

# 'Digital Auckland'

Inducing Transformation into the Transition process  
through an innovative *Visual City* platform

September 2009

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# Agenda

- Introductions & key messages
- Technology trends
- ATA and Super City Challenges
- Visual City
- Summary and next steps

# Key messages

1. Making complex data accessible
2. Stakeholder engagement
3. Nextspace as a catalyst

## **Call to action:**

- Partner to build world-class Visual City platform

# About Nextspace

- 3D visualisation industry catalyst and technology developer
- Founding partners:



A Visual Information Publishing Platform  
that can integrate 3D assets  
throughout an organisation and all its stakeholders



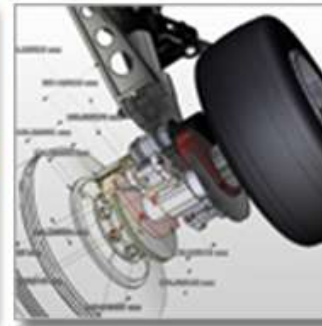
Product  
Development  
& Sourcing



Sales  
& Marketing  
Communications



3D  
Visual  
Manufacturing



Technical  
Publications  
& Training

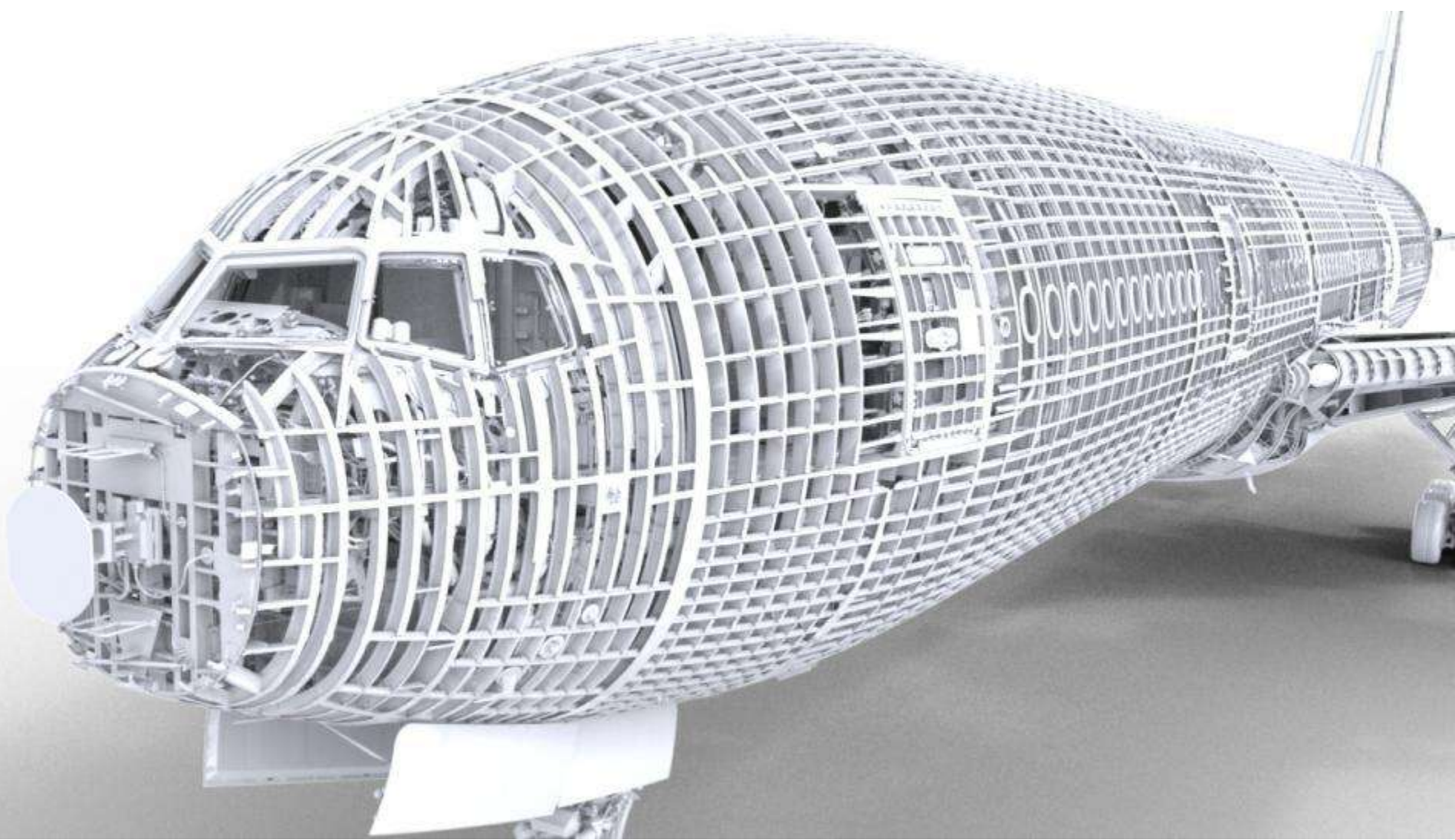


Service  
&  
Support

Strategic Partners

Featured Customers





An example of the 3D data that can be managed using Right Hemisphere technology. Boeing 777 = 27 Terabyte dataset, with 3,000 engineers accessing it online 24x7, 16 servers, over 100 file formats. This is comparable in complexity to a city.

