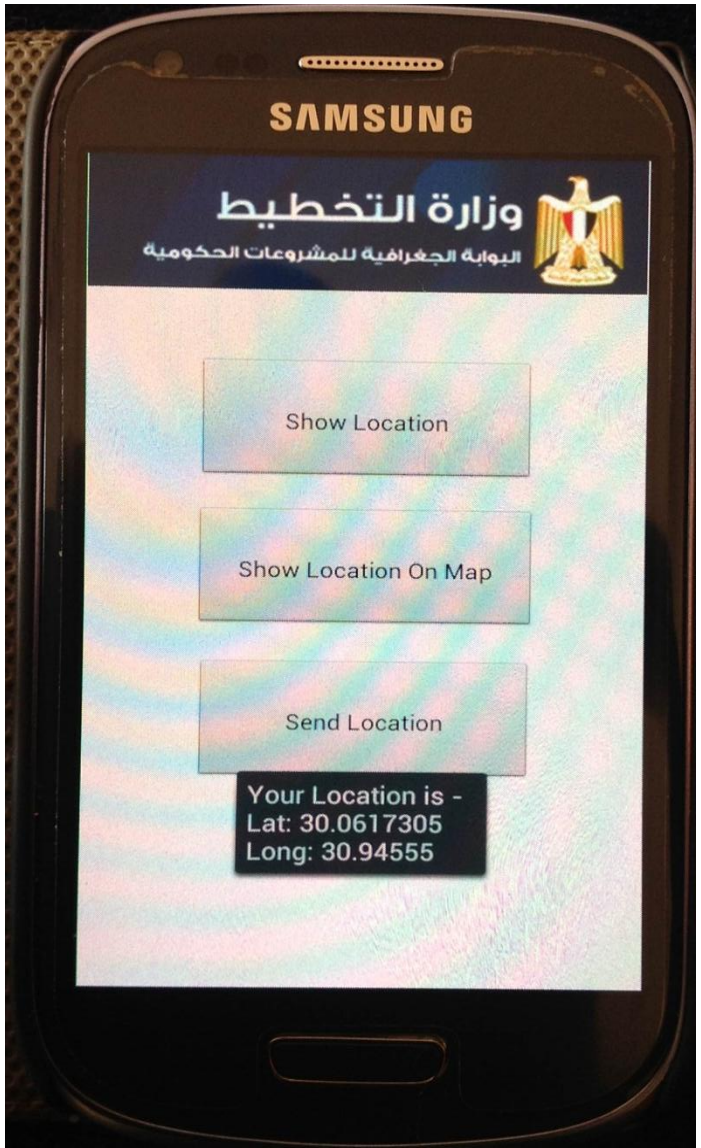


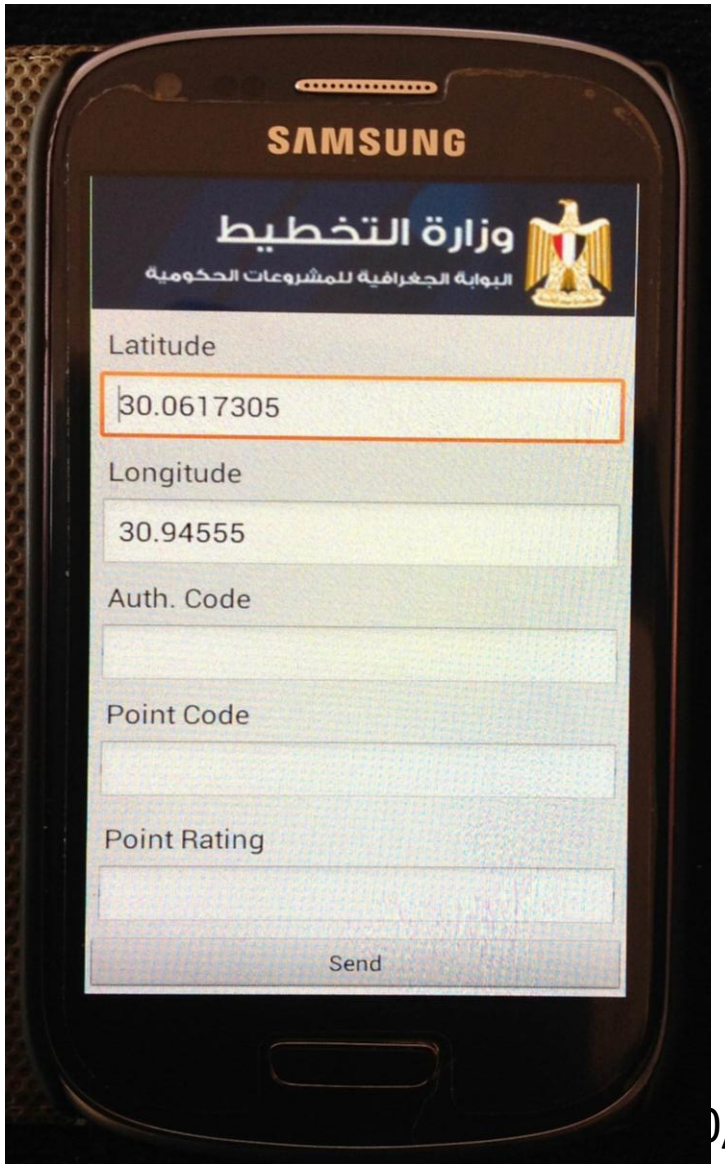
Ministry of Planning Android app on a Samsung phone

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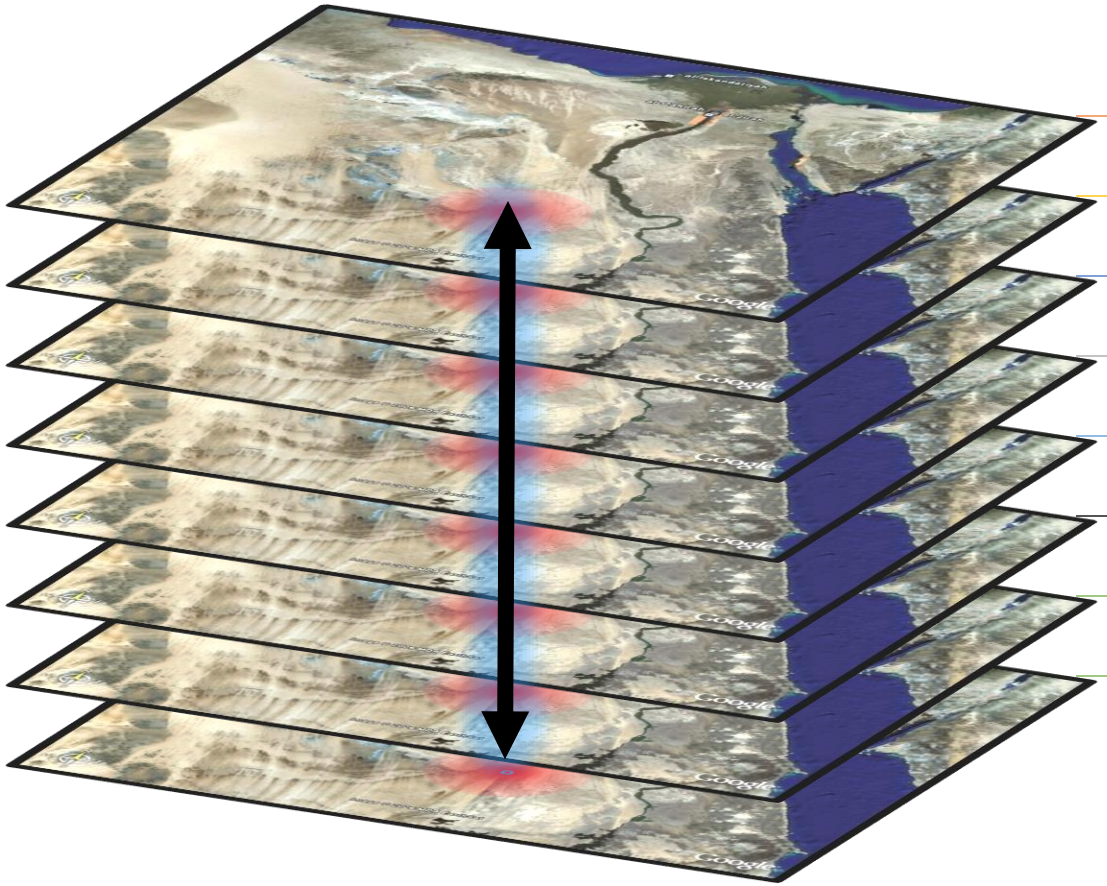
من حقك تعرف

وزارة التخطيط
البوابة الجغرافية للمشروعات الحكومية





GIS & Geo Data



- Health
- Education
- Culture
- Sports
- Economic
- Social
- Religious
- Other

How to latch to get maximum thrust ?



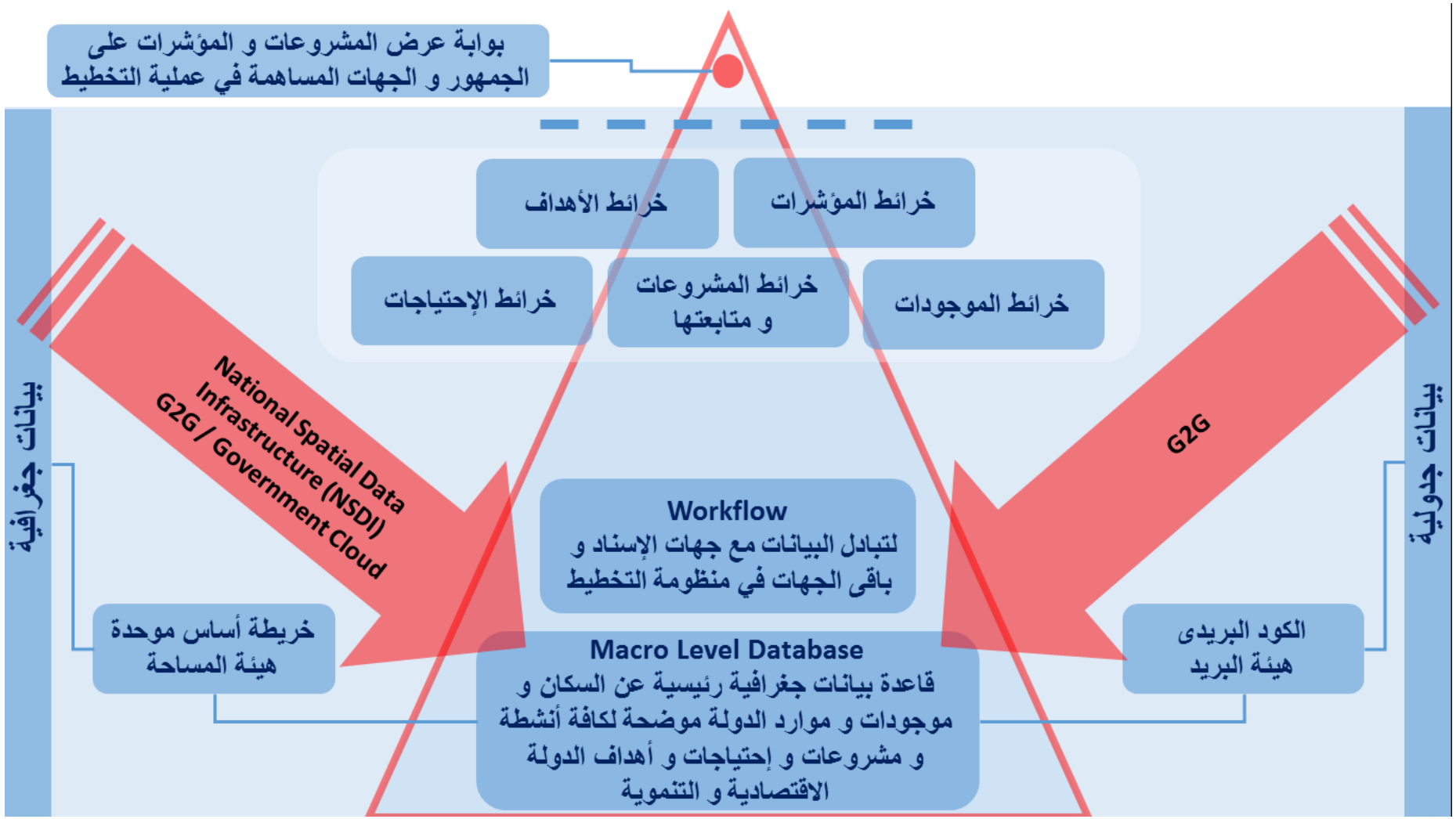
GIS & Geo Data

- Eight thematic layers: Health, Education, Culture, Sports
- Economic, Social, Religious and Other
- Every layer is drawn over the same satellite map of Egypt
- Drilling down through the stack at one point shows every service at that location



Stacked GIS layers over a satellite image of Egypt (Google Earth)

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بوابة عرض المشروعات و المؤشرات على
الجمهور و الجهات المساهمة في عملية التخطيط
خرائط الأهداف
خرائط المؤشرات
خرائط الإحتياجات
خرائط المشروعات
و متابعتها
خرائط الموجودات
بيانات جغرافية
National Spatial Data
Infrastructure (NSDI)
G2G / Government Cloud
G2G
بيانات جدولية
Workflow
لتبادل البيانات مع جهات الإسناد و
باقى الجهات في منظومة التخطيط
خريطة أساس موحدة
هيئة المساحة
الكود البريدى
هيئة البريد
Macro Level Database
قاعدة بيانات جغرافية رئيسية عن السكان و
موجودات و موارد الدولة موضحة لكافة أنشطة
و مشروعات و إحتياجات و أهداف الدولة
الاقتصادية و التنموية

Planning information infrastructure - objective restated

Integration of the information infrastructure of the planning system

Objective: build an advanced technology system to support planning decisions, ensuring the optimal use of the state's resources and effective, sustainable coordination of government work together with the private sector and civil society.

- The same objective as before, now widened to partners outside government
- Private sector and civil society are explicitly part of the coordination
- Optimal use of resources replaces the earlier 'clear view of resources'

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Architecture of the planning information system

Geographic data in

- Unified base map from the Egyptian Survey Authority
- National Spatial Data Infrastructure (NSDI)
- G2G exchange via the Government Cloud

Tabular data in

- Postal code from the National Postal Authority
- Government-to-government (G2G) data exchange
- Statistics linked to places through the postal code

Core

- Macro Level Database: one geographic database of population, assets and state resources
- Shows all activities, projects, needs and economic and development goals
- Workflow for exchanging data with implementing bodies and the rest of the planning system

Maps and portal out

- Goals maps and indicators maps
- Needs maps, project and follow-up maps, asset maps
- Portal presenting projects and indicators to the public and planning partners

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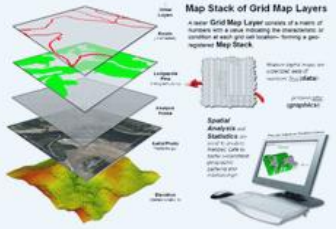
إنشاء نظام معلوماتى متكامل لخدمة التخطيط و التنمية

Ministries and Sectors IT and GIS Systems



الربط مع جهات الإسناد

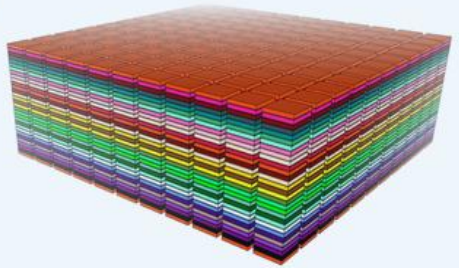
Transforming Sector Data to Grid Based Planning Matrix



تنسيق و دمج البيانات

نموذج معلوماتى متكامل لوصف المحددات و المؤشرات الكلية على المستوى القومى

- محاكى الغذاء
- محاكى الطاقة
- محاكى التعليم
- محاكى الصحة
- محاكى المياة
- نماذج لباقى الطبقات



National Planning Data Model

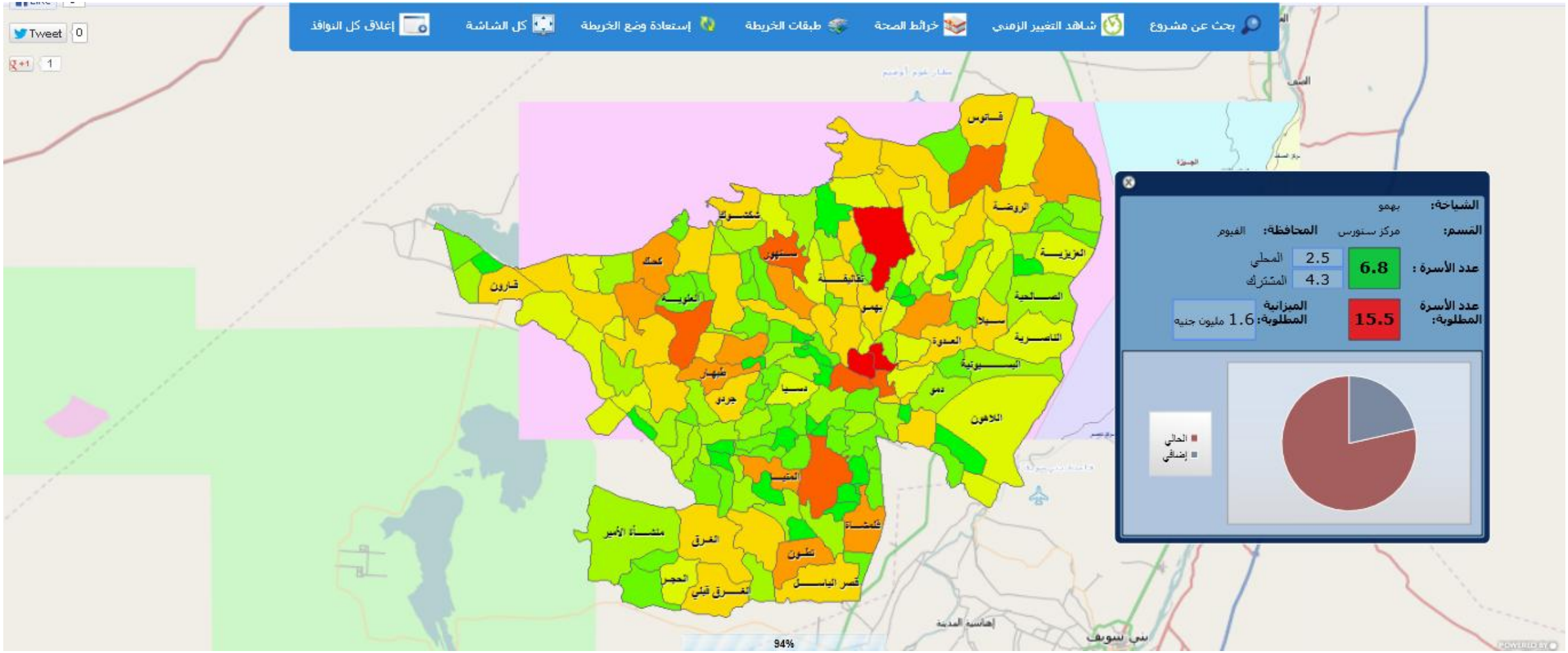
جهود مشتركة و دراسات لتطوير أنظمة التحليل و بناء سيناريوهات التنمية على أسس علمية

بنية تحتية معرفية متكاملة

- مؤسسات أكاديمية
- مراكز المعلومات
- بنوك الأفكار
- مراكز أبحاث أخرى
- التعبئة العامة و الإحصاء
- معهد التخطيط
- المعهد الديموجرافى
- خبراء القطاعات



البوابة الجغرافية للمشروعات الحكومية – من حقك تعرف



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Main parts of the planning information infrastructure

Ministry and sector systems

- Ministries' and sectors' IT and GIS systems
- Linked to the implementing bodies
- Source of the raw project and service data

Grid-based planning matrix

- Sector data is transformed onto a common grid
- Data from different bodies is coordinated and merged
- Each grid cell carries every sector's values

National Planning Data Model

- Integrated model of determinants and aggregate indicators at national level
- Simulators for food, energy, education, health and water
- Models for the remaining layers

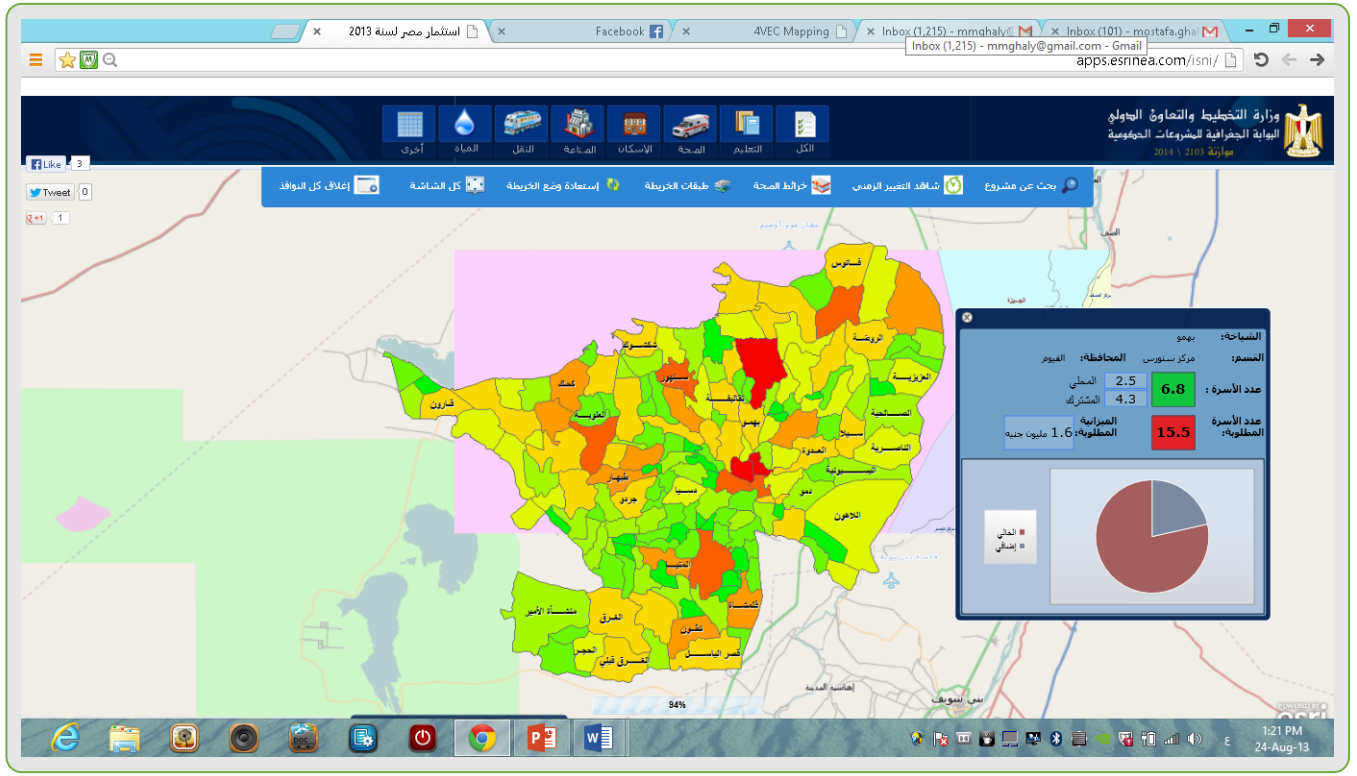
Knowledge infrastructure

- CAPMAS, the Institute of National Planning, the Demographic Institute, sector experts
- Academic institutions, information centres, think tanks, other research centres
- Joint studies to develop analysis systems and build development scenarios on a scientific basis

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Geographic Portal for Government Projects: a village view

- The same portal, now shown under its full name and slogan
- Colour-coded needs map of villages in Fayoum with a pop-up for one village
- Beds available 6.8 against 15.5 required; required budget EGP 1.6 million
- The portal turns planning data into something a citizen can check for their own village

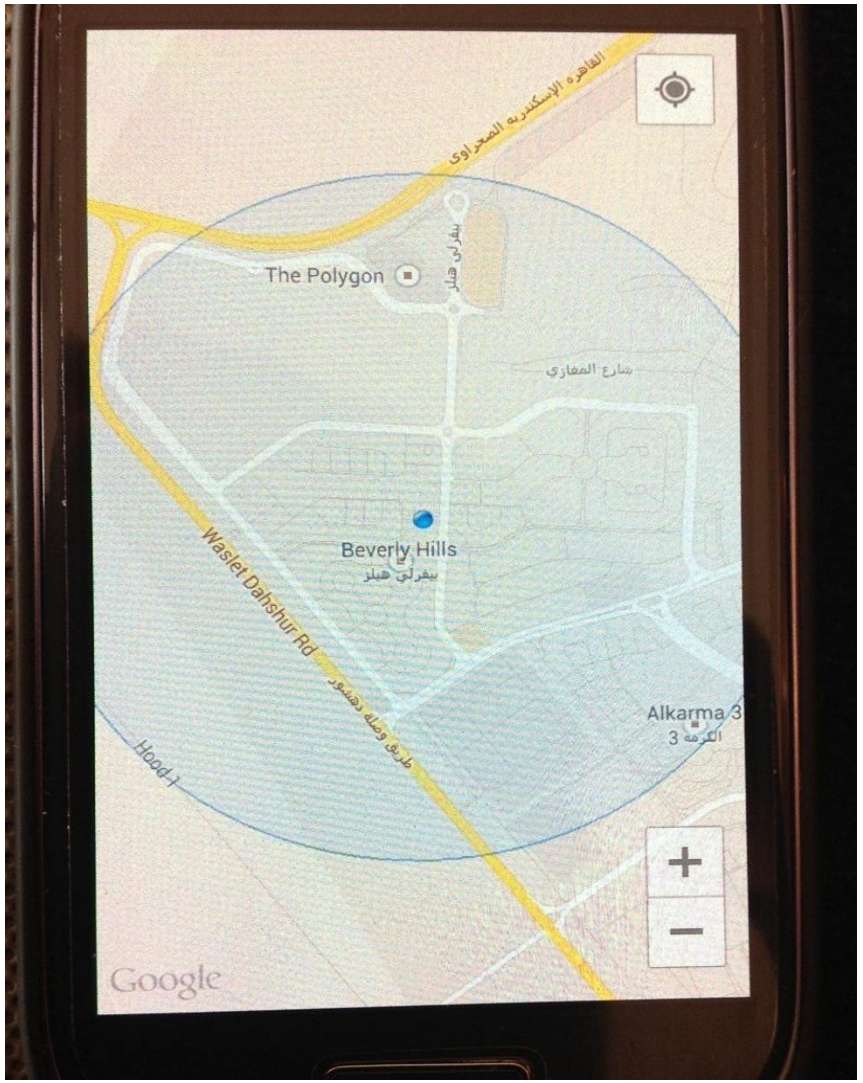


Screenshot of gis.mop.gov.eg (Arabic interface) - health needs map, Sinnuris district, Fayoum

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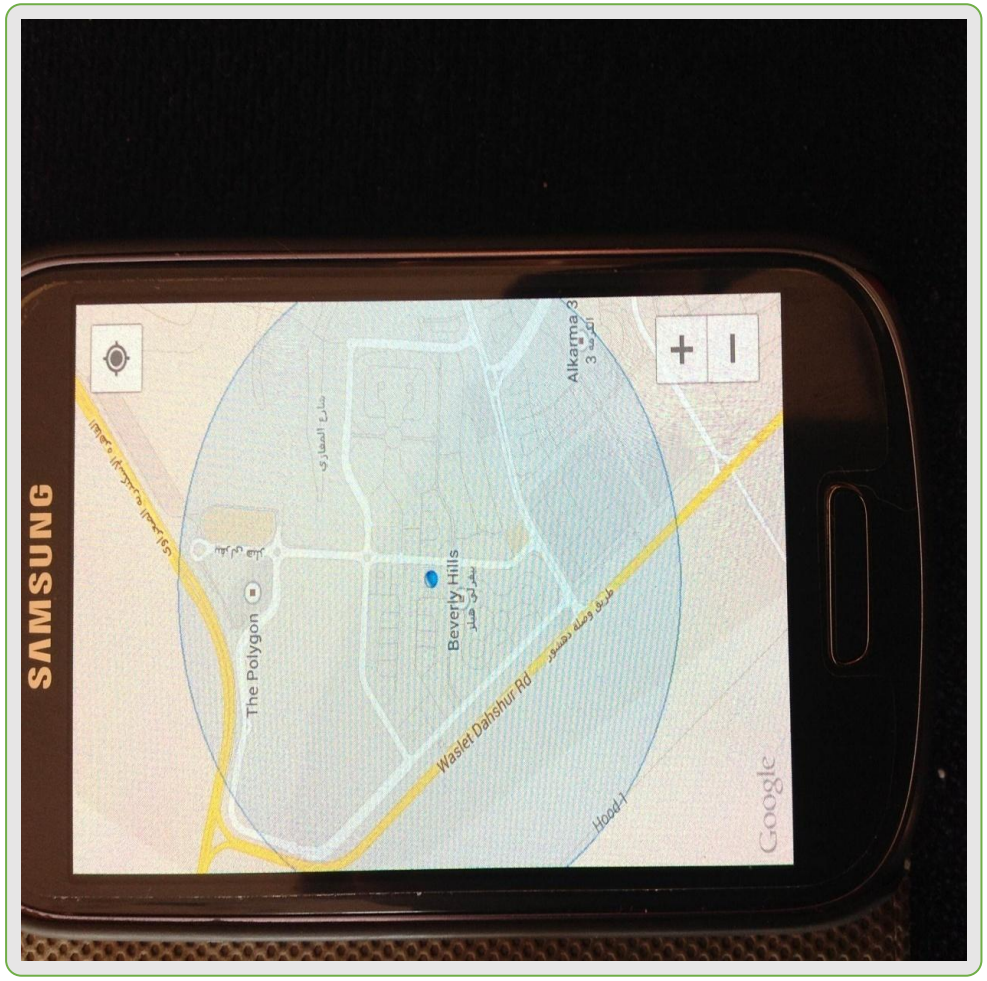
استخدام الهاتف المحمول في متابعة المشروعات التنموية





Using mobile phones to monitor development projects

- A phone's GPS shows the user's exact position on a map (here a residential area in west Cairo)
- The position can be sent to the portal together with a project code and a rating
- Project locations and progress are verified in the field, not only from office reports
- Citizens and field staff become sensors for the planning system



Google Maps on a smartphone showing the user's location

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Simulators for population needs

> **Build integrated simulators for population needs and development directions**

— Ministry of Planning - planning information infrastructure programme

Simulators let planners test 'what if' questions - more people, a new road, a new hospital - before money is spent.

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GIS & Geo Data

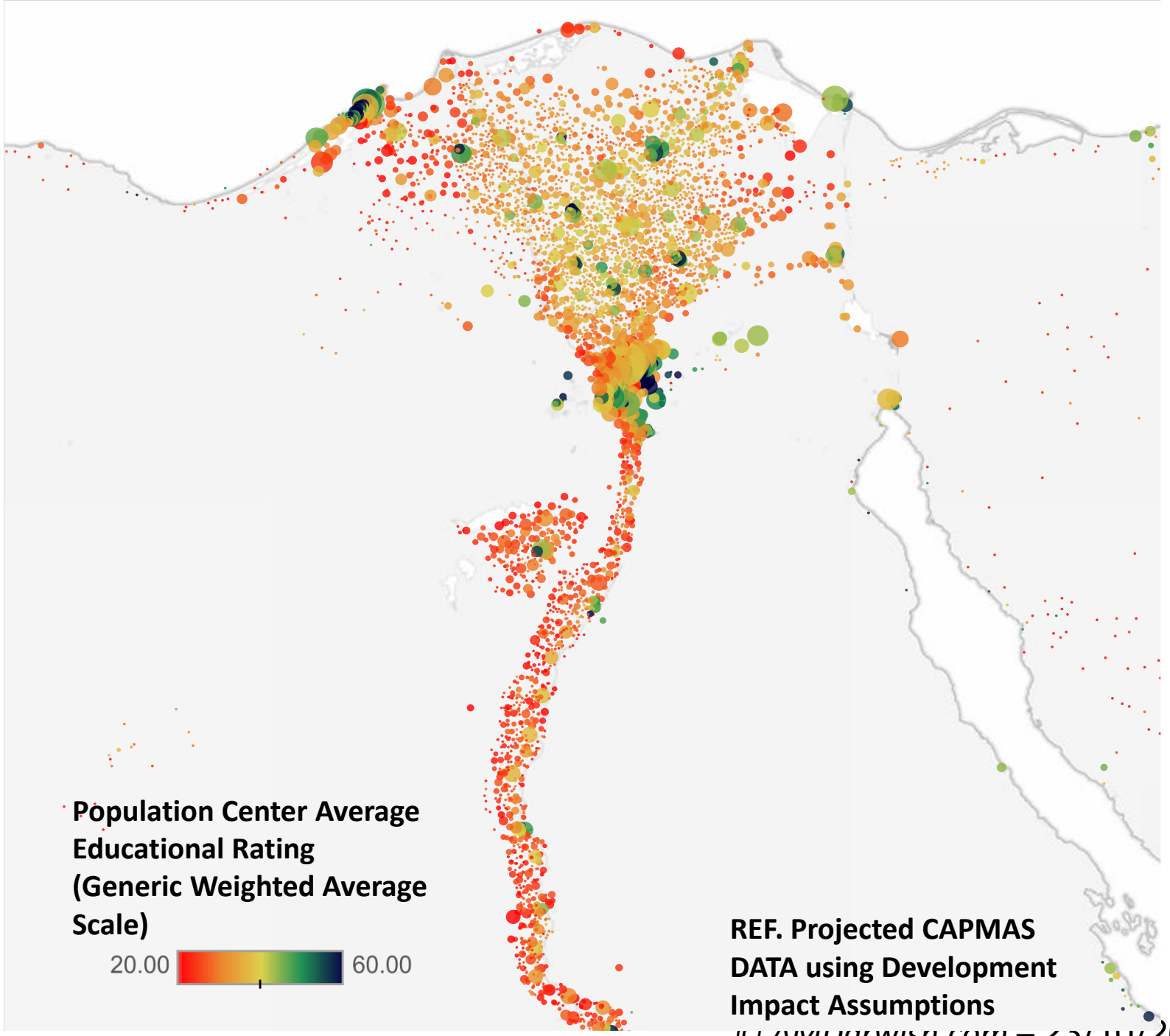
- Eight thematic layers: Health, Education, Culture, Sports
- Economic, Social, Religious and Other
- Every layer is drawn over the same satellite map of Egypt
- Drilling down through the stack at one point shows every service at that location



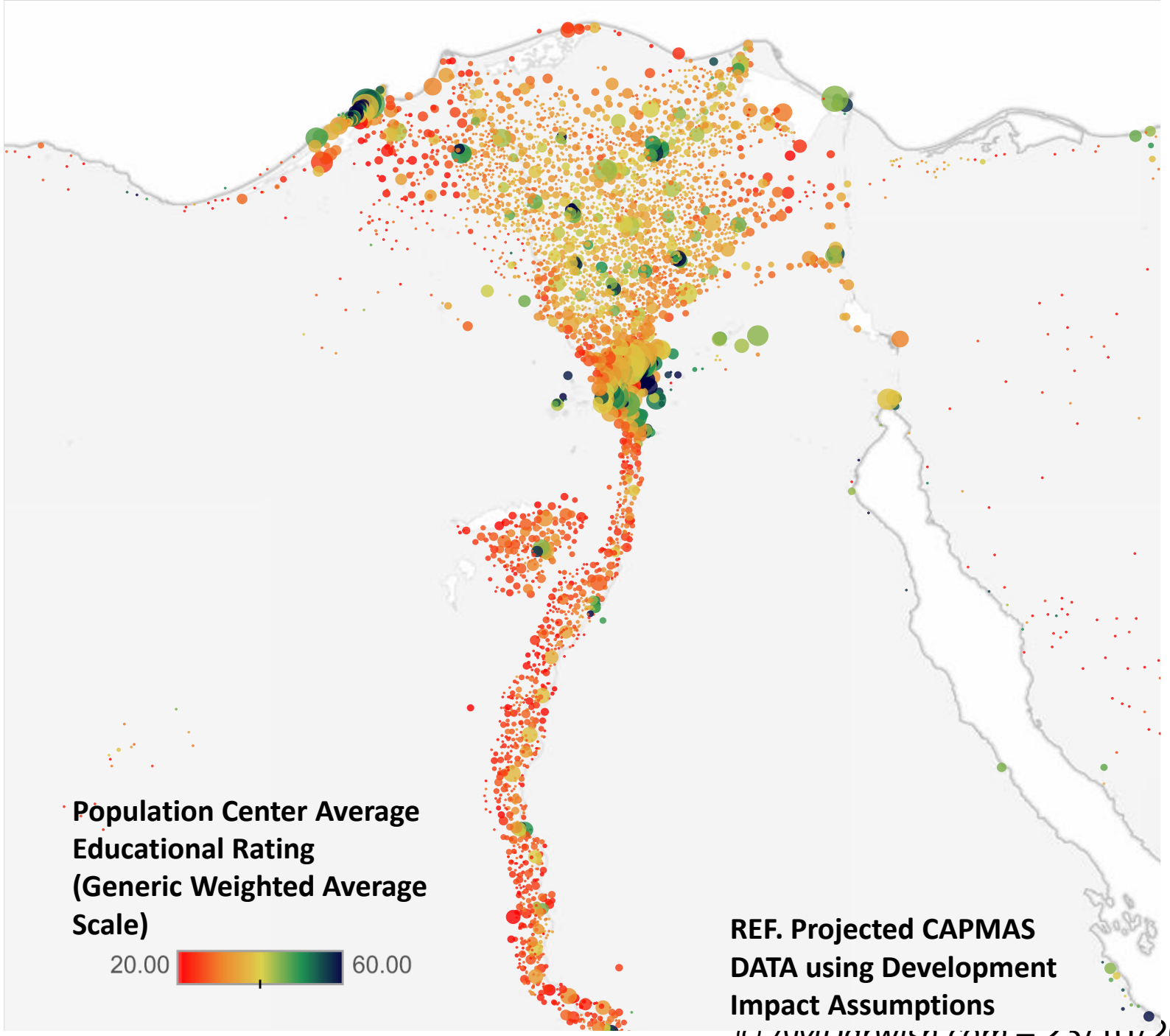
Stacked GIS layers over a satellite image of Egypt (Google Earth)

