ITU-SUDACAD Regional Forum on Internet of Things for Development of Smart and Sustainable Cities
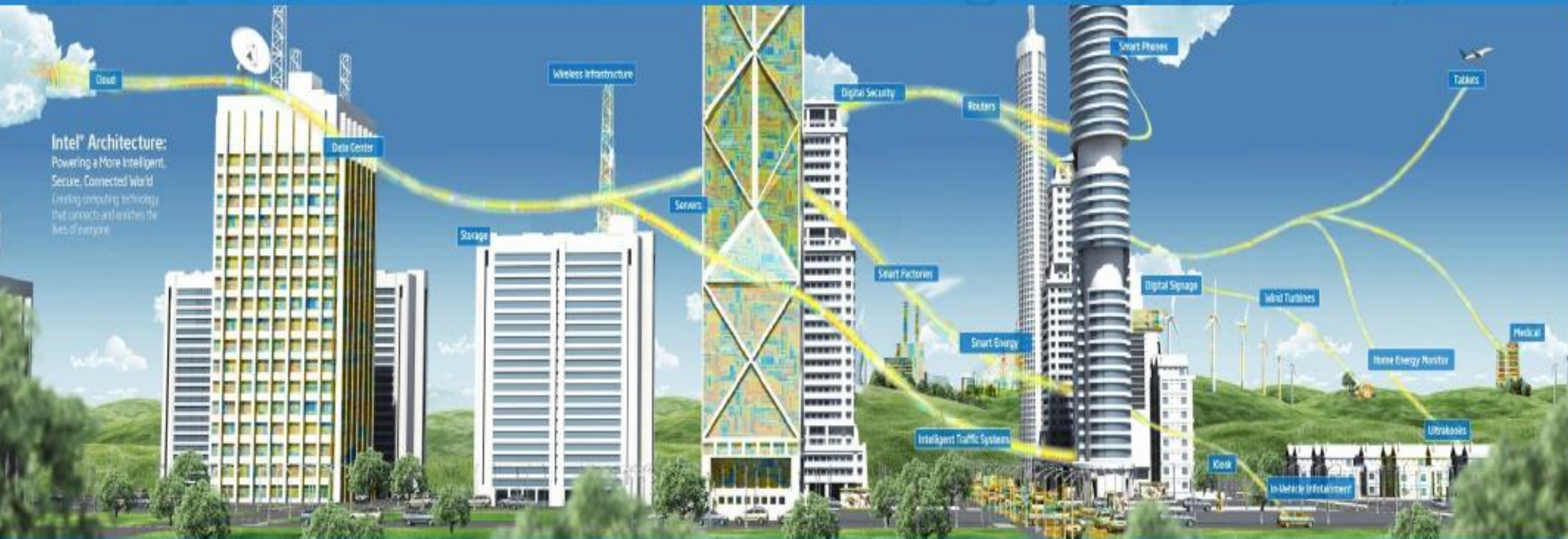
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Models for Smart and Sustainable Cities
(Economic parameters, Social, Environmental and Cultural parameters)

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Smart City

Intel® Architecture:
Powering a More Intelligent,
Secure, Connected World
Creating computing technology
that connects and enriches the
lives of everyone.

