# The future has begun…

# …and it's in our cities

GRAHAM COLCLOUGH

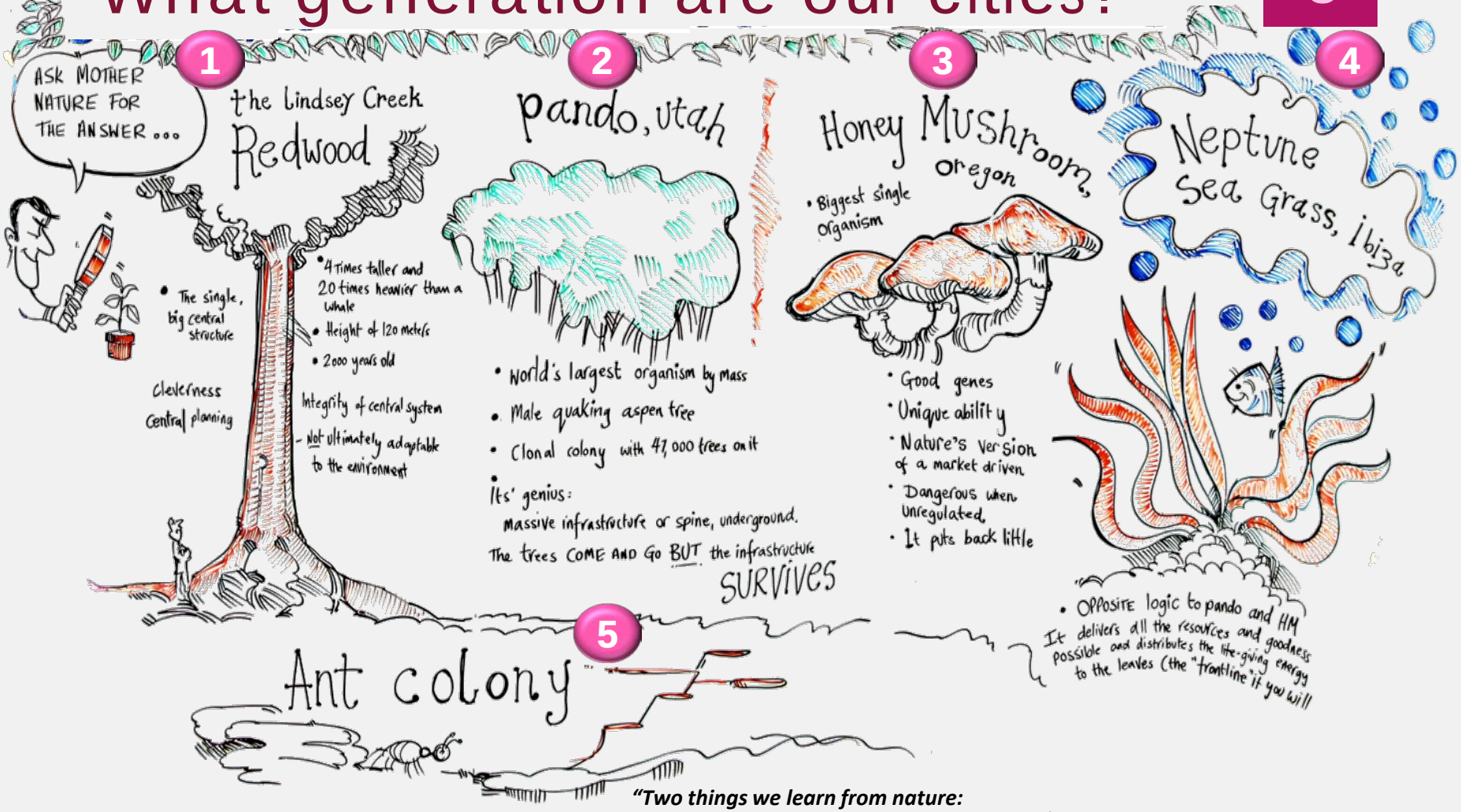
ONE CONFERENCE: APRIL 2014, BRUSSELS

# A Powerful Context...



*The accelerating growth of cities, and their disproportionate consumption of physical and social resources, is assessed by the United Nations to be the greatest challenge to mankind since we became social*