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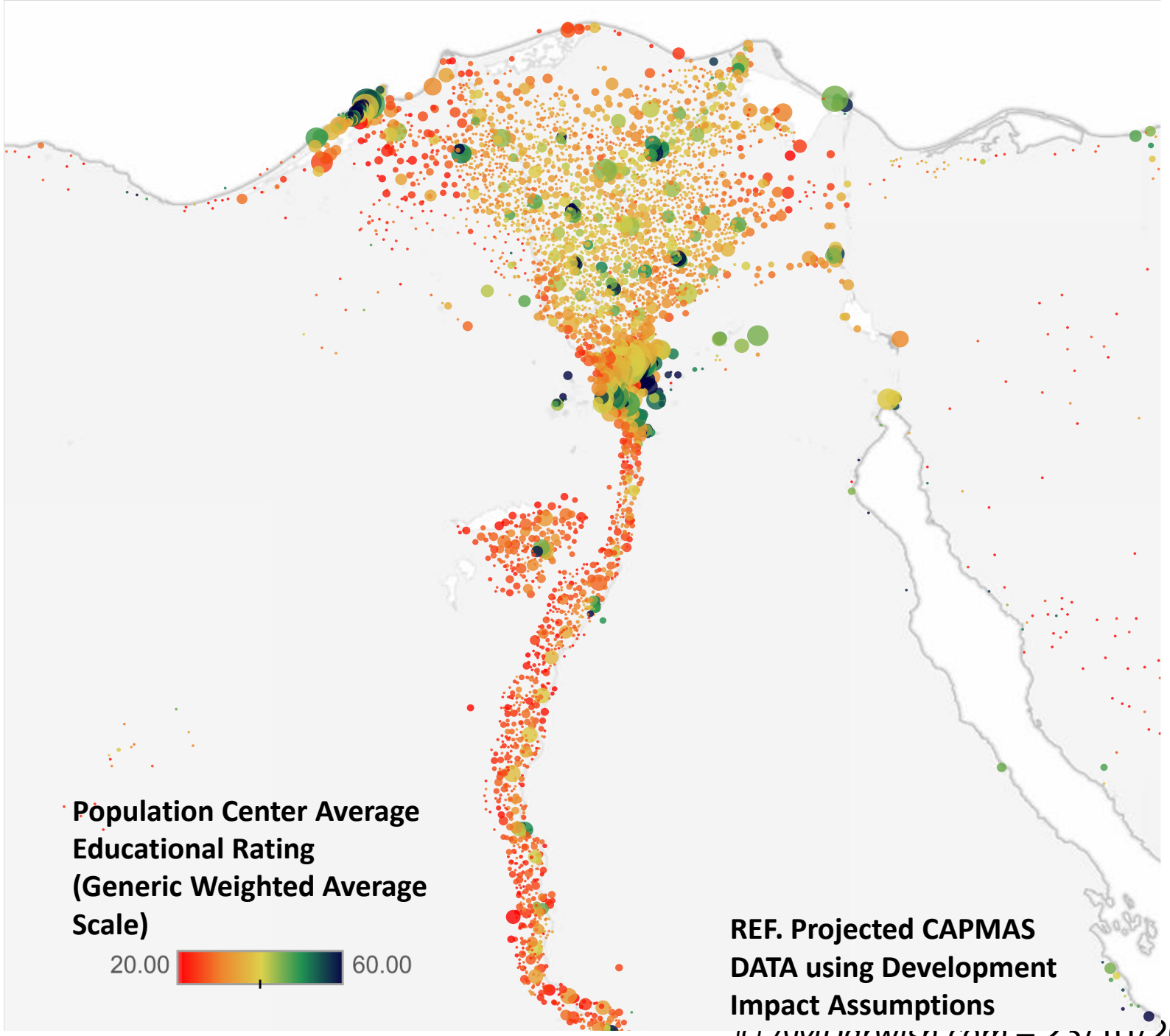
2013


Population Center Average Educational Rating (Generic Weighted Average Scale)
20.00
60.00
REF. Projected CAPMAS DATA using Development Impact Assumptions

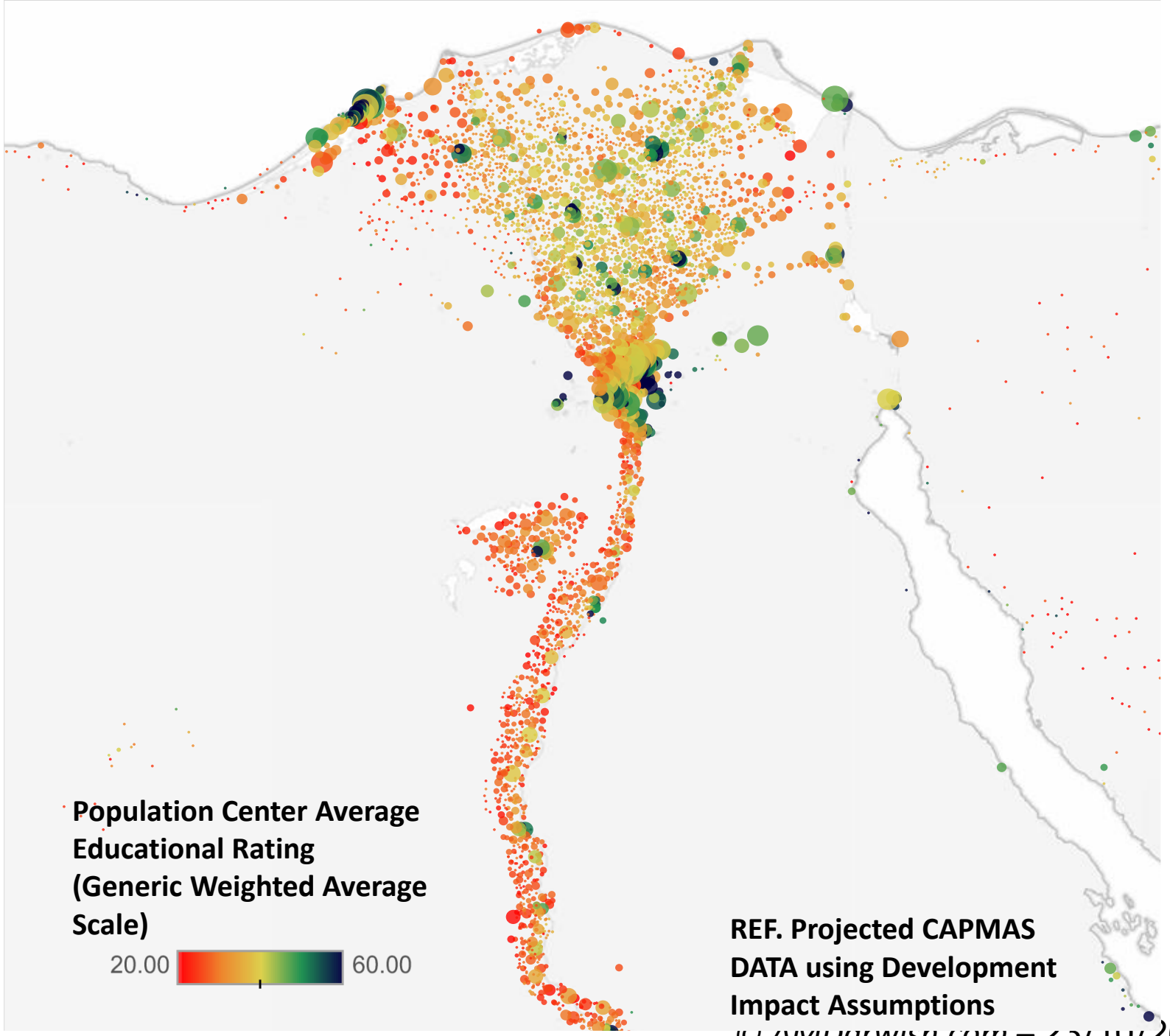
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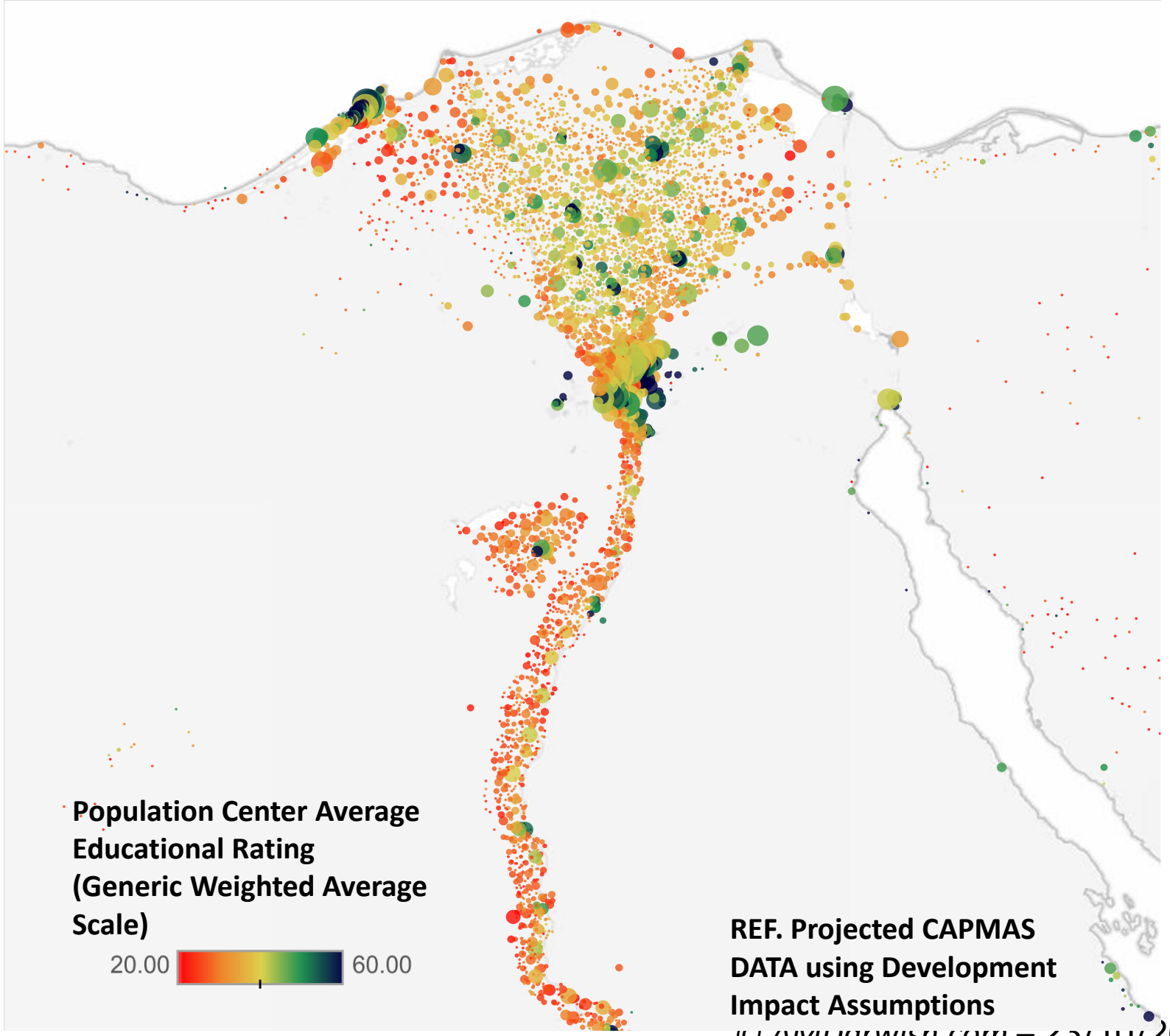
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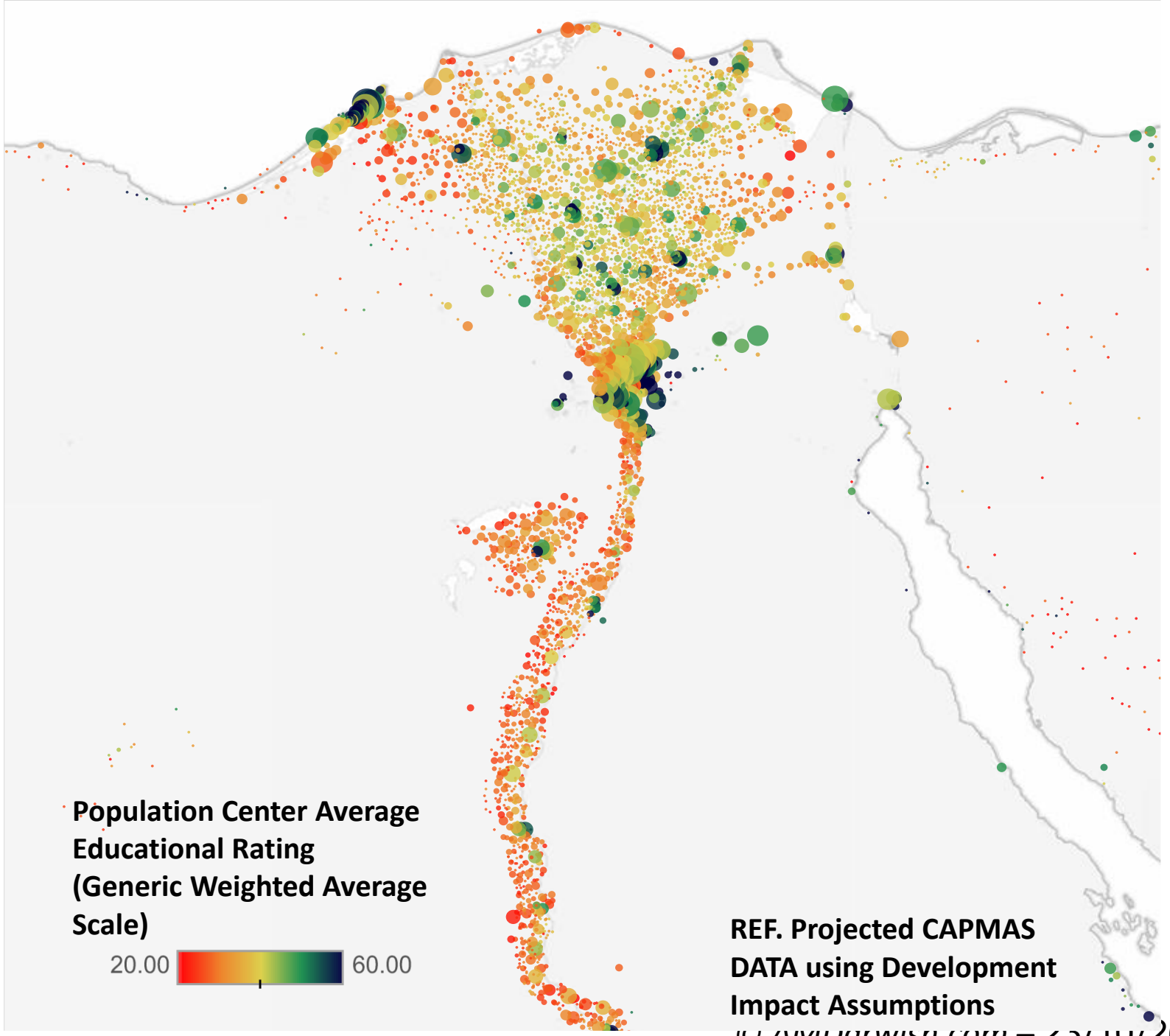
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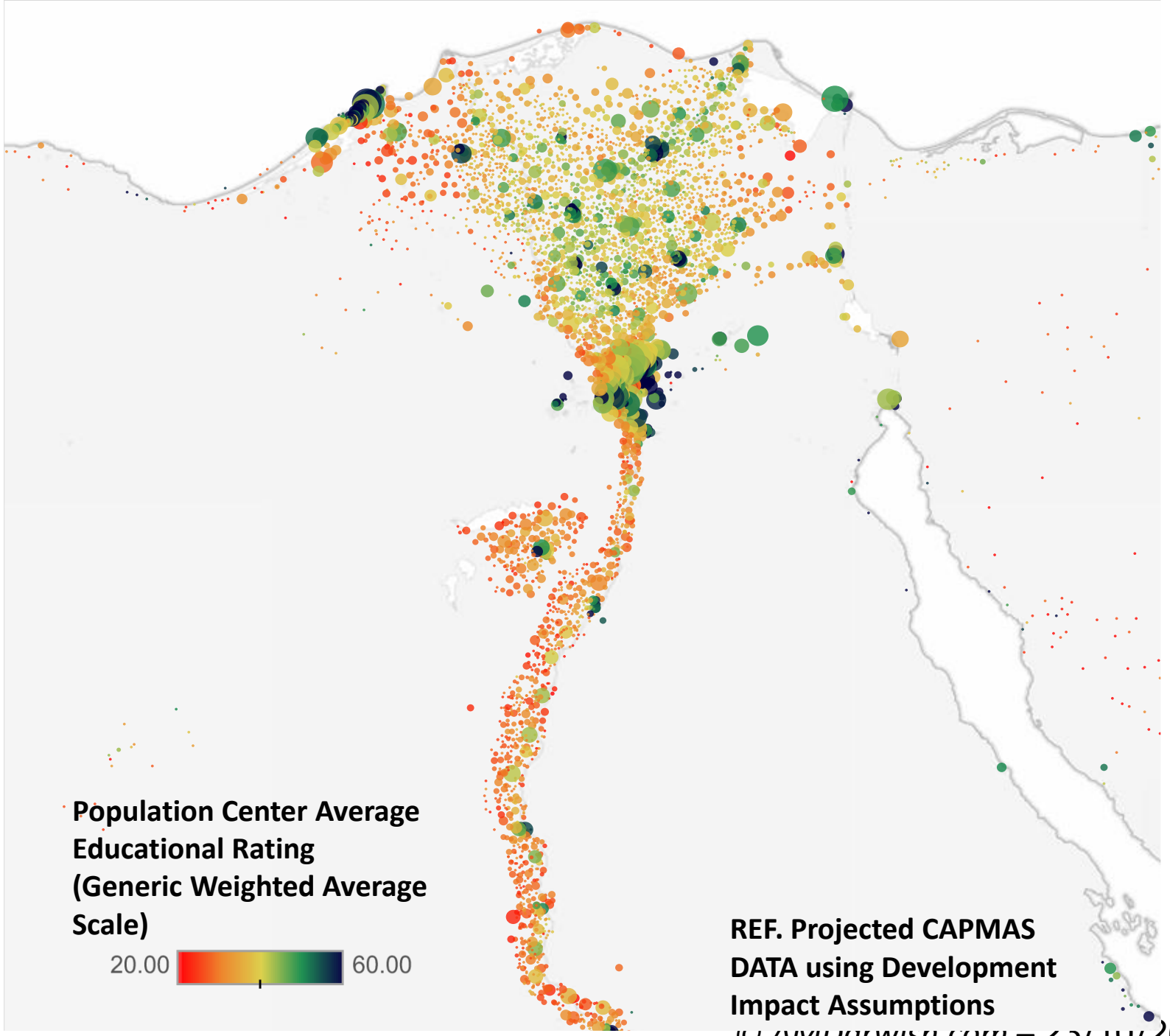
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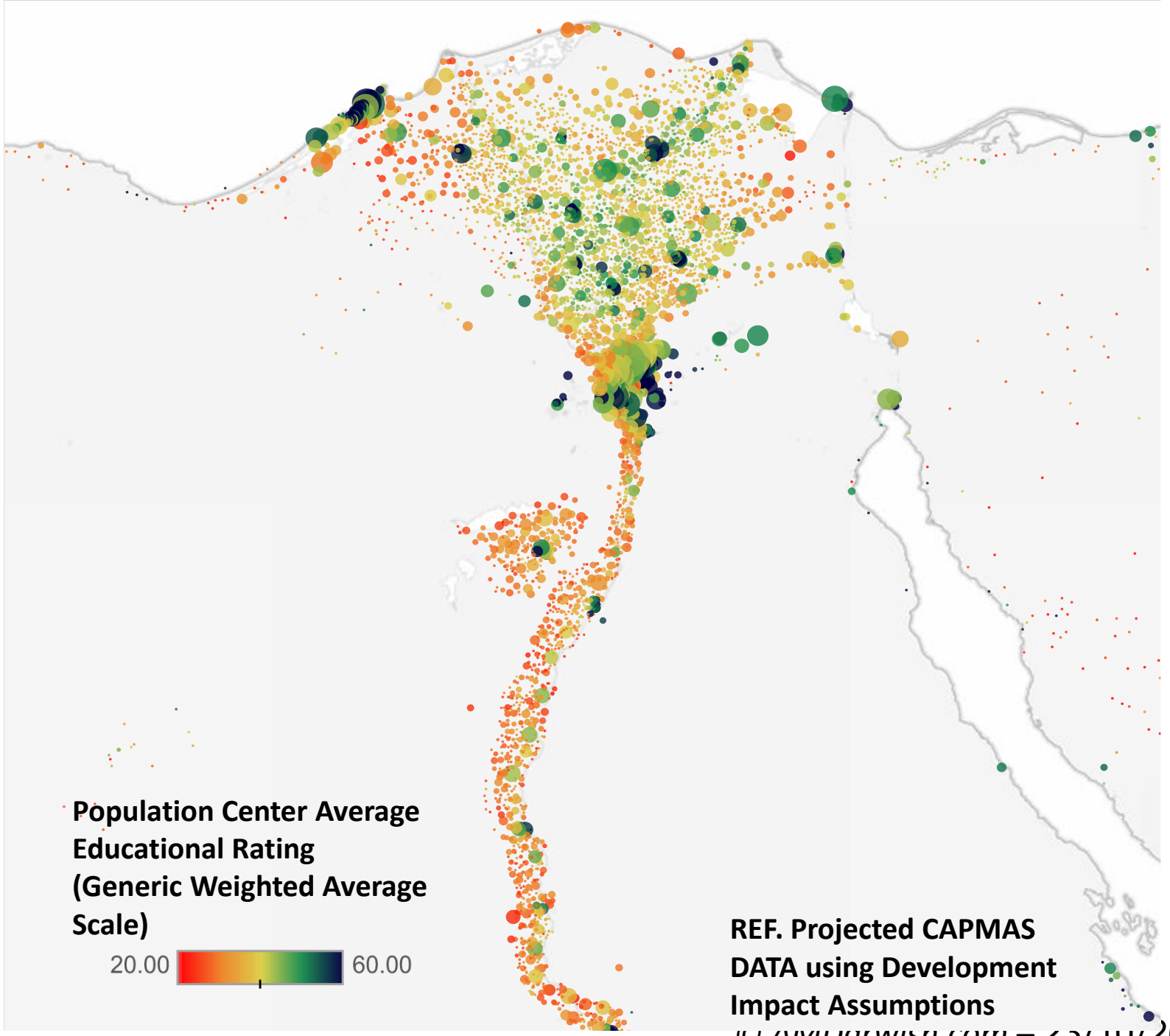
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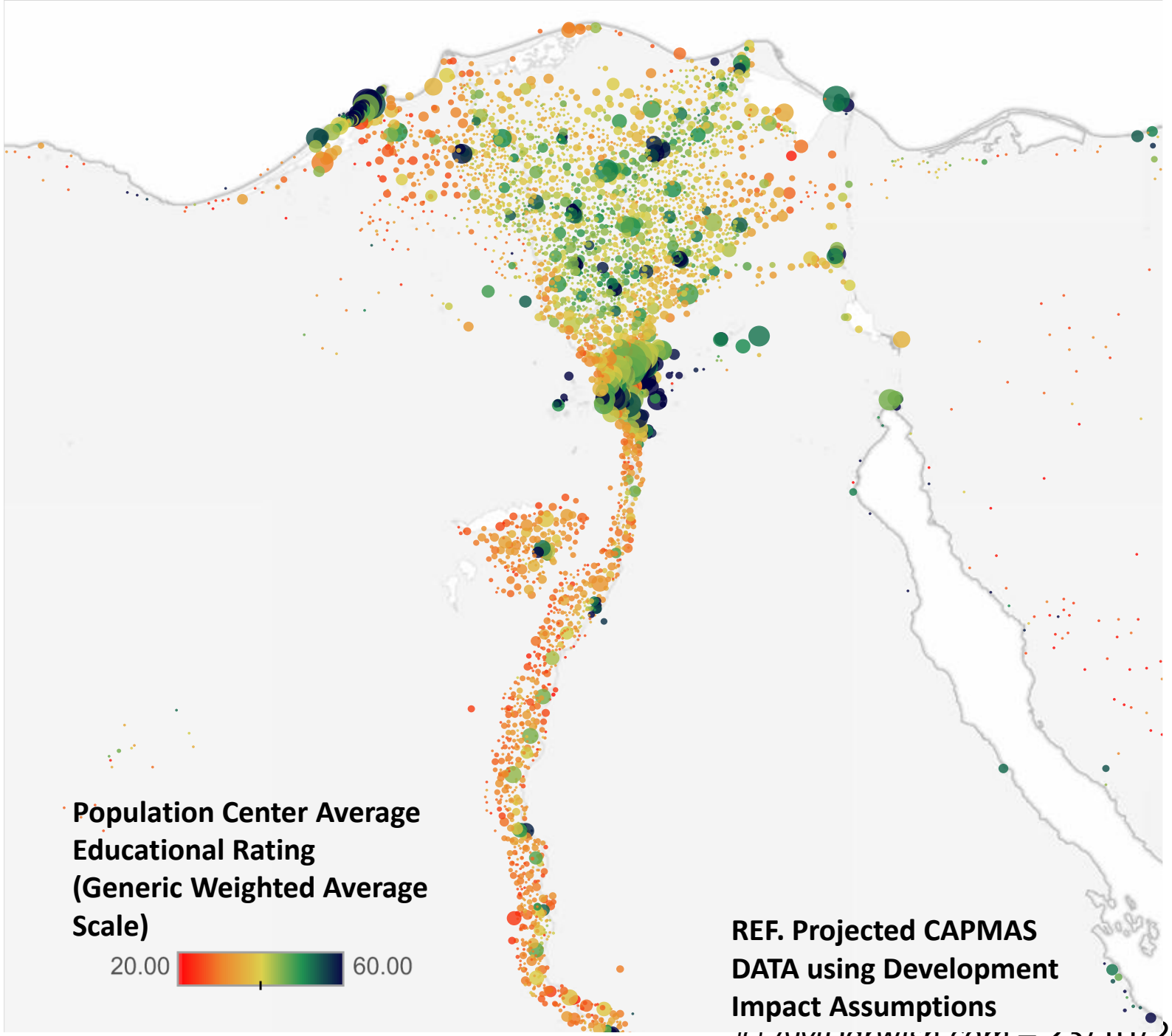
2019


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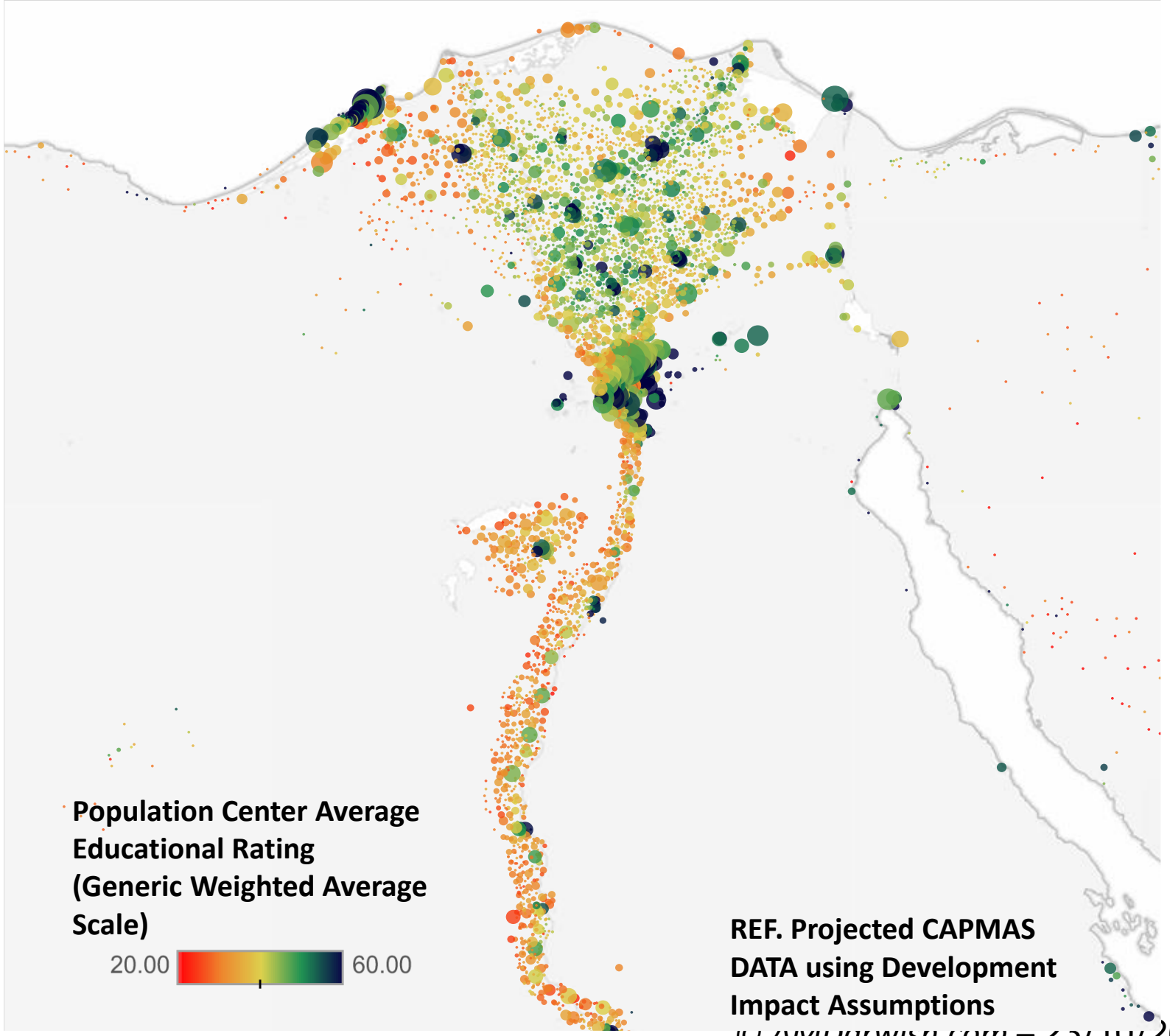
2020