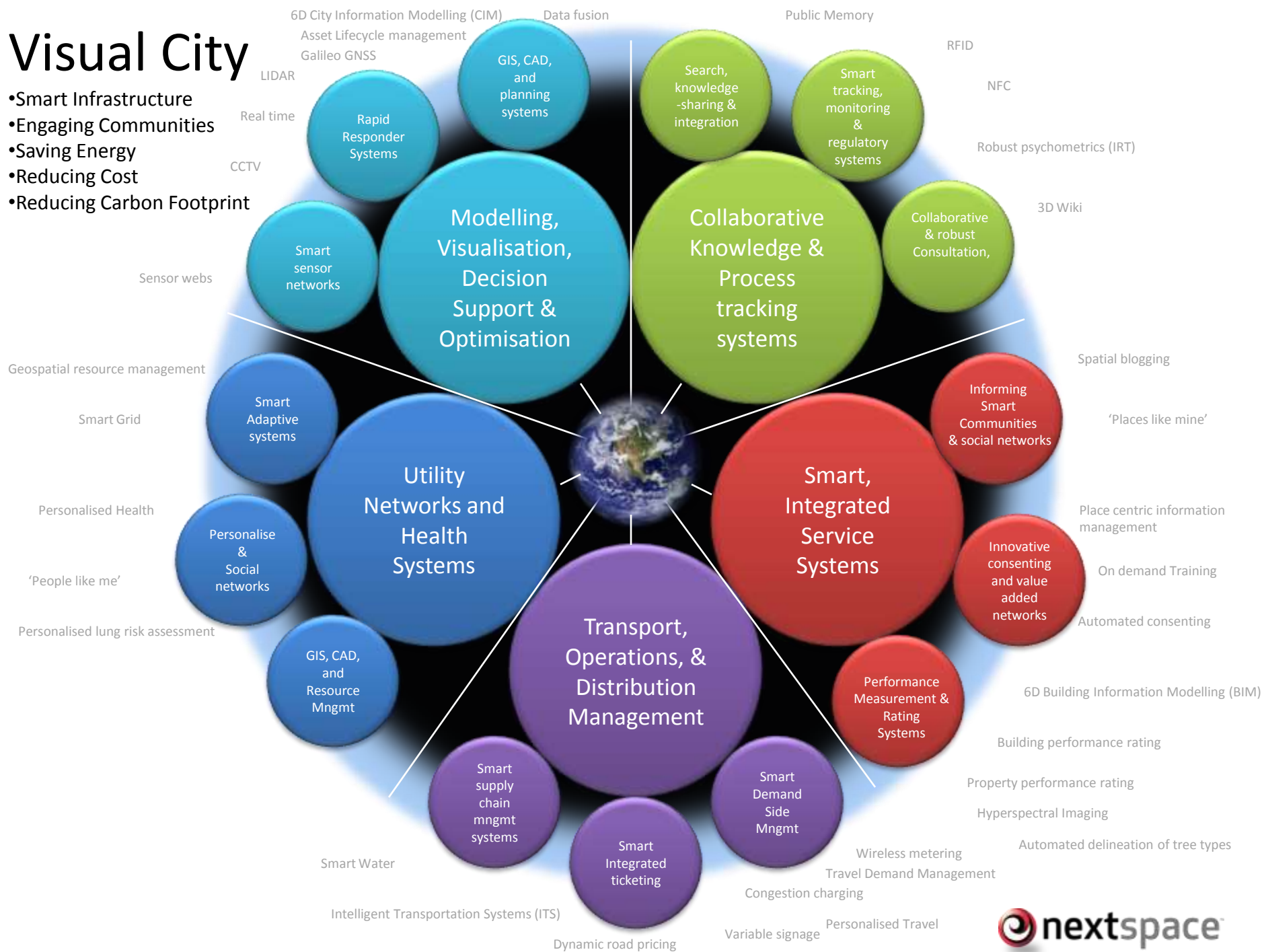


The same technology is already being used locally for residential and commercial Building Information Management (BIM).

Model courtesy of [www.predefine.co.nz](http://www.predefine.co.nz).

# Visual City

- Smart Infrastructure
- Engaging Communities
- Saving Energy
- Reducing Cost
- Reducing Carbon Footprint