# What generation are our cities?




***"Two things we learn from nature:***

1. *the organising principles, the core logic of the system*
2. *the underlying technology or special natural talent which makes that system possible"*

## *How to achieve 4th & 5th Generation intelligence for our Cities?*

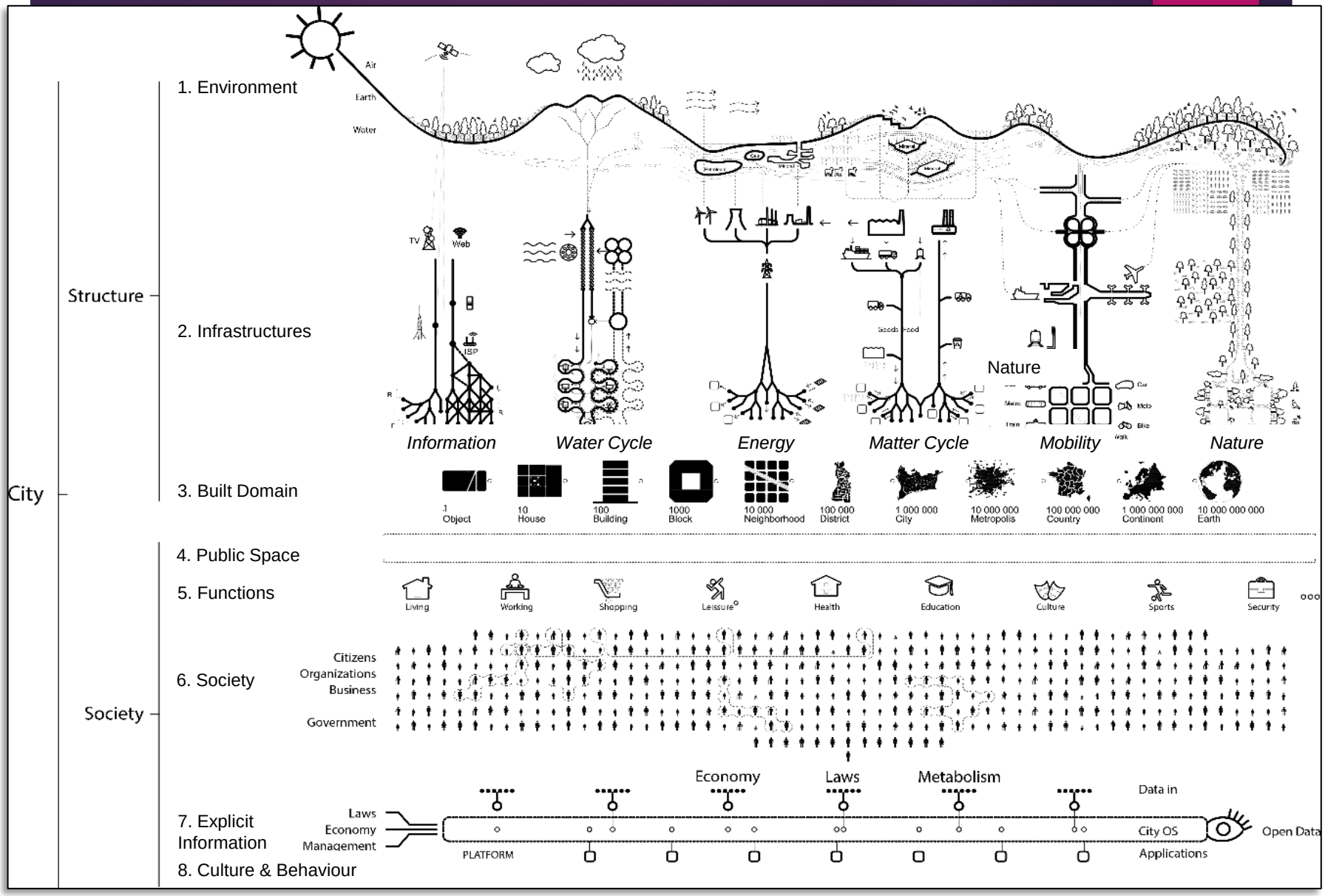
*With recognition of Keith Coleman*

# Big shifts in thinking...and actions

| ...from | to... |
| --- | --- |
| Politics | People-centric |
| Bureaucracy | Data exploitation |
| Country boundaries | Collaboration & Protocols |
| (Modest) fund availability | Innovative funding & business models |

