4th Asia-Pacific Regional Forum on
Smart Sustainable Cities and e-Government

Building smart cities in Viet Nam

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Outlines

1. **Smart city trend in Viet Nam**
2. **Some smart city initiatives**
3. **Smart city policies**
4. **KPIs for smart cities in Viet Nam**

1. Smart city trend in Viet Nam

Urban development in Viet Nam

Total number in 2017: **813 cities**

~50% of Vietnam urban population

Special: **02 cities**

I **19 cities**

II **23 cities**

III **45 urban settlement**

IV **84 urban settlement**

78% number

V **640 urban settlement**

The urbanization rate of Vietnam is 37,5% in which Hanoi and Ho Chi Minh city population occupy 30% of urban population nationwide

Quần đảo Hoàng Sa

Quần đảo Trường Sa

Source: Ministry of Construction

Major issues: Urban growth quality, Infrastructure &Connections, Urban development investment, Urban management capacity, Climate change.

Smart city trend

- Early 2010s: e-city, smarter city concept appeared in some big cities including: Ha Noi, Ho Chi Minh, Da Nang.

- Since 2015, "smart city" has become hot topic, especially at local governments ranging from big to medium cities/provinces

- Telcos play a very active role by proposing smart city solutions to local governments. Up to now, about 30 cities/provinces has signed MoU with major telcos to help build smart city master plan and projects.

- Some smart city master plans have been approved since late 2016 upto now (Quang Ninh, Vinh Phuc, Bac Ninh, Ho Chi Minh city, etc)

- Other active stakeholders have been involved: Ministry of Contruction (MOC), Ministry of Science and Technology (MOST), FPT, AIC, VAIP, VINASA, etc.

2. Some smart city initiatives

Master Plan:Ho Chi Minh smart city

- Area: ~2,095 km^2 ; Population (2015): ~ 8.2 Million

- Nov 23rd 2017: Master Plan "Ho Chi Minh smart city roadmap for the period 2017-2020, vision 2025" was approved.

- Smart City Vision 2025: *A relatively high developed and sustainable economy based on optimal use of resources and citizen-centric.*

- 4 pillars for period 2017-2020: economy, governance, living, citizen participation.

- 9 priorities: transport, health, food safety, environment, flood prevention, human resources, public safety, e-government, planning

- 6 solutions: Common data platform and open data ecosystem, Simulation Center for socio-economic forecast, Intelligent Operation Center, Information Security Center, ICT Architecture Framework, Start-up Ecosystem.

Da Nang's smart city Architechture

- Area: ~ 1,284 km^2 ; Population (2016): ~ 01 Million

- Jan 11th 2018: Da Nang's smart city Architechture was approved. All smart cities projects of the future Master Plan shall be built based on this architechture.

- The architecture is based on TOGAF (The Open Group Architecture Framework) and the ITU approach: "Setting the framework for an ICT architechture of a smart sustainable city"

- 16 smart areas are defined: IOC (Intelligent Operation Center), citizen, public services, open data, tourism, commerce, agriculture, lighting, water management, waste management, *education, healthcare,* hygiene and food safety, security and emergency services, disaster prevention – search and rescue, transport.

- Department of Information and Communications is in charge of collaborating all stakeholders to build and implement Da Nang's smart city Master Plan.

Phu Quoc island smart city

- Phu Quoc is Viet Nam's largest island and is a district of the Mekong Delta province of Kien Giang.

- Area: ~600 km^2 ; Population (2015): ~ 100,000

- Sep 2016: Roadmap to build a smart Phu Quoc city in the 2016-2025 period was approved. Based on VNPT's smart city model, Phu Quoc focuses on tourism, transport, e-government, environment.

  o Phase 1: accomplished on Oct 2017 (WiFi available on the whole island, CCTV cameras , environment observation stations, etc).

  o Phase 2 (2018): Build a data centre, a concentrated operation centre and continue implementing basic and smart services.

  o Phase 3 (2019-2020): Continue to implement smart and added value services

  o Phase 4 (2021-2025): Will make Phu Quoc an increasingly smart city

Other smart city initiatives

- Ha Noi smart city:
  - Built up critical databases such as e-citizen (7.5M), e-health (~ 1 M);
  - Monitoring Center (transport & public safety, emergency, information security, data analytics, public services, press support);
  - Smart Transportation Center; Smart Tourism Center.
- Binh Duong Navigator 2021 (Target 2021: ICF Smart21): in collaboration with the city of Eindhoven in the Netherlands.
  - Newly industrialized zone near HCM City. Area: 2,694 km^2; Population: 1.8M;
  - The Triple Helix model of collaboration, which involves a partnership between research institutions, businesses and the government.
  - 4 key areas: people, technology, business and basic conditions such as environmental conditions, quality of living, ICT and infrastructures.
- Other smart city initiatives:
  - Quang Ninh, Bac Ninh: Master Plan (with KPIs).

3. Smart city policies

Smart city policies

- PM's Decision No 1819 (Oct 2015) set target to 2020: Implementation of at least 03 smart cities

- Nov 2016, MIC made a report "Building smart sustainable cities in the world and Viet Nam".

- Dec 2016, based on MIC's report, PM requested MIC to be in charge of collaborating with MOC to work out *indicators to evaluate smart cities*; guidelines for local authorities ensuring the efficient and effective investment of smart cities projects.

