



Smart City Services: Gaps for
Mission Critical Services

International Workshop on Urban Data
Science

Introduction

Work stream: Smart Dubai - Smart City Platform

-• Dr. Ali Raza
-• Joined RIT Dubai in Fall 2014
-• 15 Years in the Telecoms and ICT Industry
-• Consulted on projects across Europe, Middle East and Asia
-• Recent Engagements in UAE, KSA and OMAN
-• Focus – Consulting in 4G technologies for MCN



Agenda

Work stream: Smart City Platform

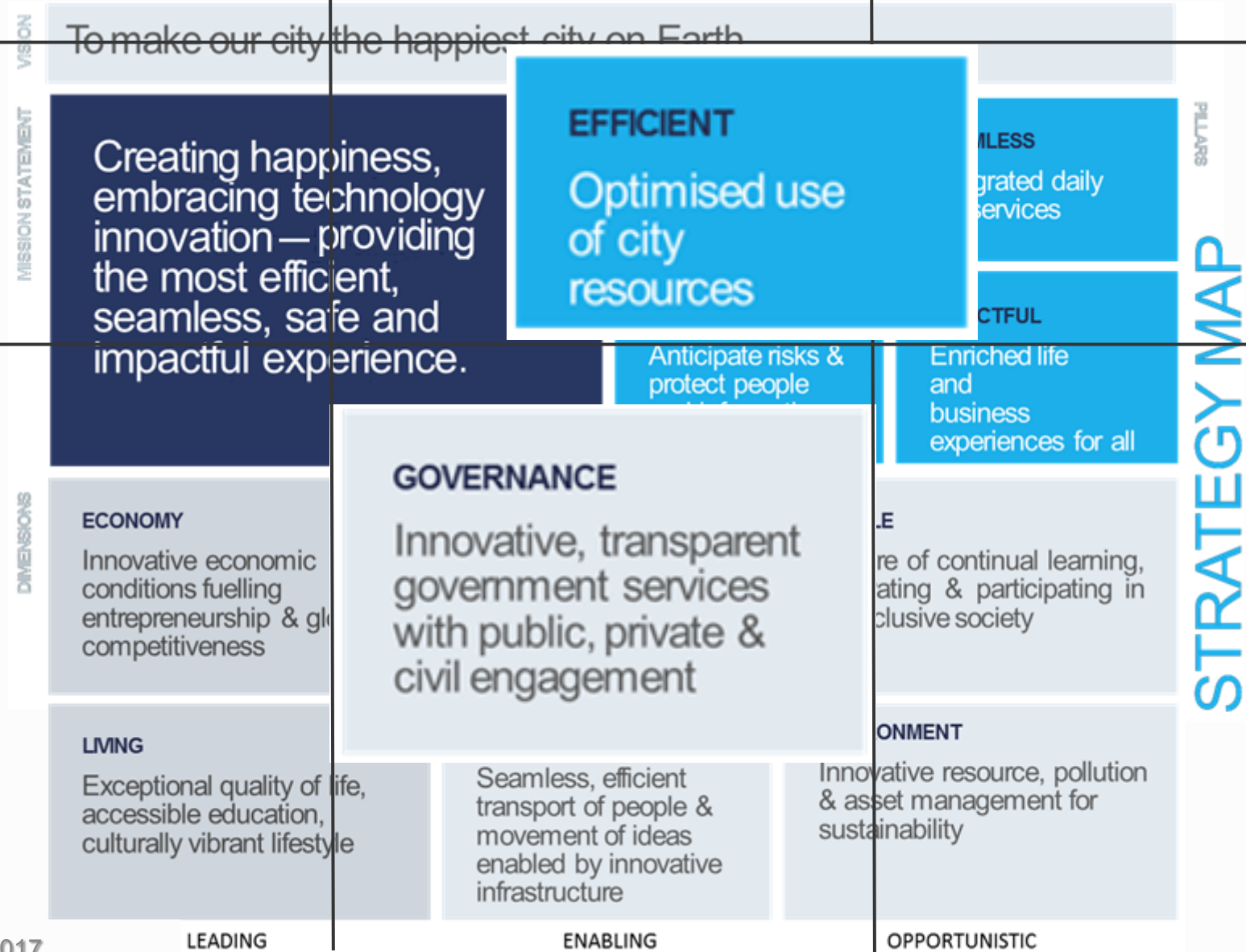


GOAL: Provide attendees of this workshop with an input on Smart Dubai SCP Initiative and **Research Opportunities**

-• Smart Dubai SCP Initiative
-• Challenges and Opportunities
-• Proposed research initiatives
-• Current Engagements of RIT Dubai
-• Q & A

