



**Journal of Events**

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# Contents

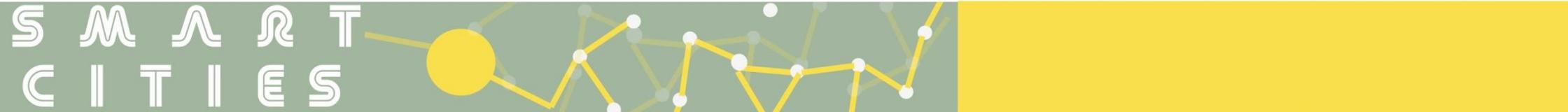
## Contents

1. Introduction and objectives	03
2. Event One Output	
Event One overview	05
Advisory Group Work Products	06
V-flet Draft Story Board	07
Overview	
Overview of a Smart City	08
Overview: Model of What's in the Box	09
Overview: matrix of Smart City Documents	10
Sponsor Group Success	
Vision	11
Transformation map	12
Projects that will help achieve the vision	13
Next steps	14
3. Event Two Output	
Event two summary	16
Developing the approaches	
Teamlist	17
Business Case work product	18
Business Model work product	21
Procurement work product	26
Sources of Finance work product	31
Value Chain work product	35



### Purpose of this document

The purpose of this document is to **provide an overview of the work** generated by our colleagues and act as a basis from which to develop the guidelines for Smart Cities standards.



# Introduction and objectives

The BSI Smart Cities Standard events one and two took place consecutively on the 7<sup>th</sup> and 8<sup>th</sup> of October at the Capgemini ASE Centre, Holborn.

## The outcomes BSI are working towards:

- More investment for UK cities
- Support to tier 2 cities
- UK industry involvement
- Acceleration of the Smart technology programme
- Better use of existing investment
- A simple, clear model that enables intelligent leadership

## Through the ASE Events, BSI aimed to gain clarity on the priorities for standards in the context of exploring Smart cities

- The Standards that are needed
- Who the audience is
- What the conditions for success are
- What the content should be





**Advisory Group Output**

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# Event One Overview

The purpose of Event One was for the BSI advisory group to define the framework for Smart Cities guidance.

### Build Our Definition

Divided into teams, participants considered the concept of Smart Cities from a variety of vantage points: Members of the Public, Decision Makers, Business Leaders, and Built Environment Professionals. This exercise generated a number of themes that will be integral to the Smart City programme going forward



### Take a panel/Share a panel

The group then had the opportunity to express their individual perspective on what a successful future would look like for Smart Cities.



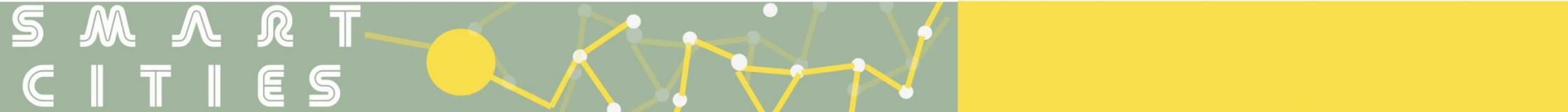
### Co-creating the Products

Having synthesised their ideas, teams then worked together to define three work products: a Smart City 'leaflet' to communicate the Advisory Group's aspirations, a Smart Cities overview, and a definition of success of the Advisory Group.

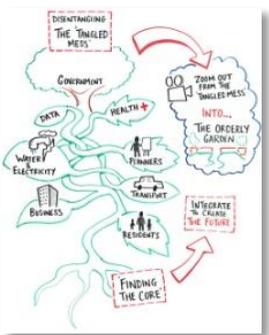
By the close of **Event One**, the Advisory Group had generated a tangible list of next steps, and had clarity around what good looks like for Smart Cities.

### Participants

Allan Mayo, Dan Palmer, Eleri Jones, Graham Colcough, Katherine Woodhouse, Kathryn Vowles, Koen Van Dam, Michael Mulquin, Paula Hirst, Philip Atkinson, Rick Robinson, Ross Hudson, Sarah Tromans, Saviour Alfino, Steve Turner, Tim Stonor, Trevor Dorling, Trevor Gibson



# Advisory Group Work Products

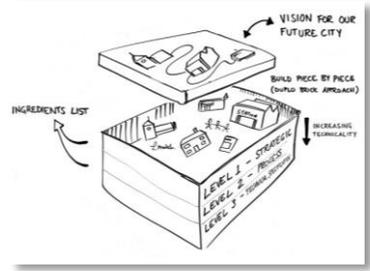


## Smart Cities Leaflet

*A communication tool that clearly and concisely explains how standards contribute to the success of a Smart City, and what this really means for people*

Key questions this aims to address are:

- Who are the audience we want to communicate to and influence? (i.e. advocates and resisters)
- Why would anybody read it?
- What is the call to action?
- What are we saying to the non believers?
- How should it influence the audience?
- What content does it include?
- How should it be written in terms of style?
- Who owns it?

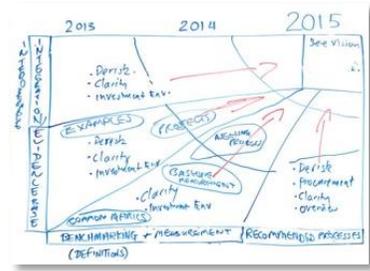


## Overview

*The 'lid of the box' of Smart Cities guidance and the components that sit within it*

Key questions this aims to address are:

- What makes a city smart?
- What are the attributes/benefits of the Smart City?
- What are the key systems?
- What is the key infrastructure?
- Who owns the overview?

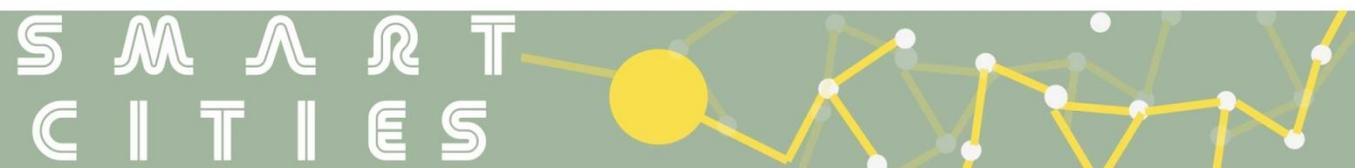


## Sponsor Group Success

*A description of what the Advisory Group aim to achieve in the next 24 months, and the plan for making it happen*

Key questions this aims to address are:

- What is the contribution the Advisory Group will make to the development of Smart Cities:
- In the UK
- Globally
- Where will we focus our efforts?
- How will we influence key actors?
- What are the Critical Success Factors (CSFs)?
- How will we leverage other work and thinking?
- What is missing for success?
- How will we work?
- What's the plan?



# V-flet Draft Storyboard

## Opening

Cities are increasingly complex

- Siloed systems have had unchecked growth, creating a tangled web/mess of process, infrastructure and services
- “It’s a jungle out there!”
- Cities are global economic growth engines
  - Choke the cities: choke the growth

## Multiple Scenarios



### Mayor

- Stalled city competitiveness
- Failed sustainability targets
- Cuts!