# City Protocol Society






***Many similarities – yet we focus on the differences!***

# European Commission action

European Innovation Partnership on Smart cities and communities

Strategic Implementation Plan

Draft version 14

| | Sustainable Urban Mobility | Sustainable Districts & Built Environment | Integrated Infrastructure & Processes |
|---|---|---|---|
| Decisions | **Citizen Focus** how we build society into the process as an integral actor for transformation and beneficiary of gains | | |
| Decisions | **Policy & Regulation** creating the enabling environment to accelerate improvement | | |
| Decisions | **Integrated Planning** how we work across sector and administrative boundaries; and manage temporal goals | | |
| Insight | **Knowledge Sharing** how we accelerate the quality sharing of experience to build capacity to innovate and deliver | | |
| Insight | **Metrics & Indicators** enabling cities to demonstrate performance gains in a comparable manner | | |
| Insight | **Open Data** understand how to exploit the growing pools of data; making it accessible – yet respecting privacy | | |
| Insight | **Standards** providing the framework for consistency commonality and repeatability, without stifling innovation | | |
| Funds | **Business Models, Procurement & Funding** integrating local solutions in an EU and global market | | |

# Two EC calls for action:
## - H2020 Call for Proposals
## - Invitation for Commitment (IfC)

- **H2020 Call for Proposals**
  - €200 mln (split 2014 / 2015) under 3 DG Research programmes to scale up and accelerate smart city activities
  - Can be considered 'seed funds' to provoke a new way of (wave III) working

- **Invitation for Commitment**
  - Commitment to the ambitions and principles of the Strategic Plan (SIP)
  - An offer of resource commitment from all city stakeholders
    - In kind (expertise; resource; 'product'); financial; test sites;...
  - A means to collaborate to access 'scale' funds from multiple sources
    - Structural; National; City; Industry; Investor; Crowdsourced;...

Key Terms....

***Scale – Acceleration – Impact ...thru... Collaboration – Common Solutions – Integrated Approach***

# Some potential (IfC) ideas…

## Rapid Action – Rapid Benefits

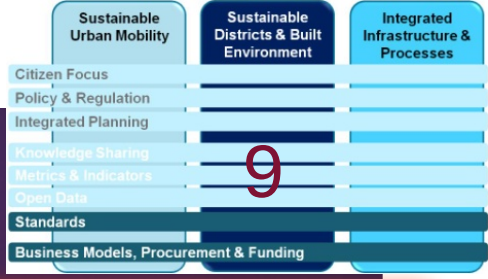
- **100 City – Industry – NGO transfers** starting now!
- **City Advisory Boards**

## Medium Term quantum improvement

- **The "Humble Lamppost"**

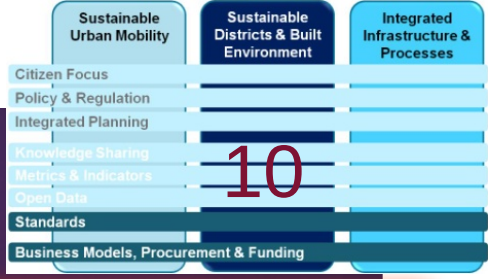
## Two 'gaping holes'

- **Integrated City Simulation & Visualisation for Planning**
- **City Information Platform**




# The "Humble Lamppost" ...the aspirin for cities

- ***"A million new lampposts across Europe"***
- Delivers:
  - Quantum financial savings: capital investment; and operational costs (energy consumption; maintenance)
  - Re-use of existing infrastructure (CCTV; WiFi; Security; Air Quality measurement; Transport monitoring;...)
  - Toolkits for Cities (to repeat successes)
  - RD&I Agenda
- Impacts:
  - Districts (Place making); Integrated Infrastructures; (Transportation)
- Requires:
  - New Business Models
  - Standardisation
  - Integrated planning & operations
- Aggregation of demand across cities