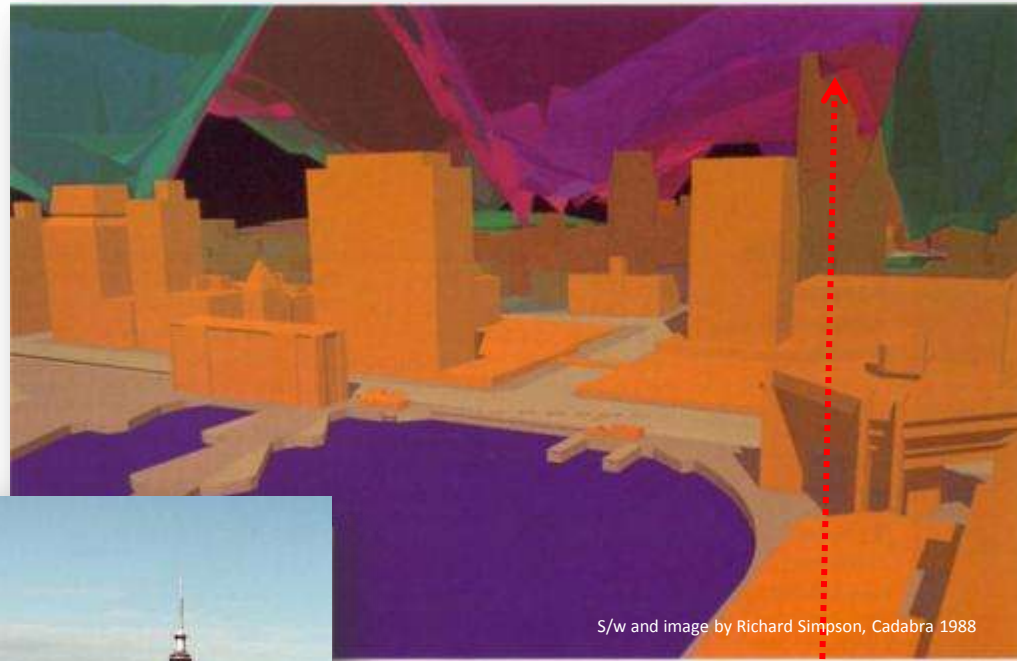
# Visual City

Digital eco-system

Language of progression



# Language of progression



S/w and image by Richard Simpson, Cadabra 1988



Control Breach visually detected

Environmental performance control envelope defining the skyline of Auckland City as driven by sunlight controls and view shafts. 'Stain glass' rendering provides an interactive quality to the visualisation to yield a deeper understanding of the complex interrelationship of controls. This mathematical simulation has dictated the shape of the City form for the past 20 years.



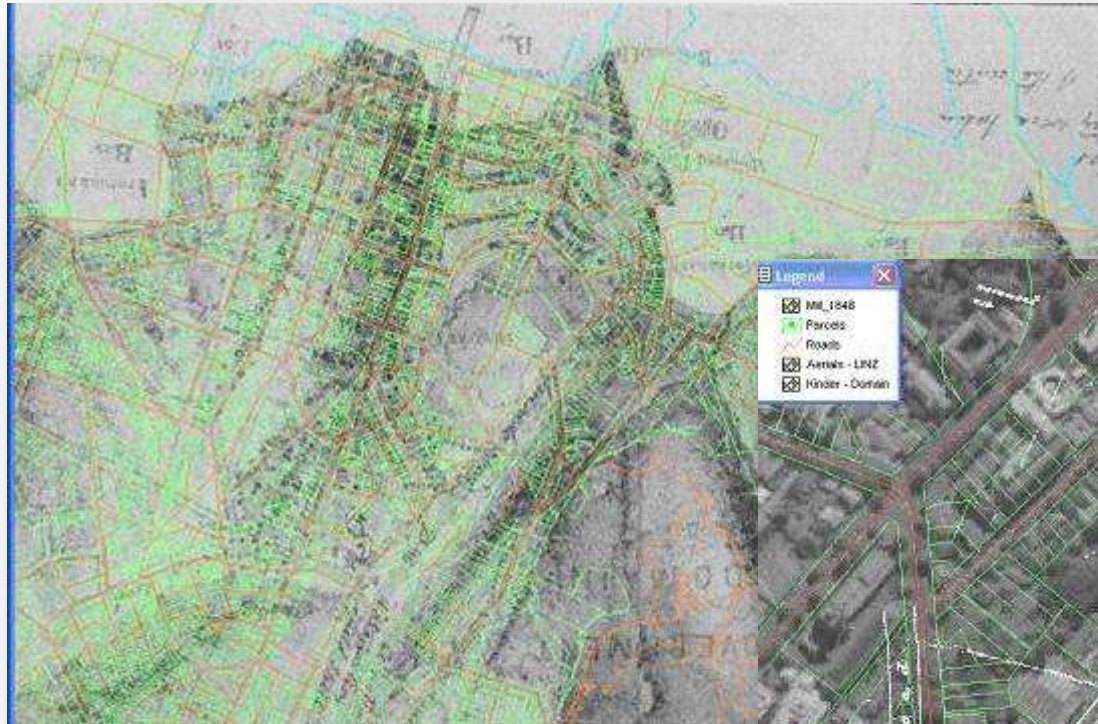
WiFi signal strength data in Salt Lake City – Paul Torrens

# Liberating latent knowledge



Parnell 1863 – Photographed from Constitution Hill by Kinder. Several photos taken so stereo pairs can be used to create 3D knowledge of the city origins.