The Strategy

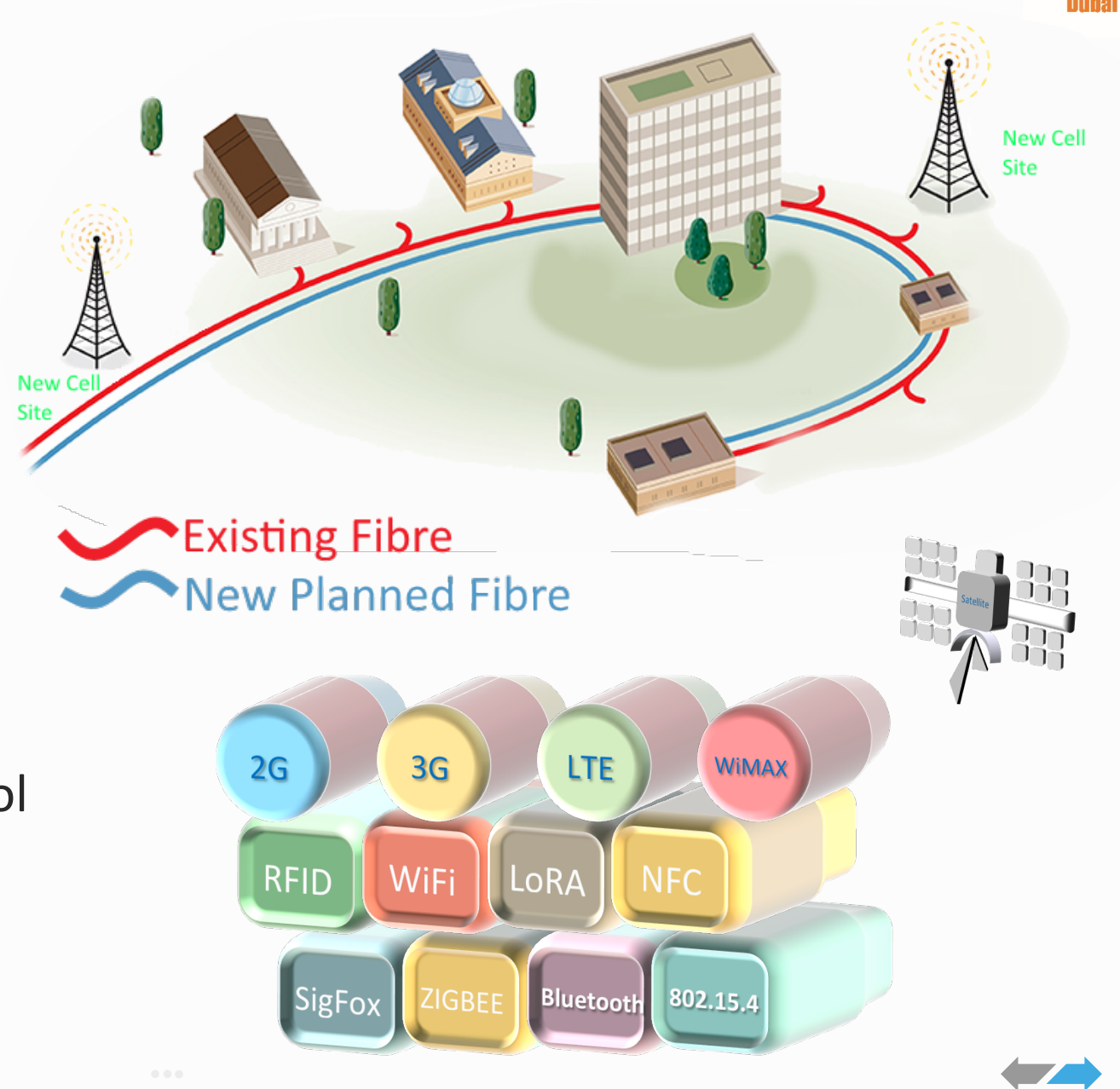
Work stream: Smart City Platform



The Current State

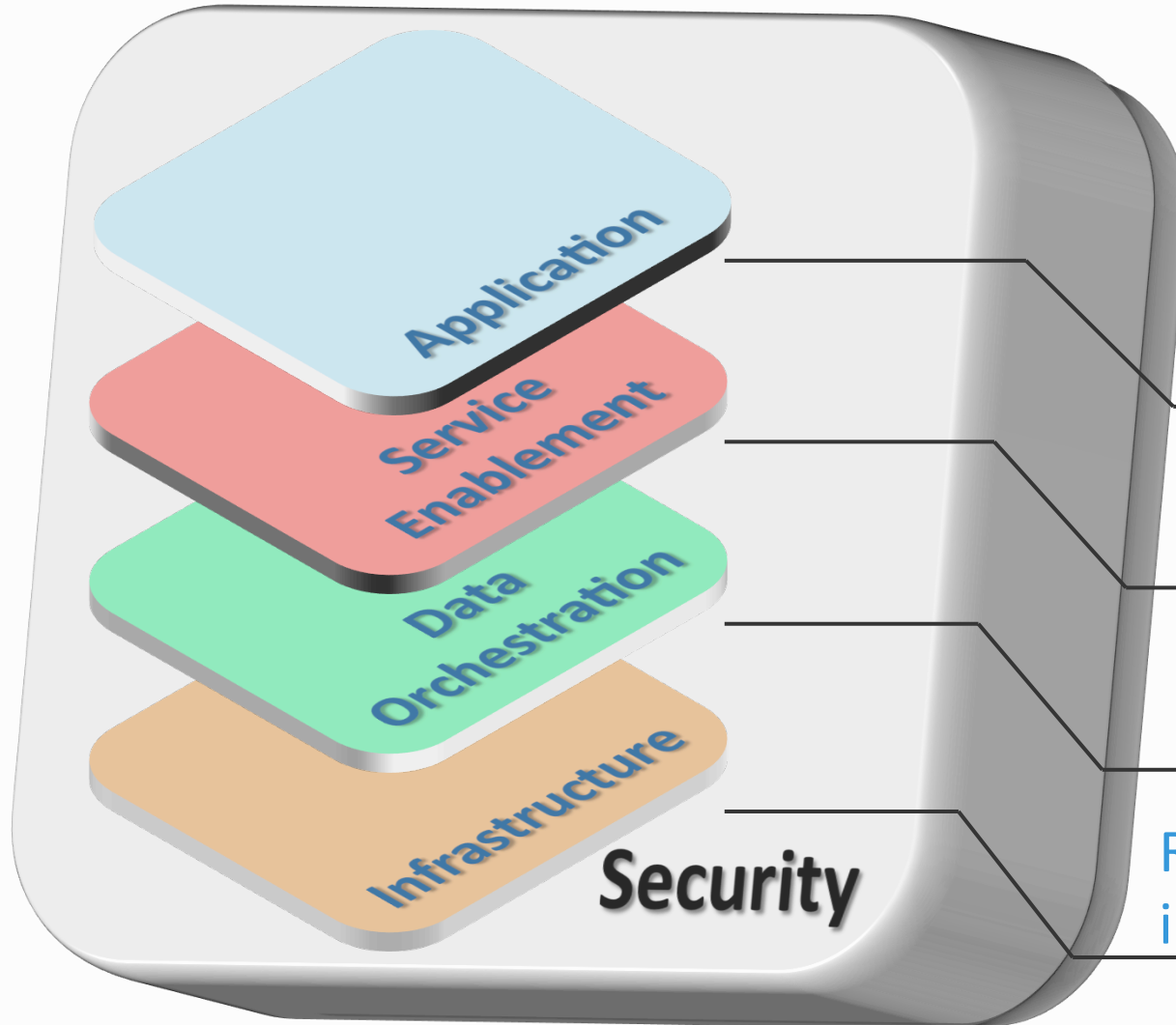
Work stream: Smart City Platform

- † Lack of co-ordination of Current and Planned ICT investments overall