### Business Leader

- Shrinking talent pool
- Inefficient support process



### Citizen

- Disruption
- Disengagement
- Dissatisfaction

## What should we do?

Understand their situation

Find The Core Shared Situation

Create The Shared Future

Accelerate Through Best Practice

- Proven path
- Access to expertise



# Overview of a Smart City

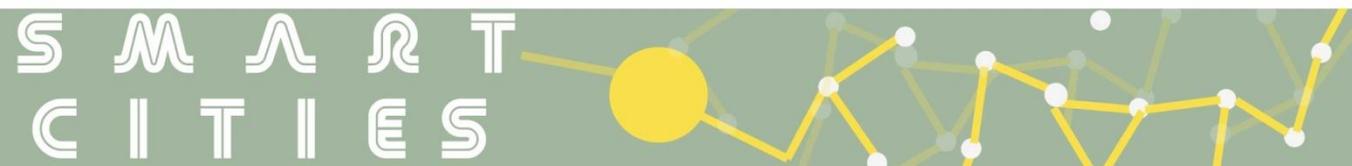
Output needs to be exciting / inspirational / not stereotypical / documentary / real / current.  
Images and models – Bradford city park, all elements of a city, information sources.

## Consistent with V-flet

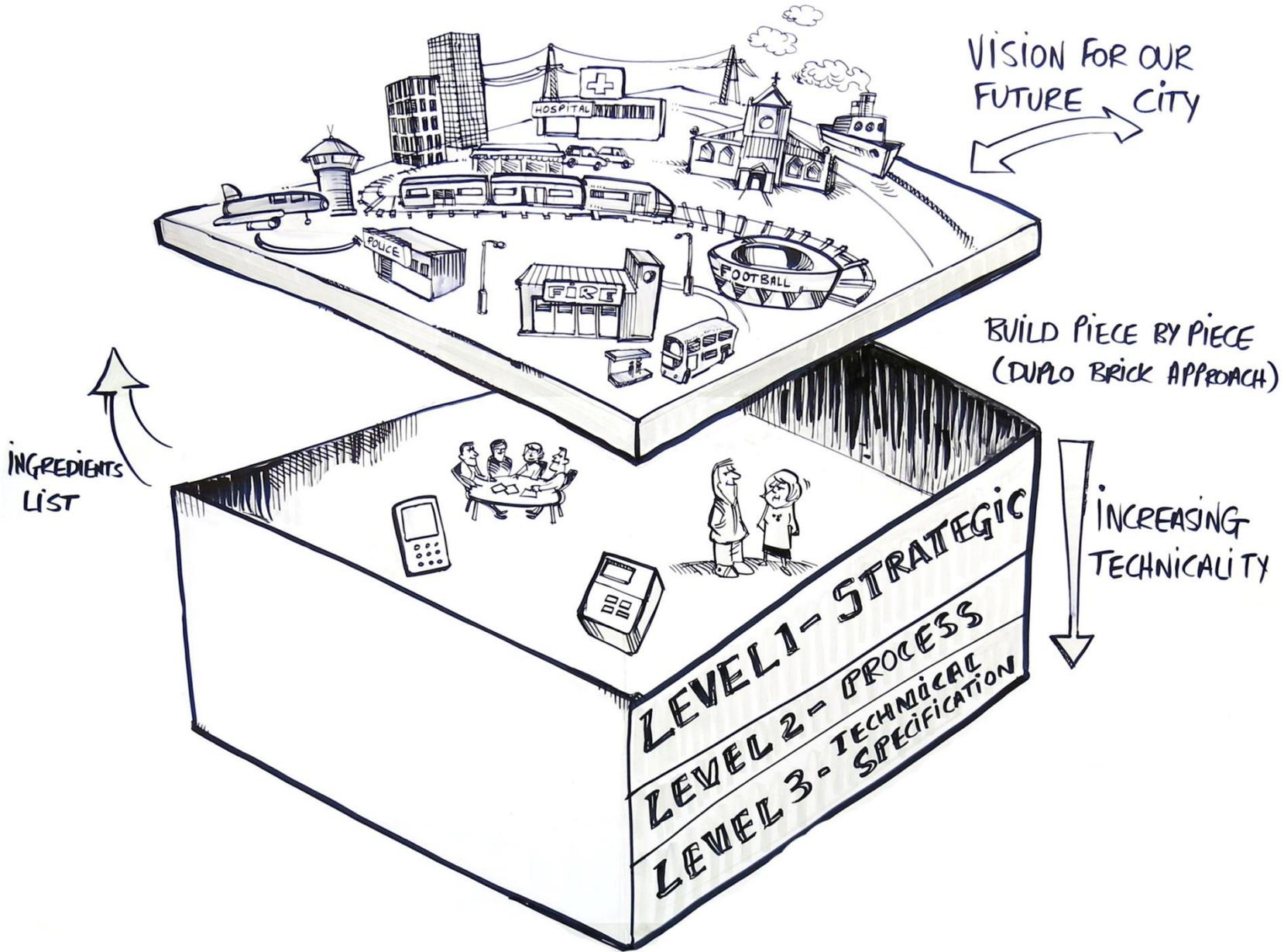
1. What is in it for me? Business leader, BE Professionals, city leaders, decision makers, city practitioners.
2. What can I do? Stories / case studies / roadmap stories. Real or theoretical? Current technology?
3. Call to action – describing everyone's part to play.

## Overview

1. Tools available – what are standards and how can they help – link to the matrix of documents.
2. Maturity model – Who we are and what are the gaps? Measure for businesses, cities, citizens, communities?
3. How to embed in city strategies? KPIs?
4. Building – on what we are doing already; also doing things differently – not necessarily more, could be less – but different and better.
5. Vision and roadmap.



# Overview: Model of What's in the Box



# Overview: Matrix of Smart City Documents

Topic	Audience	Document Type	Availability – Production
180 - Terminology	Suppliers / Buyers (Citizens?)	2	Exploit Intrenl (a first from BSI)
181 -	City Leaders	1* (actually L2)	
182 - Interoperability	Chief Officers / Independent CEY / CIO	2	stuff from ludardy
Planning	Professional / Functional Leaders	1-2	
Business Case / Business Model	Leadership	1+2	EC planned work
Procurement	Business Buyers / Procurement Officers	2 (process)	
Performance		Adapt to UK	ISO / GCIF (Perf)
Collaboration	Heads of Services	2 guide	Adapt BS11000?
Overview	Real Leadership PPA	1	New (incl. Model) Intretn exploit potential
Leadership	Political / Professional / Business Leaders	1	New city leadership document
Asset Management	CXO	1-2	
Health & Wellbeing	Heads of / CXO / IT	2	
Energy		2	
Mobility / Transport			
Waste & Recycling	Heads of		
Water			
Customer Insight			
Skills & Education		3	
Urban Modelling / Simulation	New territory		
Ethics	New territory		
Legal Issues	New territory		
Inclusivity			
Sustainability Impact Assessment			RFSC
IT Standards		3	
Resilience	Need to define		
Public Security			
Information Governance			

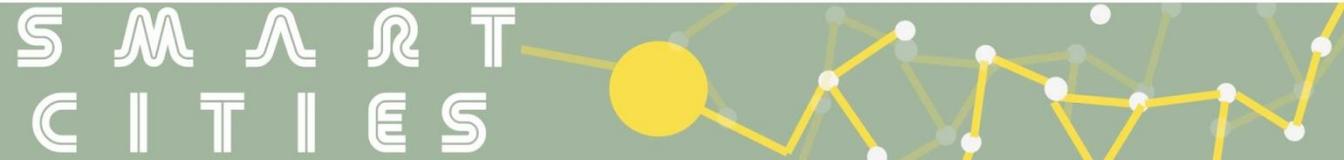
**Notes**

- City Maturity Model needed / self-assessment
- High budget, big challenge, high value potential
- High non-financial (citizen) value potential
- Assume 3 levels exist for these domains