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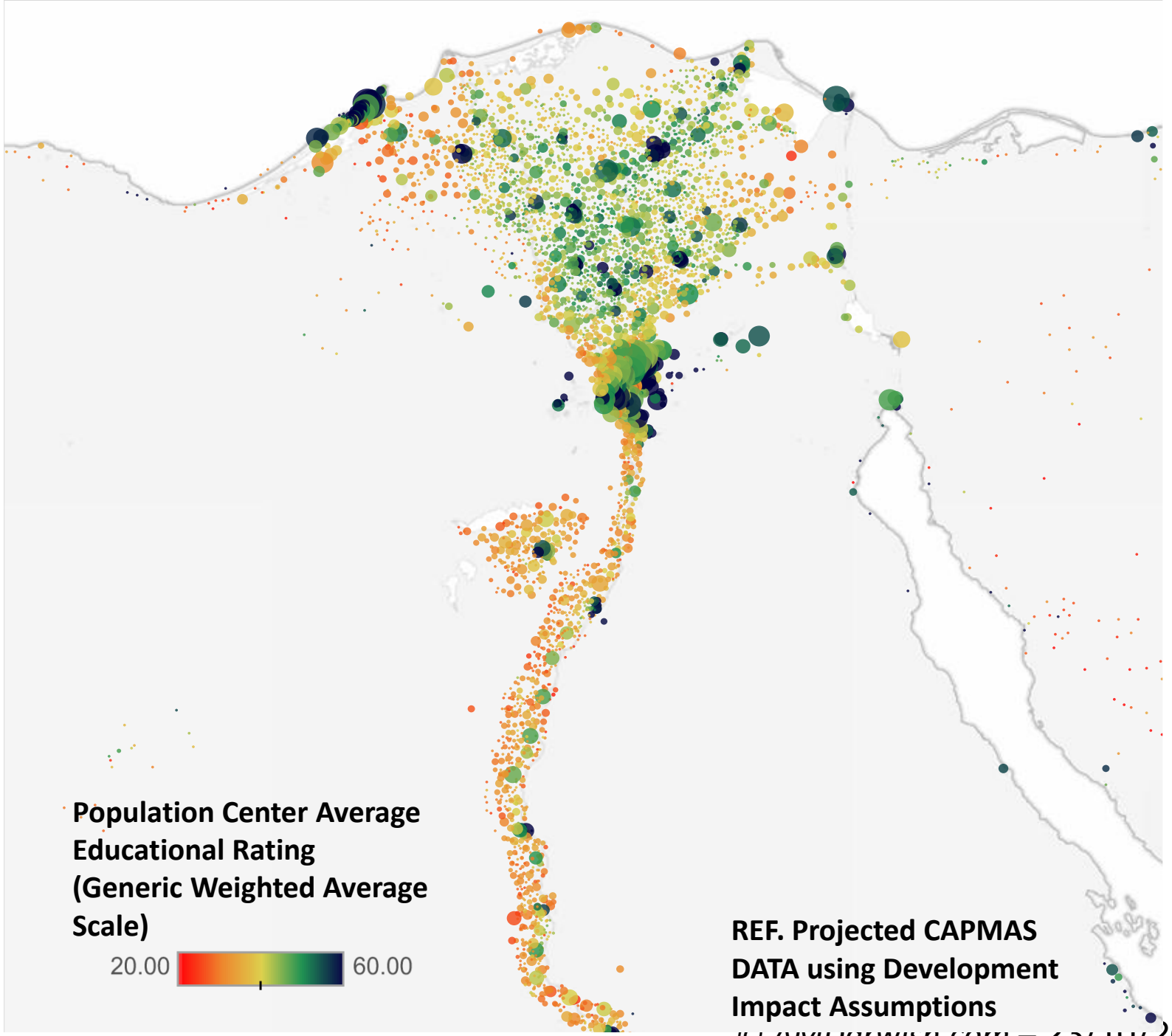
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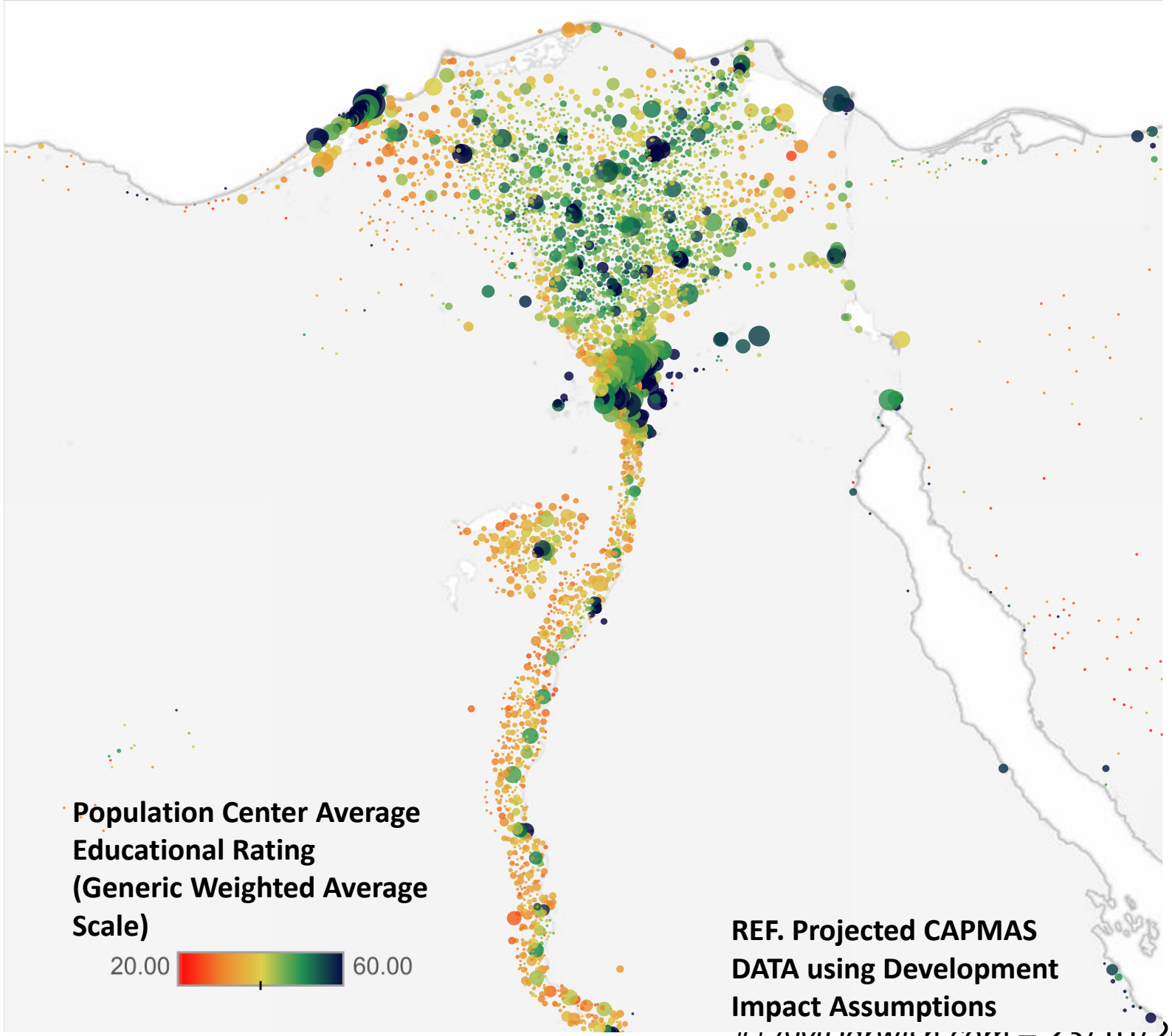
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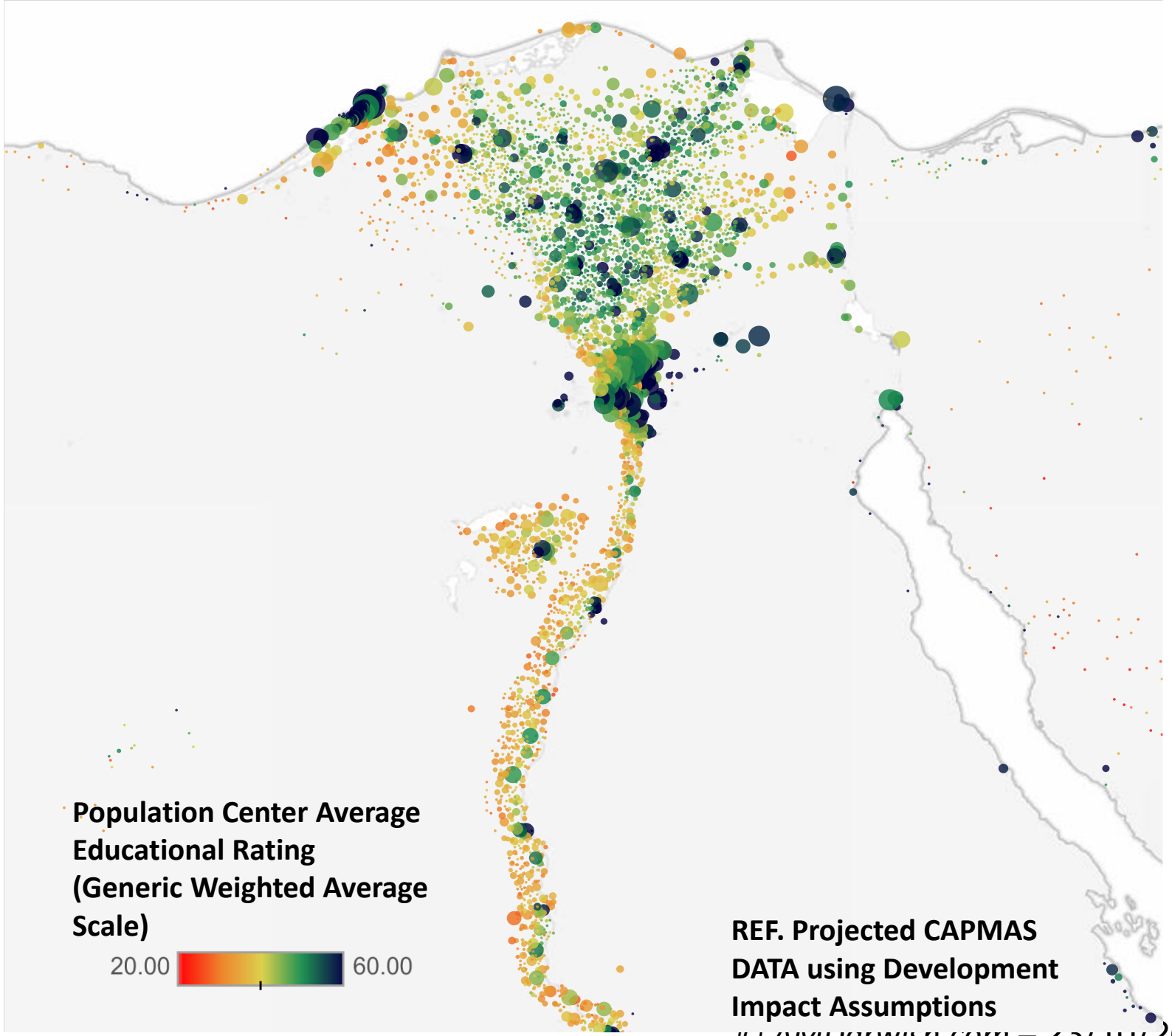
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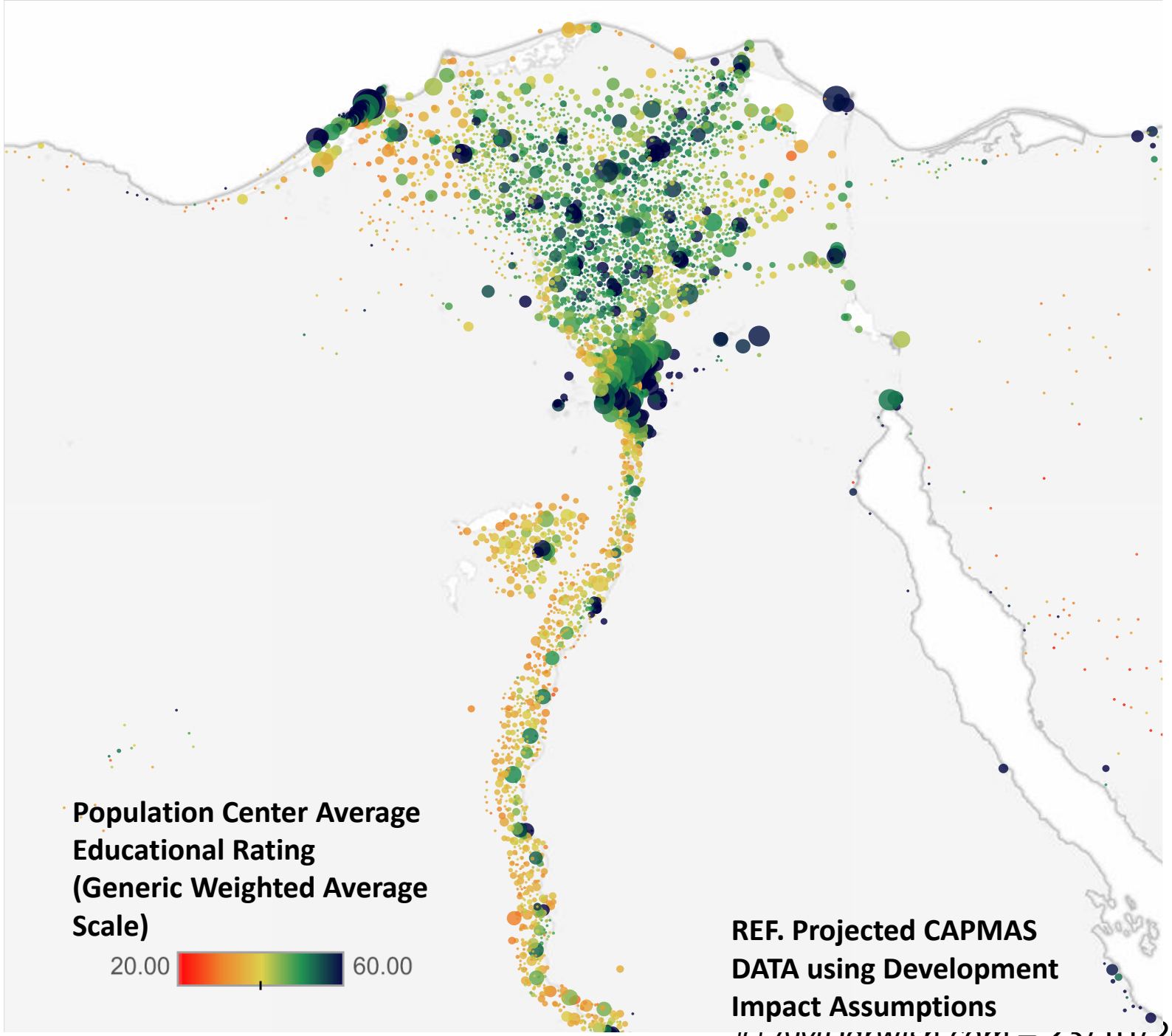
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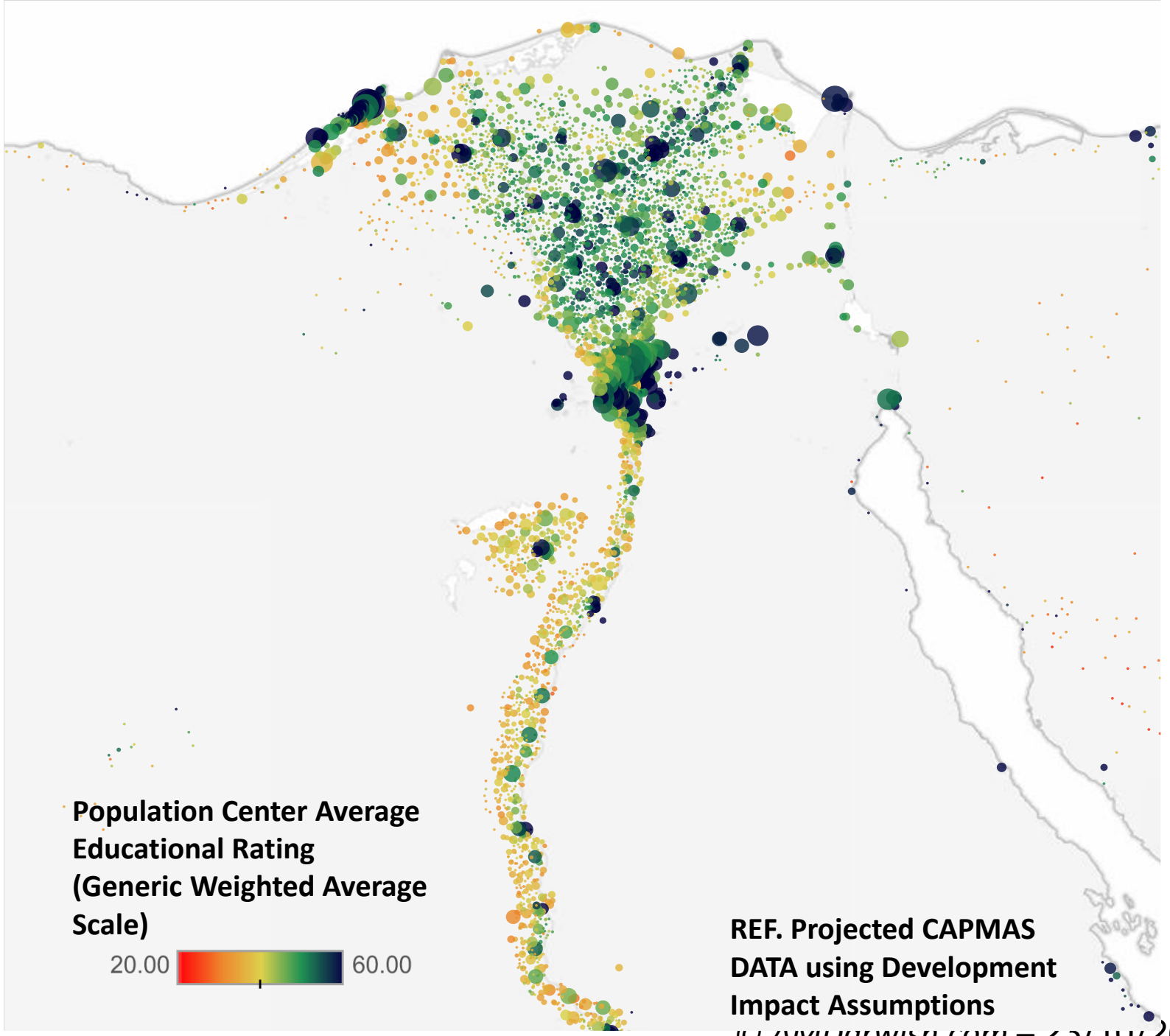
2025


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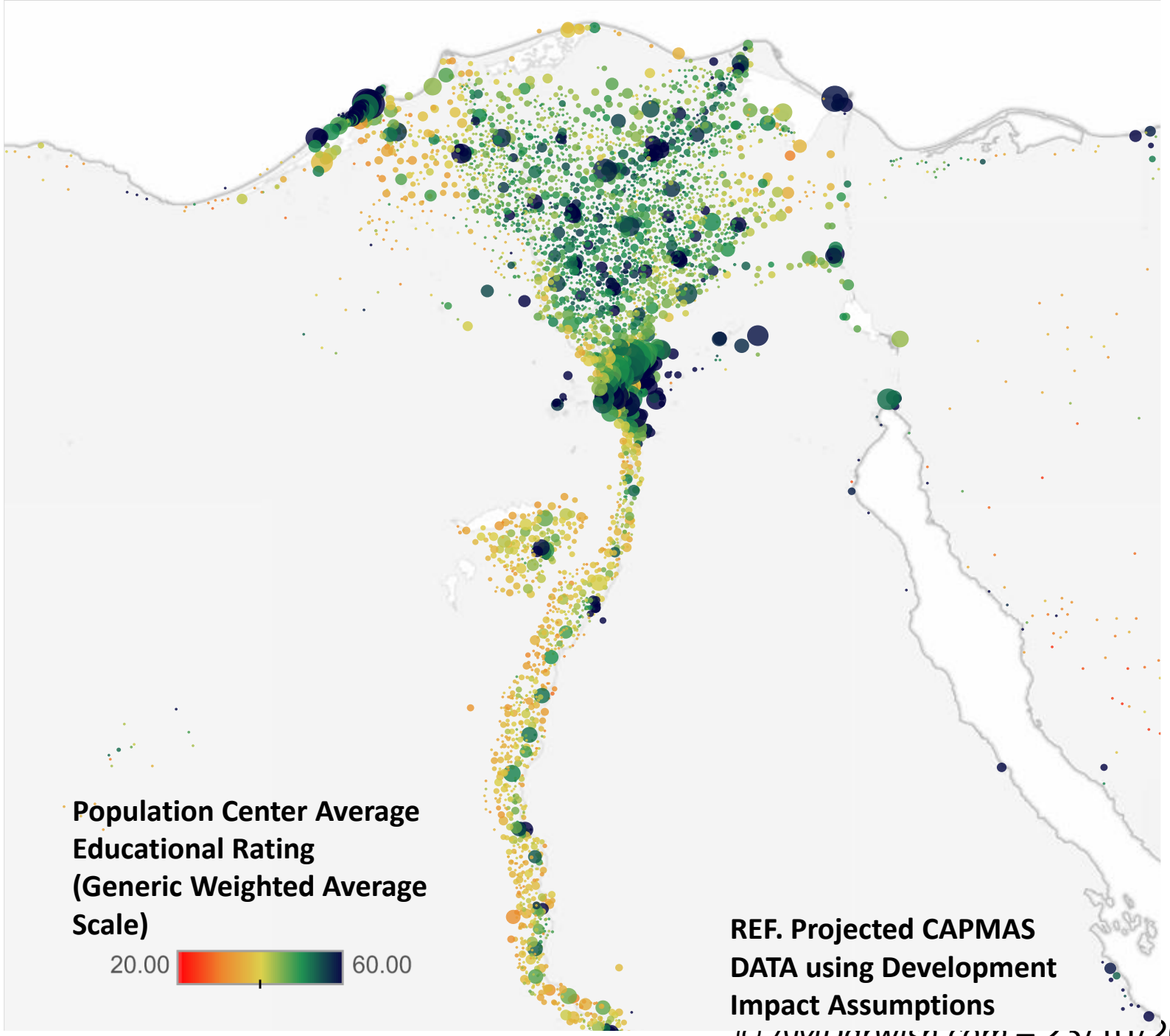
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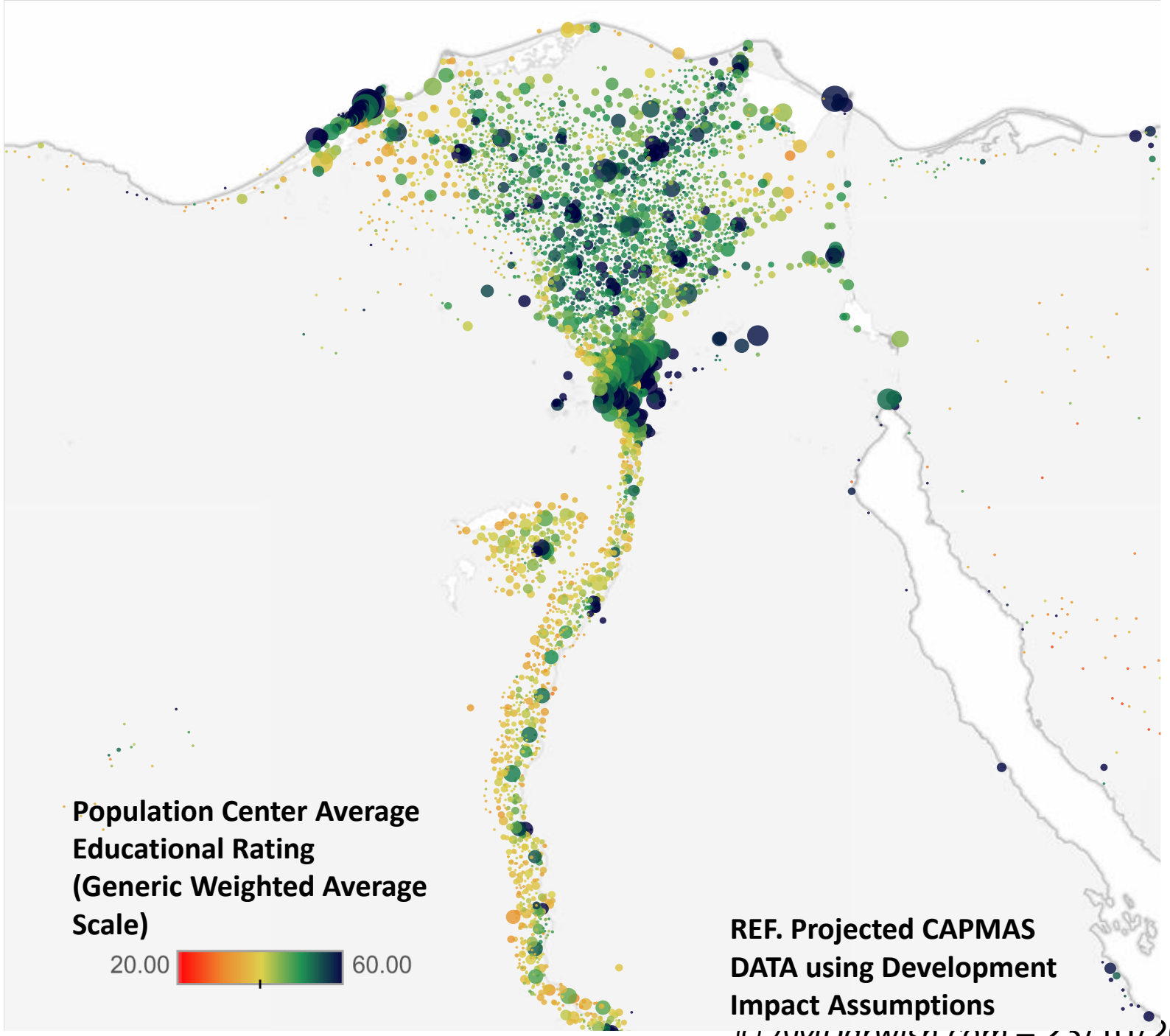
2027


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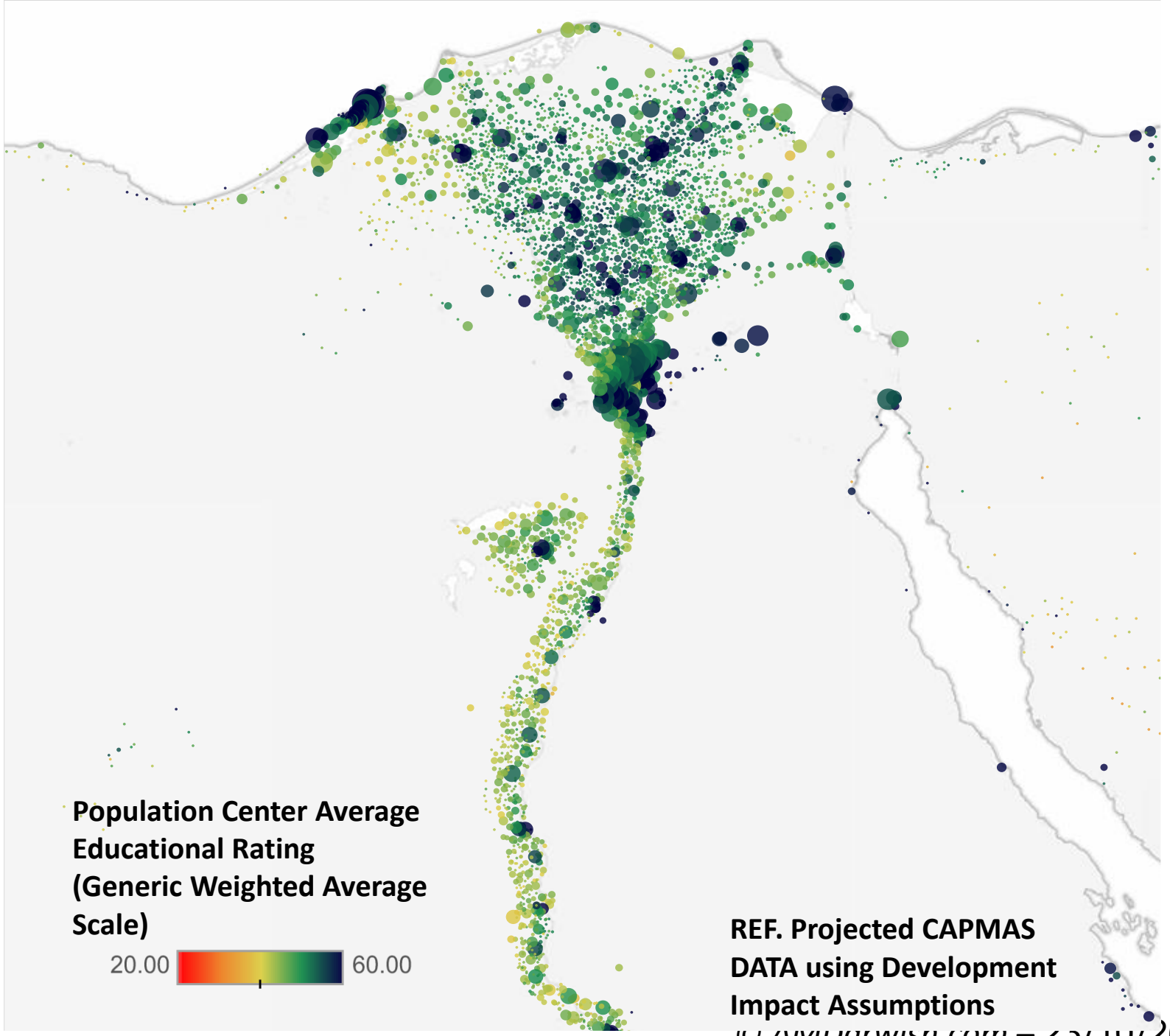
2028


Population Center Average Educational Rating (Generic Weighted Average Scale)
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60.00
REF. Projected CAPMAS DATA using Development Impact Assumptions

2029


Population Center Average Educational Rating (Generic Weighted Average Scale)
20.00
60.00
REF. Projected CAPMAS DATA using Development Impact Assumptions

2030


Population Center Average Educational Rating (Generic Weighted Average Scale)
20.00
60.00
REF. Projected CAPMAS DATA using Development Impact Assumptions

Data Protection

حماية وتأمين البيانات





Cyber Security for Institutes

Introduction

An investment in knowledge pays the best interest.
Benjamin Franklin

Motivation

- Everyone seems to be going cashless
  You cannot afford not to go digital and be left behind

On the other hand

- Possession of a huge amount of customer data and valuable assets have made banks the top target of hackers and the threat of financial losses.

➢ **Many cases of cybercrimes are bank frauds'**
(Revealing ATM passwords, OTPs and details of bank /credit card account),

Reputation is your capital

Banks and Financial Institutions must safeguard customer assets and their transactions need to be on their guard ***more*** than most businesses.

Damages

- Breaches damage banks' standing in the financial market

Difficult to keep your level of trust

- You can fall hostage for ransom
- You may expose critical information about pending merger and acquisitions
- Banks can face consequences and penalties for “Regulator” non-compliance
- Consumers can lose money and time in case of data breaches
- Consumer data is perceptive (sensitive)
- Consumers private data in the wrong hands can do great harm.

My Computers and Servers are Safe

Think again 

How about sensitive data on laptops, tablets and mobiles of top executives

Human are hooked to their mobiles
while machines are learning 😊

So, you program the machine to keep trying
and it will .. Eventually ..
break in

Sample cases

EARLY years 1994

A young computer programmer in St. Petersburg, Russia hacked into the electronic cash management system of a major U.S. bank and secretly transferred sums of money totally over 400K US$.

Pune Citibank MphasiS Call Center Fraud 2005

Some ex-employees of BPO arm of MPhasiS Ltd MsourcE gained confidence and defrauded US Customers of Citibank 3.5M US$

Database Leaks 2013-2015

Data of clients (names, addresses, phone numbers, credit limits, …) made public
OTO Bank 800K Clients
HCF Bank 24K Clients
Alfa Bank 55K Clients
Massive IT employees laid off

The Bank NSP Case

Fiancé who broke with a bank trainee created fraudulent email ids … bank was taken to court and was liable.

True Scenarios

(Repeated at different banks with different amounts)

Scenario 1

Screen is actually a layover (fake) screen and as such the banking details typed in will never hit the internet banking site
The hacker will enter different bank details

- **The bank is usually found liable and must refund the money**

Scenario 2

Overseas client transferring funds 1.5M Pounds
Client email was hacked
Changed banking instructions
Bank did not confirm details verbally
Transfer was made

- **Bank was found responsible**

Recent Vulnerabilities
Enable contactless limit bypass for Visa Cards

Cybersecurity risks and challenges in fintech (1)

Identity theft

- Criminals use stolen or compromised login credentials to impersonate users and get into fintech accounts
- They then steal money and sensitive personal information
- A 2021 global survey of financial institutions found account takeover a preferred attack: attempts rose 282% between 2019 and 2022
- A common method is API attacks that compromise authentication tokens and other verification methods meant to keep accounts safe

Data breaches

- Fintech apps hold huge amounts of personal and financial data
- Card numbers, bank accounts, addresses, answers to security questions
- Attackers want this data to commit financial fraud themselves
- Or to profit by selling it to others

Source: Cybersecurity in Fintech: Top FinTech Cybersecurity Risks and Challenges | APIsec

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Examples of attacks on fintech systems

DDoS - distributed denial of service

Attackers flood an app with traffic to crash it; many fintech APIs lack rate limits or resources to resist.

Integration loopholes

Linking modern apps to banks' legacy systems needs many custom APIs; without thorough testing each is a potential gap.

Phishing attacks

Hackers pose as banks, agencies or executives to trick users into resetting passwords or sharing financial details.

Insider threats

Risks from a company's own employees are reported as the main cause of 60% of security breaches.

Source: Cybersecurity in Fintech: Top FinTech Cybersecurity Risks and Challenges | APIsec

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Three categories of cyber attack

Cyber crimes are divided into three kinds, by who attacks and why.

Cybercrime

An attack by an individual or group that aims to destroy or alter digital or financial data.

Cyber-attack (extortion)

Politically motivated, with a direct destructive purpose against any kind of data, software or hardware.

Cyber-terrorism

The most dangerous: carried out collectively and intensively, with great power to destroy data and systems.

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Elements of successful cybersecurity (1)

Data security

Control access so unauthorised people cannot reach data, and protect it from theft and tampering.

Application security

Secure software from the design stage through to installation on servers, so risks are found early.

Mobile security

Mobile apps need special care because device types, platforms and connection methods all differ.

Network security

Starts with managing and monitoring networks for threats; includes IDS, IPS and firewalls.

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Elements of successful cybersecurity (2)

Endpoint security

User devices are the most exposed to viruses and malware; the first line of defence is user awareness.

Cloud security

Apps and data in the cloud must be secured for every user level; reckless cloud account usage is a risk.

Database and infrastructure security

Securing databases and the hardware they run on is one of the most important steps for a safe environment.

Disaster recovery (DR) sites and security

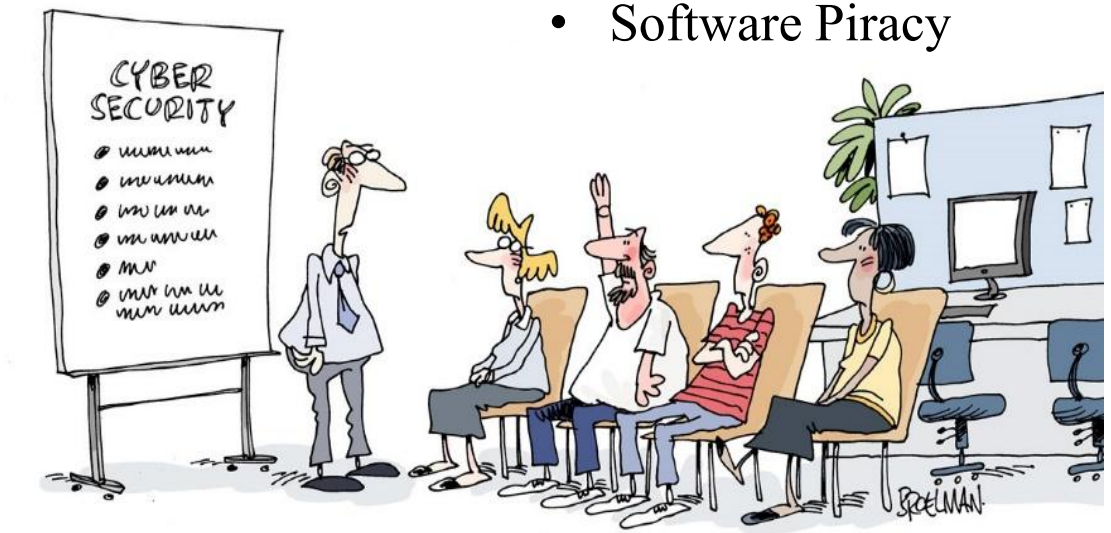
Ready, secured and tested backup sites are essential to keep operations running.

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Sources of Risk

- Forgery
- Malicious Code
- Malware on users' devices
  (Man-in-the-Browser – trojan horses)
- Phishing
- Spam
- Spoofing
- Defamation
- Manipulating Data
- Social Engineering

- Unencrypted Data
- Hacking
- Denial of Service Attacks
- Identity theft
  (example sms/sim swap)
- Virus Dissemination
- Computer Vandalism
- Cyber Terrorism
- Online Fraud
  (Man-in-the-Middle)
- Third Party Connection
- Software Piracy



And no, you don't self-isolate for two weeks if you're infected.

Defense

- Having Security Audits
- Enabling Firewalls
- Multi-layered email strategy
- Maintain up-to-date virus security software
- Fraud protection software (Ex Bank of America)
- Multi-factor Authentication (MFA)
- Biometrics
- Social log in
- Content Based Identification
- Digital Certificates
- Use of Anti-malware Applications
- Automatic Logout
- Network Traffic Monitoring and analysis
- Awareness and Education
- Ethical hacking .. Going Underground to anticipate
- Forensics
- Cyber Insurance

Role of the Regulator

Example

Data Centers Specifications
(cages .. where .. cloud)



The Egyptian Case

- Mature Regulator
- Very Strong Anti-Money Laundering Unit
- Most Banks have Internet Banking
- Variety of Electronic Payments Tools
- Variety of Micro-Fianance and Consumer Finance Products
- Many Tier 3 Data Centers (even Tier 4)
- …

Data Governance

حوكمة البيانات

✓ حوكمة البيانات

- ❑ حوكمة البيانات تتضمن إتاحة البيانات وجودتها وتأمينها على النحو الأمثل من خلال مجموعة من السياسات والمعايير.
- ❑ من خلال حوكمة البيانات يتم إثبات ملكية البيانات وتأمين البيانات واستخدامها في تحليل البيانات.

Effective data governance programs seek to improve data quality, reduce data silos, ensure compliance and security, and distribute data access appropriately.



Data governance versus data management

Data management

- The broader concept of the two
- The process of understanding, processing, storing and securing data until it is used in business applications
- The data management team makes sure the required data is available at the right time
- Works to an agreed data model

Data governance

- Also concerned with how data is used - processed, stored, secured
- But focused on creating data templates (standards) and regulating who may access data
- The governance team writes the policies for using the different data sources
- So the two teams must work in close integration

Typical data governance structure: executive sponsor and DG council (strategic), steering committee (tactical), working groups, data stewards and data owners (operational), data users

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Benefits of data governance

Applying data governance raises the value of data inside the organisation and improves the following.

- **Drive scale and data literacy** More people can find, understand and use data confidently.
- **Ensure security, data privacy and compliance** Clear rules on who may access what, and proof for regulators.
- **High-quality data** Consistent definitions and ownership mean fewer errors and duplicates.
- **Promote data analytics** Trusted, well-described data is the foundation for analysis and AI.



Data intelligence wheel: data catalog and data literacy at the centre, surrounded by enterprise architecture, data modeling, data mapping and business process

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Challenges of data governance

Applying data governance meets a set of obstacles that must be overcome to succeed.

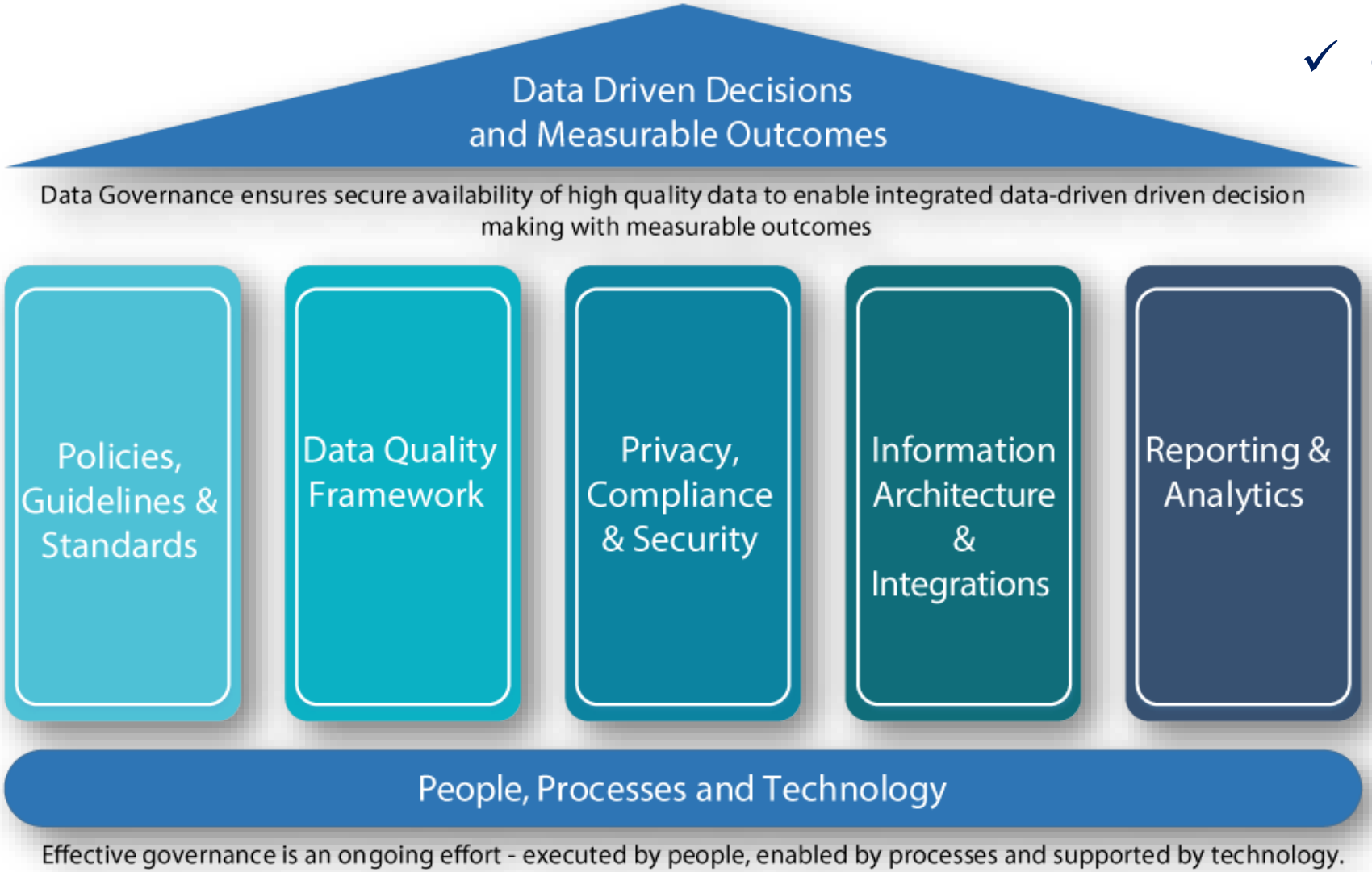
- **Organizational alignment** Departments must agree on definitions, ownership and priorities for shared data.
- **Lack of appropriate sponsorship** Without a senior sponsor, governance has no authority and no budget.
- **Relevant data architecture and processes** Governance needs a fitting data architecture and working processes to operate through.