- † Lack of a unified strategy on modernizing and sharing systems (Government Cloud, unified platforms etc)
- † Lack of unified visualization and control of critical ICT infrastructure



SCP Future Vision

Work stream: Smart City Platform



† A platform made up of four layers

† Security being a common baseline

Dashboard and applications
for public services

Private and Public Data Analytics,
governance & service platforms

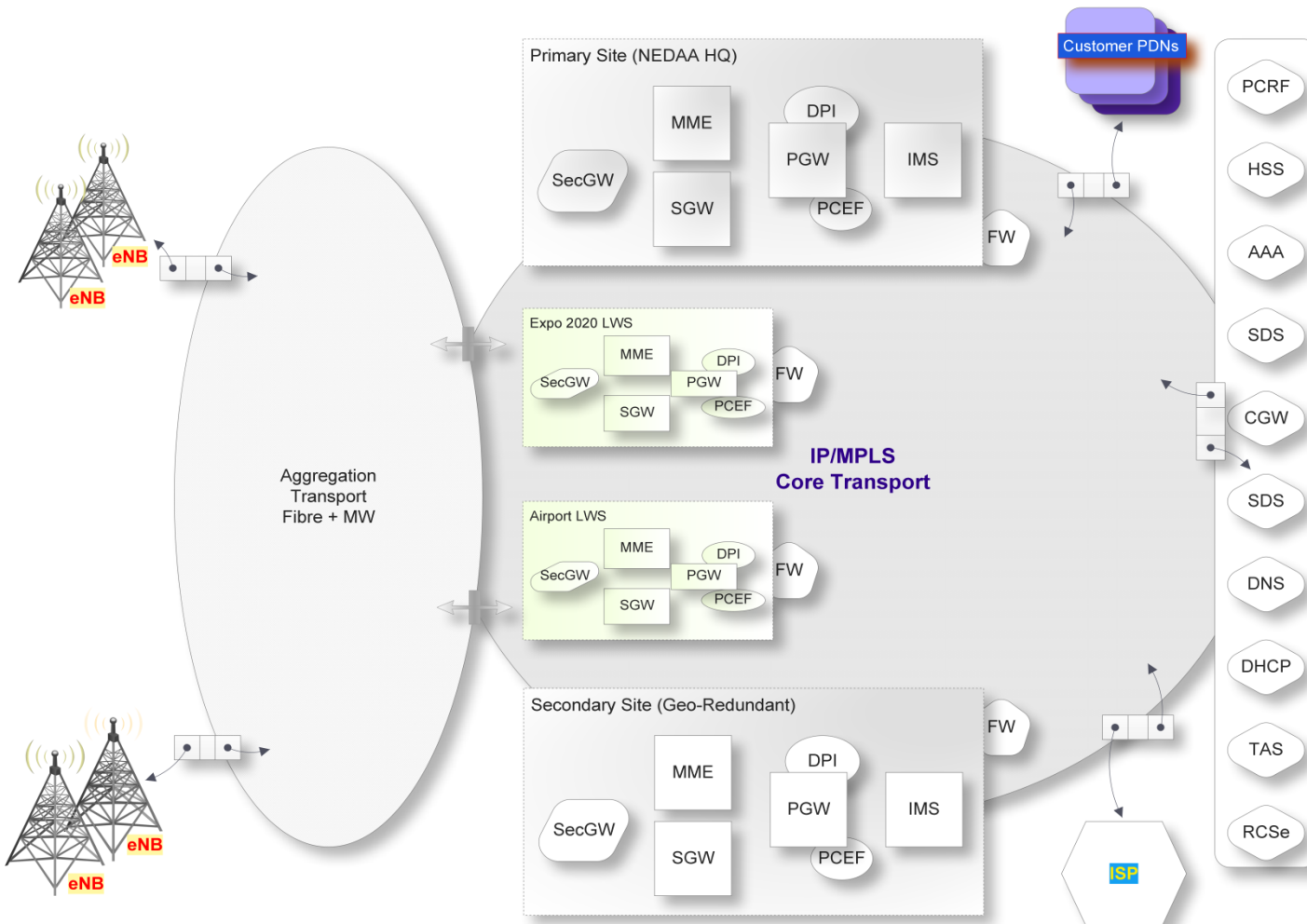
Secure Data intake,
transformation and Storage