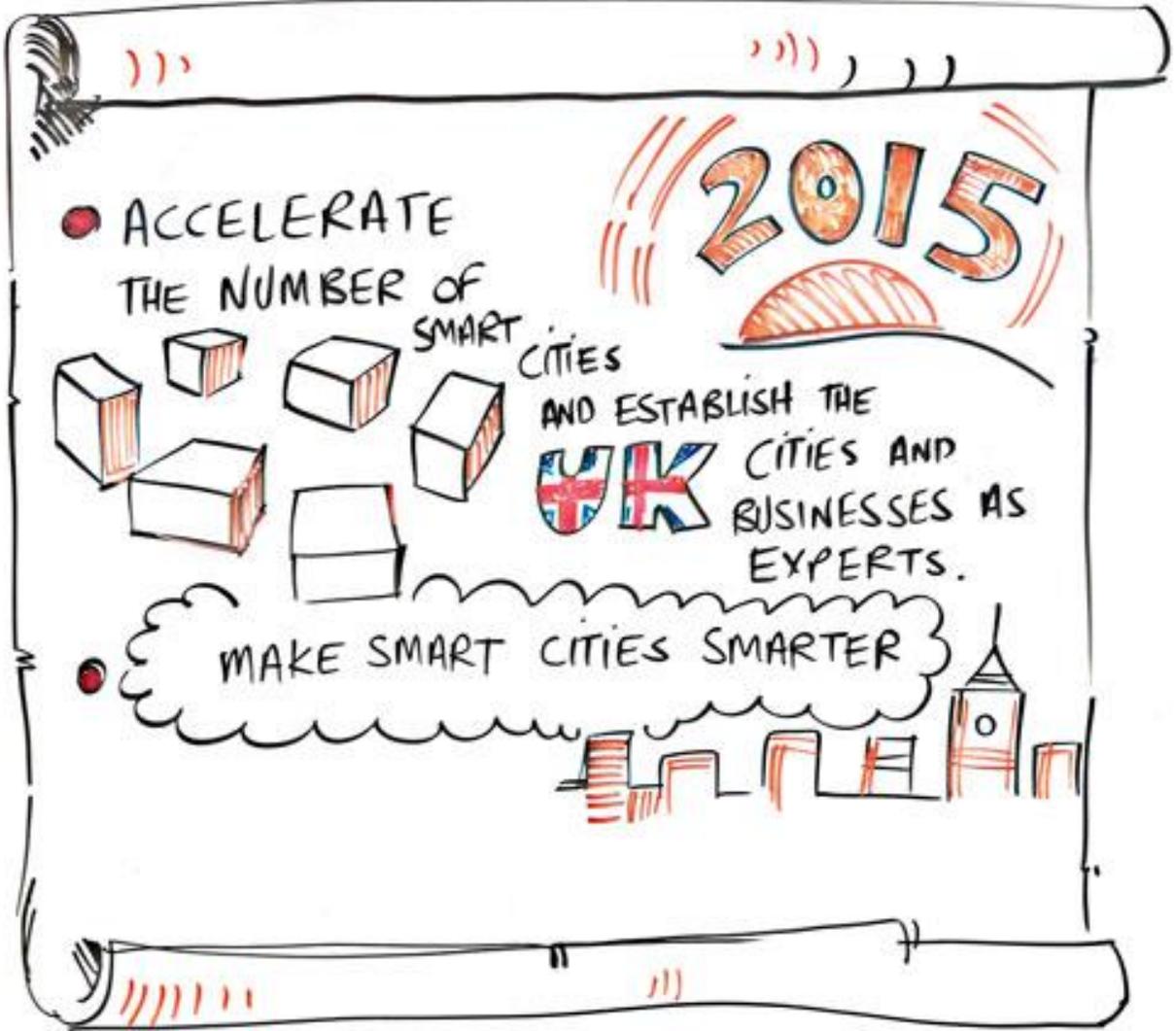
Research or interview and develop hypotheses (market focused approach)

General - s. City context is needed for many of these

- Next steps:
- 1 - Portfolio capture
  - 2 - Short synopsis of each

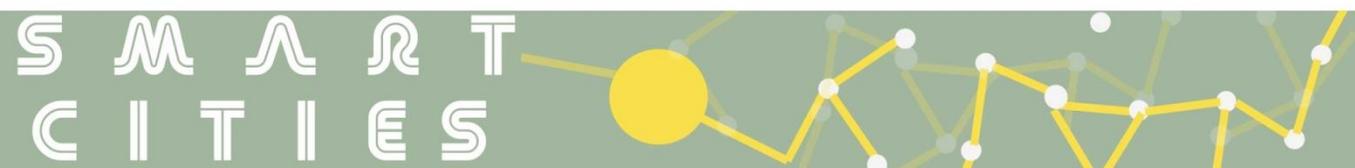
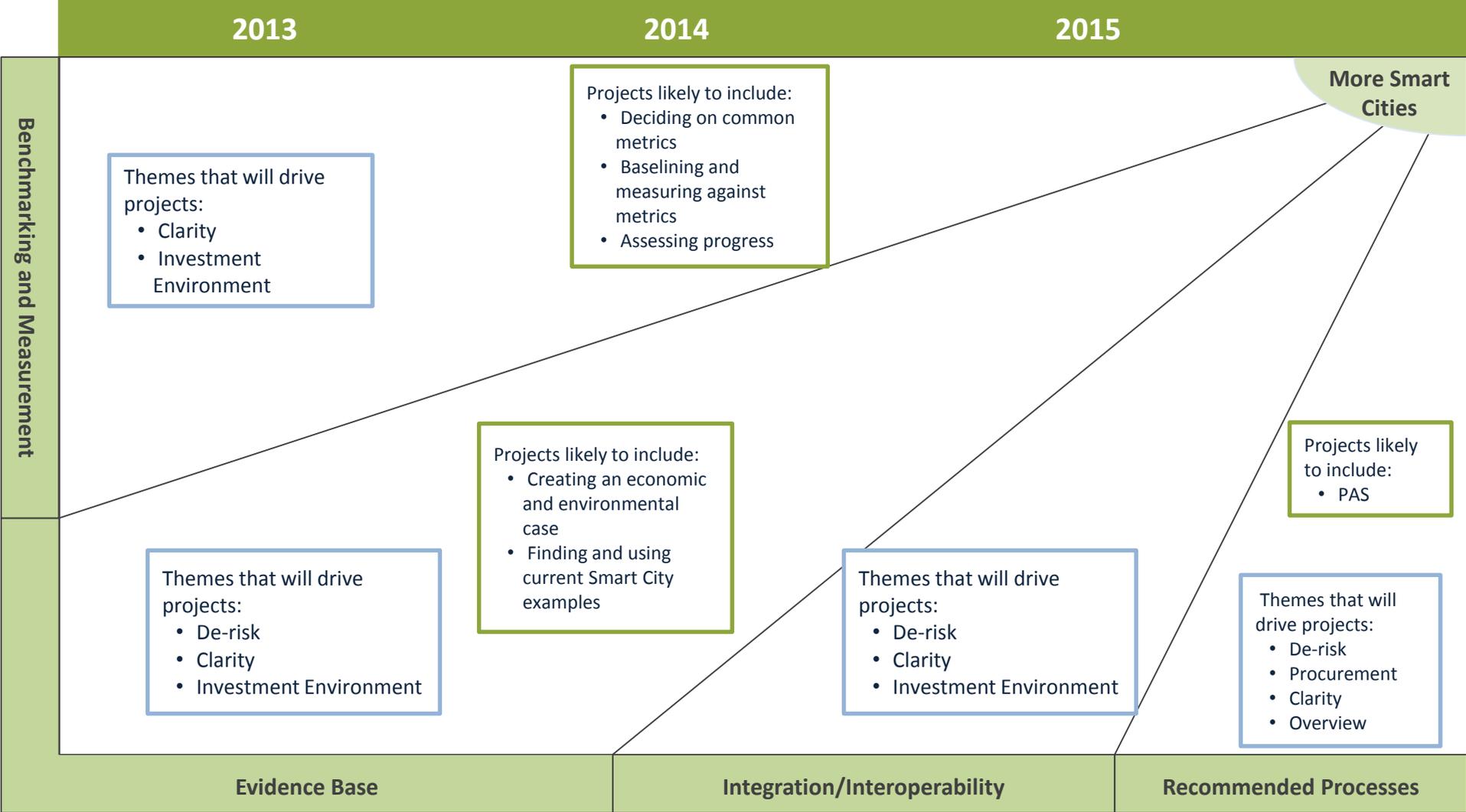