Data governance disciplines: data architecture, data development, data operations, data security, reference and master data, warehousing and BI, documents and content, metadata, data quality

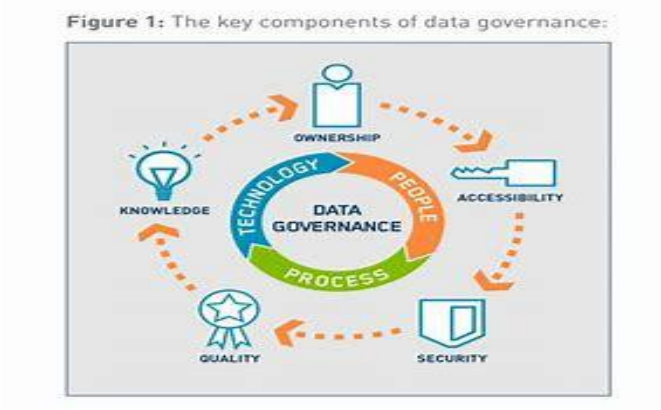
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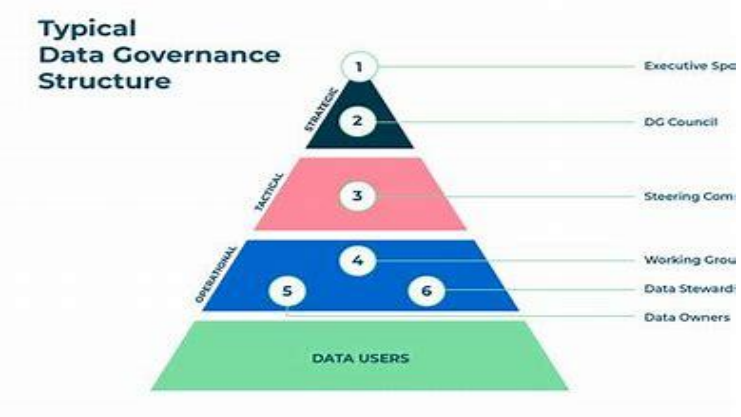
✓ حوكمة البيانات



✓الفرق بين حوكمة البيانات وإدارة البيانات

- إدارة البيانات مفهوم أعم من حوكمة البيانات حيث يمكن تعريفها على أنها عملية فهم ومعالجة وتخزين وتامين البيانات لحين استخدامها في البرامج والتطبيقات المختلفة التي تخدم أغراض الأعمال .
- حوكمة البيانات تعني باستخدام البيانات مثل معالجة وتخزين وتأمين البيانات غير أنها معنية بإنشاء قوالب البيانات وتنظيم الوصول اليها لذا لزم التكامل بين الفريقين.





- تنظيم استخدام وتأمين البيانات من خلال مصادر بيانات مختلفة يتطلب التعاون مع فريق عمل إدارة البيانات للعمل وفق data model محدد.
- يمكن لفريق عمل حوكمة البيانات عمل السياسيات لاستخدام مصادر البيانات المختلفة في حين فريق عمل إدارة البيانات يضمن الوصول البيانات المطلوبة في الوقت المناسب.

✓ تحديات حوكمة البيانات

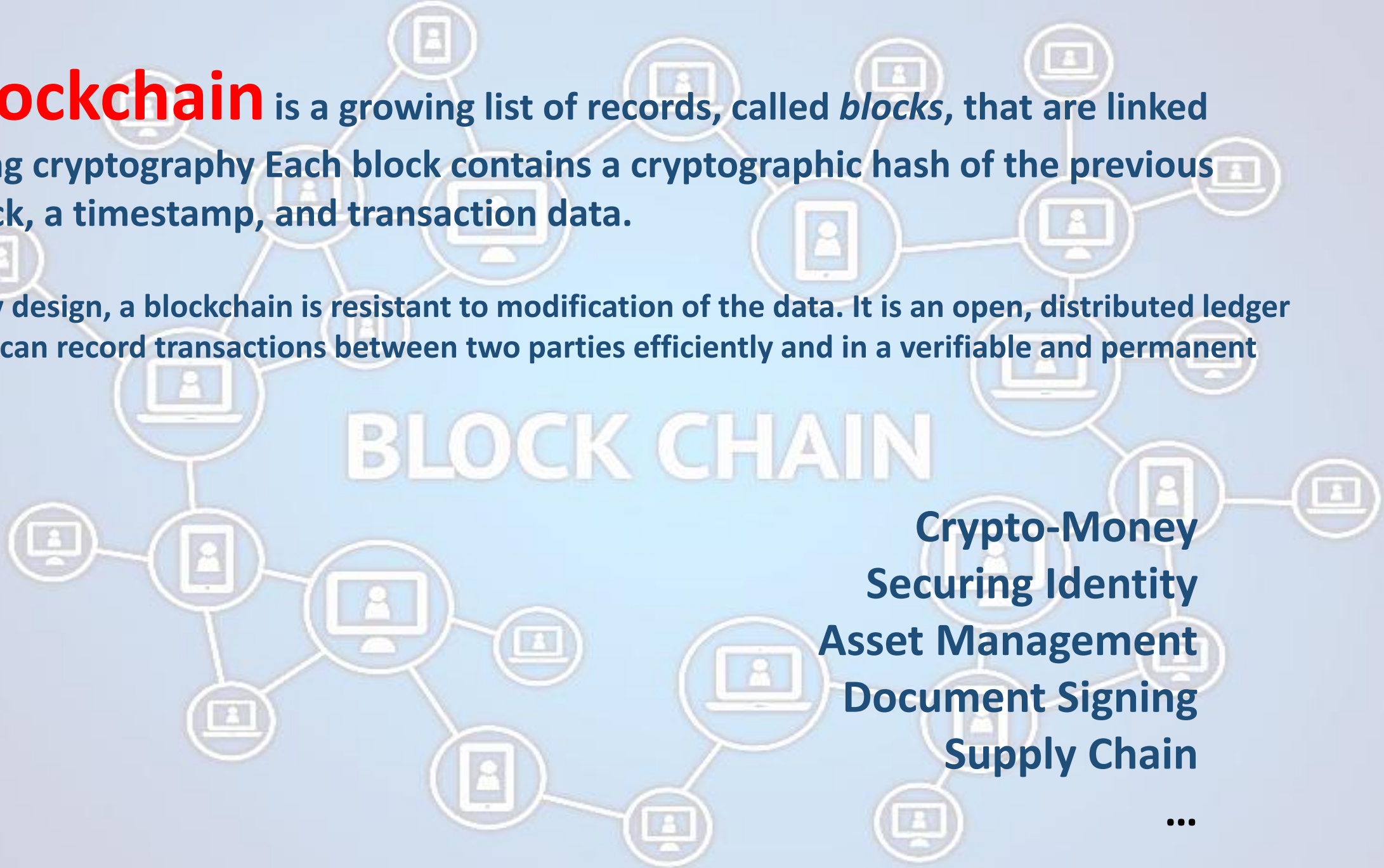
- إن تطبيق حوكمة البيانات يوجد به مجموعة من العقبات التي يجب التغلب عليها لتحقيق النجاح:-



- Organizational alignment
- Lack of appropriate sponsorship
- Relevant data architecture and processes

Blockchain is a growing list of records, called *blocks*, that are linked using cryptography Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data.

... By design, a blockchain is resistant to modification of the data. It is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way

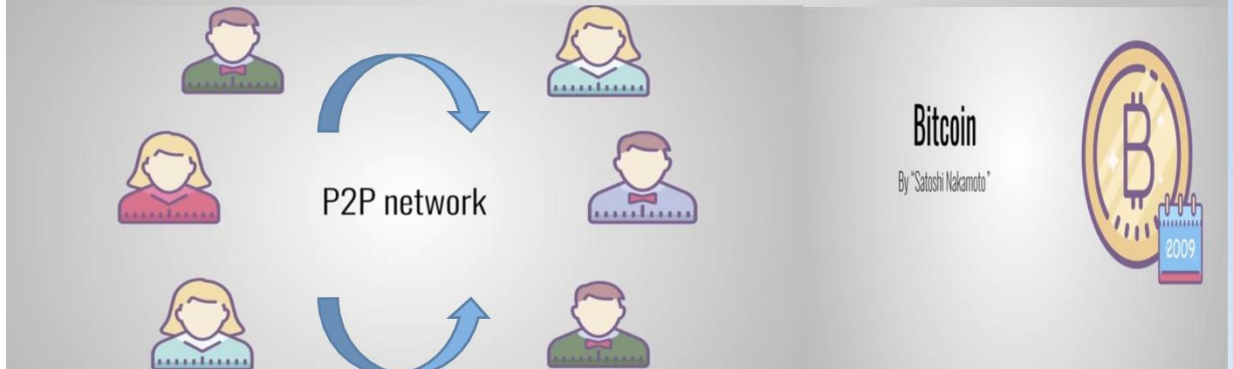


Crypto-Money
Securing Identity
Asset Management
Document Signing
Supply Chain
...

ما هي سلاسل الكتل "Blockchain":

- هي من سلسلة من السجلات أو الكتل الثابتة من البيانات المشتركة "distributed ledger"، ترتبط بعضها ببعض باستخدام مبادئ التشفير "encryption"، يتم إدارتها بطريقة لا مركزية "decentralized"، عن طريق مجموعة من الحواسيب "P2P networks".
- البيتكوين "Bitcoin".
- الواتساب.





What is blockchain?

Blockchain

A chain of fixed records, or blocks, of shared data - a 'distributed ledger' - linked to one another using encryption principles and managed in a decentralized way by a group of computers in a peer-to-peer (P2P) network.

- Distributed ledger: every participant holds the same copy of the records
- Encryption links each block to the one before it, so past records cannot be changed quietly
- Decentralized: no single authority controls the ledger
- Examples given: Bitcoin (created 2009 by 'Satoshi Nakamoto') and WhatsApp

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What is a blockchain?

Blockchain

A ledger distributed across a network of users, on which transactions are saved as a chain of linked blocks. The technology appeared in 2008, created by a person or group using the name "Satoshi Nakamoto".

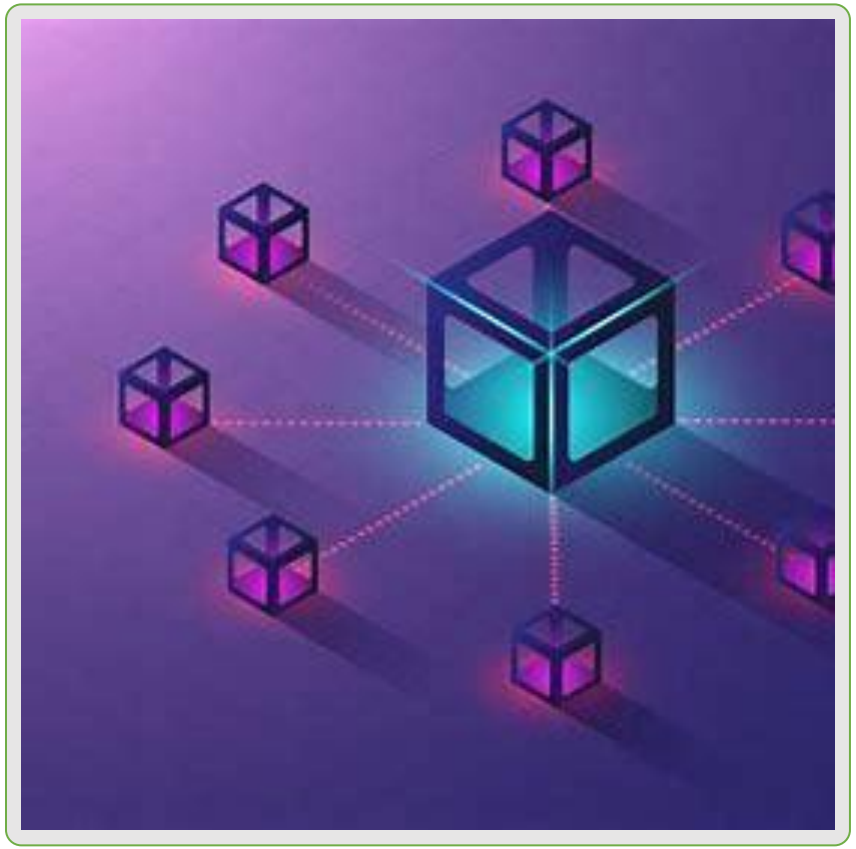
- Each new transaction is added to a block on the chain; the network is a chain of information blocks, each recording particular transactions
- A transaction is any change of ownership, or other change, to an asset on the network; the asset can be tangible, intangible or a virtual currency
- People can complete transactions or transfer money through a decentralised network of computers spread around the world
- In short: a blockchain is a public database that stores the digital record of exchanges

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Blockchain basics: definition

A blockchain is a distributed ledger: a network of linked records held in many separate places, built to record transactions and track assets across a business network.

- **Simple picture** a very complex technology, but think of it as a chain of connected blocks acting as ledgers that record every change or operation
- **Confirmation** when an operation is made in one block, the other blocks must confirm it is valid; otherwise it is rejected
- **Strong encryption** powerful cryptography makes the chain extremely secure
- **Immunity to tampering** to change anything you would have to hack every block in every chain, recorded on thousands of devices worldwide, which is practically impossible



Blockchain concept illustration

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The building blocks of a blockchain

Every block carries three things, and the hashes are what chain the blocks together.

Data

The content of the block. In Bitcoin: From, To and Amount of a payment.

Hash

A unique code computed from the block's content, like a fingerprint (e.g. e2c521bc53bb5db4fc0aa497...).

Hash of previous block

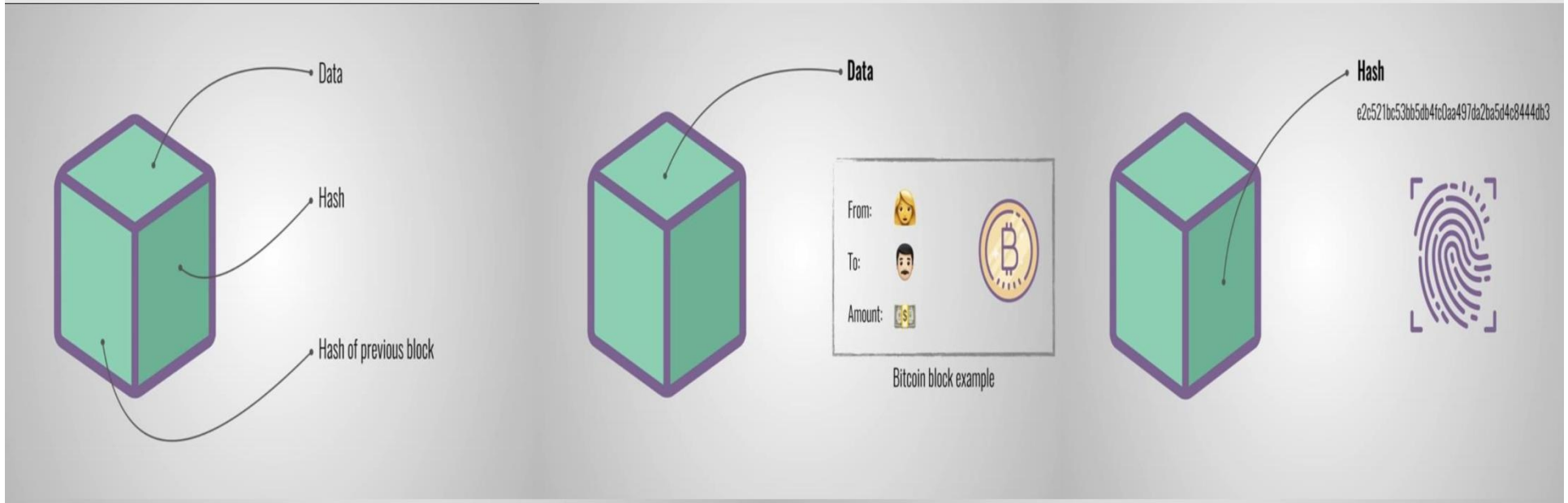
Each block stores the hash of the block before it, forming the chain back to the genesis block.

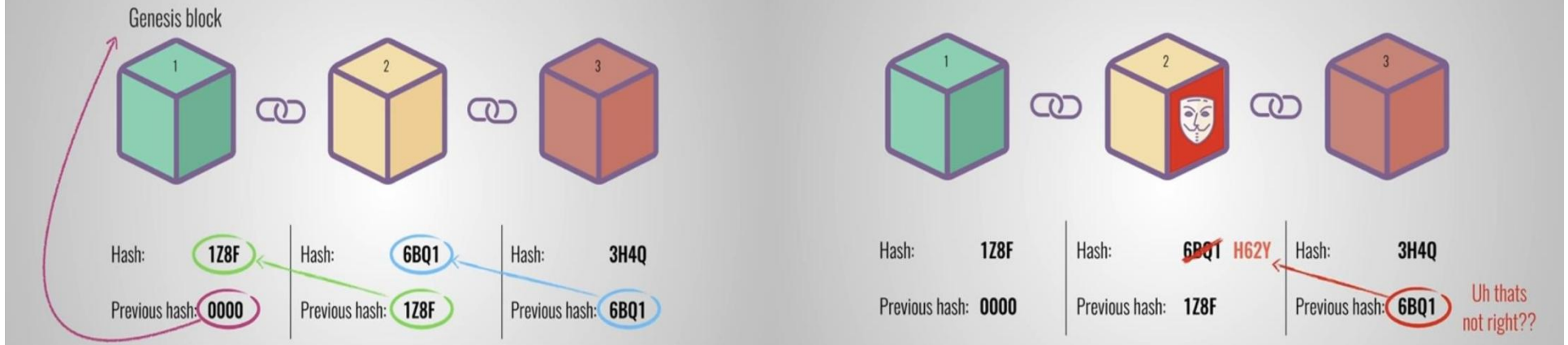
Tamper detection

Change block 2 and its hash changes (6BQ1 becomes H62Y); block 3 still points to 6BQ1, so the chain breaks.

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مكونات الـ "Blockchain" (The building blocks):





How a blockchain works: key terms

A few basic terms are needed to understand how the technology works.

Distributed ledger

The same system runs on many devices, so it keeps working even if some of them stop.

Hashing

A computer program that applies fixed mathematical functions to its input and produces an output called a hash code.

Permissions

The system's creator decides who may view shared data, who may add data, and how a new record is accepted or rejected.

Authentication

The creator also decides how each party is identified: full identity disclosed, or only a public key per user.

Distributed ledgers: nodes A-D each hold a copy of the ledger

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The purpose of blockchain technology

Decentralised storage

Data is stored across the network, not held by one central administrator.

Secure exchange

Anyone can look through the network and see which transactions did or did not happen, so tampering is hard.

No intermediary

Parties can exchange directly without a middleman to track the movement of the exchange.

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How a blockchain works: the process

1. **Transaction**
   Two parties agree to exchange value or data.
2. **Transaction broadcast to the network**
   The request is sent to all nodes.
3. **Nodes / peers validate the transaction**
   Participants check that it is genuine.
4. **Validated transaction added to a new block**
   Approved transactions are grouped together.
5. **New block added to the blockchain**
   The block is linked to the previous one.
6. **New block distributed to all nodes**
   Every copy of the ledger is updated.
7. **Transaction complete**
   The record is now permanent.

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Blockchain basics: why use it?

- Exchange information and assets accurately and easily
- Speed: exchanges happen at the same time for everyone, with high transparency
- Security: the best data-encryption methods, with access limited to authorised people only
- A blockchain network can track orders, payments, accounts, production and much more
- Because members share one network, every transaction detail is visible end to end, giving greater trust, efficiency and transparency, and opening new opportunities

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Benefits of blockchain

Complete trust

Full confidence in transferring and proving data; you receive accurate, timely information.

Confidentiality

Your confidential records are shared only with network members you have specifically granted access.

Highly secure

Built on the highest encryption and data-protection techniques.

Permanent records

Validated transactions are recorded permanently and cannot be changed; nobody, not even the system administrator, can delete one.

Wide use

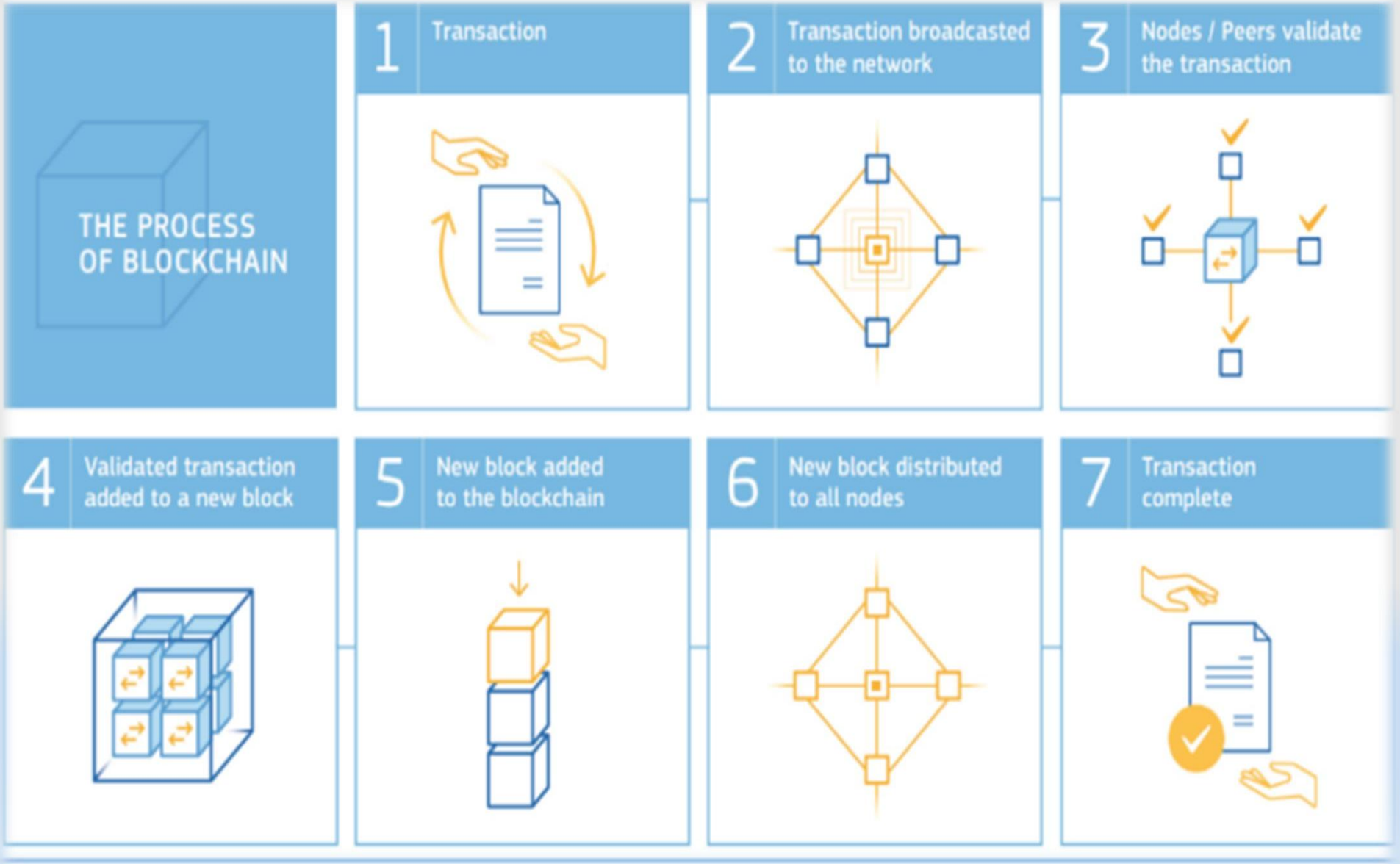
The technology is used in many fields.

No reconciliations

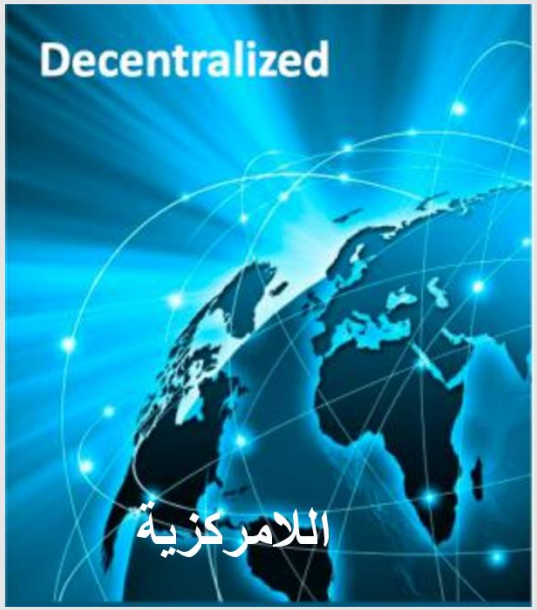
A shared DLT removes time-wasting record reconciliations; smart contracts (stored rules) execute automatically to speed up transactions.

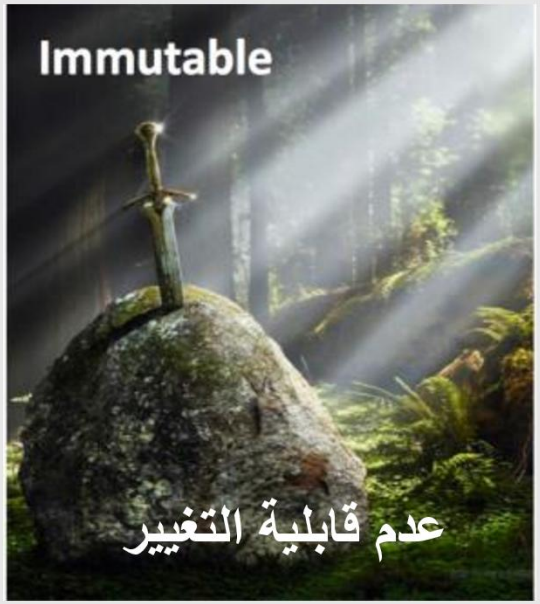
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كيف تعمل الـ "Blockchain":

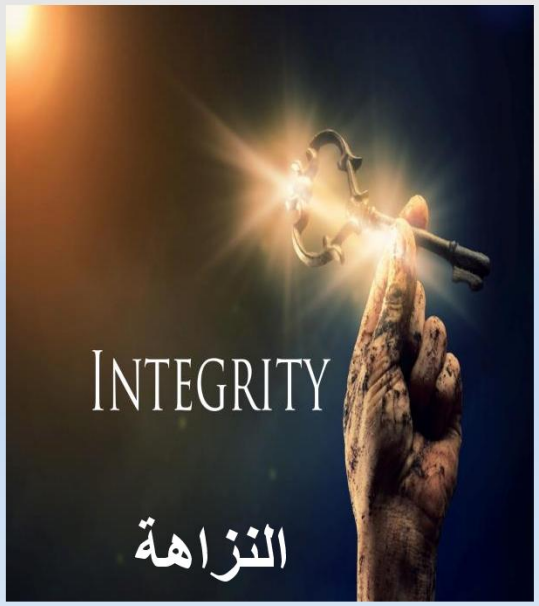


لماذا الـ "Blockchain"؟:

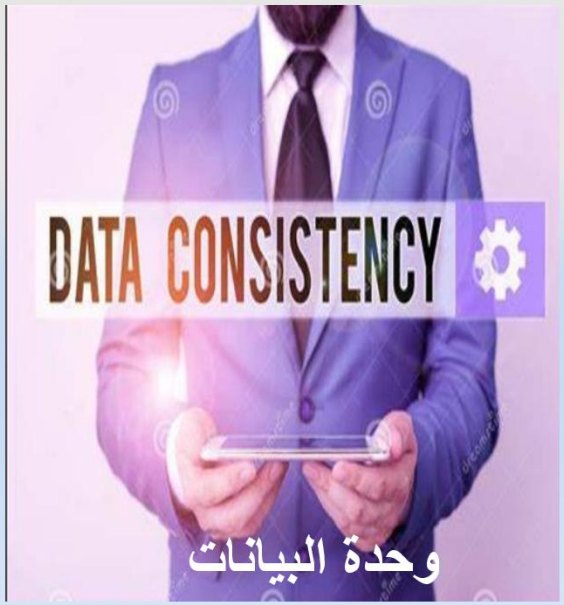












Core components (1): ledger, records, smart contracts

Distributed ledger technology

- All users of the distributed network can access their data: an immutable record of transactions
- Each transaction is recorded once, with no duplication

Immutable records

- No user can change or edit a record once it is recorded, which guarantees trust in the data
- If a transaction record contains an error, a new transaction is created to correct it; both remain visible for comparison and confirmation

Smart contracts

- A set of rules stored on the network and executed automatically when needed, speeding up operations
- The rules govern how data is transferred and guarantee that transactions are carried out

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Core components (2): consensus and vocabulary

Four properties

- Consensus: for a transaction to be valid, all participants must agree on its validity
- Provenance: participants know where the asset came from and how its ownership changed over time
- Immutability: no participant can tamper with a recorded transaction; an error is reversed by a new transaction and both stay visible
- Finality: a single shared ledger is the one place to check who owns an asset or whether a transaction is complete

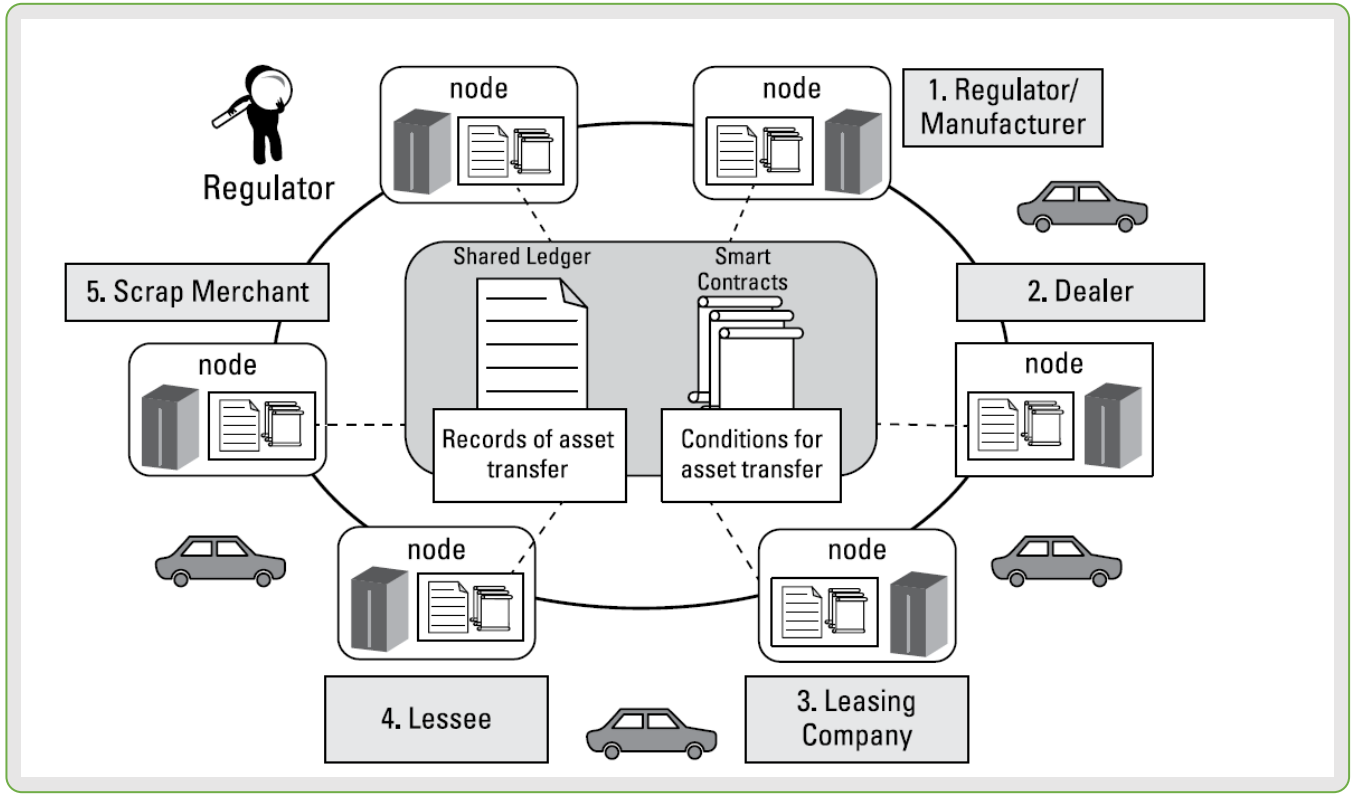
Key vocabulary

- Node: a computer within the system
- Transaction: an actual transfer of value, the smallest component of the blockchain
- Block: a data structure where transactions are stored in a Merkle-tree format
- Chain: a sequence of blocks in a specific order
- Miners: specific nodes that perform transaction and block validation

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How does it work? A shared ledger in practice

- Every transaction is recorded as a block of data; each block is linked to the one before and after it
- Transactions are blocked together in an irreversible chain: the blockchain
- Channel ledger = blockchain structure (d-CA) plus a world-state database
- A client application or smart contract reads and writes to the ledger



Example: regulator, manufacturer, dealer, leasing company, lessee and scrap merchant share one ledger of asset transfers and smart contracts (conditions for transfer)

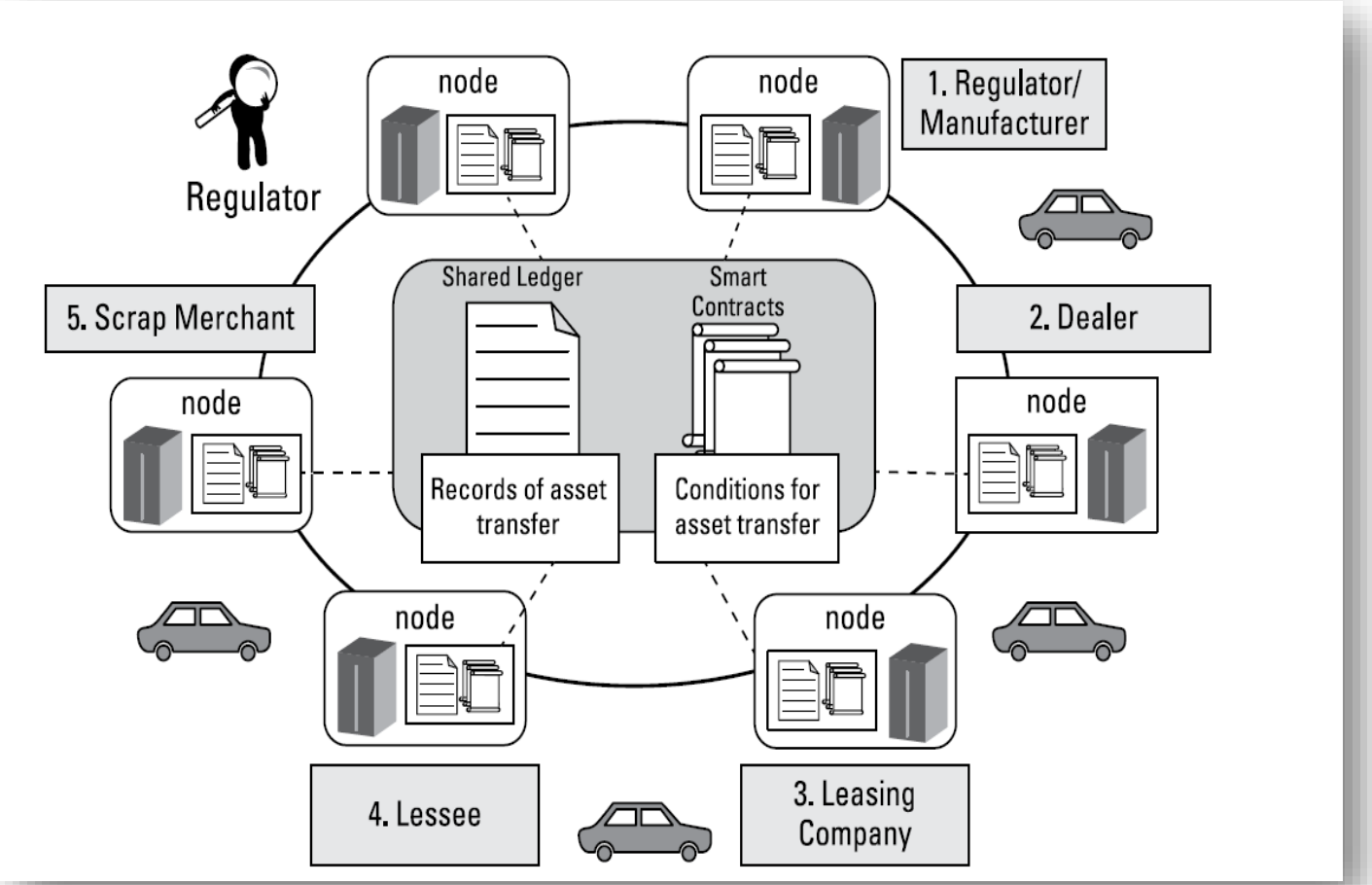
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المكونات الأساسية ✓

- **Consensus:**
- **كل مستخدمي شبكة البلوك تشين الموزعة لهم الحق في الوصول الي بياناتهم التي تتمثل غي مجموعة من السجلات للعمليات غير قابلة للتعديل immutable record of transactions شبكة البلوك تشين الموزعة تتكون من مجموعة من العمليات التي تسجل مرة واحدة دون تكرار**
- **Node:** Computer within the system
- **Transaction:** Actual transaction of value, the smallest component of the Blockchain
- **Block:** It's a data structure where transactions are stored in a Merkletree format.
- **Chain:** A sequence of blocks in a specific order.
- **Miners:** Specific nodes that perform the transaction and block validation

- **Consensus:** For a transaction to be valid, all participants must agree on its validity. (See Chapter 2 for more about consensus mechanisms.)
- **Provenance:** Participants know where the asset came from and how its ownership has changed over time.
- **Immutability:** No participant can tamper with a transaction after it's been recorded to the ledger. If a transaction is in error, a new transaction must be used to reverse the error, and both transactions are then visible.
- **Finality:** A single, shared ledger provides one place to go to determine the ownership of an asset or the completion of a transaction.