# Geo-temporal discovery



1852 water front showing extent of reclamation




1848 Map georeferenced showing original Waipapa Stream and RopeWorks

Comprehending the geomorphology of Auckland and elements pertaining to cultural sustainability and its identity

\*\* Community project by Parnell Heritage Society awarded the ASIBA Finalist 2004

# Consultation Example



REALSPACE

**REALSPACE**

SERVICES

CUSTOMERS

PROCESS

**PORTFOLIO**

MORE INFORMATION

SYSTEM REQUIREMENTS

CONTACT

## Quarry Development

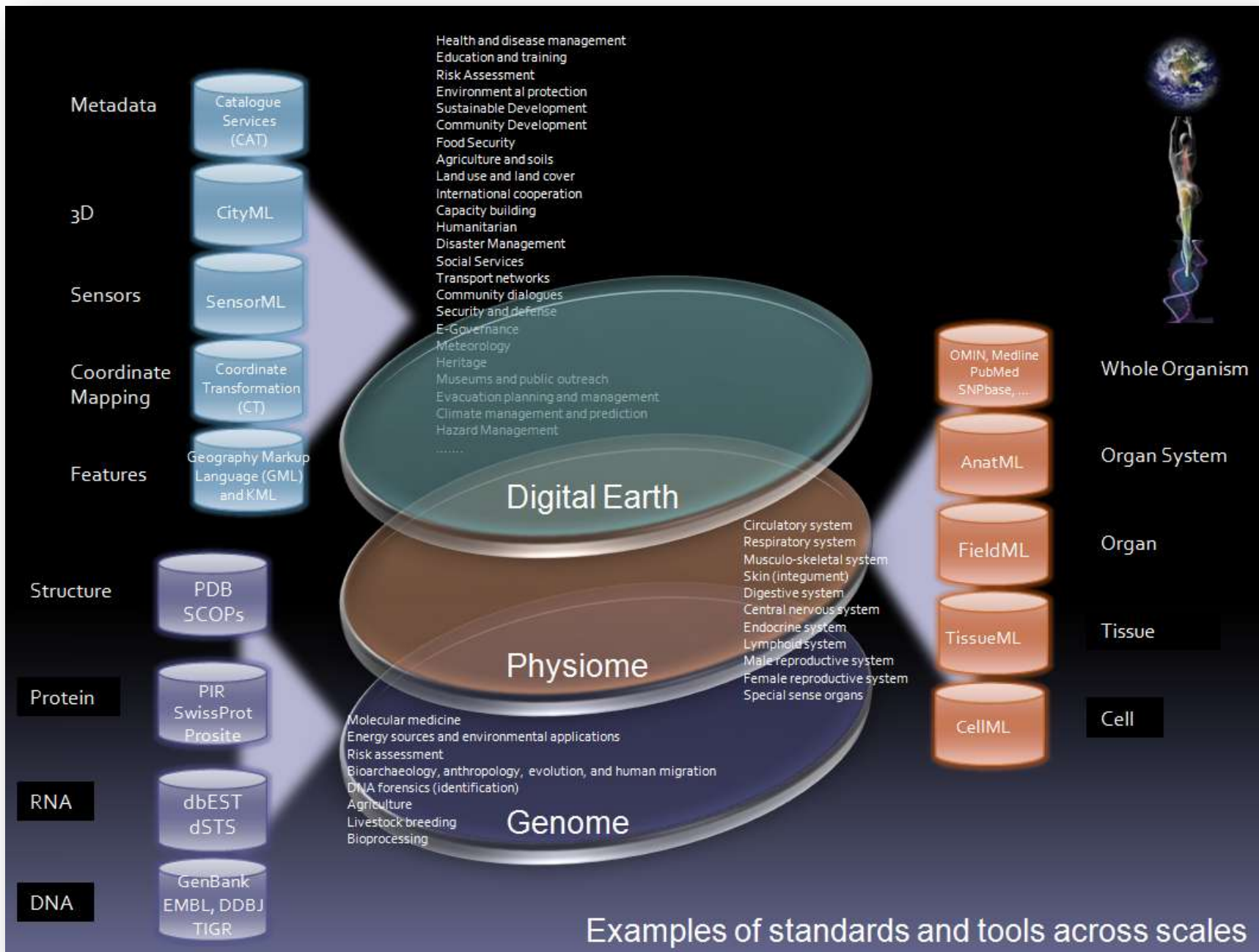
This example shows an area of approximately one square kilometre. The base 3D model was provided by Precision Aerial Surveys. This example has had the following features added.

- Graphic representation of contour lines and property boundaries
- Proposed altered cut and fill overlay with landscaped cover
- 3D modelled elements in the forms of power pylons and wires, wind turbines, utility shed and construction vehicles.
- 3D Vegetation both random average sizes to a set age, as well as specifically noted height accurate trees.
- Animation path to a specific view from a neighbour's property, from their 3D modelled deck.
- Specific animation path following the line of the power lines 1st person mode allowing the user to "walk" up anywhere in the model.