# Sponsor Group Success: Vision



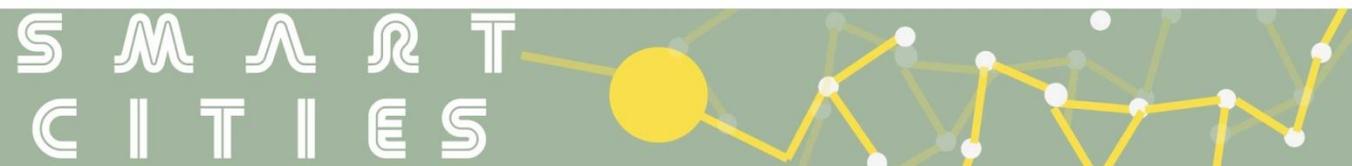
1. How many Smart Cities are there in 2013 and how many should there be by 2015?
2. How Smart are they/will they be?
3. How do we measure progress?
4. Who does the measuring?
5. Who are the experts?
6. What is the role of the advisory group?

# Sponsor Group Success: Transformation Map

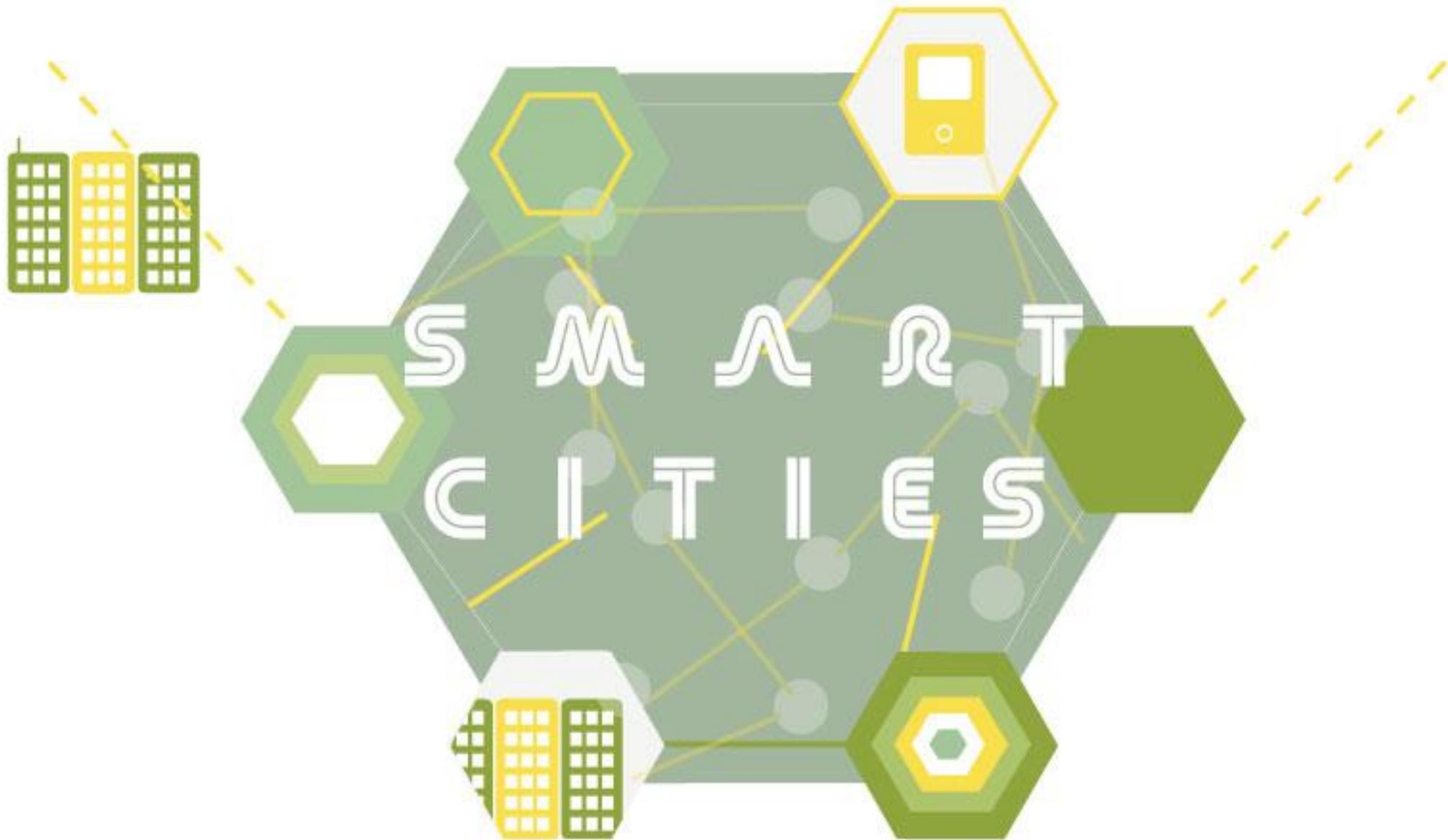


# Sponsor Group Success: Projects that will Help Achieve the Vision

- De-risk for the benefit of cities and businesses.
- Create clarity around the reasons for smart cities and create a compelling reason for them.
- Define what a smart city is.
- Engender a culture of continuous improvement.
- Determine common metrics to benchmark cities against each other and assess progress/baseline performance.
- Create a set of consistent, considered and suggested processes.
  - This will enable better decisions to be made on what investments to make.
- Generate a buzz and encourage integration between all stakeholders and support a whole systems approach. Create a ‘wave’.
  - This will create an environment for investment.
  - Integration will allow for the sharing of good practise.
- Ensure that the advisory group has the tools to do its’ job.
- Clarify terminology and create a common language.
  - ‘Gets everyone to the starting line.’







**Event Two Output**

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# Event two overview

The purpose of event two was for the BSI Advisory Group and key stakeholders to develop the definition of guidelines for business case, sources of finance, business models and procurement in smart cities.