Regional data, ICT and access network
infrastructure (4G, IoT, WiFi)



Mission Critical

Strategic Locations Across Dubai



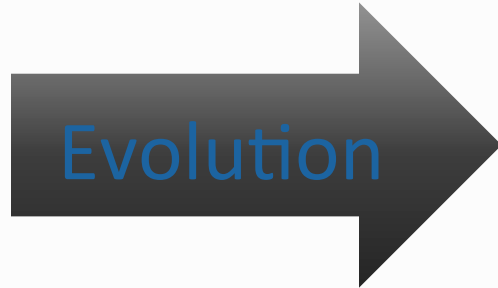
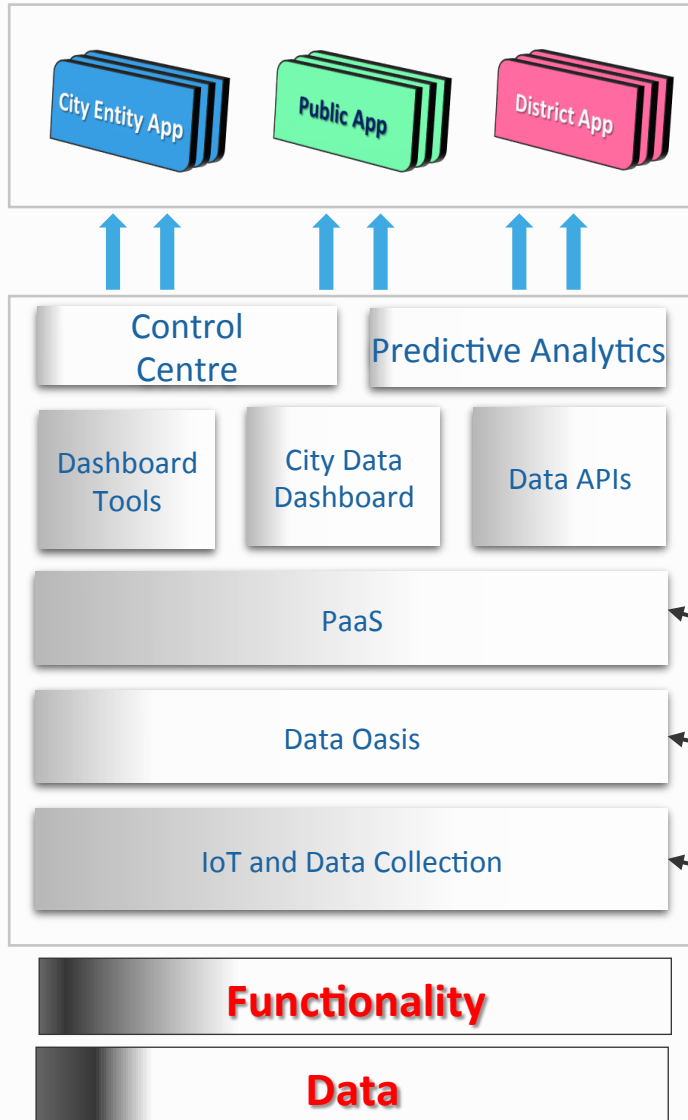
- 4 PoP Locations
- Stand alone at Dubai Airports and Expo
- IP/MPLS network to migrate from MW to Fibre
- 3GPP Standards evolution envisioned to 5G
- Cloud centric core network architecture