## Portfolio

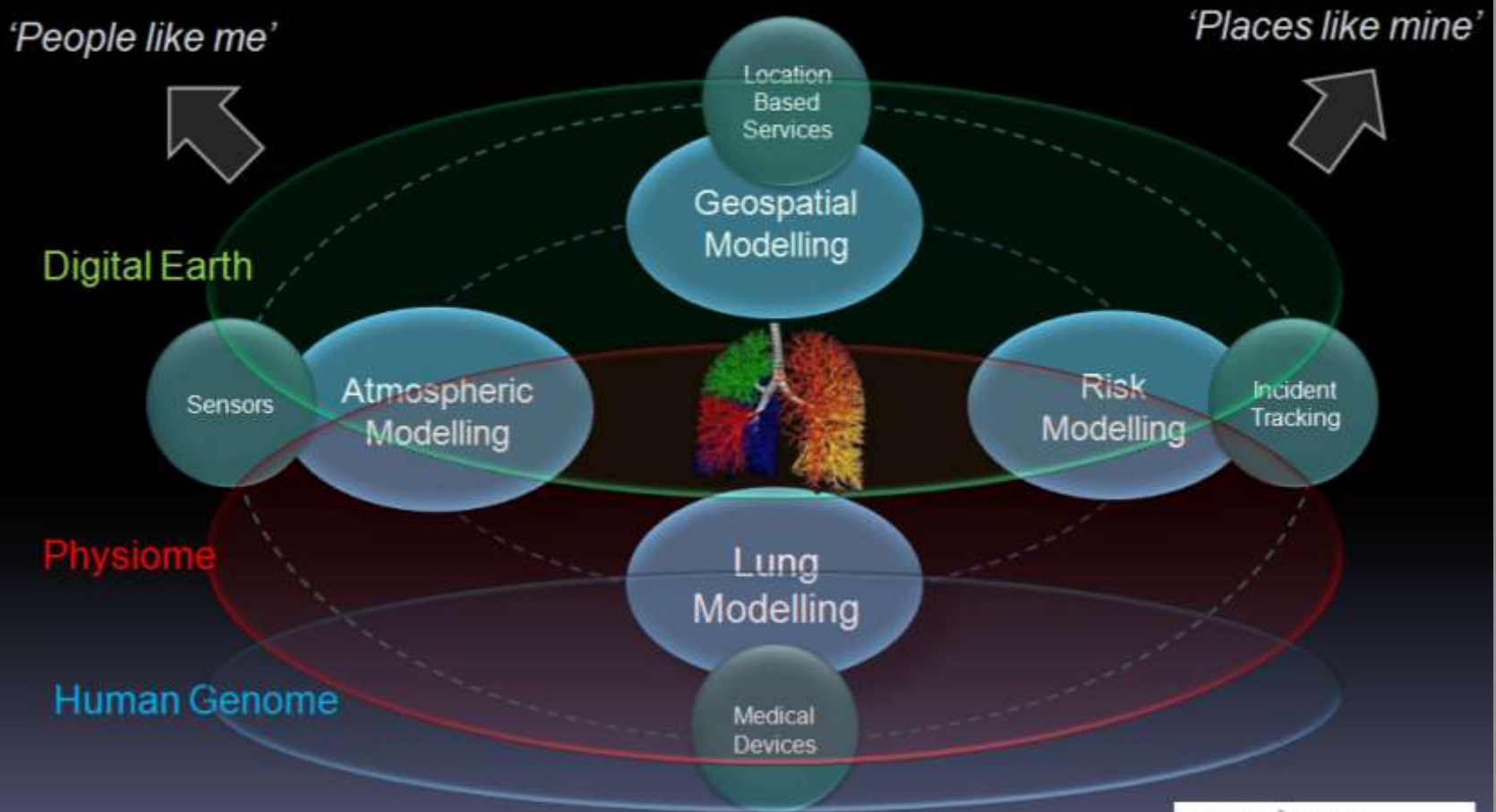
- [Quarry Development](#)
- Landscaped Courtyard
- Multi Housing Development

[http://www.realspace.co.nz/realspace-portfolio\\_the-quarry.htm](http://www.realspace.co.nz/realspace-portfolio_the-quarry.htm)