كيف تعمل ؟✓



- Block of يتم تسجيلها ك Transaction لكل عملية\ مجموعة بياناتdata
- كل مجموعة بيانات متصلة بما قبلها وما بعدها
- Transactions are blocked together in an irreversible chain: blockchain
- Channel Ledger (Blockchain Structure d-CA & World State-DB)
- Client Application/smart contract

Types of blockchain

Public

- An unrestricted DLT: anyone with internet access can join as an authorised node
- Nodes can read current and past records, verify transactions, do proof-of-work and mine
- Most common: Bitcoin and Litecoin

Private

- Restricted, closed network, usually inside one organisation; only selected members take part
- Used for voting, supply-chain management, digital identity, asset ownership
- Examples: Multichain, Hyperledger (Fabric, Sawtooth), Corda

Hybrid

- Mix of private and public: permissioned and permissionless features together
- Users control who can access stored data
- Only chosen records are made public; the rest stay confidential

Consortium

- Semi-decentralised: several organisations run the network, unlike a private chain run by one
- Each organisation can act as a node, exchange information or mine
- Used by banks and government bodies; examples: Energy Web Foundation, R3

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Blockchain applications: six uses that will change the world

1. Cryptocurrencies

Digital currencies such as Bitcoin run on blockchain.

2. Smart contracts

Self-executing agreements stored on the chain.

3. Copyright protection

Proving and protecting intellectual-property rights.

4. Voting

Tamper-proof electronic voting records.

5. Crowdfunding

Raising money from many contributors on-chain.

6. Everyday life

Day-to-day uses in services and records.

Source: EBI Training 2022

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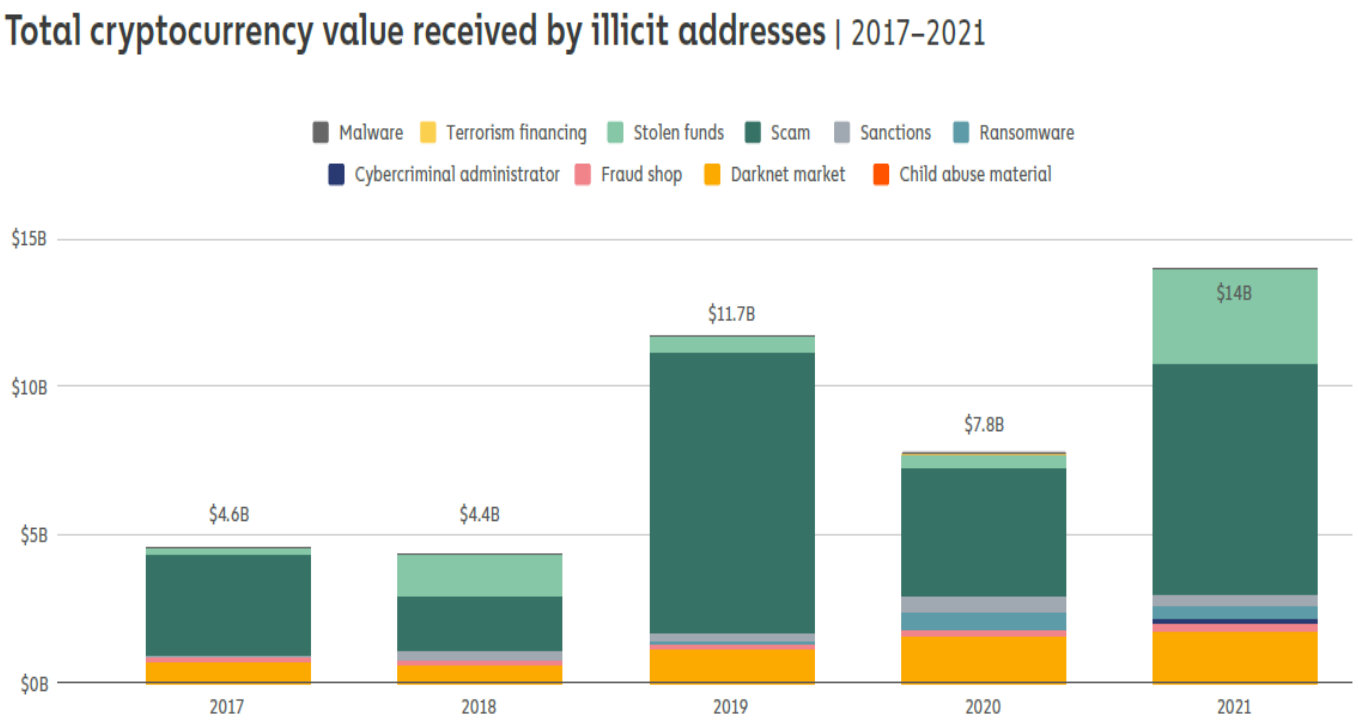
Raising money from many contributors on-chain.

6. Everyday life

Day-to-day uses in services and records.

Source: EBI Training 2022

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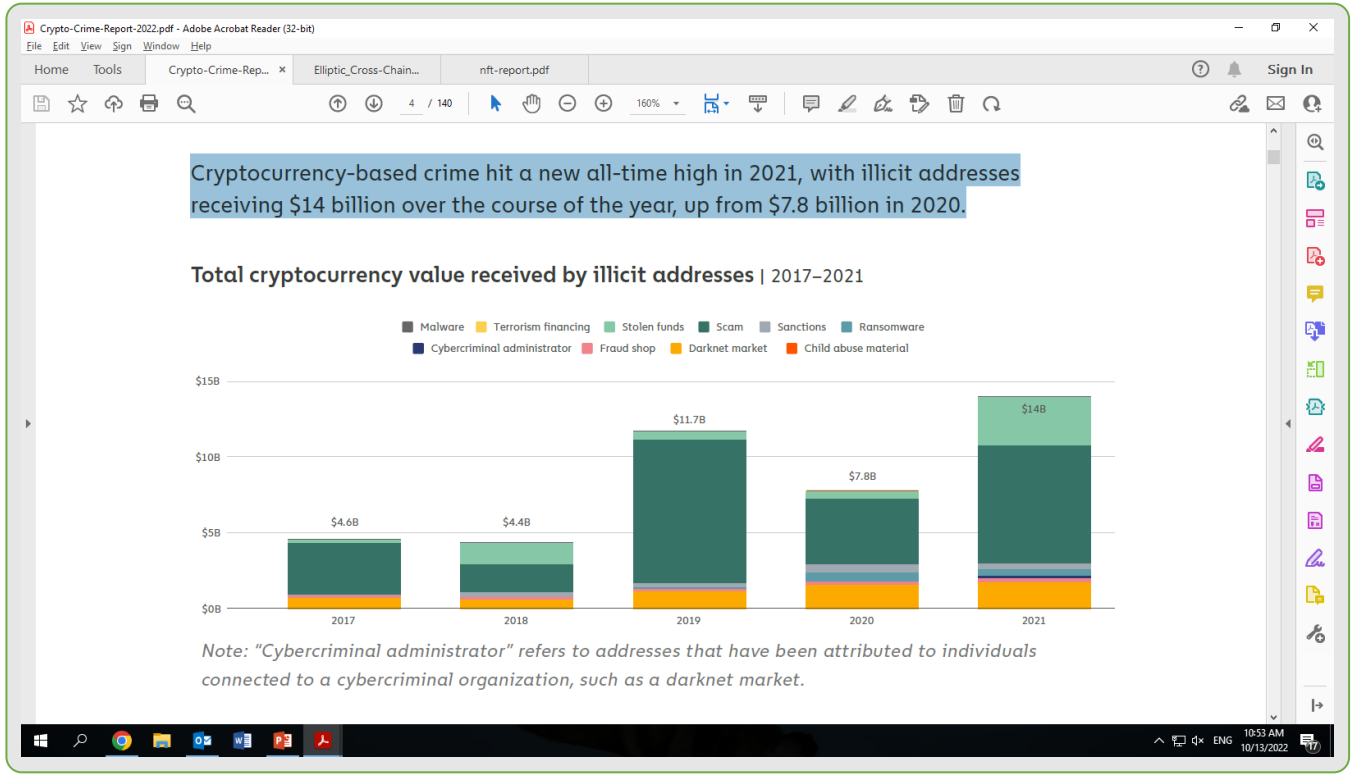


Note: "Cybercriminal administrator" refers to addresses that have been attributed to individuals connected to a cybercriminal organization, such as a darknet market.

- الجرائم المرتبطة بالاصول الافتراضية قد بلغت رقماً جديداً في عام 2021، حيث تم تلقي ما يعادل 14 مليار دولار خلال العام، مقارنة بـ7،8 مليار في 2020

Crypto crime in numbers

- Crime linked to virtual assets hit a new record in 2021: illicit addresses received the equivalent of US$14 billion during the year
- This compares with US$7.8 billion in 2020 (US$4.6bn in 2017, US$4.4bn in 2018, US$11.7bn in 2019)
- Largest categories: scams, stolen funds and darknet markets; also ransomware, sanctions, fraud shops, malware, terrorism financing

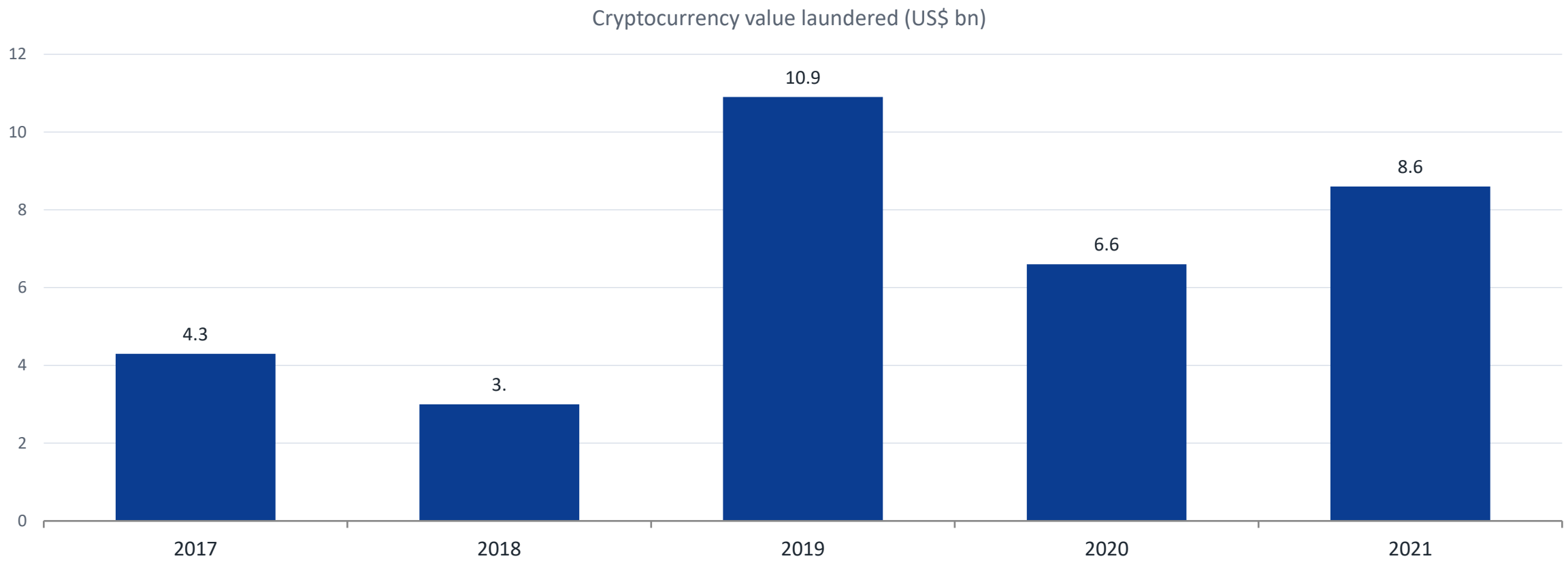


Total cryptocurrency value received by illicit addresses, 2017-2021 · Source: Chainalysis, 2022 Crypto Crime Report

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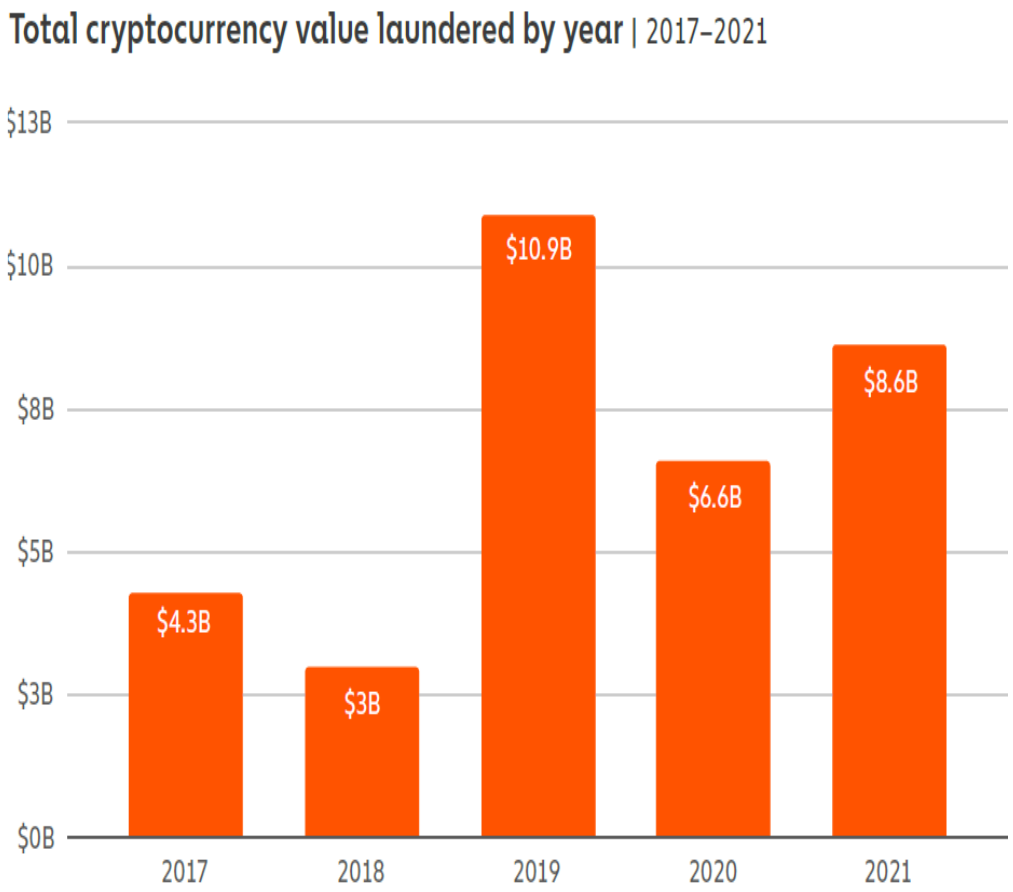
Money laundering through virtual assets

During 2021 criminals laundered the equivalent of US$8.6 billion in cryptocurrency, a 30% increase on 2020.



Source: Chainalysis, 2022 Crypto Crime Report (total cryptocurrency value laundered by year, 2017-2021)

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- قام المجرمون خلال عام 2021 بغسل ما يعادل 8،6 مليار دولار من العملات الافتراضية





مخاطر غسل الأموال وتمويل الارهاب من خلال العملات الافتراضية

الانترنت الخفى

Agora Market Guide

https://agoradrugs.com/agora-market-guide/

Paying with BTC

الدفع عن طريق البيتكوين

شراء المخدرات عبر الانترنت الخفى

بيع الأسلحة!

Cryptomarket	Total number of listings	Number of arms-related listings	Rate (per 1,000 listings)
Alphabay	36,906	414	11.2
Dreammarket	64,625	173	2.7
Valhalla (Silkkitie)	19,939	114	5.7
Hansa-market	22,151	49	2.2
Oasis1	11,932	29	2.4
Python market	7,377	14	1.9
TheDetox market	1,312	8	6.1
Traderoute	1,596	4	2.5
Minerva	697	3	4.3
Acropolis	253	2	7.9
Tochka	277	1	3.6
Dark-net-heroes-league	628	0	0.0
Total	**167,693**	**811**	**4.8**

The dark web: buying drugs online

The lecturer's illustration of the risk: a darknet marketplace listing where the only accepted payment is Bitcoin.

- **Agora Market Guide** a darknet market with a published buyer's guide (agoradrugs.com/agora-market-guide)
- **Paying with BTC** goods are priced and paid in Bitcoin, for example 9.07873882 BTC for 1 kg of cannabis shipped from Germany to Europe
- **Categories on sale** cannabis, counterfeits, data, drugs, electronics, forgeries, jewellery, services, tobacco, weapons
- **Escrow and PGP** money stays in escrow until delivery; buyers send addresses encrypted with the vendor's PGP key

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Weapons for sale on darknet markets

Arms-related listings on cryptomarkets (markets that trade in cryptocurrency).

Cryptomarket	Total listings	Arms-related listings	Rate (per 1,000 listings)
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Dark-net-heroes-league	628	0	0.0
Total	167,693	811	4.8

Source: RAND Europe, Behind the curtain: the illicit trade of firearms, explosives and ammunition on the dark web (2017)

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Dream Market
lchudifyeqm4ldjj.onion
Established 2013

Shop | Messages: 0 | granol8 | uk passport

Bitcoin (BTC)
Ƀ0

0 | Logout

Browse by category

- Digital Goods 42803
- Drugs 45042
- Drugs Paraphernalia 165
- Services 2869
- Other 5024

Ƀ Exchange

BTC	1.0
mBTC	1000.0
BCH	6.0
USD	12168.2
EUR	10019.0
GBP	8906.8
CAD	15198.8
AUD	15309.0
mBCH	6092.0
SEK	98356.6
NOK	96863.7
DKK	74631.6
TRY	45796.8
CNH	78992.8
HKD	95611.4
RUB	692574.0

11905 search results (0.8 seconds)

Filter

Ships to | Ships from | Escrow | Category | Cryptocurrency | Apply filter

Price: Ƀ - | Searchtext: uk passport | Sort by | Vendor: All

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 ... 364 365 366 367 368 369 370 371 372 373 →

10 Passport Scan (UK) Highest Quality and Cheapest



Ƀ0.00854
Kingscan (1250) (4.95★)
VA → WW
Order

Genuine UK Passport+Bill Set



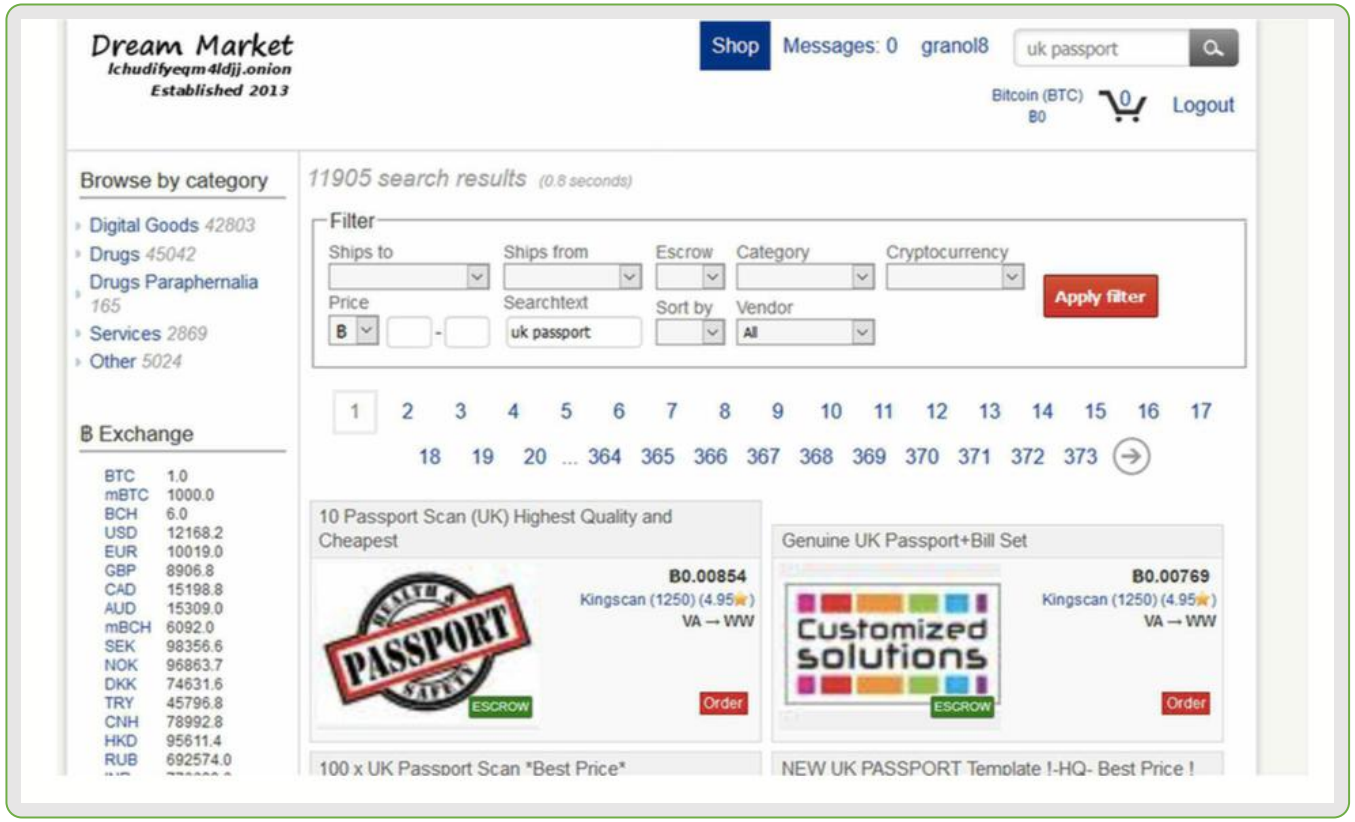
Ƀ0.00769
Kingscan (1250) (4.95★)
VA → WW
Order

100 x UK Passport Scan *Best Price*

NEW UK PASSPORT Template !-HQ- Best Price !

Dark web marketplace example: Dream Market

- A .onion marketplace (established 2013) with 45,042 drug listings, 42,803 digital goods and 2,869 services
- A search for "uk passport" returns 11,905 results: passport scans and "genuine UK passport + bill" sets
- Prices in Bitcoin (B0.00854, B0.00769), escrow protection, vendor ratings, worldwide shipping
- Built-in exchange rates: 1 BTC = USD 12,168 at the time of the screenshot



Screenshot of the Dream Market darknet marketplace

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هل يتم استخدام العملات الافتراضية في تمويل الإرهاب ؟

Virtual currencies and terrorism

Are virtual currencies used to finance terrorism?

— Discussion question

Armed groups have published Bitcoin explainers and "support the resistance" donation pages inviting supporters to send cryptocurrency. Bitcoin's features (encrypted, decentralised, hidden sender and recipient) make it attractive for such fundraising.



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To set up a totally anonymous donation system that could send millions of dollars worth of **Bitcoin** instantly from the **United States, United Kingdom, South Africa, Ghana, Malaysia, Sri Lanka, or wherever else** right to the pockets of the **mujahideen**, very little would be done. **Dark Wallet's beta** release will be published within the next coming months, the **mujahideen of Dawlatul-Islam** would simply need to set up a wallet and post their wallet address online. Then, Muslims from across the globe could simply copy the wallet address, login to their **Dark Wallets**, purchase whatever amount of **Bitcoin** they wish to send, and send them over. The **mujahideen** would then have someone on the other side convert **Bitcoin** into whatever currency they wish at optimal **Bitcoin** to currency transaction rates to receive the donations from the whole ummah. This system has the potential to revive the lost sunnah of donating to the **mujahideen**, it is simple, easy, and we ask Allah to hasten it's usage for us.

Al Sadaqah @AlSadaqah1 · Jan 19

If anyone has a Bitcoin ATM in your area or country, then you can send money to the mujhideen 100% anonymously with cash. It is really that simple. Look at coinatmradar.com for your nearest Bitcoin ATM. Inbox @alsadaqah11 for more help.



Bitcoin ATM Map – Find Bitcoin ATM, Online Rates

Find Bitcoin ATM locations easily with our Bitcoin ATM Map. For many Bitcoin machines online rates are available.

coinatmradar.com


حملة
جهرُوتا
لجمع التبرعات
لإخوانكم المجاهدين على ثرى بيت المقدس
نستقبل تبرعاتكم عبر
bitcoin

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Blockchain applications (1): land registration

Governments use blockchain to record land and property ownership and its full history.

- **Countries** Sweden, Georgia and Ukraine register land and property title and its chain of ownership on blockchain
- **BenBen (Ghana)** a digital land-transaction platform recognised by the courts as an expert witness in land disputes, which make up 70% of civil cases
- **Ownership-history enquiry** 3 days instead of a month
- **Title registration** 3 months instead of a year

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Blockchain applications (2): healthcare and procurement

Healthcare

- A unified system for recording and managing patients' health records
- Missing patient medical data was the third leading cause of death (United States, 2016)

Public procurement

- Mexico applies blockchain to public procurement, following World Economic Forum recommendations on contracts
- An innovation contest built a digital model for government tenders using smart contracts: "Talent Hackathon Party 2017"

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Blockchain in the administration of criminal justice

Why criminal justice is a natural fit for a shared, tamper-proof ledger.

- **Many parties** a criminal case passes through law enforcement, the public prosecution, the courts and judicial assistants
- **Procedural legitimacy** every step must be lawful and the evidence must be credible
- **Blockchain properties that help** transparency, linked information, time-stamping, and data that cannot be altered

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Blockchain in criminal justice: China

Dec 2018

Evidence on blockchain

The Supreme People's Court recognised blockchain for authenticating evidence before the smart (internet) courts

Mar-Oct 2019

3 million judicial procedures

Recorded on blockchain in eight months

May 2022

Full judicial blockchain vision

The Supreme People's Court adopted a complete plan to apply blockchain across the administration of the judicial system

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A proposal: blockchain across the criminal case

1. **Gathering evidence**

   Record each piece of evidence and who handled it

2. **Investigation**

   Arrest and search warrants issued and logged on-chain

3. **Trial**

   The court sees one tamper-proof record of the case

4. **Enforcement**

   The effects of the criminal judgment are executed and tracked

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تابع: الـ "Blockchain" في إدارة العدالة الجنائية :

- **الصين**:
  - اعتماد البلوكشاين في توثيق الأدلة أمام المحكام الذكية. (المحكمة العليا في الصين ديسمبر 2018).
  - 3 مليون إجراء قضائي (مارس – أكتوبر 2019).
  - المحكمة العليا (مايو 2022)، اعتماد تصور كامل لتطبيق البلوكشاين في إدارة المنظومة القضائية.



مقترح تطبيق الـ "Blockchain" فى إدارة العدالة الجنائية :

1- مراحل الدعوى الجنائية.

2- إذون القبض والتفتيش.

3- آثار الحكم الجنائي.



Proposed criminal-justice blockchain: operational flow

Participants

- Law enforcement
- Public prosecution
- Court
- Central judicial supervision

Applications

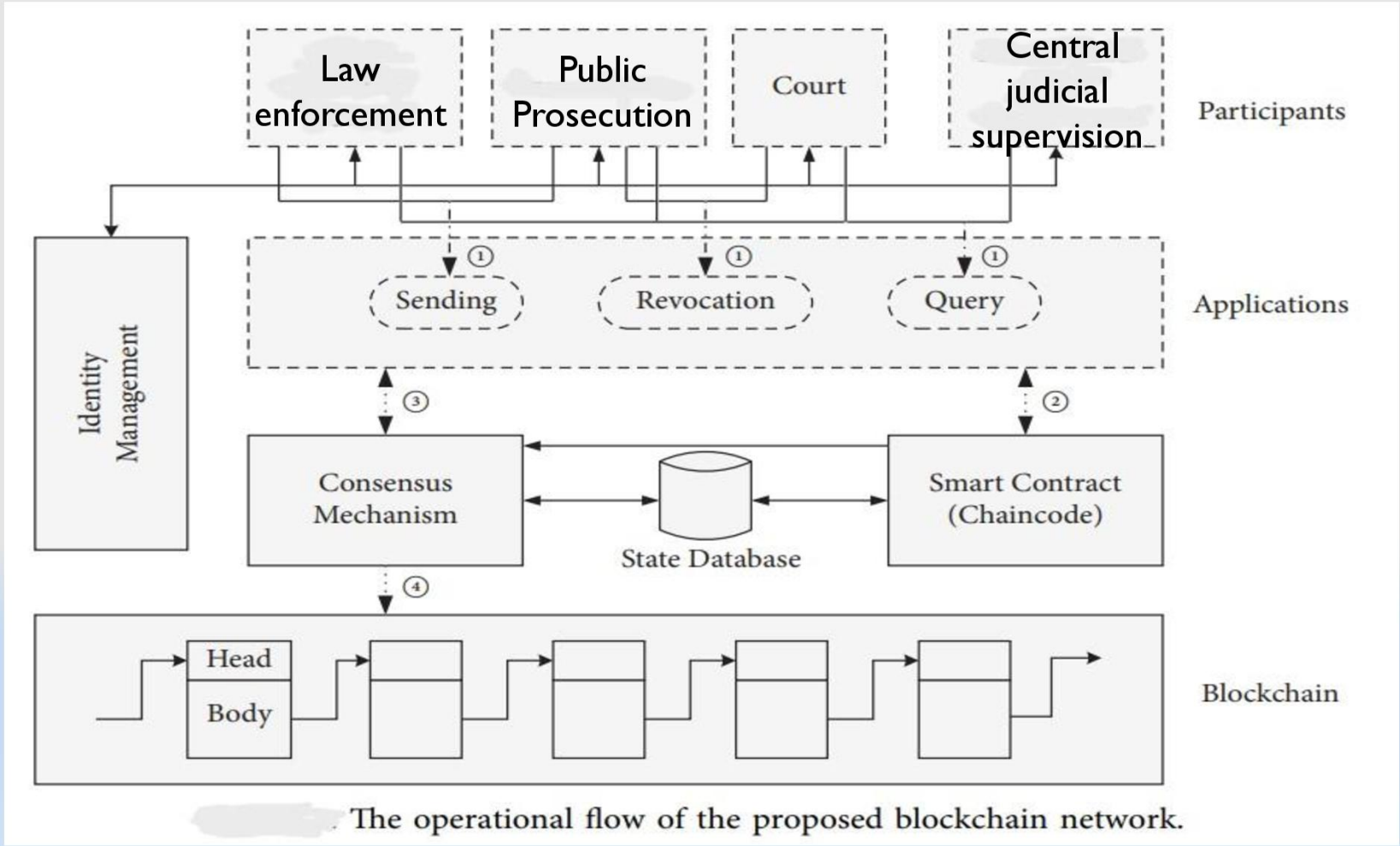
- Sending (submit a record)
- Revocation (withdraw a record)
- Query (look up a record)
- Identity management controls who may act

Blockchain layer

- Smart contract (chaincode) applies the rules
- Consensus mechanism validates each action
- State database holds the current status
- Blocks (head + body) chain the permanent record

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مقترح تطبيق الـ "Blockchain" فى إدارة العدالة الجنائية :

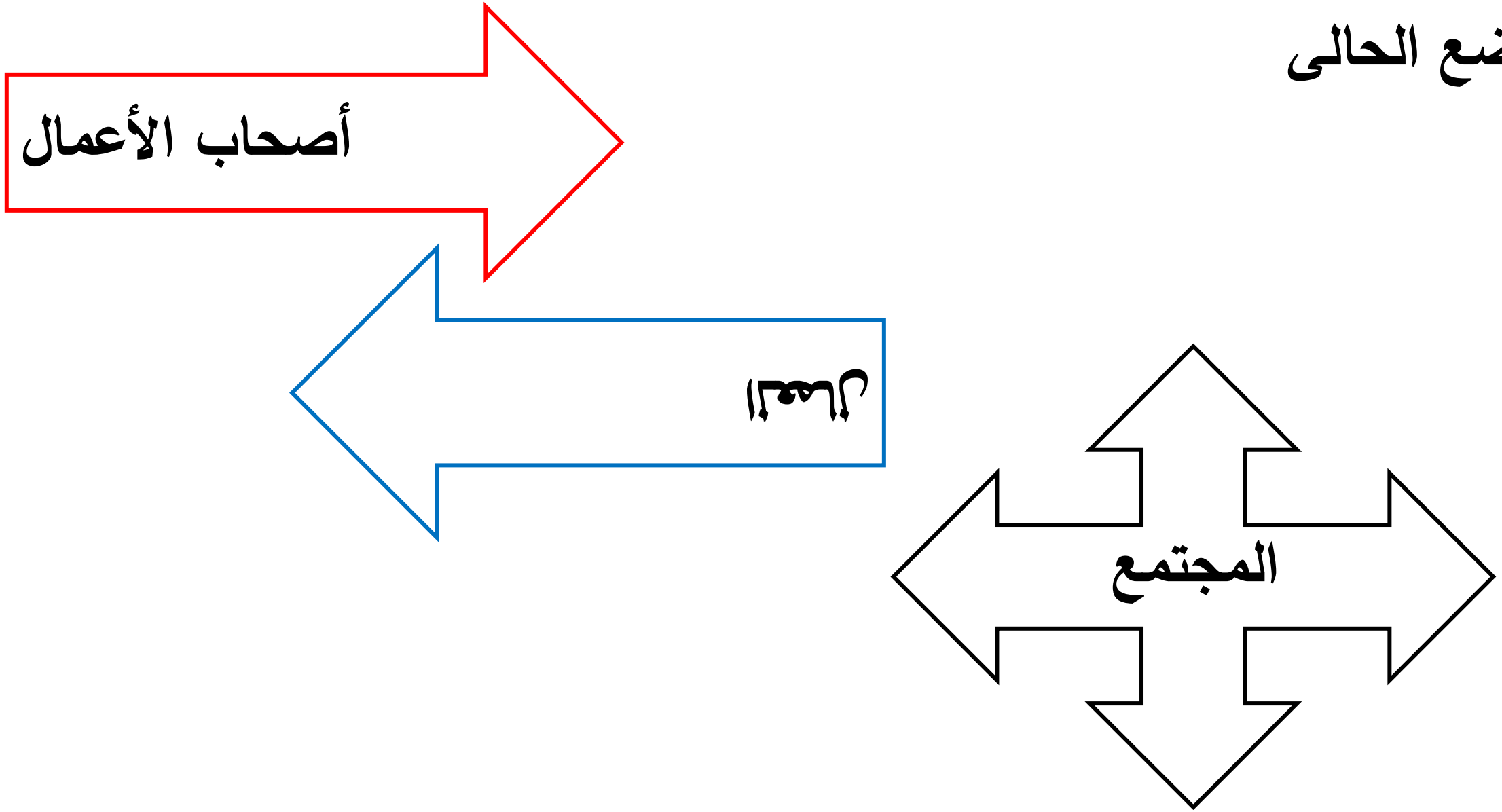


The operational flow of the proposed blockchain network.

العمل عن بعد ..

فرصة أجبرنا عليها

الوضع الحالى



The current situation

Employers

- Pull in one direction (the red arrow)
- Want output, control and lower cost

Workers

- Pull in the opposite direction (the blue arrow)
- Want time, income and recognition

Society

- Pulled in every direction at once
- Carries the cost of the tug-of-war

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How to mesh the gears for maximum torque

Three gears must engage with each other so that effort in one turns the other two.