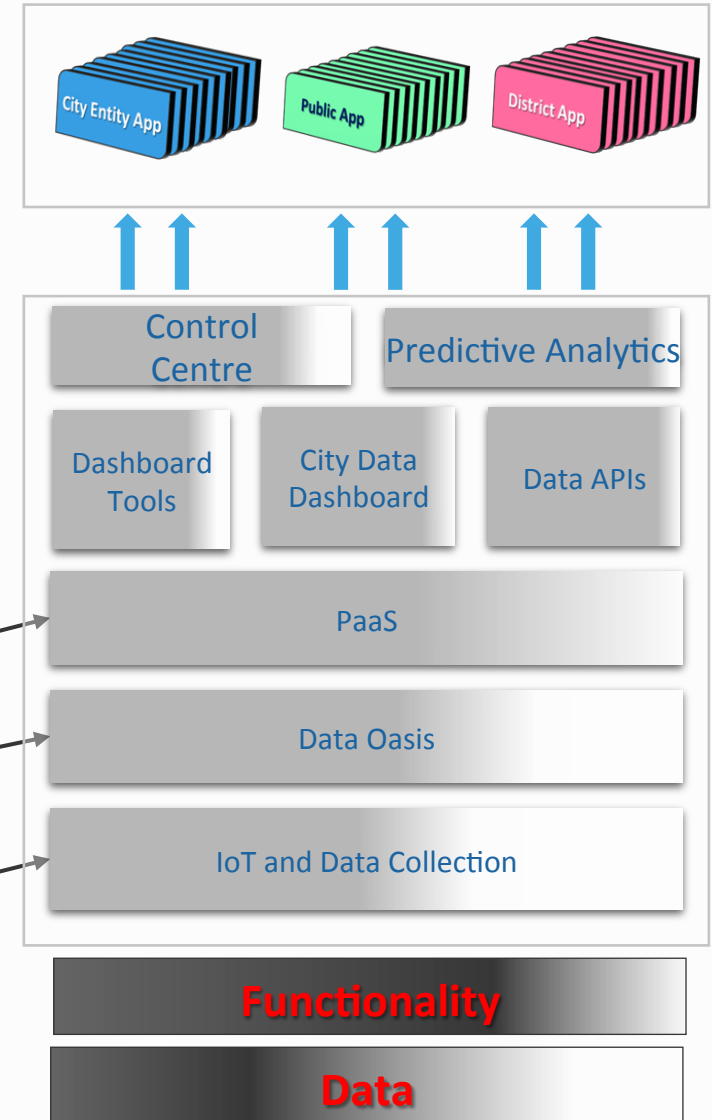
SCP Evolution

Work stream: Smart City Platform