Examples of standards and tools across scales

# Example of crossing the spheres: Personalising Lung Risk Assessment



Example of spanning across the mega-initiatives



# Emerging convergences

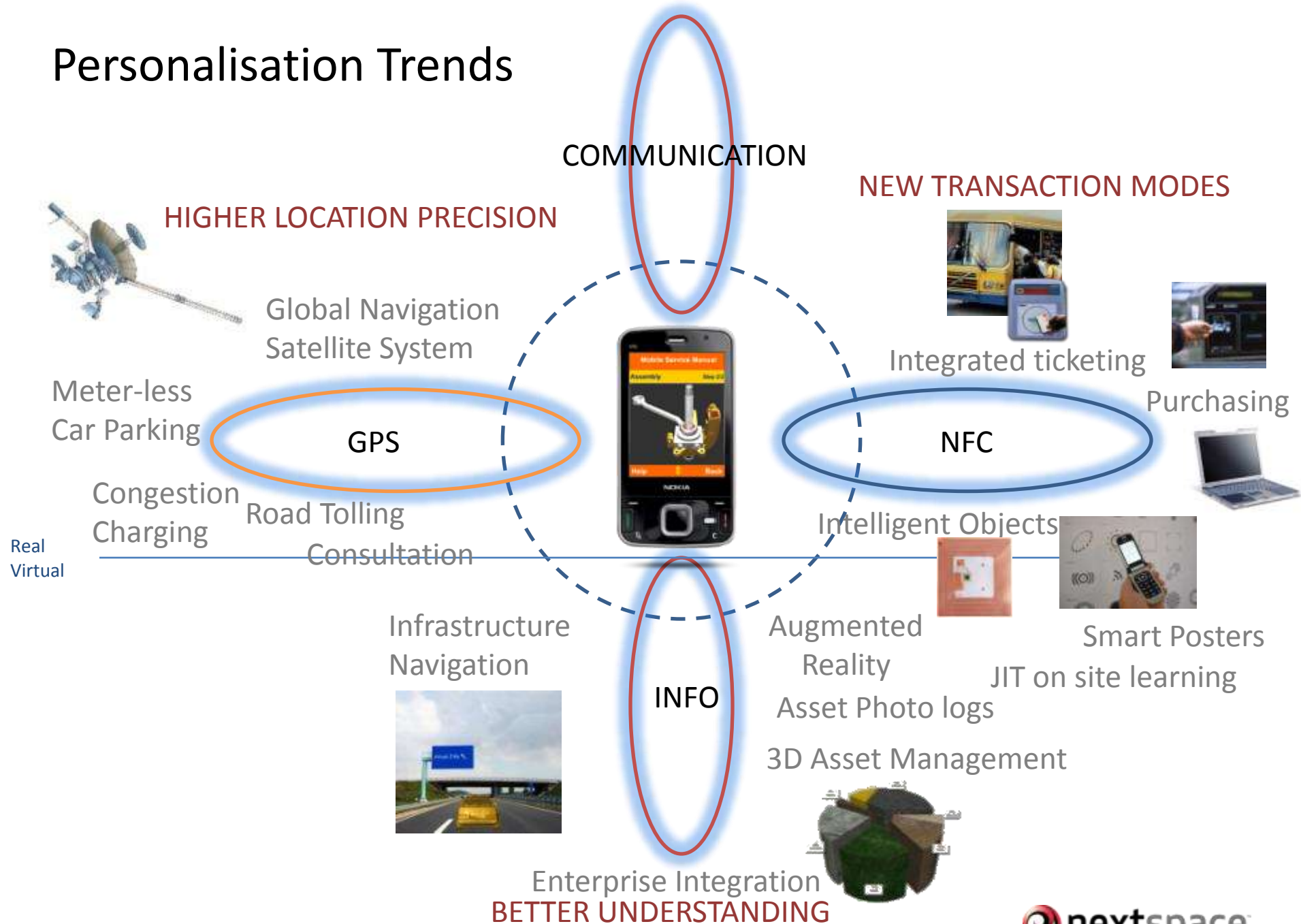
- RFID -> Internet of Things
- Sensor Web
- High precision GPS & GNSS
- Cloud Computing & SaaS
- 3D Visualisation
- Real-time integration
- Social Networking



Personalisation  
of  
Information

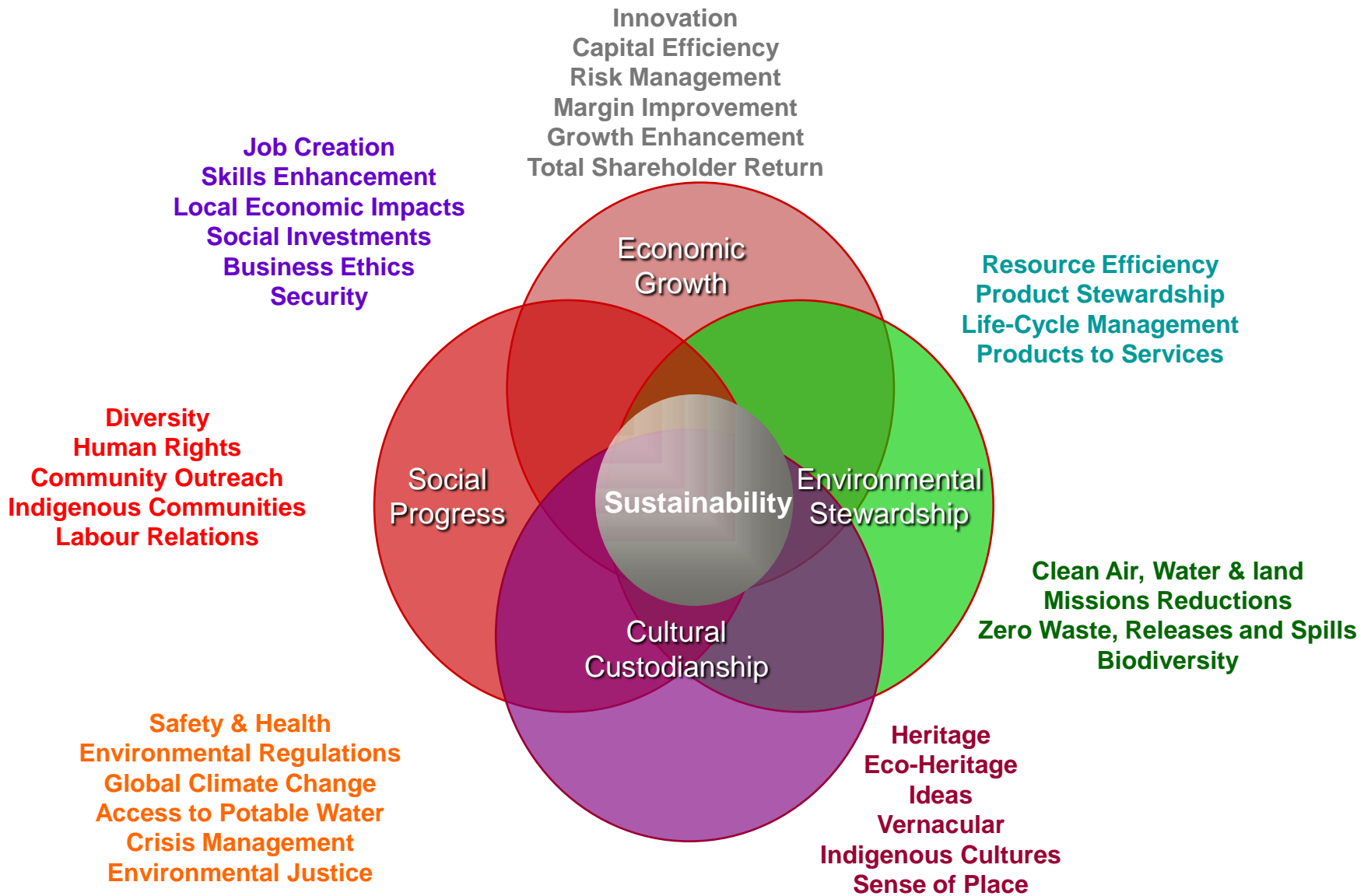
Shift from technology culture to a service culture