## Participants

- |                  |                     |
|------------------|---------------------|
| Adrian Ulisse    | Keith Hearnshaw     |
| Alastair McMahon | Kevin O'Malley      |
| Alison Jarrett   | Linda Chandler      |
| Allan Mayo       | Lorne Mitchell      |
| Andrea Fernandez | Madalina Ursu       |
| Barnaby Lynch    | Michael Mulquin     |
| Charbel Aoun     | Nick Bromley        |
| Charles Lowe     | Paul Salariya       |
| Claire Cockerton | Paula Hirst         |
| Claudio Martani  | Philip Atkinson     |
| Dan Ilett        | Philip Bates        |
| Dan Palmer       | Rakesh Bhana        |
| David Cullen     | Richard Stay        |
| Dennis Moynihan  | Rick Robinson       |
| Duncan Matheson  | Robin Daniels       |
| Frits Janssen    | Ross Hudson         |
| Graham Colclough | Saviour Alfino      |
| Ian Achurch      | Shane Mitchell      |
| James Ghani      | Stefan Stanislawski |
| James Saunders   | Steve Bowyer        |
| Jen Hawes-Hewitt | Steve Turner        |
| John Sharvell    | Tania Smith         |
| Julian Bowrey    | Tim Taberner        |
| Julie Alexander  | Trevor Dorling      |
| Kari Baden       | Vanessa Stefannak   |
| Kathryn Vowles   | Ying Jin            |

## Opportunities and challenges

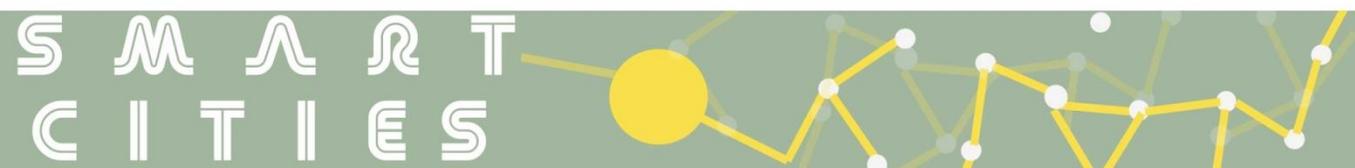
Participants began the day by identifying the opportunities and challenges of Smart Cities from a number of perspectives: SMES/Innovators/Entrepreneurs, Local public services, Central government, Investors, large organisations, the public.

## Areas for focus

The group then reviewed a selection of case studies and materials in order to learn from others' approaches. Consolidating their ideas and own experiences, teams identified elements that could be useful in the context of Smart Cities, specifically in terms of business case, business models, sources of finance, procurement, and guidelines.

## Developing the approaches

For the remainder of the event, participants divided into five teams to focus on the following areas: Business Case, Business Model, Sources of Finance, Procurement, and Value Chain (integration and interdependencies). For each area, a first draft of work product was generated, specifying areas for consideration and areas of guidance.



# Developing the approaches: teamlist

Business Case	Business Model	Finance
---------------	----------------	---------

Charles Lowe  
Nick Bromley  
David Cullen  
Frits Janssen  
Ying Jin  
Alastair McMahon  
Keith Hearnshaw  
Trevor Dorling

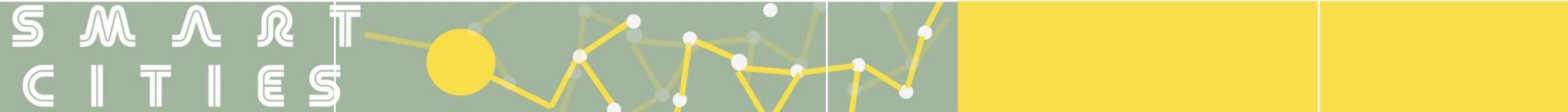
Dennis Moynihan  
Lorne Mitchell  
Paula Hirst  
Kevin O'Malley  
Tania Smith  
Robin Daniels  
Ian Achurch  
Claudio Martani  
Steve Turner

Alison Jarrett  
Madalina Ursu  
Paul Salariya  
Barnaby Lynch  
Kathryn Vowles  
Adrian Ulisse  
Charbel Aoun

Procurement	Value Chain
-------------	-------------

Philip Atkinson  
John Sharvell  
Claire Cockerton  
Philip Bates  
Steve Bowyer  
Saviour Alfino  
Stefan Stanislawski  
Michael Mulquin

Linda Chandler  
Tim Taberner  
James Ghani  
Julian Bowrey  
Graham Colclough  
Duncan Matheson  
Rakesh Bhana





**Business Case**

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# Business Case – Areas for consideration

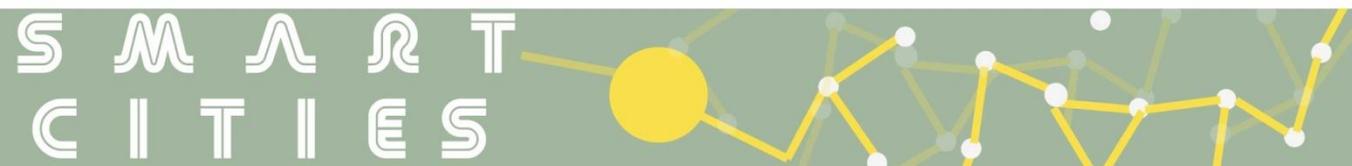
## Contents

This document contains a first draft work product for Business Case. It includes:

- Areas for consideration
- Areas of guidance for BSI
- What the guidance should cover
- The content it needs to include

## Areas for consideration

- Focus on outcomes
- Flexibility
- Early contractor involvement
- Clear specific goals
- Consider all issues up front – integration
- Benefits and their measurement – economic, environmental and social
- Define metrics
- Identify clear and focused objectives
- Involve citizen to inform
- Use data to evidence business case
- Identify de-risking opportunities
- Identify customer needs
- Flaky
- Lack of long term policy
- Regulatory landscape – complex
- Finance: profit, savings
- Social/economic: increase in employment, innovation, GDP/EVA increase
- Is there a business case?
- Making the case across original boundaries
- Using big data to inform
- Capturing the benefits
- Professional resistance



# Business Case – Areas of guidance

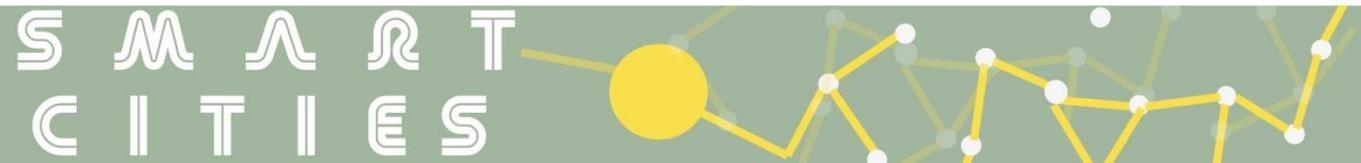
What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
The Plan	<ul style="list-style-type: none"> <li>• Audience/participants</li> <li>• Vision</li> <li>• Define projects</li> <li>• Cost of projects</li> <li>• Criteria measures</li> <li>• Solutions</li> <li>• Costs 'do nothing'</li> <li>• Quantify benefits</li> <li>• Funding</li> <li>• Risks</li> </ul>	<ul style="list-style-type: none"> <li>• Financial costs and returns</li> <li>• Risk ratios</li> <li>• Buy-in.</li> </ul>	
How to prepare Business Case	<ul style="list-style-type: none"> <li>• Vision</li> <li>• Objectives</li> <li>• Business Case</li> <li>• To engage and to encourage</li> </ul>	<ul style="list-style-type: none"> <li>• Benchmarking/baseline/ do nothing vs do something</li> <li>• Risk</li> <li>• Stakeholders</li> <li>• Economic, social, environmental benefits and structured experience sharing</li> </ul>	
Problem diagnosis	<ul style="list-style-type: none"> <li>• How to identify challenges</li> <li>• Baseline your town/city</li> </ul>		