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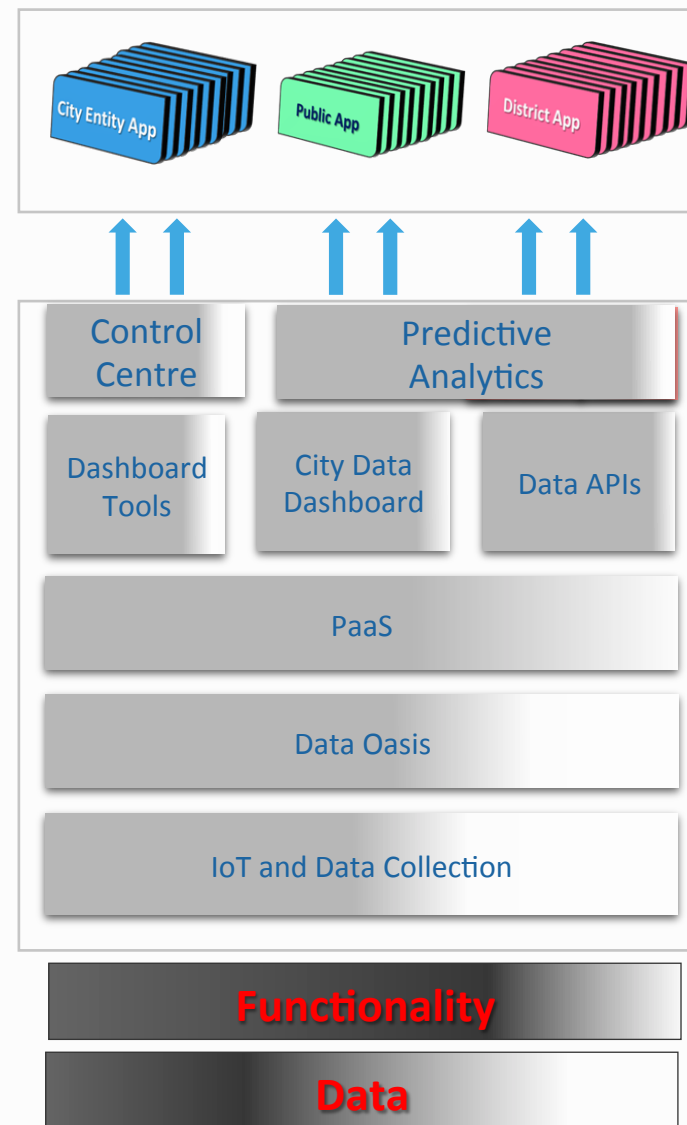
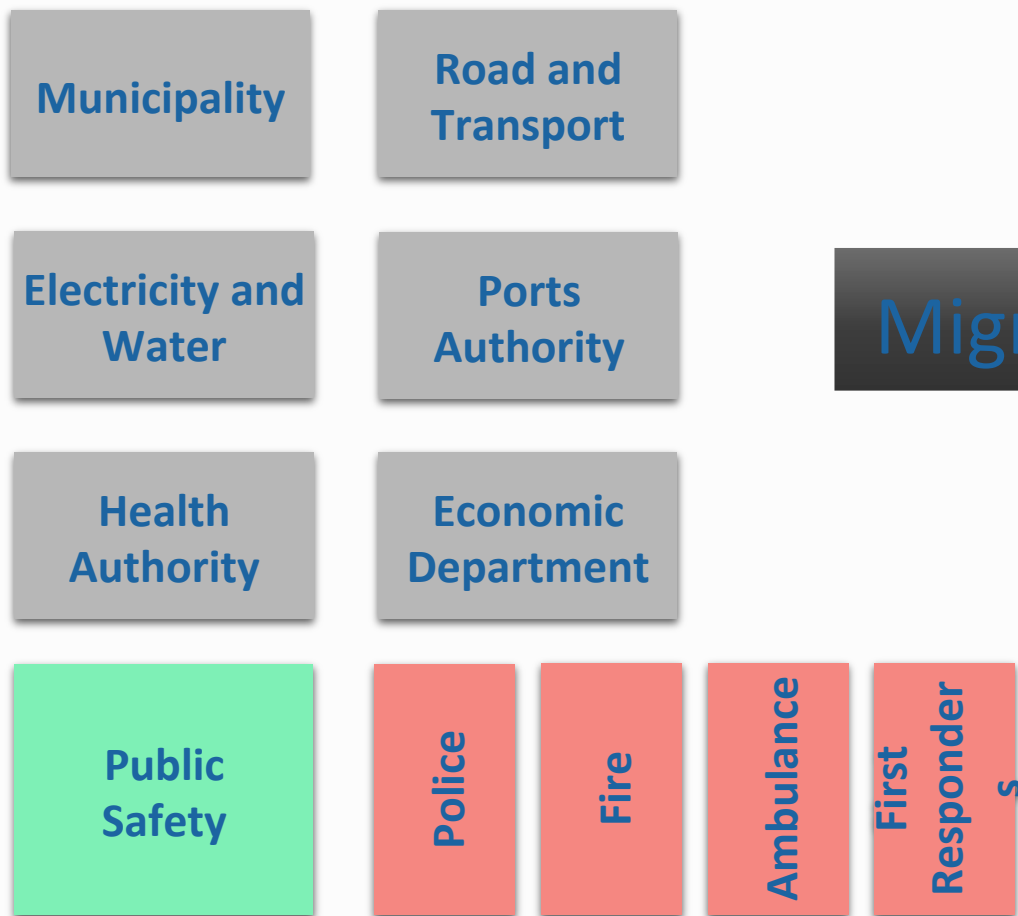