# Personalisation Trends



# Personalisation examples





# 'Digital Auckland'

Creation of value, belief, idea, principle

Dissemination  
Distribution  
Behaviour norm  
Policy Making  
Consultation  
Consensus

SERVICE

Simulation  
Synthesis  
Potential/Continuity  
Process Model

Modelling for lifecycle, human behaviour, and information flow

SCIENCE

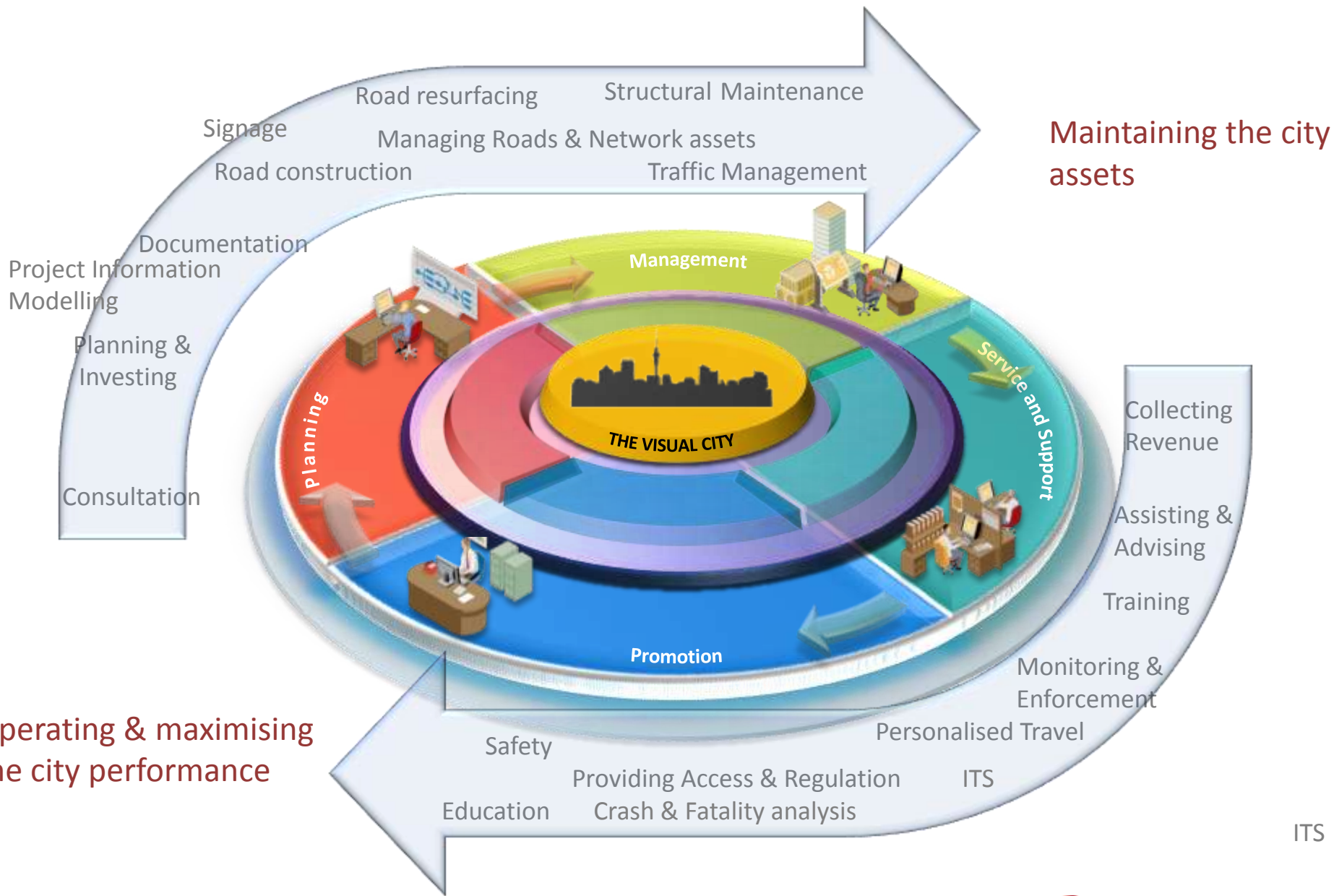
Monitoring  
Sensing  
Observation  
Field Work  
GIS, RS, CAD  
Documentation  
Databases