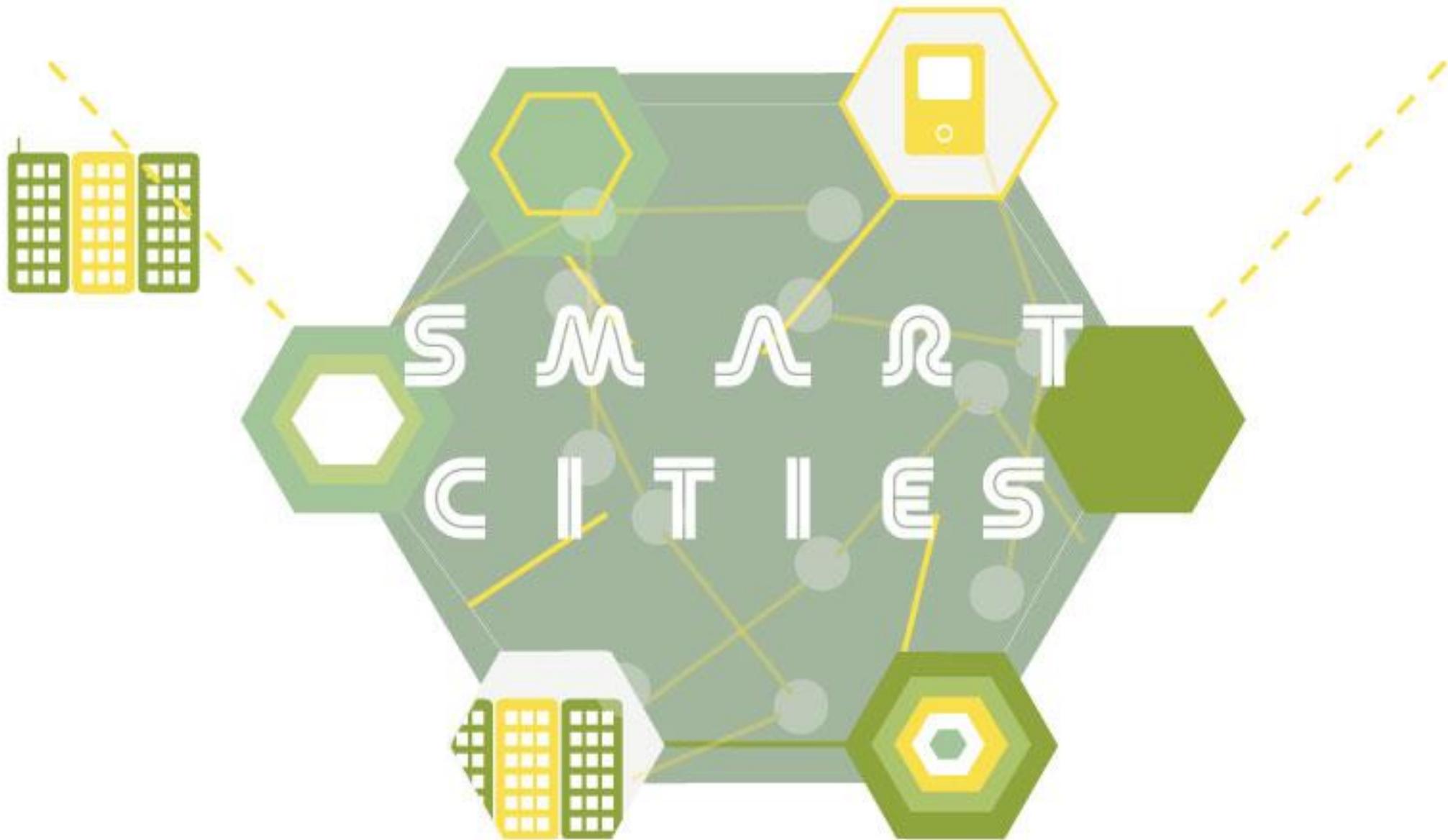
“Missing Link”

An awareness programme of “An Engaging Vision”

Then -

- The Business case
- Procurement
- Funding
- Business Model





**Business Model**

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# Business Model – Areas for consideration

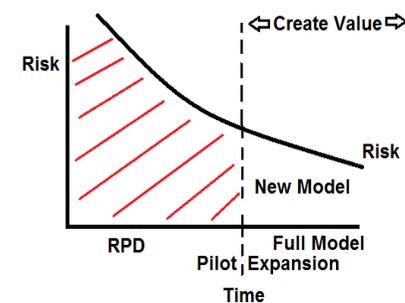
## Contents

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- Areas for consideration
- Areas of guidance for BSI
- What the guidance should cover
- The content it needs to include

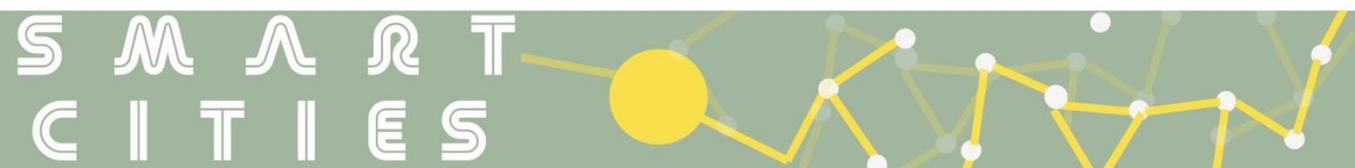
## Areas for consideration

- Stakeholder dependent
- Concessions/guarantees/de-risk from local government
- Open data vs. Closed/secure – document systems.
- User perspective
- Start small and scale up
- Build in technical innovation – big data, social media
- Transition to user pays
- Right incentives
- Shared returns
- Risk identification and allocation
- Clarity on outcomes
- Initial public sector lead
- Pilot and scale up
- Collaborative stakeholder groups
- Risk sharing – evolving over time
- Different as extent layer of value chain
- Currency  $\neq$  £ = data behaviour?
- Therefore JV (PPP)
- Partnerships re: Eco services



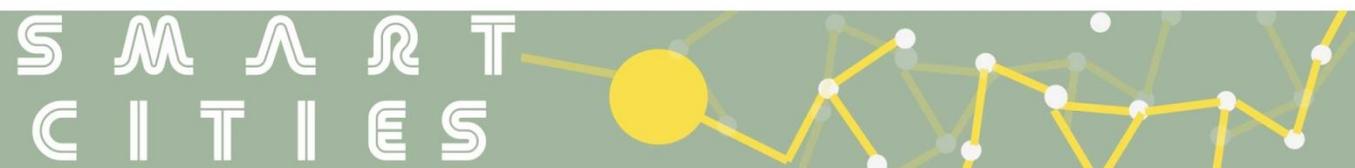
# Business Model – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
<p>Business model articulation Ecosystem / Third parties Product / service definition</p>	<p>Supply and demand focused key questions –</p> <ul style="list-style-type: none"> <li>• Gap analysis</li> <li>• Strategy to bridge the gaps. Public funding as last resort</li> </ul>	<ul style="list-style-type: none"> <li>• Guidance for creating a new value chain in a smart city context and identifying the SME's position in it</li> <li>• Set of questions for self diagnosis and basis for discussion</li> </ul>	
<p>6 page guide for city leaders (possibly published quarterly?)</p>	<ul style="list-style-type: none"> <li>• Case studies showing how 'Smart' changes existing processes</li> <li>• Different Business Models for cities to become smarter, mapped against a citizen journey</li> <li>• How to create a more collaborative environment at R&amp;D stage to bring in private sector earlier-on in the procurement process</li> </ul>	<ul style="list-style-type: none"> <li>• List of contacts?</li> <li>• Case studies and examples. Supplier profiles?</li> <li>• Interviews with city leaders who are at the front</li> </ul>	



