ICT Regulator’s Role in Smart Cities

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Agenda

- ICT and Smart Cities
- Smart City Priorities
- Responsibilities and Tasks Regarding Smart Cities
- About CITC
- CITC Activities and Initiatives
- Sample Profiles of Smart Cities and Buildings in Saudi Arabia
- Related Events
- Conclusion
Leveraging the benefits of ICT infrastructure allows many services and applications to be delivered and offered to all parts of the community.

4G (LTE) up to 42 Mb/s

5G expected to increase speed x1000, reduce energy consumption x1000*

FTTx up to 100 Mb/s

* Source: IEEE WCNC2013
ICT and Smart Cities

- Smart Infrastructure
- Smart City
- Smart City Districts
- Smart City Clusters
- Smart City Buildings
- Connected Systems
Implement Infrastructure

Provide e-services (e-gov, e-commerce, e-learning, etc.)

Local digital content

Capacity building

✓ Organization
✓ Vision
✓ Policies
✓ Business Model
✓ Services
✓ Communications
✓ Implementation
✓ ...

Smart City Priorities
Responsibilities and Tasks Regarding Smart Cities

Government and Institutions

- Develop policies, strategies, regulatory frameworks, guidelines and plans
- Improve efficiency of e-services
- Encourage use of green systems
- Financial support
- Attract investment
- Compatibility with state-of-the-art systems
- Encourage initiatives
- Increase ICT awareness and usage to enhance national efficiency and productivity
- Investment in HR

Public

- Personal development
- Utilization of available resources and services

Private Sector

- Invest in infrastructure and digital content
- Follow up global technology trends and markets
- Use green and smart systems
Principal Stakeholders in Saudi Arabia

- CitC
- Economic Cities Authority
- Royal Commission for Jubail and Yanbu
- Electricity & Cogeneration Regulatory Authority (ECRA)
- Saudi Commission for Tourism and Antiquities (SCTA)
- Saudi Council of Engineers

- CITC
- Authorities and all who influence policy
- Saudi Environmental Society (SENS)
- Saudi Telecommunications Society (STS)

- MOMRA
- Municipalities
- High Commission for Riyadh Development (HCRD)
- High Commission for Makkah Development
- High Commission for Al Madinah Development

- Presidency of Meteorology and Environment (PME)

- Saudi Arabian General Investment Authority (SAGIA)

- Saudi Industrial Property Authority

- Private Sector

- Civil Society

- Municipalities

- High Commission for Riyadh Development (HCRD)

- High Commission for Makkah Development

- High Commission for Al Madinah Development

- Economic Cities Authority

- Royal Commission for Jubail and Yanbu

- Electricity & Cogeneration Regulatory Authority (ECRA)

- Saudi Commission for Tourism and Antiquities (SCTA)

- Saudi Council of Engineers

- Saudi Environmental Society (SENS)

- Saudi Telecommunications Society (STS)
Regulatory authority for telecommunications and IT in KSA

CITC

Aims to create a positive environment to encourage investment and promote growth of the ICT market

Established in 2001 with legal standing and financial and administrative independence

Regulates the telecom and IT sectors to ensure the provision of advanced and reliable services

About CITC
About CITC

Vision

Universally available, high quality and affordable communications and information technology services

Mission

1) Provide a fair, clear and transparent regulatory environment to promote competition and safeguard public interest and stakeholder rights

2) Enable universal availability of advanced ICT services at affordable prices and optimize utilization of scarce resources

3) Increase ICT awareness and usage to enhance national efficiency and productivity

4) Build & maintain a professional and motivated CITC team
## CITC Activities and Initiatives

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<th>Section</th>
<th>Description</th>
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<tr>
<td><strong>CITC Initiatives</strong></td>
<td>CITC IT initiatives include: SMEs; e-commerce; IT industry building; local digital content; annual IT report, ICT awareness programs</td>
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<td><strong>Licenses</strong></td>
<td>CITC has issued 290 licenses in 15 service categories including: Fixed line, mobile, data service provider (DSP), ISP, GMPCS, VSAT, ...</td>
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<td><strong>Broadband Strategy, UA/US</strong></td>
<td>Develop broadband strategy, increase broadband penetration; Universal Service and Universal Access policy; Universal Service Fund (USF)</td>
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<td><strong>Regulatory Framework</strong></td>
<td>Service-specific &amp; technology neutral regime, unified licensing and resale</td>
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| **Government Projects**         | • e-Government program (“Yesser”) $\rightarrow$ 1300 services in 2012  
• The NCITP $\rightarrow$ 98 ICT projects (implemented/underway/planned)                                                |
| **Wholesale ICT Market**        | Major foreign investments in the KSA ICT wholesale market                                                                                   |
Fixed Broadband Market Evolution
Sample Profiles of Smart Cities and Buildings in Saudi Arabia
New CITC Building

HQ in Riyadh with area of about 88,500 m². Smart systems include:

- Building Management System (BMS) to connect and control all sub-systems
- Security systems
- Fire-fighting systems and multi-alarm
- HVAC
- High-speed network using fiber cable (over 3000 points of contact)
- Tier 3 Green Data Center
- Lighting control system
- IPTV system
- Indoor coverage for Wi-Fi and mobile, including LTE, for entire building
- Convention Center with high-tech systems
- Ability to broadcast events, meetings and seminars externally through the Internet
- Water systems
- …
Riyadh Techno Valley

- RTV was established to achieve the vision of Kingdom leadership to enter the "knowledge economy"
- Based on converting technical inventions into innovations and new products for trade and investment.