Employer

The organisation that provides the work, the tools and the pay

Worker

The person who gives time, skill and commitment

Society

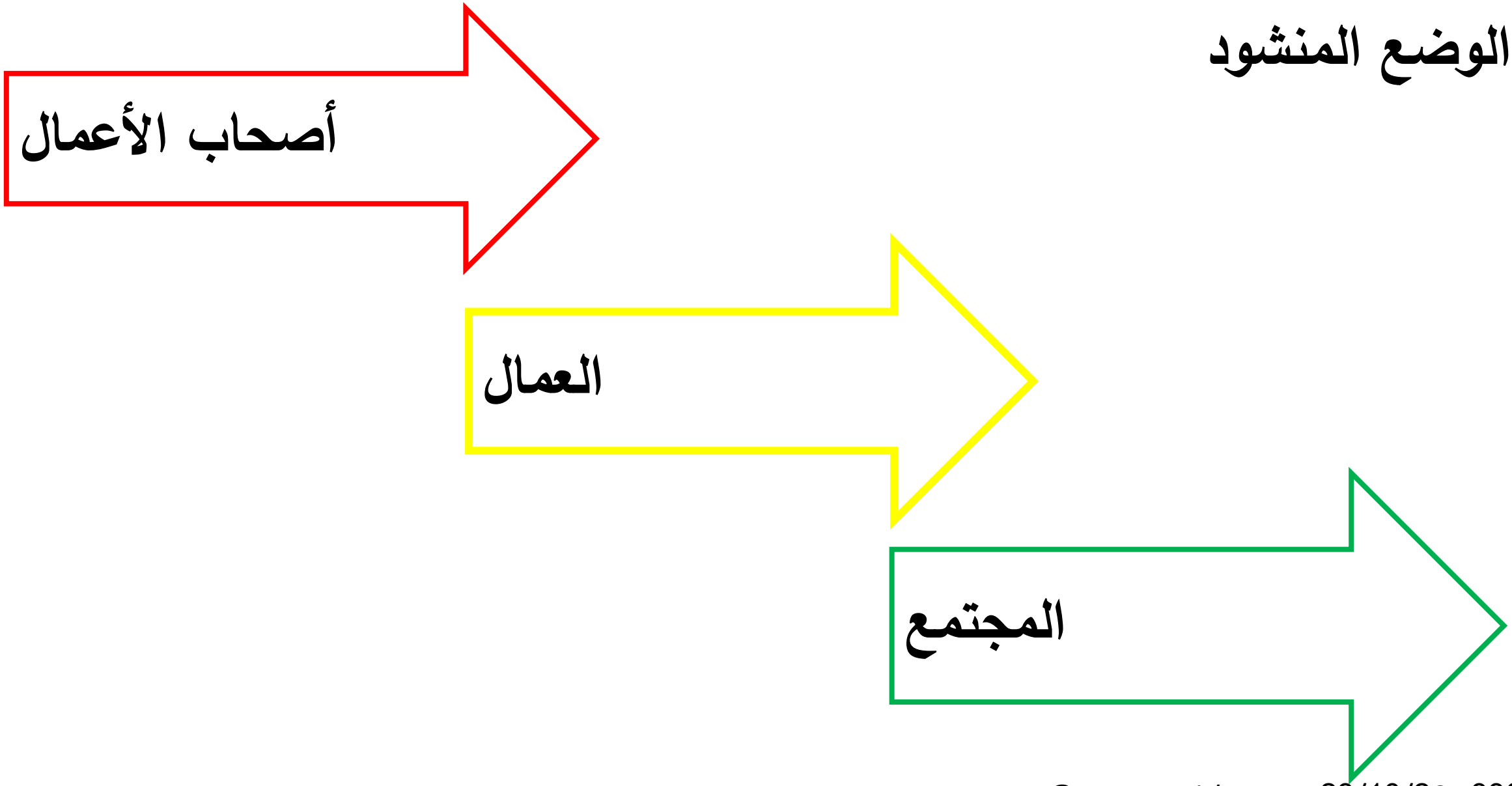
Families, cities and the environment that absorb the outcome

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كيف يمكن التعشيق للحصول على أكبر عزم



الوضع المنشود



The desired situation

All three arrows point the same way, one driving the next.

Employers

Lead the change by offering new ways of working

Workers

Respond with higher commitment and productivity

Society

Gains a better environment, happier families and engaged citizens

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What employers want

Efficiency

More and better output from the same resources

Lower cost

Less spent on buildings, offices, utilities and absence

An attractive organisation

A workplace that draws and keeps talented people

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ماذا يرغب أصحاب الأعمال

- كفاءة
- تكلفة أقل
- مؤسسة جاذبة

What workers want

The satisfaction triangle

Each of us chooses a different spot inside a triangle whose three corners are financial satisfaction, psychological satisfaction and moral (esteem) satisfaction. No two workers weigh the three corners the same way.

- Financial satisfaction: pay and material benefits
- Psychological satisfaction: comfort, support and ease at work
- Moral (esteem) satisfaction: title, status and recognition

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The satisfaction triangle in detail

An employer should use every psychological and esteem lever it has before moving on the last side of the triangle: money.

Financial satisfaction

Direct: higher salary and incentives.
Indirect: fewer hours, lighter workload, health and life insurance, services, summer resorts

Psychological satisfaction

A comfortable workplace, services for working mothers, easy-going colleagues, easy commuting

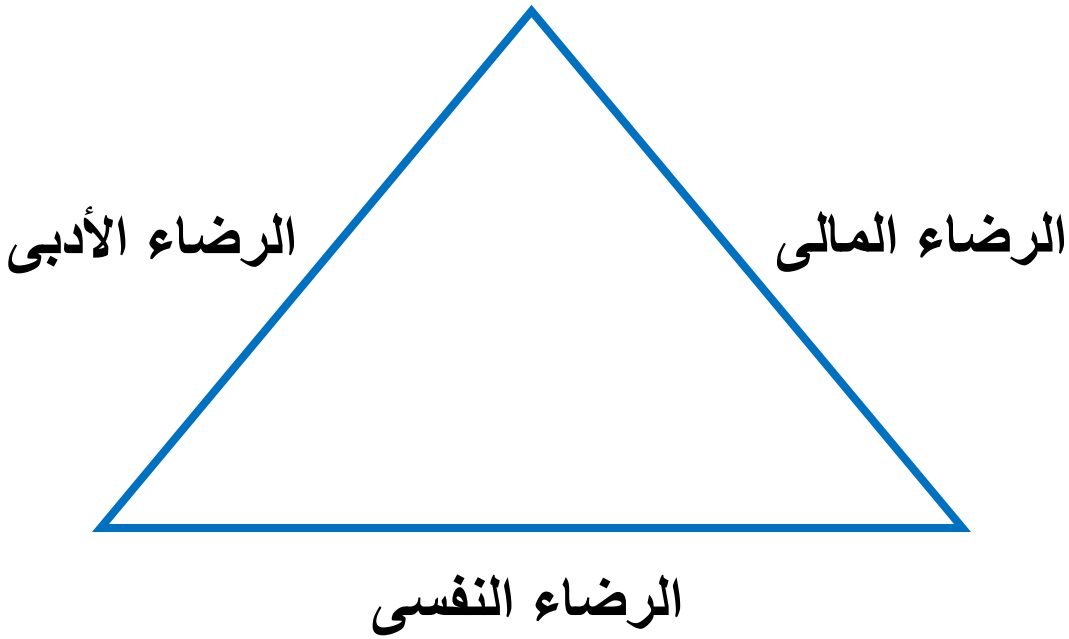
Moral (esteem) satisfaction

The ego side: job title, announcing achievements among colleagues

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ماذا يرغب العمال

كل منا له موقع مختار داخل مثلث الرضاء



مثلث الرضاء

- **الرضاء المالى:**
  مباشر: مرتب وحوافز أعلى ..
  غير مباشر: ساعات أقل – عبء عمل أقل – تأمين صحى - تامين على الحياة – خدمات – مصايف - ...

- **الرضاء النفسى:**
  مكان مريح – خدمات للأم العاملة – زملاء سهل التعامل معهم – مواصلات سهلة - ...

- **الرضاء الأدبى (الإيجو):**
  المسمى الوظيفى – الإعلان بين الزملاء عن الإنجازات - ..

يخرج صاحب العمل كل ما في جعبته من رضاء نفسى وأدبى
قبل أن يتحرك على الضلع الأخير ☺

نماذج جديدة

- جزء من الوقت
- مشاركة
- وقت مرن
- عن بعد
  - رعاية أطفال
  - رعاية مسنين
  - أجازة بجزء من المرتب أو بدون

- خدمات تصل للمنزل
- برامج مساعدة الموظفين
- اشتراك في صالة ألعاب رياضية أو نادى
- خدمات علاقات عامة
- أجازات ترفيهية

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Moral (esteem) satisfaction

The ego side: job title, announcing achievements among colleagues

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المجتمع

- بيئة أفضل
- أسرة أسعد
- مواطنين مشارك

What society wants

A better environment

Less traffic, pollution and energy use

Happier families

More time together and a better work-life balance

Engaged citizens

People with time to take part in community life

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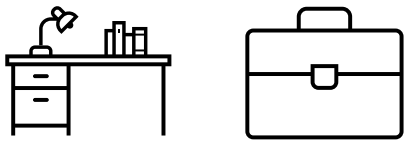
بسهولة من المنزل



أتسوق



أحصل على الخدمة



أعمل

مبادرة .. منزلك مكتبك – مصر 2007

What society wants

A better environment

Less traffic, pollution and energy use

Happier families

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Engaged citizens

People with time to take part in community life

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البنية الأساسية

- تشريعات – تنظيم
- شبكات

الأدوات

- الذكاء الاصطناعى (Artificial Intelligence)
- نظم المعلومات الجغرافية (GIS)
- البيانات الضخمة والتحليل (Big Data & Analytics)

Infrastructure and tools for remote work

Infrastructure

- Legislation and regulation
- Networks

Tools

- Artificial Intelligence (AI)
- Geographic Information Systems (GIS)
- Big Data and Analytics

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Rules of working from home and oversight

Three conditions for a job to be done from home

- The job does not require meeting the customer face to face (video is possible)
- Clear performance indicators (KPIs) exist
- Infrastructure exists that allows the tasks to be performed

Oversight

- Join some meetings, or record them and check a random sample
- The same method already used today in call centres

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قواعد العمل من المنزل

1. طبيعة الوظيفة لا تقتضى مقابلة العميل وجها لوجه (ممكن من خلال الفيديو)
2. يوجد مؤشرات قياس أداء واضحة
3. يوجد بنية أساسية تمكن من إداء المهام

الرقابة

الدخول على بعض اللقاءات أو تسجيلها وفحصها من خلال عينة عشوائية كما يحدث حاليا مع مراكز الاتصال

هل يحقق العمل من المنزل رغبات أصحاب الأعمال

كفاءة	ساعات خدمة ممتدة – خدمات للعميل ممتدة – تغلب على مصاعب الأيام المزدحمة بسبب العوامل الجوية - ...
تكلفة أقل	مبنى أصغر – مكاتب أقل –عدد أقل من الأجازات المرضية – ايجار أقل – فاتورة كهرباء أقل – إنتاجية أعلى (أشارت بعض الدراسات انها قد تصل الى 23% - ....
مؤسسة جاذبة	ولاء أعلى نظرا لالتزام العاملين نتيجة الثقة المتبادلة - جذب مهارات لم تكن للتقدم للعمل لولا النموذج الجديد – مهارات في مكان بعيد – أسهل لذوى الاعاقات - ...

Does working from home give employers what they want?

Employer want	How working from home delivers
Efficiency	Extended service hours; extended customer service; copes with crowded days caused by bad weather
Lower cost	Smaller building; fewer offices; fewer sick days; lower rent; lower electricity bill; higher productivity (some studies put the gain at up to 23%)
An attractive organisation	Higher loyalty from mutual trust; attracts skills that would not have applied otherwise; skills in distant places; easier for people with disabilities

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Does working from home give workers what they want?

Worker want	How working from home delivers
Better quality of life	Less time commuting; balance between work and family
Higher morale and more satisfaction	A sense of responsibility for taking decisions; awareness of one's own skills
Greater trust in the organisation	Feeling trusted because the organisation trusted him or her; higher commitment
Lower cost of doing the job, more value from the salary	Less transport; less wear on clothes; lower spending on cosmetics and the hairdresser

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Does working from home make a better society?

Society want	How working from home delivers
A better environment	Less crowded streets; more parking; less car exhaust; lower energy use; less wear on infrastructure; longer car life
Happier families	More time together; more time for hobbies; balance between family, work and friends; a mother can pursue her career instead of being confined to childcare
Engaged citizens	More time lets citizens take part in volunteering, non-profit organisations and community service

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هل يحقق العمل من المنزل رغبات العمال

جودة أفضل للحياة	وقت أقل بالمواصلات - توازن بين العمل والأسرة - ...
روح معنوية أعلى ورضاء أكثر	إحساس بالمسؤولية باتخاذ القرار – استشعار بالمهارات - ...
ثقة أكبر في المؤسسة	إحساس بالثقة في المؤسسة لأنها وثقت فيه/فيها – التزام أعلى - ...
تكلفة أقل لأداء العمل ومردود أعلى على المرتب	مواصلات أقل – استهلاك ملابس أقل – تكلفة أقل لأدوات الزينة ومصفف الشعر ☺ - ...

هل يحقق العمل من المنزل مجتمعا أفضل

بيئة أفضل	شوارع أقل ازدحاما – أماكن انتظار أكثر – عادم سيارات أقل – استهلاك طاقة أقل – استهلاك أقل للبنية الأساسية – عمر أطول للسيارات - ...
أسرة أسعد	وقت أطول معا – وقت أكثر للهوايات – توازن بين الأسرة والعمل والأصدقاء – أم تمارس حياتها العملية وليست مقصورة على رعاية الأبناء - ...
مواطن مشارك	وقت أطول يسمح للمواطن بالمشاركة في العمل التطوعى والمؤسسات غير الهادفة للربح وخدمة المجتمع - ...

التحديات

مثال

نظم إدارة الموارد البشرية

- **طرق تحديد المرتبات والإثابة**
- **كتابة دليل سايسات العمل عن بعد**
- **...**

مثال

تبادل الآراء في جو اجتماعى

Challenges of remote work

Examples of what has to be rebuilt when work leaves the office.

HR management systems

Systems designed around attendance and presence in the office

Pay and reward

New ways of setting salaries and rewarding output rather than hours

A remote-work policy manual

Writing down the rules, rights and duties of working at a distance

Social exchange of ideas

Replacing the informal exchange of views that happens in a social setting

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Remote Work Index, February 2021

Index published by Circle Loop (UK cloud-telecoms provider). The UAE ranked first among Arab countries; Egypt ranked 78th.

Rank	Country	Score
1	Canada	74.3
2	United Kingdom	63.4
3	Romania	62.2
4	Sweden	61.5
5	Denmark	61.4
31	UAE	53.8
49	Kuwait	50.3
57	Saudi Arabia	47.3
72	Morocco	35.4
74	Bahrain	35.0
75	Lebanon	34.6
77	Tunisia	34.1
78	Egypt	33.8
79	Algeria	33.3

Source: Circle Loop Remote Work Index, via Al-Arab newspaper infographic

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كيف صنفت الدول العربية على مؤشر العمل عن بعد؟

ترتيب الدول العربية على الصعيد العالمي بحسب مؤشر "العمل عن بعد"



ترتيب الدول الـ5 الأولى عالمياً بحسب مؤشر "العمل عن بعد"



ملاحظة: مؤشر العمل عن بعد الذي نشر من قبل شركة "سيركل لووب" المختصة بتزويد الاتصالات السحابية في المملكة المتحدة، يعتمد في منهجيته في الترتيب على متوسط سرعة الإنترنت ذات النطاق العريض الثابت، كما يأخذ في الاعتبار البلدان التي تسمح بتأشيرات عطلة العمل، وقبولها للمهاجرين، ومتوسط تكلفة الإيجار لشقة مكونة من غرفة نوم واحدة ودرجة مؤشر السعادة العالمي

المصدر: مؤشر العمل عن بعد من شركة «سيركل لووب»

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Regulatory Impact Assessment RIA

الخلفية

- تصدر التشريعات والقرارات الرئاسية والوزارية لملاحقة التطور وسد الثغرات الناشئة عن ما استحدث من تغيرات عالمية ومحلية ومانجم عنها من تداخل والأدوات الجديدة (مثل التكنولوجيا وغيرها).
- كل تشريع أو قرار يستهدف أمرا أو عدة أمور واضحة محددة الا أنه لا مفر من تعرضه للتعامل مع أمور قائمة بالفعل.
- بدأت دول منظمة التعاون الاقتصادى والتنمية OECD جهدا لانشاء آلية تعرف بتحليل تأثيرات وتبعات التشريع والتنظيم

➢ **الهدف:**

استشراف تأثير القوانين والقرارت المقترحة وتداخلها مع التشريعات والنظم القائمة بالفعل

تحليل المتأثرين بالقرار والتأكد من النماذج المالية والاقتصادية والاجتماعية التى تحكم الاطار التنفيذى.

- القاعدة التى ينطلق منها هذا البرنامج هى وجود حصر كامل لكل التشريعات والقرارات مفهرسة تساعد فى المرحلة الأولى على لفت نظر الباحث.

المشاهدة

اجراء مثل هذه التحليلات من الممكن أن يتلافى وقوع بعض الخلافات القانونية أو توابع التطبيق الفعلى

مصر لديها بالفعل قاعدة بيانات بجودة لا بأس بها يمكن الاعتماد عليها:

- قاعدة بيانات القوانين والقرارات الرئاسية والوزارية المنشورة بالجريدة الرسمية والتى ترعاها شركة لادس
- قاعدة بيانات ما قامت بجمعة المبادرة المصرية ERRADA

Legislation chasing technology

Why laws keep lagging behind change, and how Regulatory Impact Analysis can help.

- **Background** Laws and presidential and ministerial decrees are issued to catch up with change and plug gaps opened by global and local shifts and new tools such as technology
- **The problem** Every decree targets a few clear aims, yet unavoidably touches matters already regulated by other rules
- **The OECD approach** Regulatory Impact Analysis: foresee the effect of a proposed law, its overlap with existing rules, who is affected, and the financial, economic and social models behind it
- **The prerequisite** A complete indexed inventory of all laws and decrees. Egypt already has usable databases: LADIS (Official Gazette laws and decrees) and ERRADA
- **The method** Keywords for every article; data mining finds all related articles; researchers check consistency and conflicts; a parallel team models social and economic effects
- **Recommendation** A Regulatory Impact Unit at the Cabinet, starting with a decree that every regulatory ministerial decision is deposited with it together with its keywords

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Drones

Introduction

- Corruption is one of the most dangerous problems facing societies; it degrades the economy and political, social and cultural life
- It takes many forms: financial, political, administrative, judicial, environmental, social and moral corruption
- All countries now recognise the need to fight corruption in all its forms, and have invented many tools; one of the newest is the drone (unmanned aircraft)
- This paper covers: the drone's inventor and its development; the types of corruption it can fight; countries that have used it; its uses in Egypt; and proposed uses in Egypt

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The inventor of the drone

- **Abraham Karem** Pioneer and inventor of fixed-wing and rotary-wing unmanned aircraft; credited with inventing drone (UAV) technology
- **From Israel to the United States** After emigrating he founded Leading Systems Inc. in his home garage
- **Albatross to Amber to Predator** His first drone, the Albatross, was upgraded to the Amber, which evolved into the famous Predator
- **Father of drones** The Predator earned him the title 'father of drones'

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How drone technology developed

Recognition

The Economist on Karem

Described him as the man who shaped the course of modern warfare's unmanned aircraft

2004

Karem Aircraft founded

To develop manned and unmanned tiltrotor aircraft of high efficiency for military and civil transport

2019

Karem AR40 unveiled

A helicopter design for the US Department of Defense FARA programme (Future Attack Reconnaissance Aircraft)

Worldwide

Many countries, many types

Military: attack, defence, spying, suicide drones. Civil: photography, surveillance, transport, travel, leisure. Also unmanned vehicles, ships and submarines

Future

Rapid growth in every field

Drone technology is expected to take over many tasks and jobs

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Types of corruption drones can fight

- Modern technology has become one of the most important tools for fighting corruption; the drone is one of them, used in several fields including anti-corruption
- A drone is a modern tool used in many fields, including aerial reconnaissance and aerial photography, so it can also be used against corruption
- Drone use against corruption has grown: border surveillance, traffic monitoring, and monitoring infrastructure and government projects

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Three anti-corruption uses of drones

Border surveillance

Land and sea borders: detect smuggling and infiltration; analyse drone data to find active zones and strike them fast

Traffic monitoring

Show which routes are blocked and which are open, and direct traffic accordingly

Projects and infrastructure

Monitor government projects to check that required standards and specifications are applied

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Countries that have used drones against corruption

The United States and advanced Europe

The USA, Germany, the United Kingdom and France were first, using drones in all the ways described

China

Used drones to enforce curfews and bans on gatherings during the COVID-19 pandemic, with excellent effect

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Drone uses in Egypt

1. Egypt has used drones to ease traffic flow and for aerial photography
2. The most prominent Egyptian use is counter-terrorism, which the paper treats as a form of corruption
3. In that role drones are used for surveillance, raids and detonating explosive devices

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Drone uses in Arab countries

1. Many Arab countries use drones
2. Saudi Arabia is the most prominent example, especially during the Hajj season
3. Drones help prevent crowding of pilgrims at the holy sites and ease traffic flow

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Proposed drone uses in Egypt

1

More drones for the police

Increase drone numbers and equip police for traffic, counter-terrorism and crime fighting in general

2

Monitor government projects

Check safety procedures and standard specifications on public projects

3

Expand border surveillance

Greater use on land and sea borders

4

Protect agricultural land

Fight encroachment on farmland across all of Egypt

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A survey drone for farmland

- A multispectral survey drone with its controller and a tablet showing the field map
- The kind of equipment proposed for monitoring agricultural land in Egypt



Closing photo of the student paper on drones

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The Future of AI and Good Governance

How can it be

Equitable and Inclusive

?

Foreign Affairs

September/October 2023; Published on August 16, 2023

The AI Power Paradox

Can States Learn to Govern Artificial Intelligence—Before It's Too Late?

By Ian Bremmer and Mustafa Suleyman

2 Points of view

- How can AI help in achieving good Governance (State and Corporate)?
- How can we govern AI in a good sense?

We always have good hope
But the truth is

if we don’t act now,
the future of AI ..

may be efficient,	but it won’t be	just
may be profitable,	but it won’t be	fair
may be advanced,	but it will not	serve humanity in its fullness

THE RISE OF AI - SPEED, …

- GPT-4 required 2 · 10^25 FLOP of computing power to train.
- New latest public model was trained with 10^27 FLOP.
- Once the new datacenters are up and running, they'll be able to train a model with 10^28 FLOP—a thousand times more than GPT-4. Thus, they could train this model in 150 days.
- ChatGPT reached 100 million users in two months. faster than any app in history.

- The amount of data we collect is immense (we even know how many seconds you stopped to look at a page)
- Our next Gen AI will be trained better for each individual ..We will have better correct advice

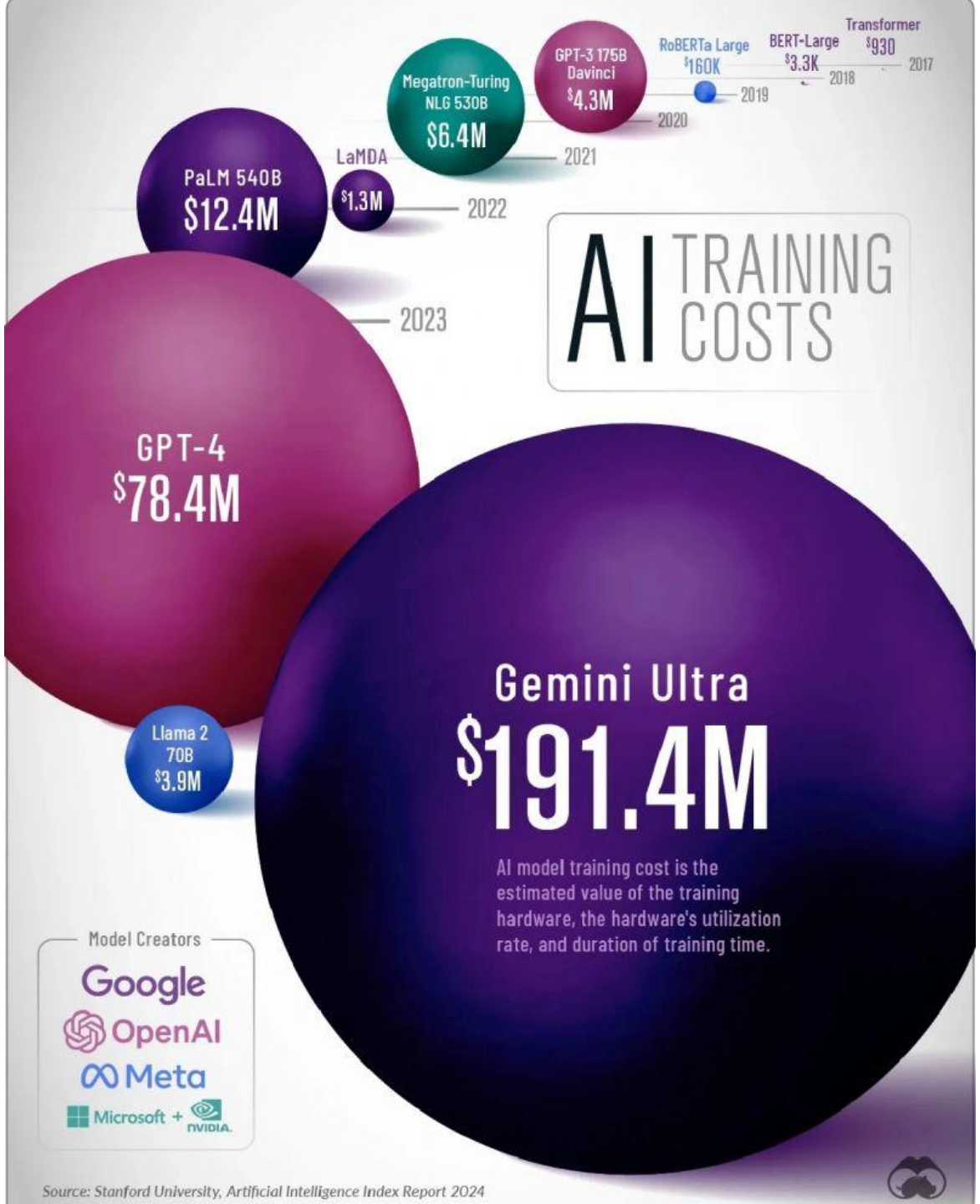
… Scale, and …

- AI systems have moved from theory to utility in less than a decade
- AI is expected to contribute US$15.7 trillion to the global economy by 2030 (PWC).
- 75% of companies will adopt at least one AI tool in the next 3 years (McKinsey)
- The number of AI patents filed globally has increased by over 400% since 2010, with China leading.

… SKEW

- Of the top 100 AI firms in the world, over 85% are based in just five countries.
- Less than 3% of datasets used in LLMs include content in African or Southeast Asian languages.
- A 2023 Stanford study found that only 1.8% of top AI researchers are from the Global South.
- The vast majority of countries have neither the money nor the technological know-how to compete for AI leadership.
- The vast majority are users not developers .. a high risk

➢ **So yes, AI is growing. But it is not growing equally.**


Transformer
$930
2017
RoBERTa Large
$160K
BERT-Large
$3.3K
2018
2019
GPT-3 175B
Davinci
$4.3M
2020
Megatron-Turing
NLG 530B
$6.4M
2021
LaMDA
$1.3M
2022
PaLM 540B
$12.4M
2023
AI TRAINING COSTS
GPT-4
$78.4M
Llama 2
70B
$3.9M
Gemini Ultra
$191.4M
AI model training cost is the estimated value of the training hardware, the hardware's utilization rate, and duration of training time.
Model Creators
Google
OpenAI
Meta
Microsoft + NVIDIA
Source: Stanford University, Artificial Intelligence Index Report 2024

The top 4 global Hyperscale Tech Companies were investing $60 billion every quarter in digital infrastructure!

Microsoft

- Q3'24 CapEx was $14.9 billion, while Q2'24 CapEx was $19 billion.

Google

- Q3'24 CapEx was $13.1 billion, while Q2'24 CapEx was $13 billion.

Amazon

- Q3'24 CapEx was $22.6 billion.
- Q2'24 CapEx was $17.6 billion, while Q1'24 CapEx was ONLY $14 billion.
- CEO said the company is expected to spend $75 billion in CapEx in 2024, and even more in 2025!

Meta

- Q3'24 CapEx was $9.2 billion, and Q2'24 CapEx was $8.47 billion.

Open AI, Oracle and SoftBank Just announced 5 days ago plans for 10GW $500 billion Data Centers

What Is AI Governance?

The system of

rules, norms, and institutions

that ensure

AI systems are aligned with public interest.

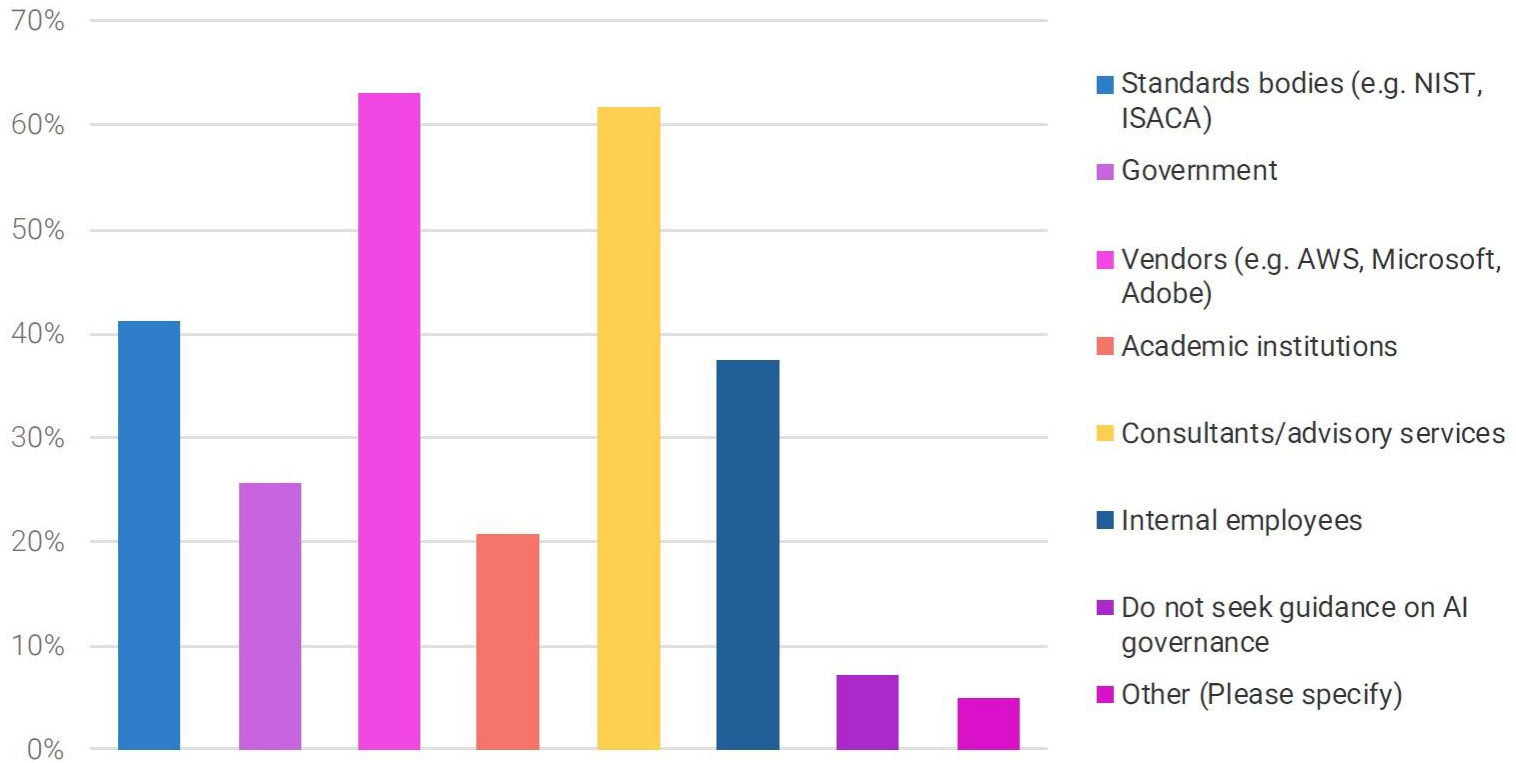
Why It Matters

AI ≠ Just a technical system
it's a decision-maker

- Approving loans
- Prioritizing patients
- Recommending sentences in courts
- Influencing elections through personalized ads
- …

AI governance guidance is often sought from external sources

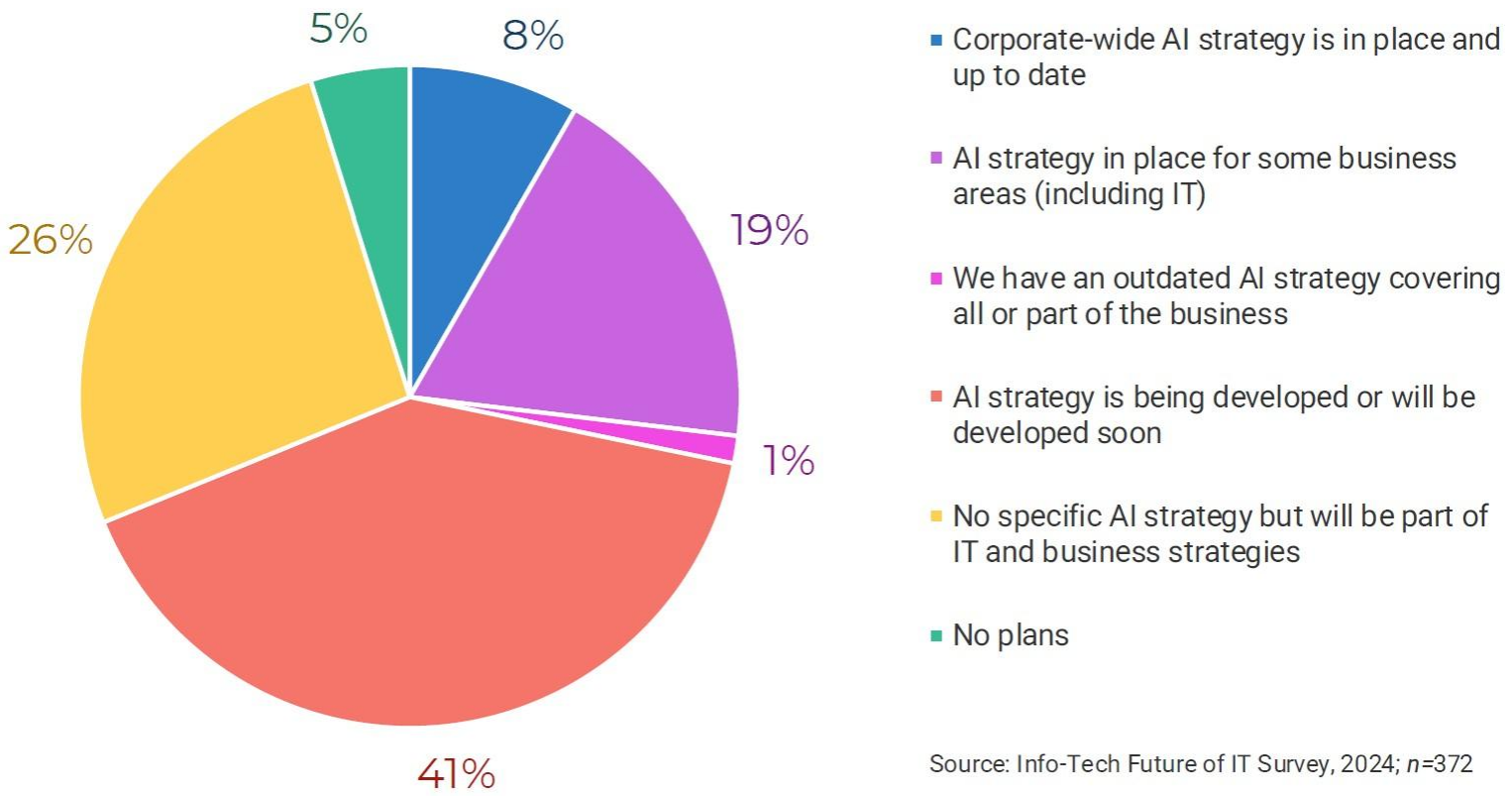
Where does your organization seek guidance on its approach to AI governance?



Source: Info-Tech Future of IT Survey, 2024; *n* = 371

AI strategy is new for most organizations

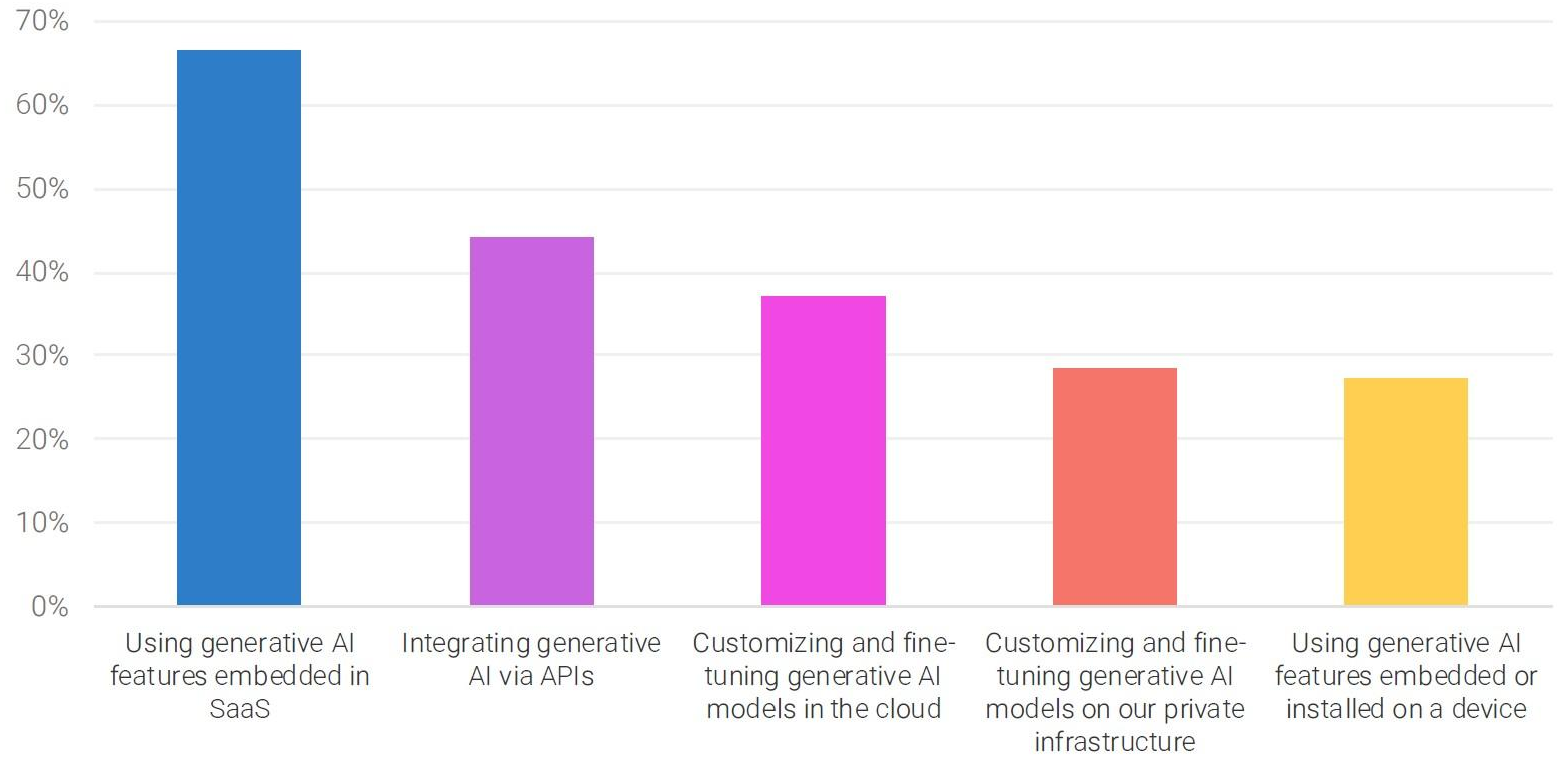
What best describes your organization's approach to AI strategy?