Cognition of change in environment, Infrastructure, economic, social

OPERATIONAL  
SYSTEMS

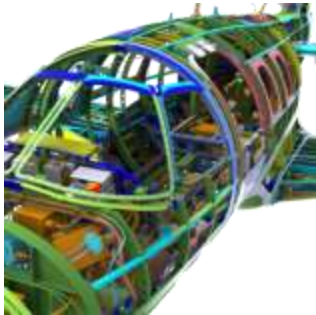
# Elements

- Web Portal
- Metadata (comprehensive records about information)
- Metadata Clearinghouse
- Shared Vision Model – Decision support tools, planning control modelling,
- Web Mapping Services
- Engagement tools – opinion mapping, geospatial blogging, social networking (eg. places like mine, people like me etc), consent automation, reporting tools, 3D urban modelling etc.
- Asset Management – road, footpaths, utilities, ducting, building, etc.
- Regional Geospatial Database Management System
- Document Management System
- Works Management System
- Enterprise Resource Planning (ERP)
- Policies
- Standard
- Other

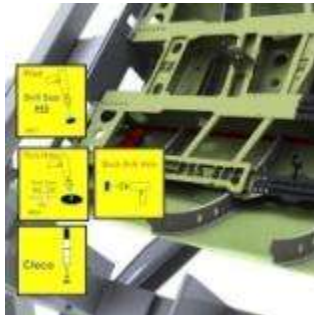


# Visual City - Solutions

Visual Design  
Navigation



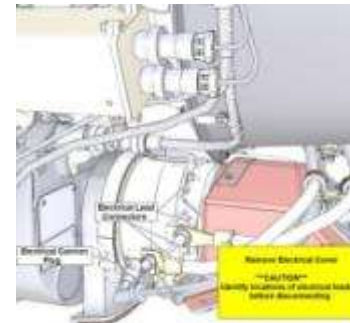
Visual  
Asset Management



Visual Consultation  
& Promotion



Visual Training &  
Documentation



Visual Applications



## Strategic Partners



Microsoft

Adobe



## Featured Applications

Road Inventory Management  
Mobile Integrated Ticketing Services  
3D Asset Manager  
Learning Tools  
Consultation Management  
Decision Support Dashboard  
Facility Management

Documentation Management  
Publication Management  
Infomobility Tools  
Emergency & Security  
Logistics  
3D Visualisation  
Personalised Travel



Maintaining the city assets

Operating & maximising the city performance

Collaborate

Automate

Integrate



# Personalised Configurations

City Visualware Services

Interactive Workflow Engines

Simulators

Application Interface

Information Services  
Data Retrieval & Mining, Mobile, AR etc.

User Manager

Data Fusion Infrastructure

Data Preparation (rules, templates, config.)

Clearinghouse Server (Catalogue Services)

Meta data

N-dimensional Services

Data synchronisation

MOT

NIWA

STATS

TLAs

Other

Meta data

CAD

GIS

DOC

PDF

Images

Video

Audio

Items

Stats (Pop. Census etc)

CCTV	Web Cam	Traffic Count	Sensors	Weather
LIM	RSS	SCADA	SCATS	Tolling
Simulat.	ERP	Incidents	Capacity	Future

Maintaining the city assets

Operating & maximising the city performance

Collaborate

Automate

Integrate



# Personalised Configurations

City Visualware Services

Interactive Workflow Engines

Simulators

Application Interface

## Information Services Data Retrieval & Mining, Mobile, AR etc.

Environment Models	Network Models	Planning Models
Schedule (4D) Model	Cost (5D) Models	Lifecycle(6D) Models

MOT  
NIWA  
STATS  
TLAs  
Other

Meta data

## Data synchronisation

CAD	GIS	DOC	PDF	Stats (Pop. Census etc)
Images	Video	Audio	Items	

CCTV	Web Cam	Traffic Count	Sensors	Weather
LIM	SRMS	SCADA	SCATS	Tolling
Simulat.	ERP	Incidents	Capacity	Future

# Summary

1. Making complex data accessible
2. Stakeholder engagement
3. Nextspace as a catalyst

## **Call to action:**

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