# The "Humble Lamppost" …the aspirin for cities

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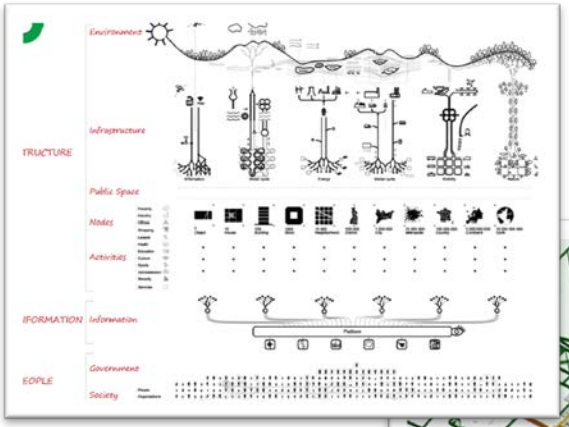
**Potential Commitments:**

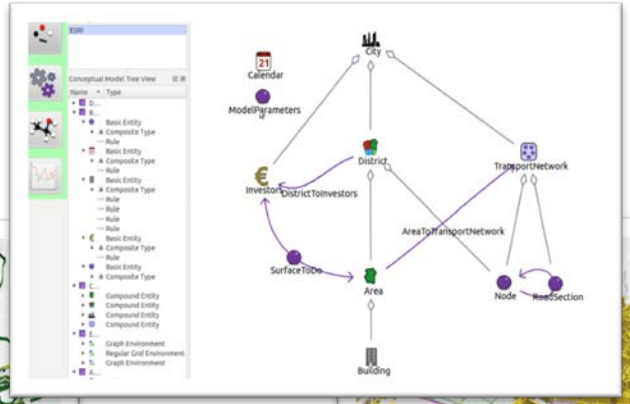
- **Lighting Industry**: RD&I funds
- (Local SME) **Service Providers**:
- **Funders**: new commercial models (& money)
- Standardisation Bodies: specifications
- ....

# Integrated Planning - systems modelling & visualisation

- ***"Digital City Planning"***
  - Streamlined internal administrative processes
  - Digitally captured integrated 3D plans; simulation and scenario building
- Connecting: Masterplanners; Politicians; Infrastructure providers; Service Providers; Society
- Address how 'hard' and 'soft' infrastructures interplay (over time)
- A generic integrated city model & proven set of modelling tools ('Sim city' - just not a game!)



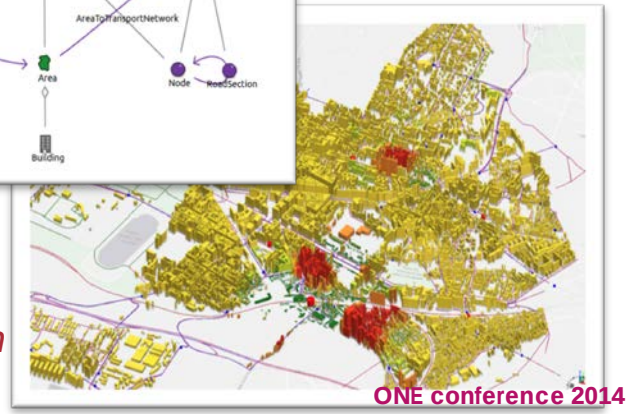
*Conceptual City Systems Model*




*Linked Systems Models*

*Geo-Spatial Systems Model*

*Physical Visualisation*



# Integrated Planning - systems modelling & visualisation

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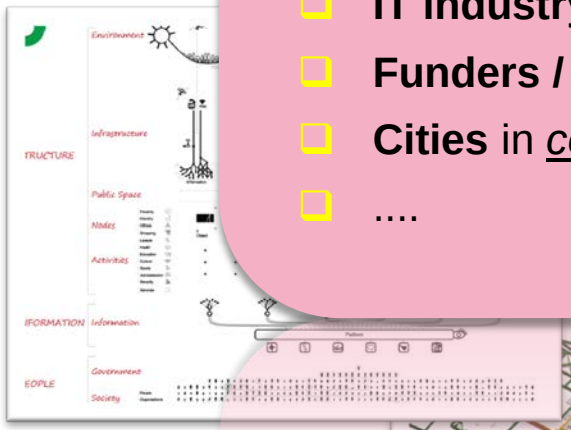
**Potential Commitments:**