Source: Info-Tech Future of IT Survey, 2024; *n*=372

Organizations prefer to access generative AI through applications

How does your organization plan to make use of generative AI from now through the end of 2025?



Source: Info-Tech Future of IT Survey, 2024; *n*=183

Challenges .. AI could be used to

generate and spread toxic misinformation, eroding social trust and democracy;
to surveil, manipulate, and subdue citizens, undermining individual and collective freedom;
Or
create powerful digital or physical weapons that threaten human lives.
Or
destroy millions of jobs, worsening existing inequalities and creating new ones;
entrench discriminatory patterns and distort decision-making by amplifying bad information feedback loops;
Or
spark unintended and uncontrollable military escalations that lead to war.

Where Current Governance Models Fall Short

Key Insight:

"AI is global in deployment, but local in impact — and governance hasn’t caught up."

Governance must ensure:

Legitimacy: Are AI decisions fair and just?

Accountability: Can harm be traced and addressed?

Adaptability: Can governance evolve with tech speed?

Strategic Imperative:

“Governments must move from
AI users to AI rule makers.”

Governance is supposed to ensure that **power is checked**, that **institutions are accountable**, and that **citizens are heard and have a role**.

1. Transparency

Most AI systems today are black boxes.

2. Accountability

Who is liable when AI causes harm?
Examples: Self driving cars – Bias in Neighbourhood arrests.

3. Participation

Very few citizens have any say in how these models are built or deployed.
In the EU AI Act consultations, fewer than 3% of submissions came from developing countries or non-profits.

➢ **In short, governance has not caught up with the scale, speed, and opacity of AI systems.**

The overarching goal of any global AI **regulatory architecture** should be to **identify and mitigate risks to global stability without choking off AI innovation.**

AI governance must also be **agile** so that it can adapt and correct course as AI evolves and improves itself. Public institutions often calcify to the point of being unable to adapt to change. And in the case of AI, the sheer velocity of technological progress will quickly overwhelm the ability of existing governance structures to catch up and keep up.

AI governance **must cover the entire supply chain**, from manufacturing to hardware, software to services, and providers to users.

The Governance Challenge:

Without deliberate good governance,

AI can entrench bias and widen inequalities.

Biased algorithms in hiring or credit can reinforce discrimination, and unchecked data practices may undermine privacy and agency. Ensuring AI benefits everyone – not just a few – requires proactive policy intervention.

Why Equity and Inclusion Matter:

Technology-driven progress must not come at the expense of civil rights or social justice. Inclusive AI governance means

embedding principles of diversity, equity, and fairness

from the outset. In fact, without integrating Diversity, Equity, and Inclusion (DEI) into AI governance, we risk exacerbating global disparities. The goal is a future where AI is not only smart but also just, equitable, and inclusive.

Multi-Stakeholder Involvement:

Effective AI governance isn't top-down only – it thrives on engagement with civil society, academia, industry, and affected communities. Open Government efforts recommend opening up algorithms and AI projects to public scrutiny to improve accountability. This includes publishing algorithms or inviting public comment on AI systems. In practice, countries are convening multi-stakeholder forums (e.g. the Open Algorithms Network co-chaired by Canada and others) to co-create inclusive AI strategies. Such participatory approaches ensure that a broad range of voices – including women, minorities, and marginalized groups – shape AI policy from the start.

Ian Bremmer and Mustafa Suleyman

Companies will be part of the formula ..
Governments cannot assume they are in full control

Common Mistake: One Size Fits All

Did not achieve good success in Internet Governance ..
Not settled on governance of IPv6
So how will we govern AI which is by far harder

Big Question .. Can USA and China will meet in the middle

THE ETHICAL COST OF NON-INCLUSIVE AI

Let’s be clear: bias in AI is not a bug — it’s a reflection of the data and the society we train it on.

Examples;

In 2019, Joy Buolamwini at MIT found that facial recognition systems had error rates of 0.8% for white men and 34.7% for Black women.

In India, loan algorithms regularly deny credit to women entrepreneurs due to a lack of formal credit history — even when their businesses are successful.

In Indonesia, a fintech company admitted that its AI scoring penalized borrowers who used Bahasa Indonesia over English on their applications, because most of the training data was in English.

These examples aren’t isolated. They show us a world where the poor are invisible, the marginalized are mislabeled, and the rich get richer.

FRAMEWORK FOR INCLUSIVE AI GOVERNANCE — THE FOUR R's

1. Representation

Who is in the room when models are designed?
Include not just engineers, but ethicists, social scientists, linguists, and users.
Build multilingual datasets.
Demand demographic disclosure for training datasets.

2. Regulation

Governments must step in to set standards.
Regulatory sandboxes can help test models in controlled environments.
Examples: UAE AI ethics board. Singapore has a Model AI Governance Framework.

3. Resilience

Systems must be robust against adversarial attacks, misinformation, and edge-case failure.
Governments must invest in AI literacy, cyber hygiene, and public awareness.

4. Redistribution

AI will create immense wealth. But who benefits?
We need mechanisms to share the gains: tax on data extraction, shared IP, public AI tools.
Brazil is piloting data dividends.

Equitable and Inclusive AI Policy Frameworks

Global Principles Embedding Inclusion:

International frameworks increasingly center inclusion. UNESCO's Recommendation on the Ethics of AI (2021) urges that "diversity and inclusiveness" be ensured throughout the AI system lifecycle. Similarly, the OECD AI Principles (adopted by 50+ countries) highlight inclusive growth and fairness as key tenets. These high-level principles push governments to consider how AI can benefit all segments of society and not deepen divides.

"Equity by Design" in AI:

Policymakers are adopting equitable AI design guidelines to preempt bias. Non-discrimination and fairness are now common pillars in AI ethics codes.
Example: UAE AI Ethics Principles (2022) explicitly emphasize fairness, inclusiveness, equality, human benefit, and rights, aligning AI initiatives with the Sustainable Development Goals. Such frameworks act as a compass ensuring that AI deployment advances social good and protects the vulnerable.

Ethical Governance and Religious Values:

Ethical AI frameworks can also draw on cultural and religious value systems to enrich their moral foundation.
In this context, principles of
justice (عدل),
Trust (أمانة)
Participation (شورى)
compassion (رحمة),
and accountability (محاسبة)
are particularly relevant.
They exist is all religions and spiritual

Trust: Data is not a commodity; it is a trust. We must protect how it is collected, stored, and used.

Participation: Good governance means inclusive consultation. We must include affected communities, especially the voiceless.

Justice must be at the center. If AI increases inequality, it is failing its purpose.

International Efforts and Case Studies in Inclusive AI Governance

- **UN:**

In July, UN Secretary-General Antonio Guterres called for the establishment of a global AI regulatory watchdog.

- **The European Union – A Human-Centric Approach:**

The EU is at the forefront with its comprehensive AI Act, a regulatory bill (In June, the European Parliament passed a draft of the EU's AI Act), the first comprehensive attempt by the European Union to erect safeguards around the AI industry. It takes a risk-based approach to AI. It bans or strictly controls AI uses that threaten fundamental rights and mandates transparency and bias mitigation for high-risk systems. Underpinning this is the EU's commitment to human dignity and non-discrimination. In parallel, the EU has also published ethical guidelines on "Trustworthy AI," emphasizing inclusivity and diversity in AI development. Moreover, recognizing that regulations must be democratically governed, experts have called for greater civil society participation in technical standard-setting for AI – noting current barriers like the dominance of industry voices. The EU's experience shows the importance of pairing hard law with inclusive processes (standards, oversight boards, etc.) to ensure AI benefits all Europeans.

- **G7:**

In May 2023, the G-7 launched the "Hiroshima AI process," a forum devoted to harmonizing AI governance.

International Efforts and Case Studies in Inclusive AI Governance
(Cont.)

- **The United States – AI Bill of Rights:**

In 2022, the White House proposed a Blueprint for an AI Bill of Rights as a policy framework to protect the public from abusive AI. It enumerates principles like “Algorithmic Discrimination Protections” – meaning citizens should not face bias from AI, and systems should be designed in an equitable way. While not a binding law, it guides U.S. agencies and companies toward practices such as testing AI for bias, ensuring explainability, and safeguarding privacy. Additionally, U.S. lawmakers are exploring new regulations (e.g. an AI Civil Rights Act) to eliminate algorithmic bias in sectors like lending and employment. The U.S. case underscores growing consensus that AI governance must uphold civil rights and equal opportunity in the digital age.

Regional Spotlight: Middle East

- **National AI Strategies in MENA:**

Across the Middle East, governments are crafting AI strategies with an eye toward innovation and social impact. The United Arab Emirates appointed the world's first minister of AI and issued an "AI Ethics" guideline (2022) focusing on inclusivity, fairness, and transparency. Saudi Arabia's AI strategy similarly highlights equity and aligns with Islamic ethics on data privacy and security. These strategies often reference local cultural values – for example, the importance of community and consent in Islamic teachings – alongside global ethical norms. While implementation is ongoing, the vision is clear: position the region as a leader in AI while ensuring technologies are used in line with ethical and societal norms (such as protecting personal dignity and preventing harm).

Regional Cooperation and Capacity Building: Countries in the Middle East are also collaborating on AI through forums like the OECD's AI Policy Observatory (which includes several MENA participants) and bilateral partnerships (e.g. UAE–Egypt AI cooperation on skill development). Likewise, countries like Qatar and Oman are investing in AI literacy and upskilling programs to ensure their citizens can partake in the AI economy, not just watch from the sidelines.

- **Egypt:**

In 2024 MoHE in Egypt in cooperation with UNESCO and ISESCO issued Ethics of the Use and Development of AI in Egypt

Regional Spotlight
(Cont.)

- **Turkey**

Towards Responsible AI Governance: Turkey, as the host nation for this discussion, offers a compelling case study. The government released its National AI Strategy in 2021, aiming to transform Turkey's economy with AI by 2025 while safeguarding societal well-being. A Digital Transformation Office (DTO) was established to coordinate AI policy across ministries. Responsible and inclusive AI is a declared priority in Turkey's AI journey. In practice, this has meant aligning with European best practices: Turkey is preemptively harmonizing its AI policies with the EU AI Act to ensure ethical implementation. The DTO has issued an AI circular setting standards for transparency, accountability, and fairness in public-sector AI. Notably, Turkey is developing a "Trustworthy AI Seal" certification for AI systems – a badge to assure citizens that an algorithmic system meets rigorous ethical and technical criteria. Together with algorithmic accountability guidelines, this is meant to bolster public trust that AI-assisted public services are fair and explainable.

There is recognition that talent development and education are key to inclusion. Turkey established dozens of AI research and education programs and funded industry-academia projects to build an AI-ready workforce.

Global Multi-Lateral Initiatives:

Beyond individual nations, international bodies are fostering inclusive AI governance. The UN has called for a global “Digital Compact” to ensure digital technologies (including AI) drive inclusion and development for all. UNESCO’s 193 member states unanimously adopted the AI Ethics Recommendation, committing to actions on data governance, gender equality, and inclusive AI education. The Global Partnership on AI (GPAI) brings together governments and experts from around the world (including Middle Eastern countries) to collaborate on responsible AI, with work strands on future of work and data justice that address equity and inclusion. These international efforts provide platforms for sharing best practices and harmonizing norms – important for smaller states to voice their needs and values in the global AI narrative.

US (pro-innovation) vs. EU (pro-safety) AI regulatory comparison

	United States	European Union
Key Driver	Innovation	Safety and mitigating risk
Approach	Policy	Legislation and regulation
AI Regulatory Framework	• No legislation at the federal level • Legislation exists at the state and municipal level • White House AI Executive Order 14110 (policies for federal agencies)	• EU AI Act • General Data Protection Regulation • Product Liability Directive • EU Data, Digital Services, Digital Markets, Data Governance Act
Enforcement Agencies	• Federal Trade Commission (FTC) • Consumer Financial Protection Bureau (CFPB) • Sector-specific regulators	• European AI Office • European AI Board • National Data Protection Authorities
AI System Classification	Emphasizes responsible use, no reporting/classification requirements	• Unacceptable risk: any system leveraging personal biometric data • High risk: any system that categorizes or profiles individuals
Regulatory Focus	Vertical/sector/risk-based, will depend on context	Horizontal-based, same rules apply to all industries
Penalties	No new penalties; leverages existing laws	Fines based on a percentage of revenue
Obligations	Compliance with AI principles	Based on requirements for high-risk AI systems (Section 2) • Risk Management System, Data Governance, Documentation, Record-keeping, Transparency to Deployers, Human Oversight, Accuracy, Robustness and Cybersecurity

Key Challenges:

➢ Bias

Algorithmic Bias and Discrimination:
One of the most urgent governance challenges is correcting algorithmic bias that leads to unfair outcomes. AI systems can inherit and amplify human biases present in training data or design. Case in point: facial recognition software was found to have error rates below 1% for light-skinned men but as high as 34% for dark-skinned women – a stark disparity arising from non-representative training data. Such biases have real-world consequences: they can result in higher wrongful arrest rates for minorities, unequal loan approvals, or denial of job opportunities to qualified candidates. Policymakers must therefore implement standards for "algorithmic fairness testing" and require audits of AI systems used in sensitive areas (hiring, policing, healthcare) to detect and mitigate bias. Another strategy is mandating diversity in AI development teams and datasets, so that perspectives of women, racial/religious minorities, and other underrepresented groups shape system design. Ultimately, ensuring AI is fair is a cornerstone of inclusive governance – it preserves social justice in an algorithmic age.

Key Challenges:

➢ Digital Divide

As AI advances, a new form of digital divide is emerging – an “AI divide” between those who have access to AI tools and literacy and those who do not. This divide reflects unequal access to AI benefits across communities and countries. Marginalized groups (rural populations, women, low-income communities) often lack the connectivity, education, or resources to utilize AI-driven services, which exacerbates existing inequalities. For instance, AI-powered education or healthcare services may not reach remote or impoverished areas, further isolating them. Bridging this gap requires investments in AI literacy and digital skills training for all citizens – so people understand and can leverage AI. It also calls for expanding affordable internet access and ICT infrastructure, particularly in developing regions. Governments and international agencies should view AI capacity-building as a development priority, akin to basic education. If left unaddressed, the AI divide could mirror or even worsen the socio-economic divide, leaving a portion of the global population unable to benefit from (or voice concerns about) AI. Ensuring equitable access and empowerment is thus integral to “inclusive AI.”

Key Challenges:

➢ Global Inequality

Who develops and benefits from AI on the world stage is heavily imbalanced. Wealthier nations currently dominate AI research, investment, and infrastructure, while lower-income countries lag behind. The chart above (AI preparedness by country income group) vividly illustrates this gap: High-Income Countries (red bubbles) cluster far to the top-right – indicating robust AI readiness (often 60–80% on the index) – whereas Low-Income Countries (purple) lag at the bottom with minimal preparedness. In 2023, the U.S. alone attracted over $67 billion in AI investments, 8 times more than the next country (China). Such disparities mean advanced nations are poised to reap AI's rewards (productivity, wealth creation) while poorer nations risk falling further behind. There is a real concern that AI could widen the global wealth gap, undermining development gains. Moreover, developing countries may be less prepared to handle AI's disruptions – lacking social safety nets or retraining programs to cushion job losses from automation. This challenge demands a global response: richer nations and international organizations need to support capacity in the Global South through funding, technology transfer, and inclusive governance forums. Without corrective measures, AI's growth could mirror past technological revolutions that benefited the few over the many, making it imperative to bake global equity into AI governance discussions (from WTO and G20 talks to UN agencies).

Actionable Insights: Toward Inclusive AI Governance

- **Embed Fairness and Non-Discrimination into Policy:**

Policymakers should codify fairness principles into AI regulations and procurement. This could include requiring algorithmic impact assessments for public algorithms (checking for biased outcomes before deployment) and enforcing “equity by design” standards. Several governments are already moving in this direction – for example, Finland now mandates ethical guidelines to avoid AI biases affecting human dignity and equality. Likewise, Canada is strengthening its AI Directive to require an intersectional analysis (Gender-Based Analysis Plus) during AI system development to catch biases impacting women, minorities, or disabled groups. Adopting such tools universally can help ensure that AI-driven decisions do not discriminate but rather promote inclusive outcomes.

Actionable Insights: Toward Inclusive AI Governance
(Cont.)

- **Invest in Digital Infrastructure and AI Literacy:**

Inclusive governance means making AI accessible to all. Governments, especially in developing countries, must invest in foundational digital infrastructure – affordable internet, electricity, and data centers – as a public good. For instance, India's drive to connect 600,000 villages to broadband has laid groundwork for rural communities to benefit from AI innovations. In parallel, education and skilling programs are crucial: integrating AI and data science into curricula, offering vocational training for the AI economy, and running public awareness campaigns. Viet Nam's initiative to include AI in all levels of education by 2025 is a notable example. By improving STEM education and AI literacy, nations equip their citizens – including underrepresented groups – to participate in and shape the AI future rather than be passive recipients.

Actionable Insights: Toward Inclusive AI Governance
(Cont.)

- **Strengthen Inclusive Institutions and Participation:**

Governance mechanisms should be designed to include diverse voices in AI policymaking. This means setting up ethics committees, advisory councils, or regulatory sandboxes that have representation from women, ethnic/religious minorities, persons with disabilities, youth, and other stakeholder groups. It also entails consulting widely on AI strategies (through public comment periods, town halls, etc.). The EU's approach of involving civil society in AI standard discussions, or Scotland's public challenges on AI and disability inclusion, are practices to emulate. Internationally, developing countries should be actively invited into global AI governance fora – their perspectives on equity and needs must shape global norms. Decolonizing AI governance involves recognizing and elevating the voices of the Global South in rule-making. An actionable step is to provide funding and capacity support for stakeholders from poorer countries to join these conversations (echoing recommendations to boost civil society participation in standards work). In sum, inclusive governance is as much about process as outcomes: who gets a seat at the table will determine if AI policy truly serves everyone.

Actionable Insights: Toward Inclusive AI Governance
(Cont.)

- **Address the Data Divide and Encourage Local Innovation:**

Equitable AI requires diversifying the data and systems that power it. Policymakers should push for inclusive data governance – encouraging data collection that covers marginalized populations and local contexts (with proper consent and privacy). Open data initiatives can help, as can international data-sharing agreements that ensure the Global South has access to the data resources fueling AI (for example, sharing satellite or health data for development uses). At the same time, governments can spur local AI innovation targeted at local problems. This might mean grant programs, innovation hubs or sandboxes for startups building AI solutions in, say, Arabic or Turkish languages, or addressing regional issues (like water scarcity or crop optimization). Rwanda's support for youth and women in coding and AI projects shows how empowering underrepresented innovators can yield AI solutions tailored to community needs. By fostering home-grown AI and closing data gaps, countries ensure AI development isn't one-size-fits-all from abroad, but inclusive of diverse cultures and contexts.

Actionable Insights: Toward Inclusive AI Governance
(Cont.)

- **Ensure Accountability and Ethical Oversight:**

To maintain public trust in AI, robust oversight mechanisms are needed. Policymakers should establish clear accountability for AI harms – defining legal liability for AI decisions and avenues for redress when AI causes discrimination or other harms. This could be through updating anti-discrimination laws to cover algorithmic decisions or creating AI ombudsperson offices to investigate complaints. Regular audits and transparency requirements will also enforce accountability: e.g. requiring government agencies or companies to publish information about their AI systems ("AI registers") and conduct independent audits for bias, security, and performance. Some jurisdictions (like New York City with its bias audit law for hiring algorithms) are pioneering this. Additionally, ethics review boards (with community representation) can oversee the deployment of AI in sensitive areas. Finally, grounding governance in core ethical principles – like the Islamic ethos of أمانة (trustworthiness) and مصلحة (public interest) – can guide officials to make decisions in service of the common good, ensuring AI systems remain "human-centered" and aligned with our moral values.

Case Study 1: Employment

The past industrial and digital revolutions have proven to shift job market to a different skill set
Will this one be the same?

AI as a European heaven
UNIDO study

3 cases

1. Forced to do because Jobs are on workshop premises
2. Export favoured in the short term because jobs can be performed remotely
3. Looking forward for AI to perform some of the tasks

Case Study 2: RIA:

Regulatory Impact Assessment

Expectations, Scenario Building and Decision Making

Call to action

Who must do What?

- ✓ **Policymakers:**
  Draft inclusive AI strategies with local values. Fund domestic AI infrastructure. Push for regional AI governance bodies.

- ✓ **Technologists:**
  Build for explainability, not just accuracy. Document decisions. Center inclusion in the design process.

- ✓ **Civil Society:**
  Educate communities. Demand transparency. Create coalitions across borders.

- ✓ **Religious and Spiritual Leaders:**
  Provide moral framing. Issue guidance. Ensure ethical debates are not left to technocrats alone.

To Conclude

We are at a critical juncture. The future of AI will not just be built in Silicon Valley or Beijing. It will be shaped by the questions we ask here, today.

- Let us make those questions bold, ethical, and inclusive.
- Let us not replicate the injustices of the past with the technologies of the future.
- Let us instead build an AI that serves the human being — not replaces him !!

We can not be mere consumers of good governance,
we must be participants and co-creators

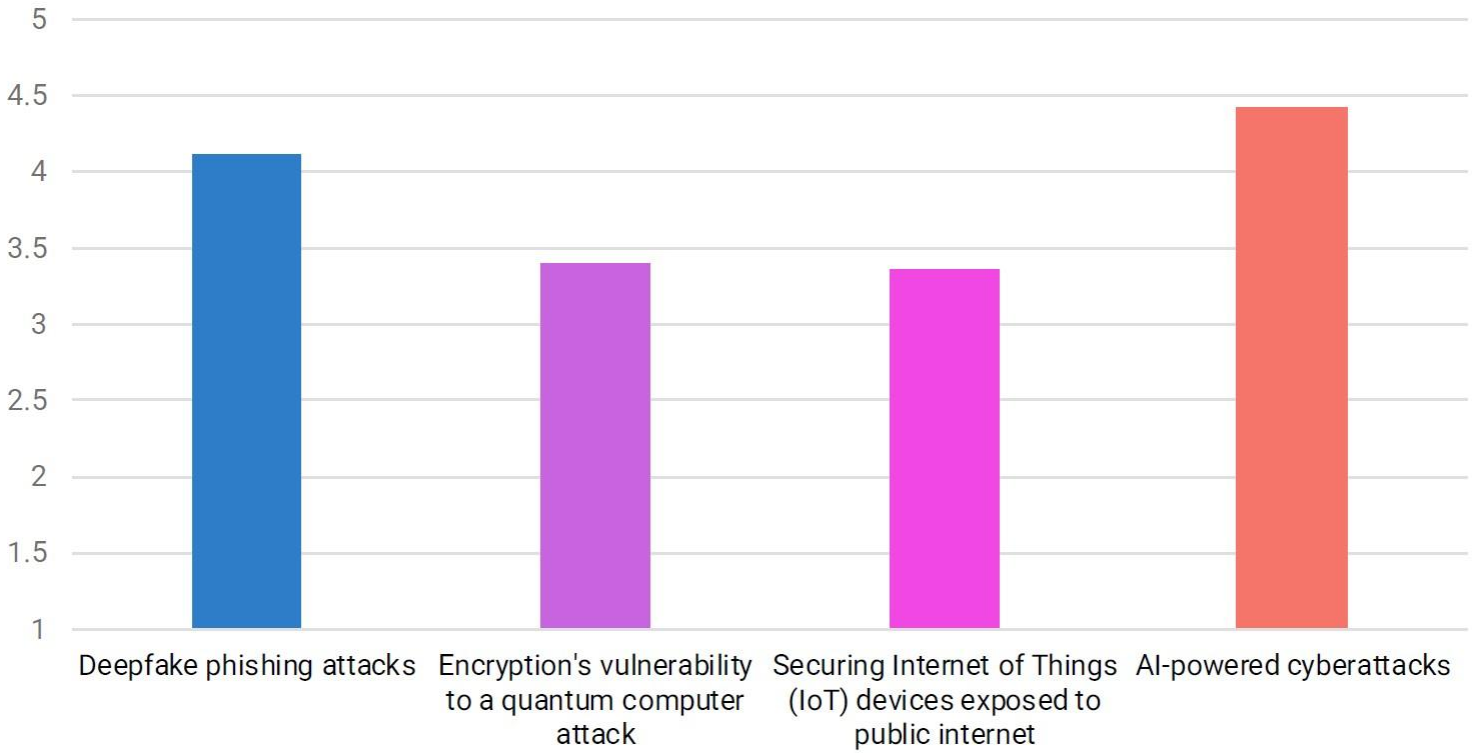
Rohini Nilekani

I am concerned that we will be trying to fit old structures to new Technologies

Ahmed Darwish, Paris 2002

AI-based cyberattacks and deepfakes are the top cybersecurity threats

How concerned are you about the following external cybersecurity threats? Rate 1 (Not concerned) to 5 (Very concerned)



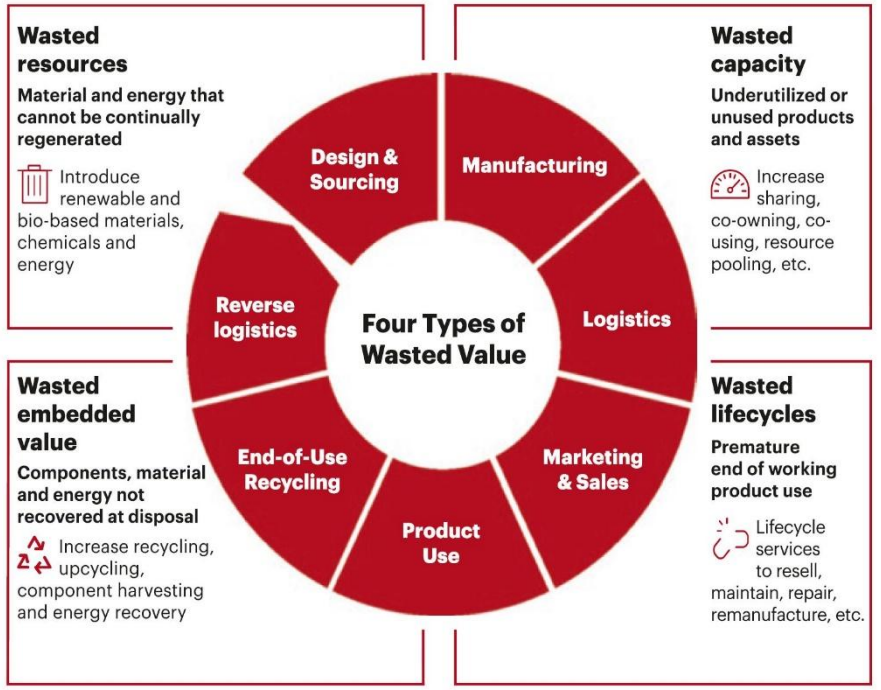
Source: Info-Tech Future of IT Survey, 2024; *n*=190

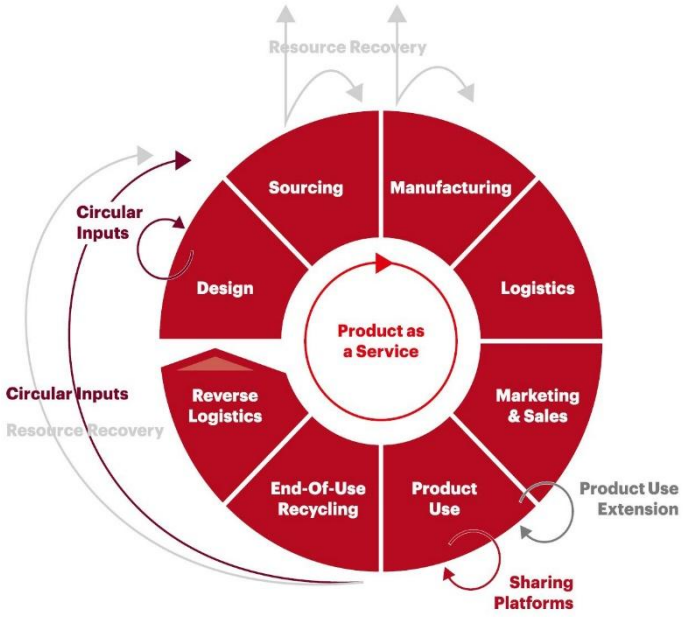
Linear Economy

Take Make Use Waste

Circular Economy

- **Circular design and production:** applying “reduce and recycle” strategies to design out waste at the source, prior to commercialization.
- **Circular use and life extension:** enabling the reuse, repair, repurposing, refurbishing or remanufacturing of products in use phase
- **Circular value recovery:** recovering materials and other resources from waste, recovering waste heat and/or reusing treated wastewater
- **Circular support:** facilitating circular strategies in all lifecycle phases, for example with the deployment of key ICT technologies, digitalization and services supporting circular business models and circular value chains.





Quantum Computing

Nano Robots

Drones

New Generation of Batteries

Web3

Organ Mathematical Modeling

What?

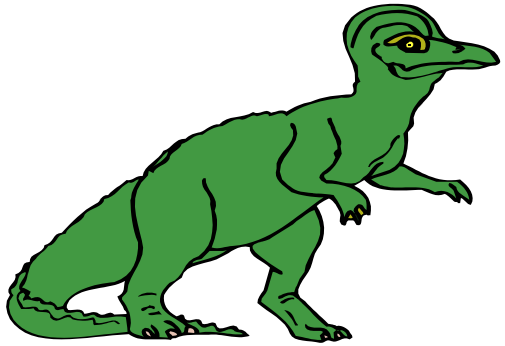
We all know but we are not acting ..

We like to stay in our comfort zone !!

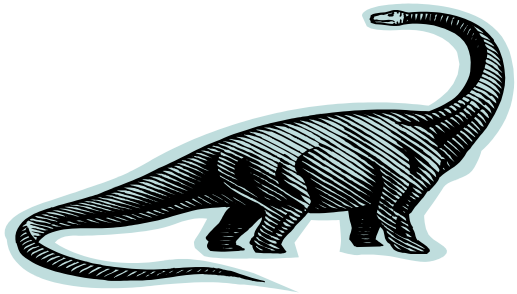
We need to move from 1$ economy
to the 20$ economy

If we work as programmers for others ..
bye bye ☹

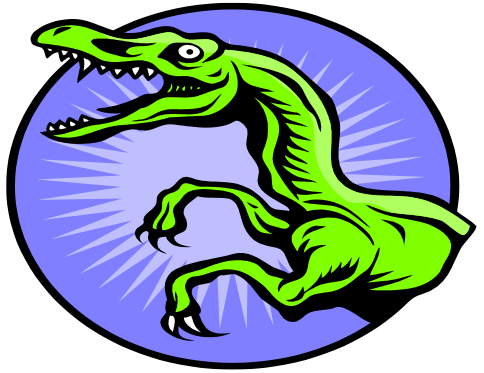
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الطبيعة علمتنا

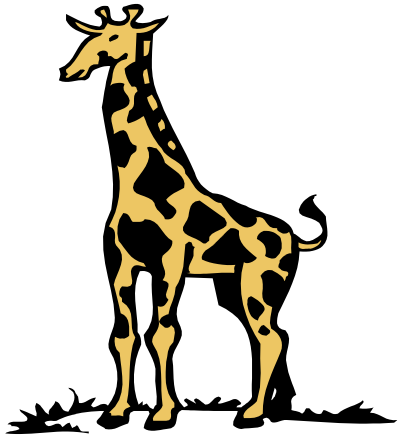


أن من لا يتواءم ينقرض





مرونة



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Flexibility

> **Nature taught us that what does not adapt goes extinct.**

Dinosaurs disappeared; the giraffe stretched its neck and survived. Flexibility is the lesson for organisations and laws alike.

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> **Are we trying to fit old structures onto new mechanisms?**

— A. Darwish, Paris 2002

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هل نحن نحاول ان نكيف هياكل قديمة على آليات جديدة؟

أد باريس 2002

Case Studies

Singapore

Singapore

- A small island city-state in Southeast Asia
- Sits at the southern tip of the Malay Peninsula, between Malaysia and Indonesia
- Lies on one of the world's busiest shipping routes, between the Indian Ocean and the South China Sea



Singapore on the map of Asia

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A short history

1

1963–1965: part of Malaysia

Singapore joins the Federation of Malaysia as one of its states

2

Ethnic riots and unrest

Violent clashes between the Malay and Chinese communities

3

Malay dominance

The ruling party in Malaysia insists that Malaysia stays under Malay control

4

Malaysian Solidarity Convention

Singapore's leaders campaign for a 'Malaysian Malaysia' with equal rights for all races

5

1965: separation from Malaysia

Singapore is expelled from the federation and becomes an independent republic

6

A multi-racial society

The new state is built on equality between all citizens, whatever their ethnic origin

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Singapore and Malaysia compared

Two neighbours that separated in 1965: a tiny city-state next to a large federation.

	Singapore	Malaysia
Population	5,453,566	32,776,195
Area	726.00 km²	328,550 km²
Government	Republic with a parliamentary system	Federal constitutional monarchy
State founded	1965	1963
Legislature	One chamber (unicameral)	Two chambers (bicameral)
GDP (US$)	396.99 billion	372.70 billion

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Corruption in Singapore before the reforms

In the 1950s and early 1960s corruption was a normal part of daily life. Five features stood out.

Bribery everywhere

Most things got done through bribes; paying officials was the normal way to obtain a service.

Weak legal framework

Anti-corruption laws were weak and poorly enforced.

Widespread illiteracy

A poorly educated population could not hold officials to account.

Low wages

Civil servants and police were badly paid, so bribes topped up their income.

No economic transparency

Public money and decisions were hidden from scrutiny.