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Opportunities and Challenges

Preventative as well as predictive analytics



2020



Opportunities and Challenges

Public Safety Use of Mobile Phones

† Identify the right use cases and data → critical and complex

Benefits → Ability to:

- Circulate a rich diversity of data created by a variety of sensors, devices, and communications
- Harness the enormous computing power of potentially millions of edge-enabled devices
- Optimize and transform the flow of real-time actionable information to:
 - First Responders
 - Incident Commanders

Opportunities and Challenges

Public Safety Use of Mobile Phones

- † Using real-time and simulated data sets to create meaningful analytical techniques for public safety
 - † We are looking for both predictive analysis and preventative analysis
- † A framework of tools is needed to enable the joint development and tuning of tools for researchers and PS agencies

Proposed Research Initiatives

Public Safety Use of Mobile Phones

- † Proposals on exploratory, confirmatory, and qualitative data analytics for specific domains that are critically important to public safety
- † Proposals for computing and communication resources being used effectively, and dynamically optimized to enable robust, efficient, and real-time applications
- † Proposals on how high volume complex data in the PS communications ecosystem can be effectively filtered to distil accurate, essential, and actionable information for first responders

Proposed Research Initiatives

Public Safety Use of Mobile Phones

- † Proposals on how data can be shared securely across the public safety agencies and kept isolated from other SCP data
- † Proposals on a security framework for data preservation

RITs Current Engagement

Public Safety Use of Mobile Phones

- † Engaged with NEDAA which is private communications agency in Dubai.
- † Engaged with DESC which is a government enterprise security agency
- † One MSc student at NEDAA working on a proposal related to secure data sharing
- † Discussions with DESC on funding of research proposals with a security gear

Thoughts and ideas for collaboration

Public Safety Use of Mobile Phones

- † PS agencies are cognizant of rogue employees. A simple leak of internal information in the world of PS can be catastrophic and lead to loss of life in some cases.
- † The proposal being put forward is to collect, aggregate and analyse relevant behavioural data which can identify rogue elements and prevent any negative outcomes.
- † Questions: what kind of data would need to be collected, how will behavioural patterns be identified, how can real-time analysis be used to raise appropriate alarms.

Thoughts and ideas for collaboration

Public Safety Use of Mobile Phones

- † Proposal for a conference in Dubai
- † Possibility of partial funding from DESC
 - † if there is a strong security component

Thank You!

Work stream: Smart City Platform

† Q & A

† Contact: axrcada@rit.edu