Cloud
Wireless Infrastructure
Data Center
Digital Security
Routers
Smart Phones
Tablets
Servers
Storage
Smart Factories
Digital Signage
Wind Turbines
Medical
Smart Energy
Home Energy Monitor
Intelligent Traffic Systems
Ultrabooks
Kiosk
In-Vehicle Infotainment
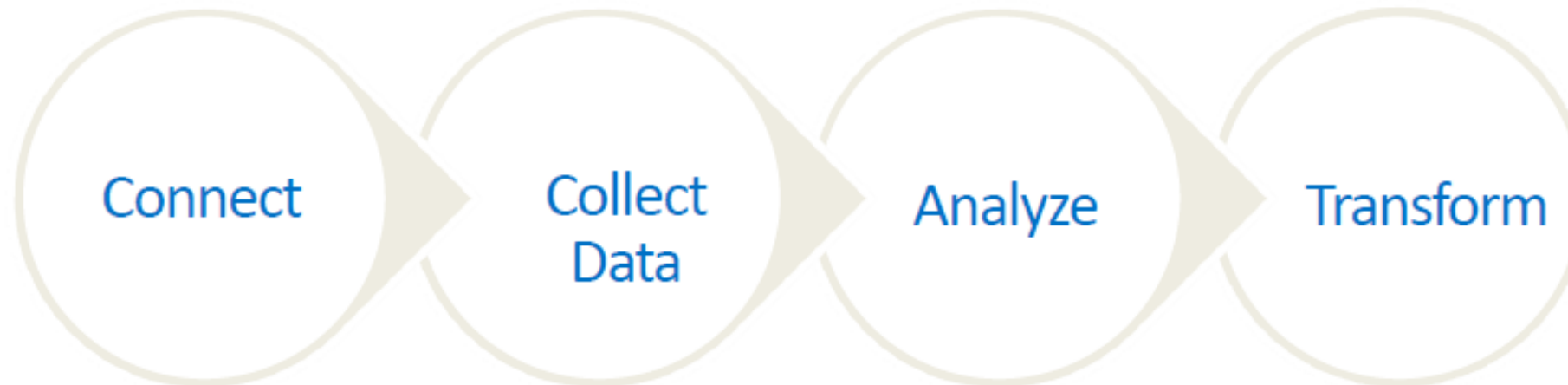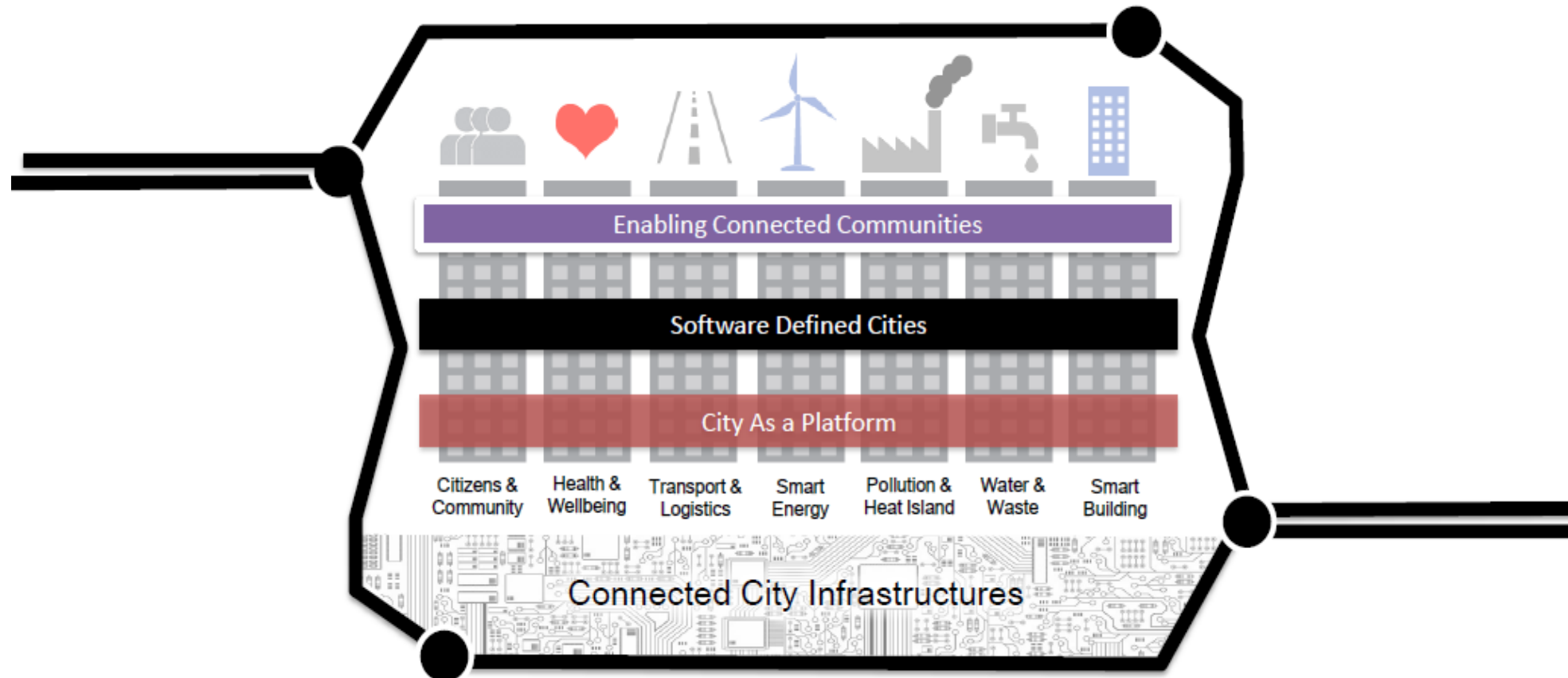
Cities are made up of citizens, scholars, businesses, buildings, infrastructure, tourists & commuters; supported by administrative bodies.

