



# National Telecom Regulatory Authority (NTRA)

## Policies Enabling Smart Cities in Egypt

Dr. Fadel Digham

# 1) Political Will

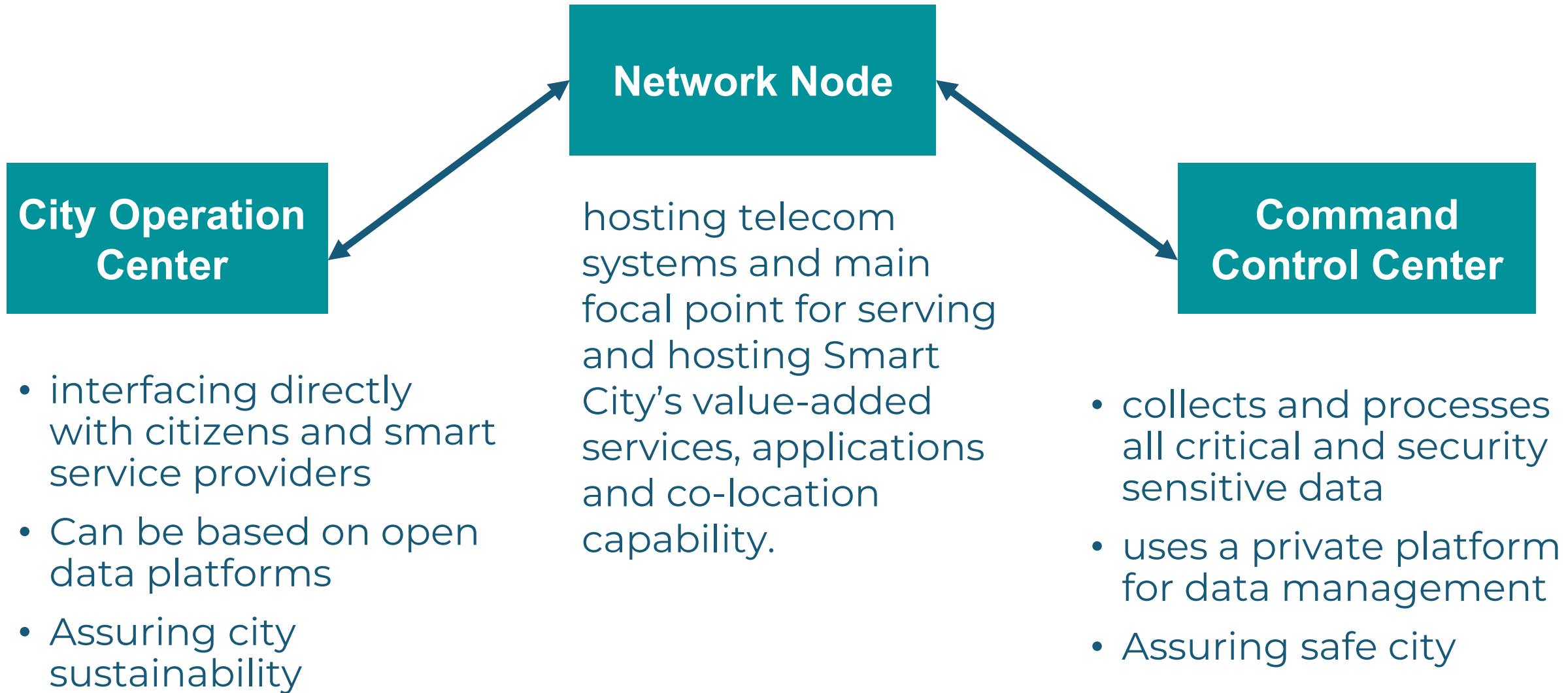
**Believing that Smart Cities are boosting economy and improving city operations**

**Forming a national committee reporting to the Prime Minister**

# 2) Developing Smart City Unified Architecture



# 3) Key Nodes for Network planning



# 4) Design Concept of Communication Infrastructure

## Open Access

- The design accommodates:
  - Smart applications
  - Utilities
  - ICT services

two types:

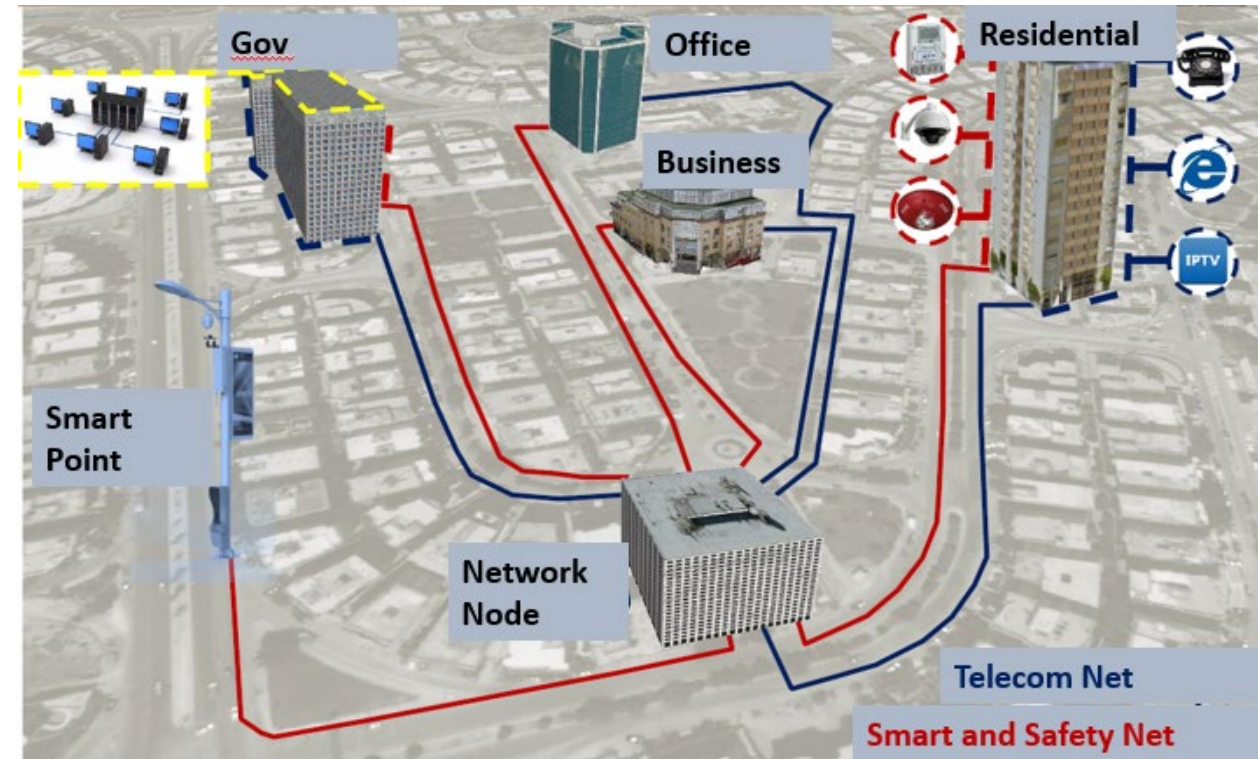
Telecom Sub-network

**Smart/safety sub-network\*** (isolated smart information class and critical info class).

\* Safety network could just share same civil and passive infrastructure

## Flexible Implementation

## Smart Design



# 4) Design Concept of Outside Infrastructure

## Open Access

## Flexible Implementation

## Smart Design

- The fixed network architecture is based on FTTx:
  - Primary / Secondary networks
  - Fiber filling ratio for future expansion
  - Air Blown Fiber (ABF): fiber blown into tubes only as needed
- Wireless solutions (cellular/non-cellular) to complement the main core network to provide smart city operation (e.g., smart meters, smart poles' light control,...)

# 4) Design Concept of Outside Infrastructure

**Open Access**

**Flexible Implementation**

**Smart Design**

**Network design based on smart services needs and categories**

Service	Service Point
Telecommunication services	Residential
	Commercial
	Services
	Administrative
	Wireless stations (mobile - security and safety)
Electrical Services	Smart Meter (Gas-Water-electricity)
	Sub Station
Traffic and Transportation	Distributer
	Monitoring and control traffic on axes , main and subsidiary roads
	Public parking areas
	Passenger stations for various transportation
	Public Transportation Hub

## ICT and Housing Sectors

### NTRA / NUCA

- NUCA issued telecommunication infrastructure requirements with its smart cities authorizations/contracts
- NTRA then approves the design
- Pre allocation for mobile sites in new cities with sharing principle

NUCA (New Urban Communities Authority)

### NTRA / HBRC

- Codes related to the development of smart services
- Inside building codes.

HBRC (Building National Research Centre)



# 6) Unified codes and guidelines

## Telecommunication networks Inside

### Buildings

#### Main Elements

- **Telecom Spaces**
  - Main Telecom Room (MTR)
  - Floor Telecom Room (FTR)
  - Roof-top Service Room (RSR)
- **Electro-Mechanical Requirements**
  - Main Telecom Room (MTR)
  - Floor Telecom Room (FTR)
  - Rooftop Service Room (RSR)
- **Pathways**
  - Vertical Containment
  - Horizontal Containment
  - Entry “Hand-Hole”

#### Telecom Codes for each Building Type

- **Office Building**
- **Residential buildings ( up to 10 floors)**
- **High-Rise Mix-Use Buildings**
- **Residential buildings allocated for low- and moderate -income citizens**
- **Services Buildings**
- **Education Facilities**

## Smart City Codes involving other sectors

Egyptian code of requirements for the planning, management, operation and sustainability of smart cities

**Green Field  
City**

**Part I**

**Brown-Field  
City**

**Part II**

## **IoT regulatory framework**

- Identifying networks and smart services
- Identifying Service providers
- Licensing / Authorization

## **Fiber Professional Technician Program**

- Collaborative training between ministry of ICT institutes/agencies
- Train of the trainers
- 3000 graduates

## Success factors

- **Ensuring political support and belief**
- **Unified Architecture and building nodes/blocks**
- **Issuing standards and codes for designing/building communication networks inside/outside buildings depending on optical fiber technologies**
- **Collaborative regulation approach with other sectors**
- **Licensing/authorizing smart networks and services**
- **Building the required capacity**



**Thanks**