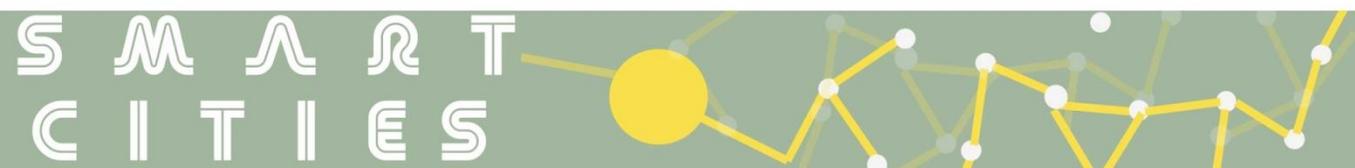
# Business Model – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
Guidance for the local authority decision makers	Guidance on how to be an intelligent 'customer' in a smart city marketplace; shifting away from a passive 'customer' role to become an active facilitator, enabler or partner	<ul style="list-style-type: none"> <li>• Understanding the strength of new commercial partnerships in the smart city</li> <li>• Valuing assets and resources other than cash (physical assets and infrastructure, relationship with citizens, experienced staff, city brand and profile etc)</li> <li>• Working through silos and departments to build a coherent offer; facilitating involvement of other public sector and third sector organisations</li> <li>• Understanding where the costs are borne and the benefits fall to ensure a satisfactory and equitable outcome</li> </ul>	M



# Business Model – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
<p>Business Model (stakeholder) mapping toolkit (gap analysis)</p>	<ul style="list-style-type: none"> <li>Identifies who are the 'customers' for smart city products and services, and who are the providers/vendors.</li> <li>Identifies the key questions to ask for each to help understand what makes a successful business model (upfront cost – revenue cost and savings – ROI)</li> <li>With experience, a toolkit would suggest best practice from other examples, but also will facilitate 'local' specific answers.</li> </ul>	<p><b>Potential customers</b>            City leadership (mayors, departments), city supporters/utilities, local health services, commercial and industrial business, housing, citizens.</p> <p><b>Questions to ask of each</b>            What do they want? What can they bring (assets)? What can they spend? Do they need financing? What is the ROI? How do you measure ROI? What are the risks/barriers? How do you remove?</p> <p><b>Questions for each</b>            What do they want? How are they financed? What are their resources/capacity? What are their risks / barriers? What support could they use?</p> <p><b>Potential vendors / providers</b>            Big multinationals, utilities, universities, other cities, SMEs, individual innovations.</p>	





**Procurement**

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# Procurement – Areas for consideration

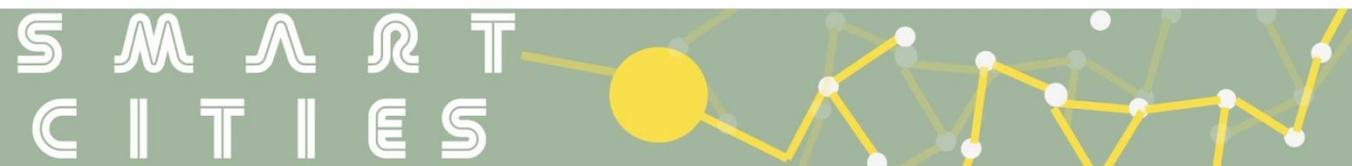
## Contents

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- Areas for consideration
- Areas of guidance for BSI
- What the guidance should cover
- The content it needs to include

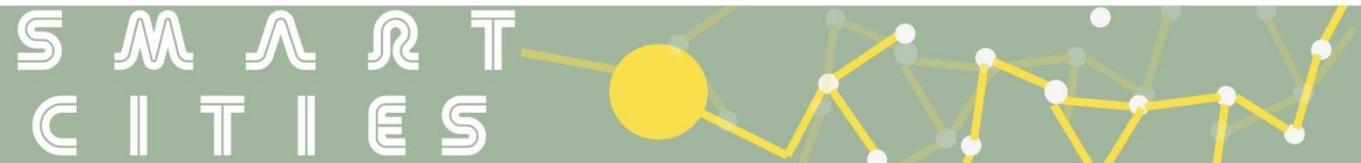
## Areas for consideration

- Needs to be based on a digital masterplan for the smart city
- Positive discrimination towards SMEs
- Cross departmental funding
- Simplify
- Nimble
- Collaboration within the private sector
- Collaborative 'purchasing' groups
  - Business aggregation
- Proposition packages
- Provision of umbrella/framework vehicles to ensure consistency
- Avoid narrow-minded boxed procurements
- Mutual qualification and competitive dialogue
- EU
- State Aid
- Don't make this a public procurement of services
- Incentivise innovation
- Transparency
- Outcome base
- Commitment to scale up successful pilots and trials to citywide deployments
- Don't prescribe the solution
- Appropriate contract timescale
- Build in contract flexibility
- Collaborative specification
- Market testing



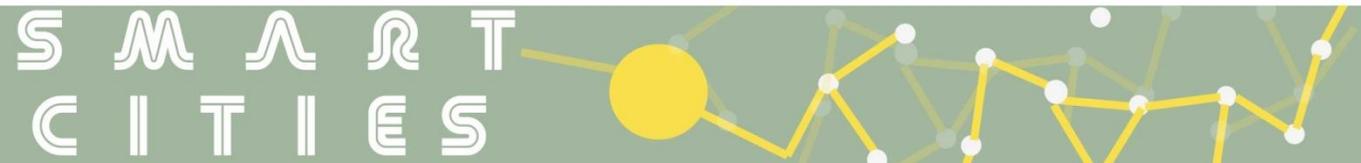
# Procurement – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
<p>Procurement as a delivery mechanism</p>	<ul style="list-style-type: none"> <li>• How procurement is integral to <u>the whole</u> project lifecycle</li> </ul>	<ul style="list-style-type: none"> <li>• Early engagement (negotiated procedure)</li> <li>• Open question – not a rigid specification – for legal comfort</li> <li>• Should be <u>constructive</u> of itself</li> </ul>	<p>H</p>
<p>How to ensure that the product procured is an open one and can be easily utilised for potential new and valuable uses in the future.</p>	<ul style="list-style-type: none"> <li>• Kit</li> <li>• Data</li> <li>• Terms &amp; conditions of access</li> <li>• Interfaces</li> <li>• APIs</li> <li>• More?</li> </ul>	<ul style="list-style-type: none"> <li>• Checklist of the areas where openness might be important– both technical and commercial</li> <li>• Definitions of openness for each of these</li> <li>• Questions for bidders</li> </ul>	<p>H</p>
<p>What wider aspects ought to be considered for inclusion in procurement, over and above the solution required:</p> <ul style="list-style-type: none"> <li>• Promotion of Innovation</li> <li>• Provision of opportunities for SMEs</li> <li>• Wider social benefits</li> <li>• Etc</li> </ul>	<ul style="list-style-type: none"> <li>• How to de-risk ‘unconventional’ choices</li> <li>• How procurement is too important to be left to the procurement department –</li> </ul>	<ul style="list-style-type: none"> <li>• Projects bond or financial mechanism</li> <li>• Risk budget</li> <li>• Cultural change (in government)</li> <li>• Assessment criteria (not always just price)</li> </ul>	