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سنغافورة


Turkey
Georgia
Armenia
Azerbaijan
Iraq
Kazakhstan
Uzbekistan
Turkmenistan
Iran
Kyrgyzstan
Tajikistan
Afghanistan
Pakistan
Mongolia
China
UAE
Saudi Arabia
Oman
Nepal
Bhutan
India
Bangladesh
Myanmar
Laos
Thailand
Cambodia
Vietnam
Arabian Sea
Bay of Bengal
Andaman Sea
Sri Lanka
Maldives
Indian Ocean
Sea of Japan
North Korea
South Korea
Japan
East China Sea
Taiwan
Philippine Sea
South China Sea
Philippines
Brunei
Malaysia
Singapore
Indonesia
40
20
0

تاريخيا

سنغافورة واحدة ضمن ولايات ماليزيا

1965-1963

أعمال شغب واضطرابات عرقية بين المالاويين والصينيين

الحزب الحاكم يصمم على خضوع ماليزيا لسيطرة المالاويين

مؤتمر

التضامن الماليزي

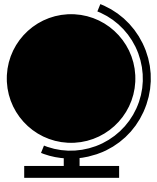
الانفصال عن ماليزيا

1965

سنغافورة

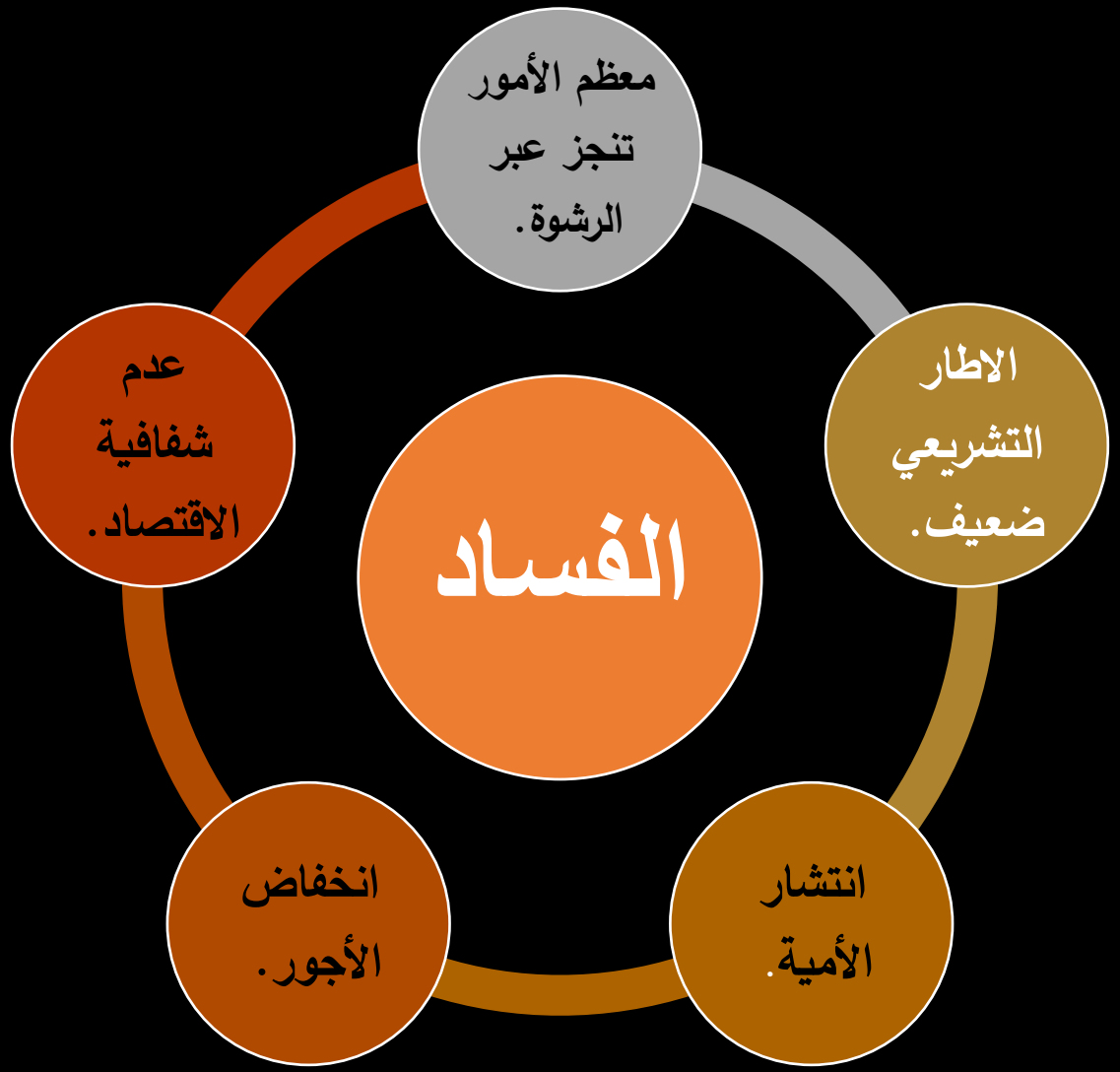
مجتمع متعدد الأعراق يساوي بين كافة المواطنين

سنغافورة وماليزيا... نظرة مقارنة

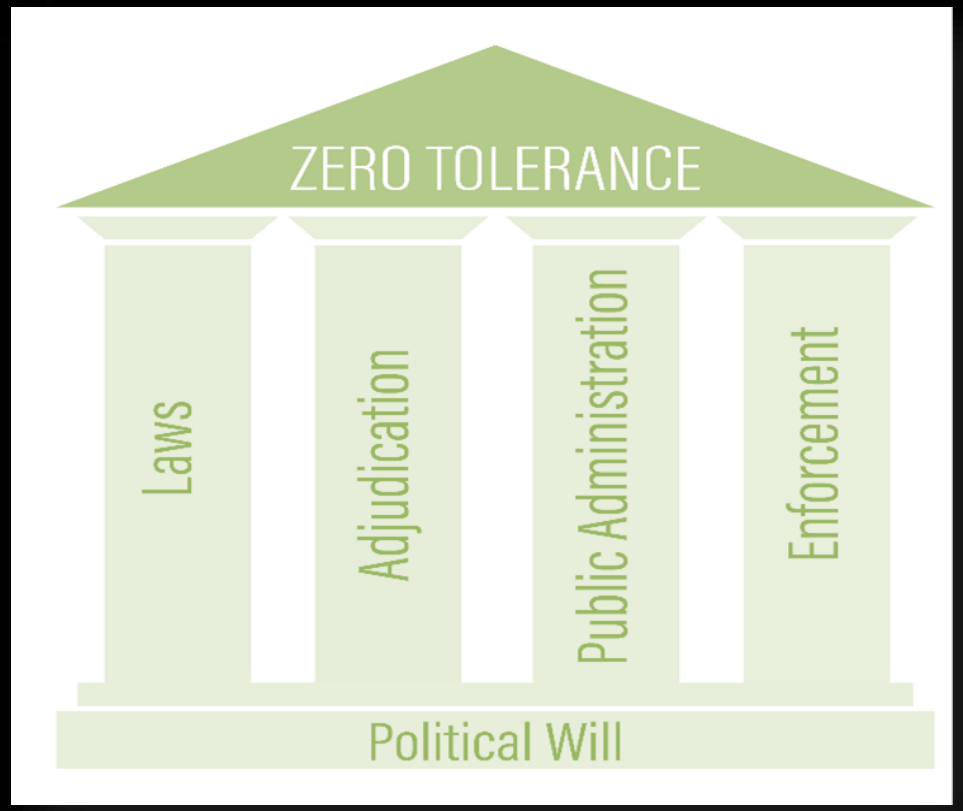


وجه المقارنة	سنغافورة	ماليزيا
السكان	5.453.566	32.776.195
المساحة	726.00 كم²	328.550 كم²
الحكومة	جمهورية نظام حكم برلماني	ملكية اتحادية دستورية
قيام الدولة	1965	1963
المجلس التشريعي	غرفة واحدة	غرفتين
اجمالي الناتج المحلي $	396.99 مليار	372.70 مليار

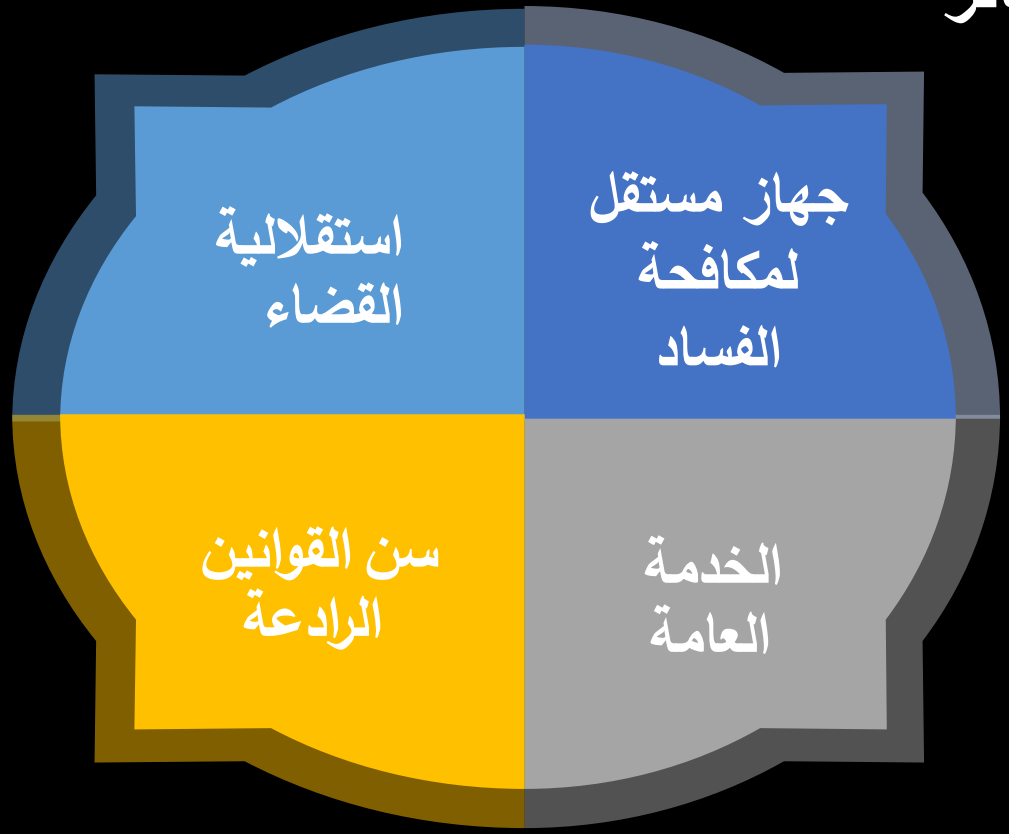
الفساد في سنغافورة



استراتيجية سنغافورة لمكافحة الفساد



الركائز



القاعدة: الإرادة السياسية

الإرادة السياسية

- برنامج لمكافحة الفساد
" تريدون محاربة الفساد؟ إذن استعدوا لإرسال أصدقائكم الى السجن"

- التزام الحكومة السياسي... ثقافة **عدم التسامح مطلقًا مع الفساد** متأصلة في نفسية سنغافورة وأسلوب حياتها.

Singapore's anti-corruption strategy

Base: political will. On top of it stand four pillars, under a roof of zero tolerance.

Independent anti-corruption agency

The Corrupt Practices Investigation Bureau (CPIB) answers directly to the Prime Minister.

Clean public service

Strict code of conduct and regular reviews of government procedures.

Independent judiciary

Judges appointed on merit; courts that are strict and impartial.

Deterrent laws

Tough legislation with heavy penalties, strictly enforced.

The 'temple' model: Political Will as the base; Laws, Adjudication, Public Administration and Enforcement as pillars; Zero Tolerance as the roof

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Political will

> **You want to fight corruption? Then be ready to send your friends to jail.**

— Lee Kuan Yew, founding Prime Minister of Singapore

A government programme against corruption, backed by real political commitment. A culture of absolute zero tolerance for corruption became part of the Singaporean mindset and way of life.

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Pillar 1: an independent anti-corruption agency

Corrupt Practices Investigation Bureau (CPIB). Vision: a leading anti-corruption agency that upholds integrity and good governance towards a corruption-free nation.

- **Policy** Enforces anti-corruption policy in both the public and the private sector
- **Investigation** Investigates abuse of power, corrupt practices and every complaint it receives
- **Reporting** Reports its findings to the bodies the accused officials belong to
- **Review** Reviews work systems in government agencies and proposes anti-corruption measures
- **Integrity meetings** Meets officials who deal with the public to stress the principles of integrity
- **Public education** Spreads the anti-corruption message through initiatives with students, agencies, companies and the public

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Pillar 2: a clean public service

Code of conduct

A code of conduct for civil servants built on integrity, non-corruption and transparency.

Procedure reviews

The CPIB is tasked with reviewing government agencies whose work procedures could be exploited for corrupt practices.

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Pillar 3: an independent judiciary

- **Strict and impartial** A judicial system known for firmness and neutrality
- **Merit-based appointments** Judges are appointed transparently on the basis of merit, competence and experience
- **Chief Justice** Appointed by the President after consulting the Prime Minister
- **District judges and magistrates** Appointed by the President in consultation with the Chief Justice

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Pillar 4: deterrent laws

One legal system built from three pieces of legislation.

The Prevention of Corruption Act

The main anti-corruption law; gives the CPIB its powers to investigate and arrest.

The Corruption, Drug Trafficking and other Serious Crimes Act

Allows the confiscation of the proceeds of corruption and other serious crimes.

Penal Code (sections 161 to 165)

Provisions on bribery of public officials.

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Additional steps

Higher salaries

- Attract the best professionals into the public sector
- Civil servants and judges are paid salaries that match those of senior corporate executives
- A well-paid official has far less reason to take a bribe

Objective media

- Corruption cases that are uncovered are reported openly
- Officials who expose corruption are publicly praised
- Publicity turns enforcement into deterrence

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لي كوان يو

رئيس وزراء سنغافورة الأسبق

من العالم الثالث إلى الأول

قصة سنغافورة ١٩٦٥ - ٢٠٠٠

الطبعة الثالثة



نقله إلى العربية

معين الإمام

العبيكان
Obeikan

Recommended reading

From Third World to First: The Singapore Story 1965–2000

The memoir of Lee Kuan Yew, former Prime Minister of Singapore, telling how the country moved from a poor, corrupt post-colonial port to a first-world economy in one generation.

- Author: Lee Kuan Yew, former Prime Minister of Singapore
- Arabic edition (3rd printing) translated by Moein Al-Imam, published by Obeikan
- Key chapters on fighting corruption and building a clean civil service

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المؤشرات الدولية

سنغافورة

85/ 100 4/180	مؤشر مدركات الفساد 2021 Corruption Perception Index CPI
86.2 2/190	سهولة ممارسة الأعمال 2020 Doing Business DB
12/191	التنمية البشرية 2021 Human Development Report HDR
72.794	نصيب الفرد من الناتج المحلي الإجمالي 2021 Gross Domestic Product GDP

Singapore in the international indicators

85/100

Corruption Perceptions Index (CPI) 2021

Rank 4 of 180 countries

86.2

Doing Business (DB) 2020

Rank 2 of 190 economies

12/191

Human Development Report (HDR) 2021

Human Development Index rank

US$72,794

GDP per capita 2021

Gross Domestic Product per person

Source: Transparency International CPI 2021; World Bank Doing Business 2020; UNDP Human Development Report 2021; World Bank GDP per capita 2021

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Conclusions

> **The password: putting the nation's interest first.**

Political will at the top, an independent agency, a clean civil service, impartial courts and tough laws all rest on one idea: the interest of the country comes before the interest of any individual or group.

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Estonia Digital Transformation

Estonia at a glance

A small country in north-eastern Europe on the Baltic Sea, fully integrated into Western institutions.

1.3 million

Population

US$27.9 thousand

GDP per capita

Euro

Currency

Estonian

Official language

EU, NATO, OECD

Member of the European Union, NATO and the OECD

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1991: the leaders who chose a digital future

When Estonia regained independence in 1991 it started almost from zero. Three men set the direction.

Lennart Meri

President. Wanted Estonia to become 'a Nokia': a small country known worldwide for technology.

Mart Laar

Prime Minister. Open to 'crazy ideas' and research and development; backed radical reform.

Raimund Ubar

Computer scientist. Championed digital transformation and the use of IT in education and government.

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Milestones of Estonia's digital transformation, 1996–2007

1996 — Tiger Leap
National programme to put computers and internet in every school

2000 — e-Cabinet, e-Tax Board, m-Parking
Paperless government meetings, online tax filing, parking paid by mobile

2001 — X-Road
Secure data-exchange layer connecting public and private databases

2002 — ID card, digital signature, e-School
National electronic ID with legally binding digital signatures

2003–2004 — eesti.ee and ID bus ticket
State portal (2003); ID card used as a public-transport ticket (2004)

2005 — i-Voting
First country in the world to hold legally binding internet voting

2006 — e-Justice
Digital case files and court procedures

2007 — Mobile-ID and e-Police system
Identity on the SIM card; police access to registers from patrol cars

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Milestones of Estonia's digital transformation, 2008–2017

2008 — **Keyless signature infrastructure and e-Health system**

Blockchain-style integrity for government data; nationwide electronic health records

2010 — **e-Prescriptions**

Doctors issue prescriptions digitally; pharmacies read them with the ID card

2011 — **Visualised business register and smart grid**

Company ownership data made visual; smart electricity metering

2012–2013 — **EV quick-charging network and X-Road Europe**

Nationwide electric-vehicle chargers (2012); X-Road offered to other countries (2013)

2014 — **e-Residency**

First country to offer a government-issued digital identity to non-residents

2015 — **e-Receipt**

Digital receipts replace paper

2017 — **Data embassy**

Backup of critical state data held in a server room in Luxembourg

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Milestones of Estonia's digital transformation, 2018–2021



Kick-off: proactive government; cross-border e-prescription

Services offered automatically before citizens ask; prescriptions valid in Finland

Reporting 3.0

Businesses report once; data flows automatically to the state

e-Notary for remote verification

Notarial acts completed by video link

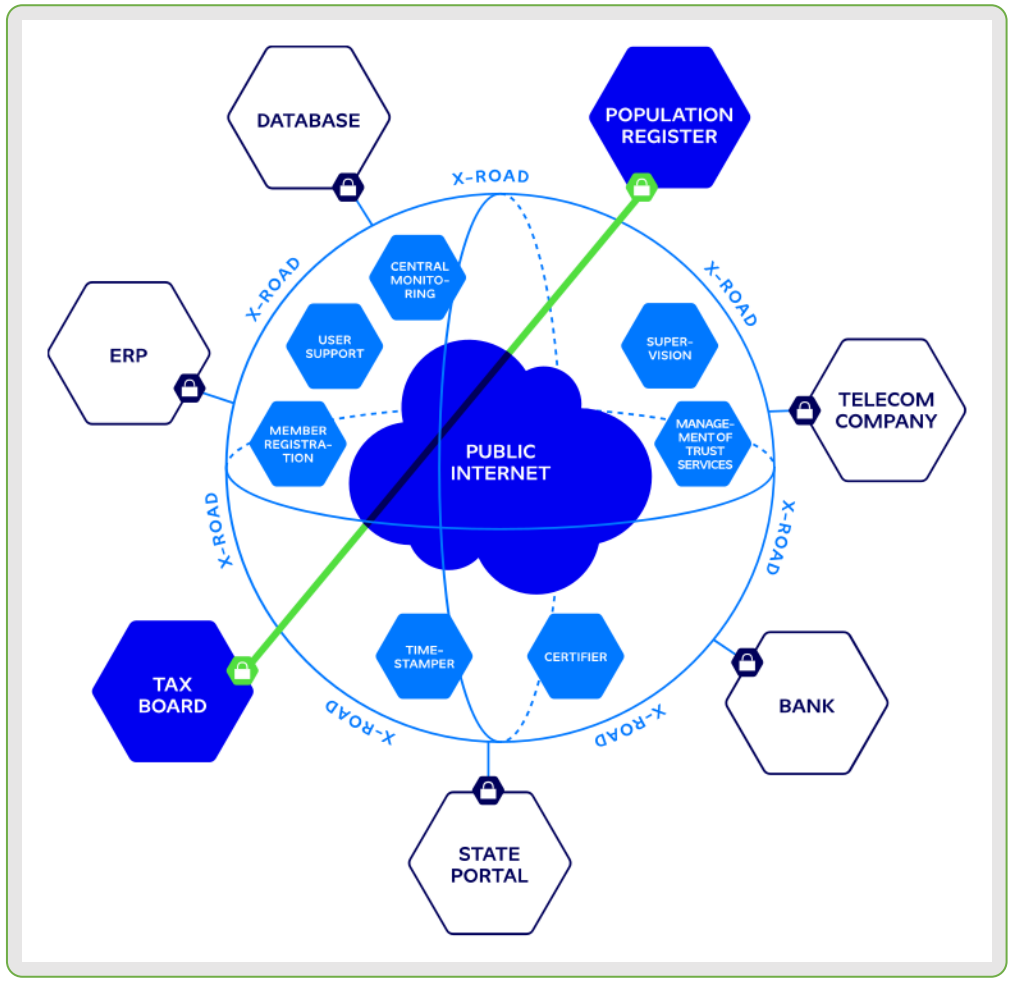
Bürokratt

AI virtual assistant that lets citizens use public services by voice or chat

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X-Road, the busiest highway since 2001

- X-Road – secure and interoperable open-source data exchange platform
- Operational in Azerbaidjan, Argentina, Cambodia, Colombia, El Salvador, Estonia, Faroe Islands, Finland, Germany, Iceland, Japan, Kyrgyzstan, Vietnam
- X-tee – the Estonian X-Road ecosystem since 2001
- Saving 3 million working hours annually; over 3,000 different services; over 2,5 billion transactions per year



X-Road architecture: public and private databases (population register, tax board, banks, telecoms, ERP systems, state portal) exchange encrypted data over the public internet

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e-Residency

First in the world: a government-issued digital identity for people who do not live in Estonia (e-resident.gov.ee).

160+

Countries

Where e-residents come from

90,000+

e-Residents to date

21,000+

e-Resident companies

Registered in Estonia

€32m+

Taxes paid to Estonia

By e-resident companies



The e-Residency kit: smart card and reader issued by the Estonian Police and Border Guard Board

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What the Corruption Perceptions Index looks at

Corrupt practices

- Bribery
- Embezzlement
- Abuse of public office

Government processes

- Routine (red-tape) procedures
- Disclosure and transparency
- Efforts to reduce corruption
- Public appointments

Accountability

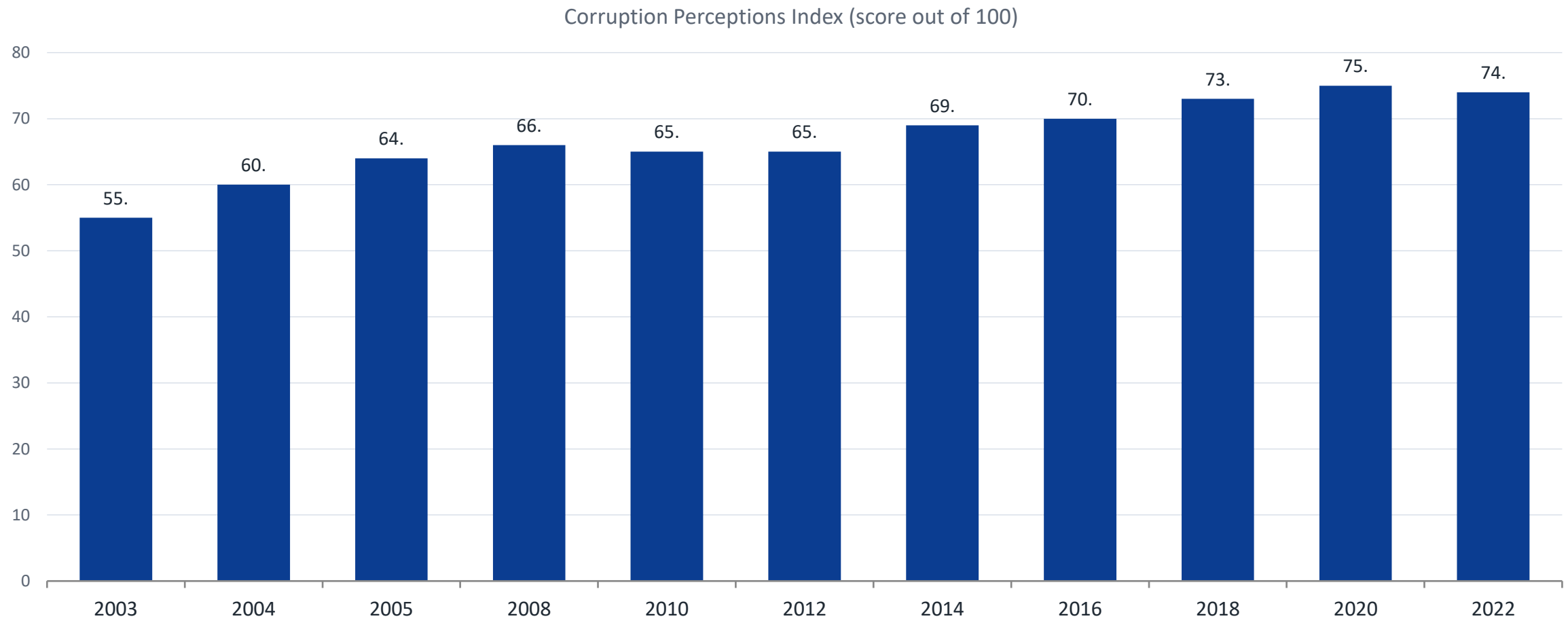
- Laws
- Prosecution of the corrupt
- Protection of whistle-blowers

Society and leadership

- Who leads the state
- Civil society
- Human rights

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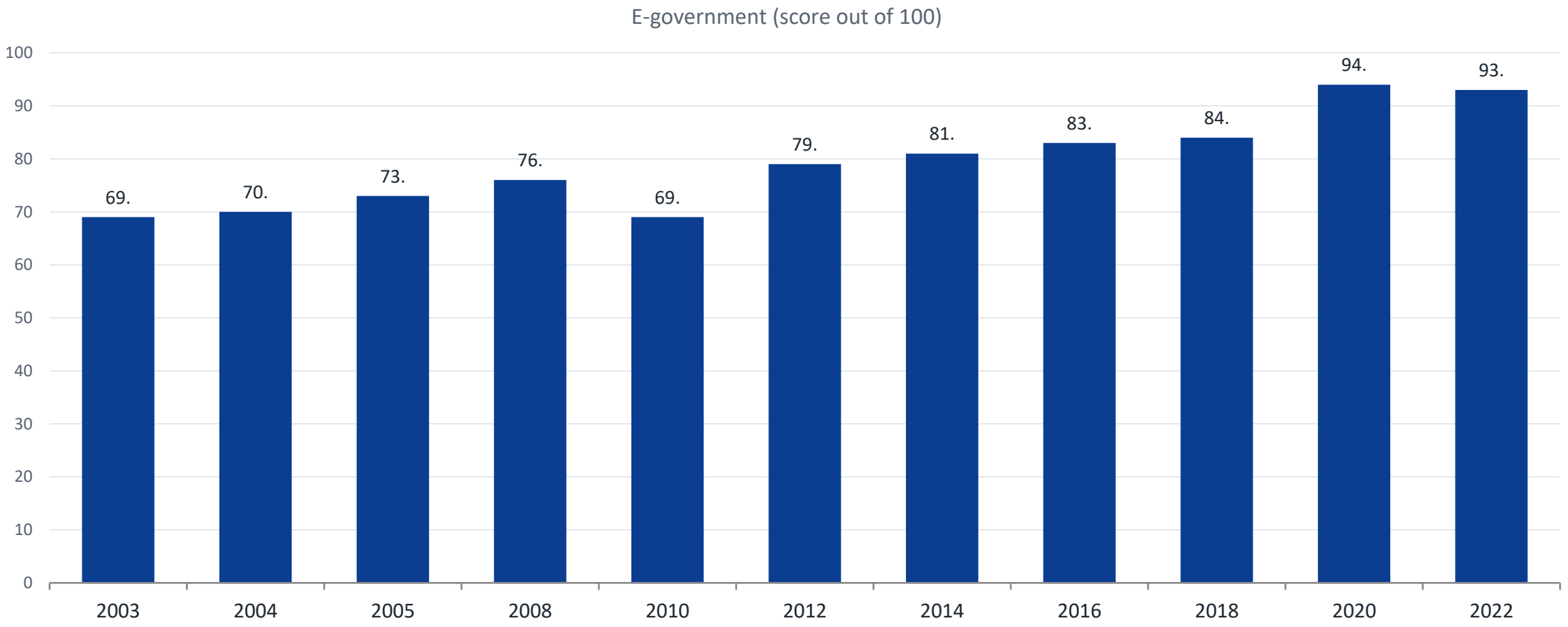
Corruption Perceptions Index, Estonia



Source: Transparency International, Corruption Perceptions Index (score 0–100, higher = cleaner)

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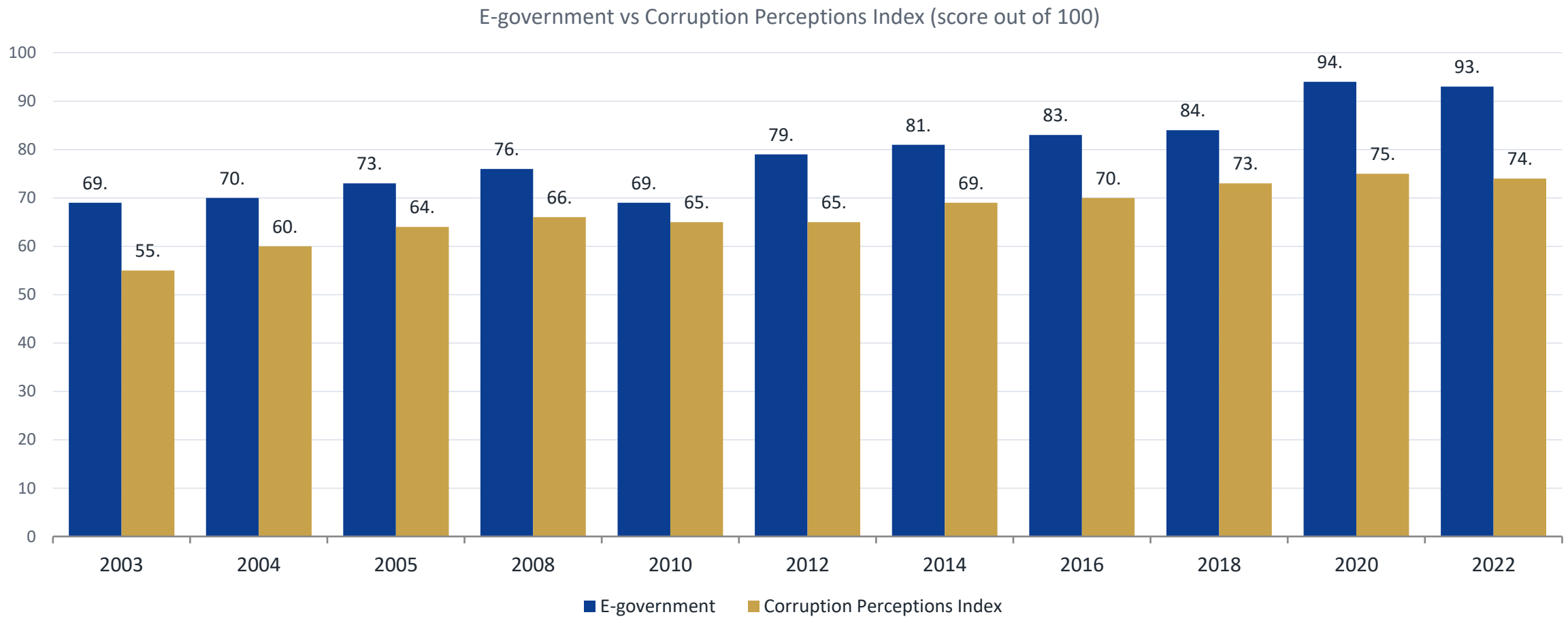
E-government index, Estonia



Source: United Nations E-Government Survey (E-Government Development Index, scaled to 100)

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Digital transformation and anti-corruption, Estonia



Source: UN E-Government Survey; Transparency International CPI

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التحول الرقمي في إستونيا

1991 م

ريموند أوبار



التحول الرقمي

مارت لار



Crazy Ideas
R & D

لينارت ماري



NOKIA

x-road

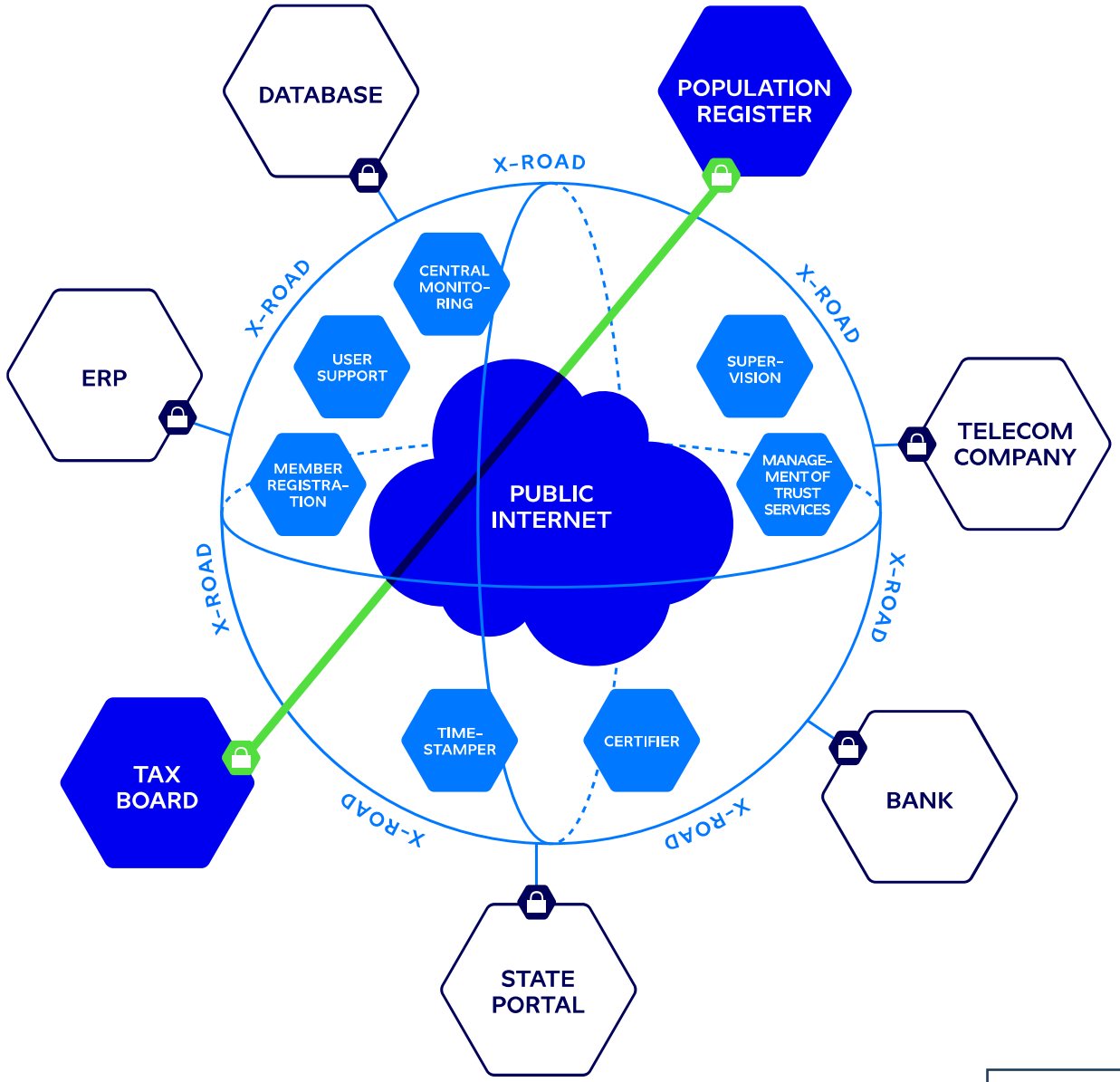
- the busiest highway since 2001

X-Road – secure and interoperable open-source data exchange platform

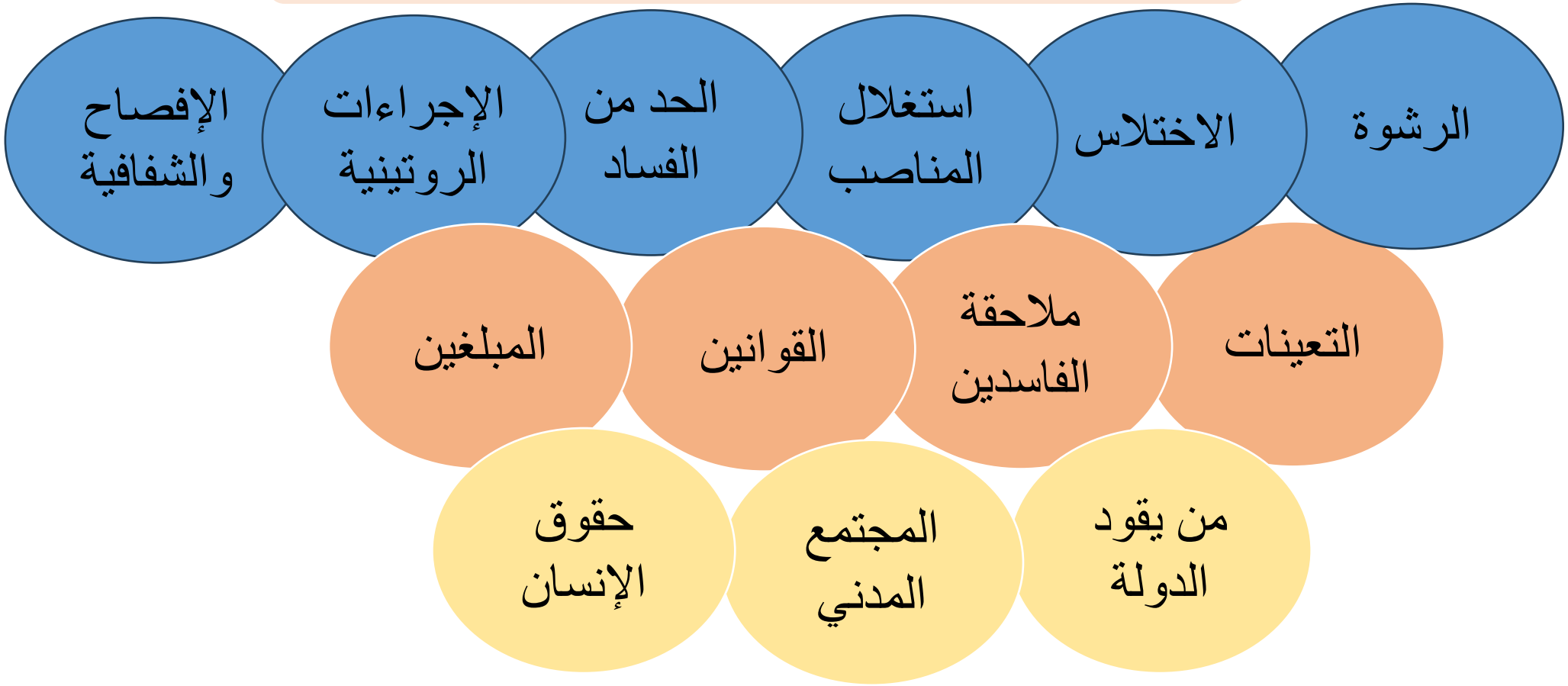
- operational in Azerbaidjan, Argentina, Cambodia, Colombia, El Salvador, Estonia, Faroe Islands, Finland, Germany, Iceland, Japan, Kyrgyzstan, Vietnam

X-tee – the Estonian X-Road ecosystem since 2001

- saving 3 million working hours annually
- over 3,000 different services
- over 2,5 billion transactions per year



مؤشر مدركات الفساد



FAILURES ARE DIVIDED INTO
TWO CLASSES
THOSE WHO
THOUGHT AND NEVER DID
AND
THOSE WHO
DID AND NEVER THOUGHT

A GREAT
PLEASURE IN LIFE IS
DOING
WHAT PEOPLE SAY
YOU CAN NOT DO

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Thank you

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