Projects:
- King Abdullah Institute for Nanotechnology
- Prince Sultan Advanced Technology Institute
- RTV Main Building (Innovation Tower)
- National Diabetes Center
- SABIC Plastics Applications Development Center
- Researchers Housing Towers
- National Center for e-Learning and Distance Learning

Source: www.rtv.com.sa
Riyadh Techno Valley
Comprehensive Strategic Plan for Makkah Holy Places and Mashaar

- Includes 21 plans to ensure the city has world-class facilities and services
- Cost to implement the plans SAR100 billion ($26.67 B)
- Examples of plans:
  - Implementation plan
  - GIS framework & base
  - Review of previously adopted plans and existing strategies
  - Transportation plan
  - Public utilities and infrastructure plan
  - Makkah environmental plan
  - Expansion of the Holy Sites
  - Urban design and architectural guidelines
  - Community facilities plan
  - Urban development regulations
Holy Mosque, Makkah
Central Area of the Holy Mosque

- The Abraj Al-Bait Towers in Makkah, Saudi Arabia, is the tallest clock tower, tallest hotel, largest and 2\textsuperscript{nd} tallest building in the world
- 43-meter diameter clock built on this 601-meter hotel tower

Source: www.ctbuh.org
To attract the world’s leading ICT companies by offering the world’s best ICT services and infrastructure

ITCC development cost US $1.65 billion (SAR 6.5 billion)

ITCC will achieve at least the basic LEED environmental certification through the use of grey water recycling, low energy lighting, low energy air conditioning and most of all – reduction in solar gain
King Abdullah Financial District (KAFD)

- KAFD now the world's biggest green development – massive real estate project seeking green accreditation
- Expected cost for the project is $10 billion
- More than 40 towers covering 1.6 km²

Source: MEED's Saudi Green Buildings Forum 2011
Knowledge Economic City (KEC)

- KEC is a modern development with the latest ICT infrastructure based on a Smart City model where residents, workers and visitors can take advantage of the Smart Infrastructure related services to enable lifestyle experience and achieve optimum productivity.
- IP-based network improves ability to manage maintenance and energy usage as well as provides a platform to deliver various network-related value added services.

Facts and Numbers

- Total investment in KEC upon completion is SAR 30 billion ($8 billion)
- 4.8 million square meters of land
- 9 million square meters of built up area
- 120,000 population
- Hotels can accommodate up to 20,000 visitors
- 20,000 employment in various sectors
- 30,000 residential units
- 1200 shopping outlets

Source: www.madinahkec.com
Examples of Economic Cities

The economic cities are an infrastructure priority and are expected to attract $100B in investment.

King Abdullah Economic City (West)

The city will integrate itself into the Kingdom’s ongoing drive to expand the economy and function as a catalyst to attract foreign investment, global trade, commerce and industry.

- **Investment:** SAR 100B ($26.67B)
- **Located in** Rabigh
- **Announced on** 20 Dec 2005

Prince Abdulaziz Bin Mousaed Economic City (North)

Core industries to be agribusiness, building materials and logistics supplemented by light industry, tourism and real estate.

- **Investment:** SAR 30B ($8B)
- **Located in** Hail
- **Announced on** 16 June 2006

Jazan City (South)

Will contain an advanced industrial zone equipped with superior network facilities specifically for heavy industry projects as well as secondary (processing) industries.

- **Investment:** SAR 100B ($26.67B)
- **Located in** Jazan

Source: SAGIA
Related Events

In Saudi Arabia

- Smart Cities Forum, Riyadh, 6 Feb 2007
- Intelligent Cities Conference, Makkah, 19-21 January 2009
- Saudi Green Buildings Forum 2012
- Digital Grids and Smart Cities Summit, Riyadh, 10-13 March 2013

In the Arab Region

- Middle East Smart Cities Conference, Dubai, 4-5 June 2012
- ICT as an Enabler for Smart Water Management, Egypt, 14 April 2013
- Arab Future Cities Summit 2013 “Smart Solutions for Sustainable Cities”, Doha, 22-23 April 2013
- 2nd World Smart Grid Conference Middle East, Abu Dhabi, 22-23 April 2013
Conclusion

- Issue yearly progress report about ICT and Smart Cities including practical indicators, developed by ITU-T, to measure improvement and efficiency using ICT in Smart Cities.
- Recommend a strategy for Smart Cities by ITU, to be adopted by Member States.
- Develop technical guidelines and specifications for implementing ICT infrastructure for governmental complexes, districts, compounds, houses, etc.
- Importance of policies and regulations to encourage investment in Smart Cities.
- Identify roles and responsibilities of in-country stakeholders regarding Smart Cities.