AREAS

- What makes a Smart City

- City services and Aspirations

- City & citizen pain points that could be solved with IoT solutions.

- Consider who owns the data and how can it be used – The Value/Data Conundrum

Connect → **Collect Data** → **Analyze** → **Transform**

Sustainable City Services

Enabling Connected Communities

Software Defined Cities

City As a Platform

Citizens & Community | Health & Wellbeing | Transport & Logistics | Smart Energy | Pollution & Heat Island | Water & Waste | Smart Building

Connected City Infrastructures

SMART technologies from Sensor to Cloud enhancing and enabling better decision making across each sector. This is predicated on shared data and information

Challenges Faced by Cities – Thrive & Resilience

UTILITIES – Securing Supply

Recycling and waste management.
- Waste bins that are overloaded, while others are over collected.
- Transporting to landfills out of municipality.

Water distribution and reclamation.
- Inefficient systems typically lose 70% of water from filtration plant to tap.
- Grey water mixed with black water – almost impossible to separate and reclaim.

Electricity distribution.
- Losing electricity through inefficient transmission – which increases with distance.
- Manual metering of usage.
- Load shedding to avoid brown and black outs.

TRANSPORT - Needs Efficiency.

Public & Private
- Right place, Right time, Reduce Congestion
- Shared services
- Identifying over or under-maintenance of vehicles.
- "Wrong" sizing of fleets causing over-capacity and under-utilization.
- Determining plowing progress of critical roadways in inclement weather.
- Monitoring unsafe driving
- Reducing pervasive idling.

Safety, Security & Privacy
Reducing crime rates with overloaded police departments.
Traffic signal downtime causing unsafe conditions.
Proper lighting in common areas during peak hours.

Smart Living - sensed data to help citizens, governments & businesses manage resources effectively

- Data comes from many sources
- Different needs for different stakeholders

- Acquire – Analyse – Act
- via a Connected, Secured, Managed Internet of Things

Recommendations for Cities

Create Secure, Interoperable, pluggable and distributed architecture to work for a variety of scenarios.

A city's approach to upgrades necessitates a solution where specific capabilities can be implemented in phases, and to slices of the infrastructure. This means that parts of the new systems will need to talk to old systems (mainframes, legacy apps, proprietary solutions). **Security must be device to cloud.**

Optimise infrastructure that already exists.

Many cities already have smart devices deployed across the city that just need to be connected. Cities seem to be tiring of laying fiber, pricing carriers, handling line-of-sight issues, and ensuring privacy and security. Providing this basic need will provide a better ROI on the existing infrastructure for cities and corporations. **Inclusion is critical**

Provide tighter security on end-point devices.

Many cities are deploying endpoints that are not secured leaving room for personal and collective attack. **Cities have a responsibility & duty of care.**

Investing in Infrastructure

Most city projects will be Brownfield, and will be upgraded in long phases as money is available.

Decision makers will vary by city and project. Project managers lobby for issues they feel are important, and money gets extended to those who can show the most promising outcomes. **Consider & Agree Who has access and at what level? aggregated?/tagged/identified etc**

Security and privacy are top of mind for many & critical for resilience

Framing a City

Values
- Reduction of costs.
- Improving resource usage.

Funding Models
The path of least resistance is to align to a city's budget planning cycle.
- Annual/Bi-annual budget – YoY spend
  - Standard budgeting follows a bottoms-up process. Top-down mandates occur less often, unless it's tied to a city/state/federal initiative.
- Grants, bonds, and levies – Up front capital
  - Grants, bonds, and levies can occur for critical initiatives, but not reliably.

Sales Lead Times
- City budgets are annual or bi-annual, so lead time could be upwards of 1-2yrs.

GTM Stakeholders
Start with Influencers and they'll make a case for Decision Makers.
- Influencers
  - Typically the CIO's and IT Managers.
  - Responsible for technology project/budget strategy and serving other departmental needs (domain experts).
- Decision Makers
  - Typically Mayors, City Council and Operations.
  - Responsible for approving the budget.

Creating a Sustainable City

Thank You