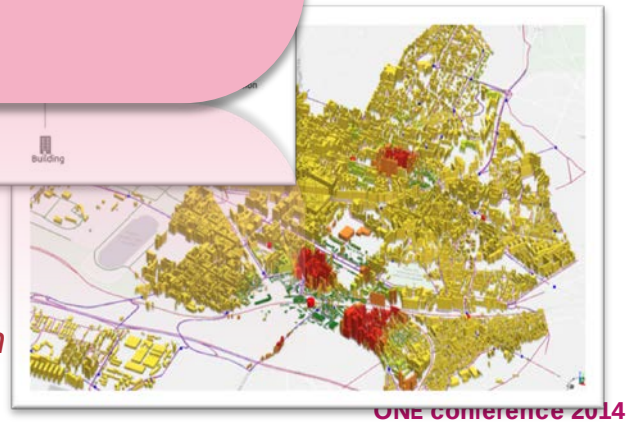
- **SME** O.R. model & visualisation tools (existing FP 7 project)
- **Academia** - expert audit & review
- **City Networks**: Urban Anatomy conceptual model)
- **Built Environment Industry** - funds (stand to gain)
- **IT industry** - stitch all data together
- **Funders / Investors** & **Insurance** companies - funds
- **Cities** in *collaboration* - proof points
- ....