- Feb 2017: Government's Decree No 17 : MIC is in charge of guiding local governments in developing ICT applications and smart cities

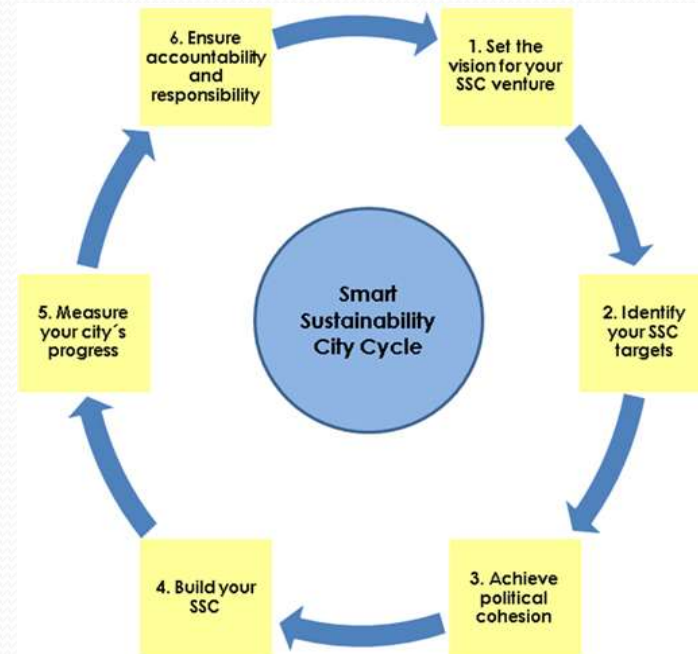- Jan 11th 2018: MIC issued "*ICT fundamental guidelines for building smart cities in Viet Nam*"

ICT fundamental guidelines for building smart cities in Viet Nam (1)

1. The term "smart sustainable city or community" is a city/community that uses innovative, appropriate and truthworthy information, communication technologies (ICTs), and other means to:
    - improve quality of life of citizens;
    - increase the efficiency of urban operation and services by more applications of data analytics and citizen participation;
    - promote innovation and economic growth as well as protect the environment;

2. Principles:
    - citizen-centric and all stakeholders' engagement, ICT infrastructure and open data ecosystem, information security assurance, encourage PPP model, HR development, international collaboration.

3. Local governments build master plans with the following principles:
    - incremental approach (no big bang);
    - encourage trial projects which demonstrate that success will have potential to be repeatable and scalable across cities of different sizes.
    - make best use of existing ICT infrastructures, e-government projects.
    - encourage IoT, cloud, big data analytics and AI.

ICT fundamental guidelines for building smart cities in Viet Nam (2)

4. Principles of smart city ICT architecture framework: layered structure, SOA, interoperability, scalability, flexibility, availability, measurability, feedback ability, shareability, security, technology neutral.

5. 6 basic steps to become a smart sustainable city.

    (ITU-T: Rec Y.4000-Sup 32)

Ongoing studies

- MIC, MOC and MOST are collaborating for some research projects on smart city's including KPIs.

- MOC are preparing the National Master Plan on Smart Sustainable Cities Development.

- MIC is looking for international best practices on smart cities:
  - KPIs (ITU, ISO/IEC, EU, China, ICF, etc);
  - Maturity & benchmark model; PPP model;
  - Frameworks, architectures, standards;
  - Strategies, policies, guidelines for developing smart cities in local governments;

4. KPIs for smart cities in Viet Nam

International KPIs

- ISO 37120 (2014): Sustainable development of communities - Indicators for city services and quality of life → *overall indicators*
- ISO/TS 37151 (2015): Smart community infrastructures – Principles and requirement for performance metrics
- ISO/IEC 30146 (WD): Smart City ICT Indicators
- ISO 37122 (WD): Indicators for Smart Cities
- ITU: Key Performance Indiators (KPIs) for Smart Sustainable Cities
    1. L.1601: KPIs related to the use of ICT in smart sustainable cities (SSC)
    2. L.1602: KPIs related to the sustainablility impacts of ICT in SSC
    3. L1.603: KPIs for SSC to assess the achievement of sustainable development goals (SDG)
- ITU have been piloting KPIs in a number of cities.
- ISO/IEC is going to pilot their indicators soon.

Other KPIs

- European Smart City Index: developed by TU WIEN for cities with population under 1M (2 versions)
- ETSI TS 103 463: KPIs for Sustainable Digital Multiservice Cities
- China: National smart city indicators (2016) are based on clear policy decisions of the Chinese Government related to smart cities.
- India: KPIs for Smart Cities Mission.
- Consulting firms: IDC, Navigant Consulting&Huawei, Machina Research&Nokia, etc.
- Other organizations: Espresso, ASOCIO (Asian-Oceanian Computing Industry Organization), TM Forum (Maturity), IESE (Cities in Motion), etc.

→ *We are studying various KPIs around the world.*

KPIs for smart city in Viet Nam

- Quang Ninh, Bac Ninh: KPIs based on European Smart City Index with modifications to make KPIs more relevant to local context.

- Ho Chi Minh city: ideas of KPIs are refered in the master plan.

- VINASA: proposed ASOCIO smart city index

- General KPIs: Da Nang, HCM city: draft of "livable city indicators"

- MOC issued Circular 01/2018/TTBXD: "Indicators for Green Development Cities":

- MOC is preparing "National City Performance Indicators"

- MIC is focusing on the "smartness" KPIs of city: ICT use and impacts with the following principles:

  ➢ In line with international KPIs' principles: scientific and reasonable, comprehensiveness, availability (collectable and quantifiable), simplicity (clear), timeliness, consistent, directive (vision of city's leaders).

  ➢ Citizen-centric, efficient governance, cybersecurity assurance, open data, etc.

  ➢ Pilot testing to make KPIs more relevant to local contexts in Viet Nam.

  ➔ *We are trying to work out relevant smart cities KPIs for Viet Nam*

Q&A

Thank you for your attention!

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