*Linked Systems Models*



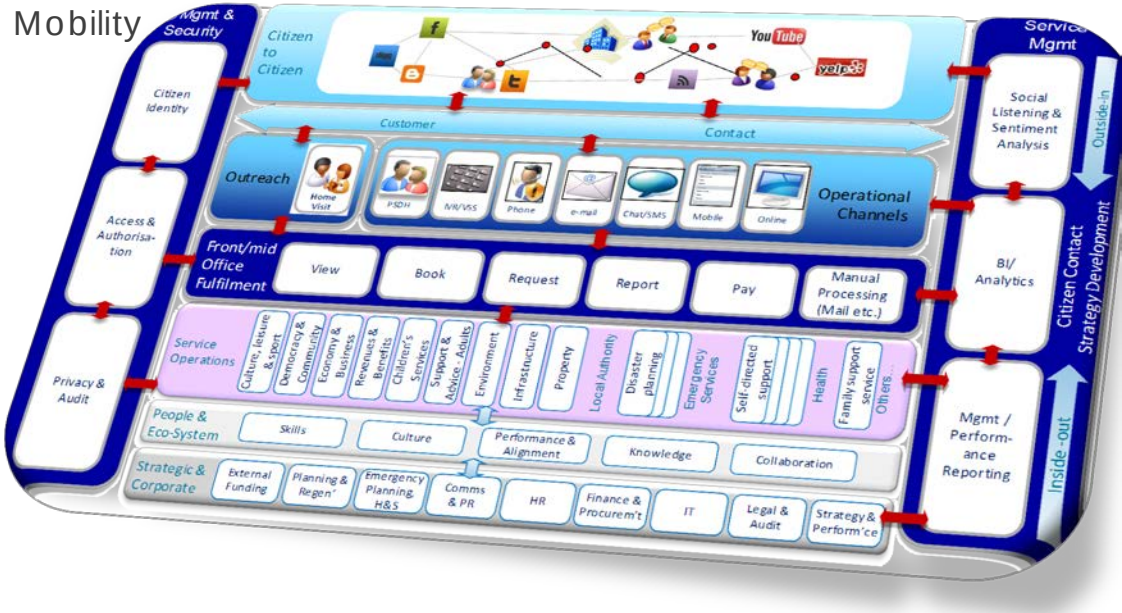
*Geo-Spatial Systems Model*

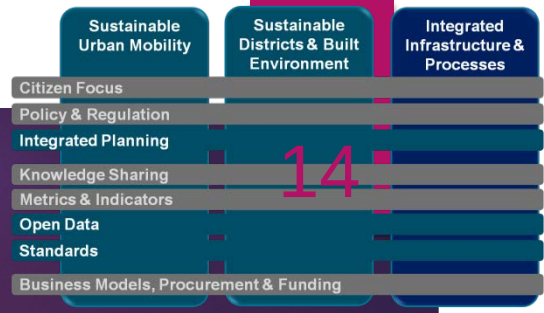
*Physical Visualisation*



# City Information Platform – A solution for "City Fence-Sitters"

- **A solution for "City Fence-Sitters"**
- Context
  - Present 'silo' operations
  - Limited common & integrated use of 5 major data sources
- Impacts
  - Integrated Infrastructure; Districts; Mobility
  - ...and all other city domains!
- Requires
  - Common Protocols (standards)
  - Data Mgmt
  - Integrated planning
- Delivers
  - City / industry market evaluation
  - Logical design
  - Proof of concepts






# City Information Platform –
## A solution for "City Fence-Sitters"

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- Delivers
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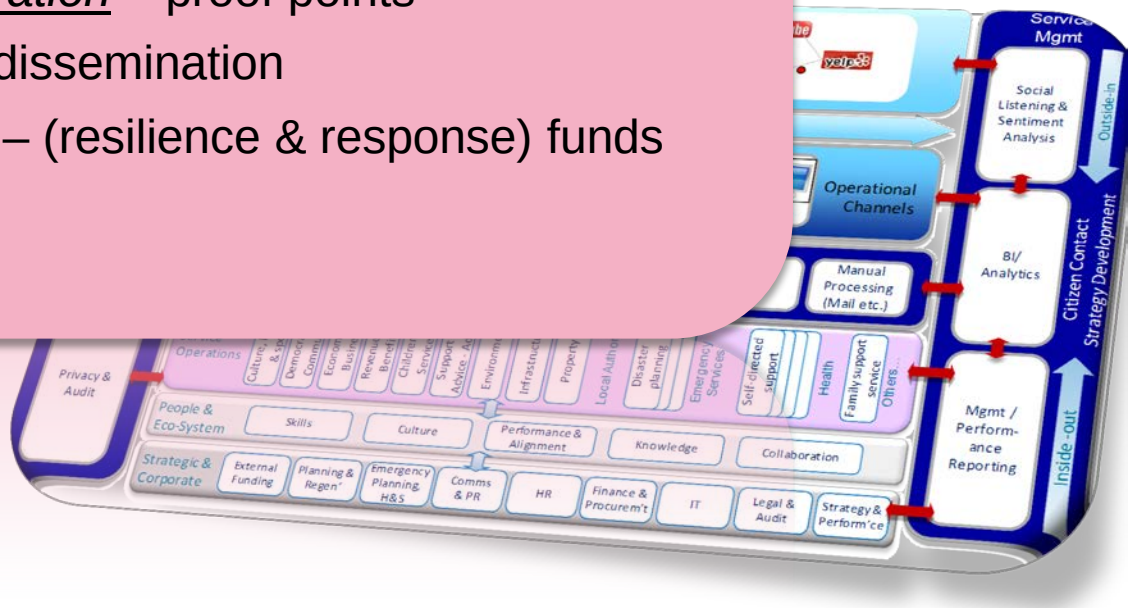
  - Logical design
  - Proof of concepts

**Potential Commitments:**

- **IT industry** – collaborate for common protocols
- **SME** – niche component solutions
- **Academia** – objective challenge
- **Cities** in *collaboration* – proof points
- **City Networks**: dissemination
- **Insurance Cos.** – (resilience & response) funds
- ....



# So many ways ICT can help transform our cities…

## Governance

- *Understanding society*
- *Connecting with (& empowering) people*
- *Informing leadership*
- *Enabling collaboration*
- *Connecting across public agencies*

## Services

- *Getting around the city*
- *Care of the Elderly*
- *Community safety*
- *Transforming energy consumption*
- *Supporting SMEs! (business friendly cities)*

## Infrastructure

- *Getting control of public assets*
- *Connected Infrastructures (IoT)*
- *Disruptive ICT ('SMACS')*

# Just go to it ! ....

GRAHAM COLCLOUGH

THANKS!