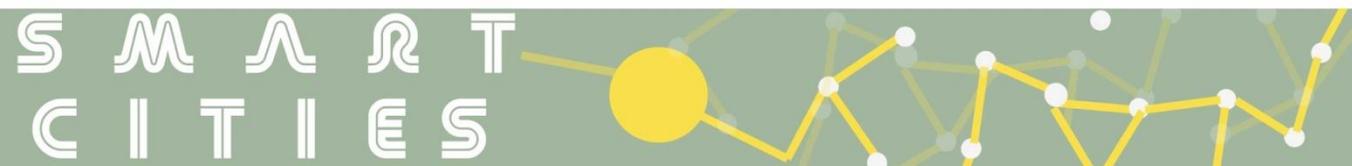
# Procurement – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
Early Engagement: How to include suppliers, funders and stakeholders in the process from the beginning	What are the different models of doing this appropriate to different scale and type of projects	The process to be followed for each model that allows all stakeholders to input without compromising the process	
Inclusion of SMEs	<ul style="list-style-type: none"> <li>• Accelerators, including shared technology for due diligence</li> <li>• Framework deal for incubator</li> <li>• A single online aggregation site of tender opportunities in the UK suitable for SMEs</li> </ul>		
Alternatives to Procurement	<p>A review of alternatives to conventional procurement including:</p> <ul style="list-style-type: none"> <li>• Incubators and accelerators</li> <li>• JVs</li> <li>• SPU's</li> <li>• PPPs</li> </ul>	<ul style="list-style-type: none"> <li>• Case Studies</li> <li>• When is it appropriate?</li> <li>• When is it legally safe?</li> <li>• What type of business model is suited to each act?</li> </ul>	



# Procurement – What else

- A detailed Digital master plan needs to be in place so that all the procurements can be seen in context. This will make it easier to ensure that all potential added benefits will be thought about throughout the process
- The need of cultural change – to stop considering procurement as a chore but rather a key part of making sure that a real transformational solution is delivered
- Use procurement to ‘sponsor’ innovation
- Keep asking the questions “Does it need procuring?” “Could it be delivered through a different process?”
- Procurement should be thought of on day one





## Sources of Finance

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# Sources of Finance – Areas for consideration

## Contents

This document contains a first draft work product for Sources of Finance. It includes:

- Areas for consideration
- Areas of guidance for BSI
- What the guidance should cover
- The content it needs to include

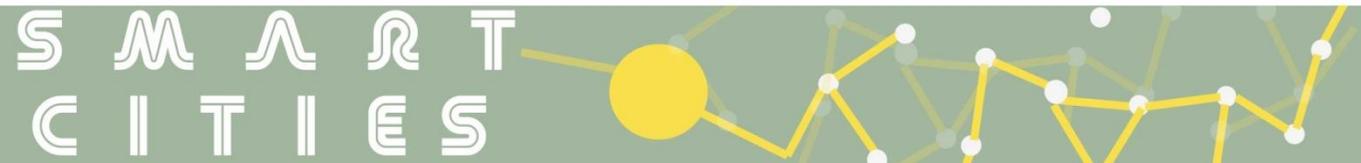
## Areas for consideration

- Public sector as seed
- Imaginative use of public sector capital asset-base
- Discreet packages for private sector money (clarity and competition)
- Bank says 'yes'
- Land value uplift
- Utilities
- User fees/payments
- Rent
- Business rates
- Local Authority payments
- Up front cost – LT reigns
- Revenue
- Prudential borrowing
- Central – local government
- Corporate equity
- Banks – ST
- Infra – LT
- VC funds
- Publicly financed innovation:
  - Over reliance on public finance?
  - Does it meet the business case?
- Private: Return on investment/business case
- Case homes etc.
- Self funding:
  - Pay per click
  - Umbrella arrangements
- Equity
- Debt
- Income/cash flow from public and private sectors
- Shared public sector budgets
  - Health, housing, de-risk, energy, social
  - EU funding
- Private sector
  - Through value creation for scaled delivery



# Sources of Finance – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
Governance Models	<ul style="list-style-type: none"> <li>• Multi-level governance co-ordination</li> <li>• JV and taxation structures</li> <li>• Examples of legal frameworks</li> </ul>		
Funding Models	<ul style="list-style-type: none"> <li>• Current available models</li> </ul>	<ul style="list-style-type: none"> <li>• Indication of <u>risk</u></li> <li>• International models case studies</li> <li>• Social, environmental and economic value</li> </ul>	
De-risking Investment	<ul style="list-style-type: none"> <li>• Enabling testing/pilot procurement realisation</li> <li>• Central government guarantee in place of grant</li> </ul>	<ul style="list-style-type: none"> <li>• The creation of a national data basis (future cities catapult)</li> </ul>	

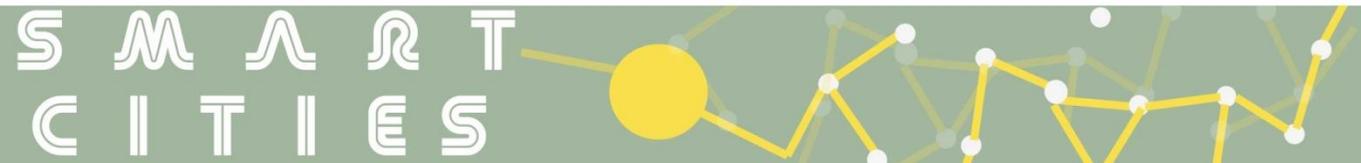


# Sources of Finance – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
Guide for Capital Accounting	<ul style="list-style-type: none"> <li>• Guidance for different models and sources of finance</li> </ul>	<ul style="list-style-type: none"> <li>• Balance sheet with taxation effects                             <ul style="list-style-type: none"> <li>– This would help with efficiency</li> </ul> </li> </ul>	
Procurement Guidelines	<ul style="list-style-type: none"> <li>• Understanding European regulations for different funding models</li> </ul>	<ul style="list-style-type: none"> <li>• European case studies</li> <li>• Link to other working group</li> </ul>	

### What else?

- Political timescales (terms)
- Financial devolution for cities
- Funding across portfolios





**Value Chain**

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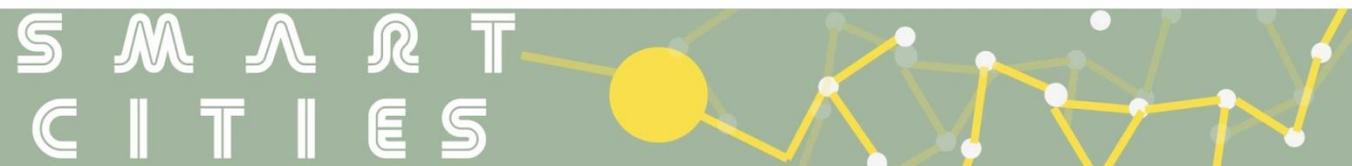


**Value chain - overall approach**

# Value Chain – Areas for consideration

## Areas for consideration

- Business case, procurement & finance match?
- Contractive model – flexibility – match?
- Cross-silo flows – interaction better services
- Requires definition
- Prove value for investors and end users
- Holistic approaches – integrated collaboration
- Finding the value benefit from collaboration (e.g. efficiencies as much as revenue)
- Consistent strategic approach overall to realise benefits (nimble at operational level)
- Connecting citizen to public/private organisations
- Thematic approach to outcomes e.g. troubled families
- Understanding market failure
- Users (Super users)
- (Retail) service providers
- Communications providers
- Network operator
- Physical infrastructure provider
- Users
- Apps
- Devices
- Connectivity
- Infrastructure
- Processing
- Services



# Value Chain – Synergies between the four topics

## Contents

This document contains a first draft work product for Value Chain. It includes:

- Areas for consideration
- Areas of guidance for BSI
- What the guidance should cover
- The content it needs to include

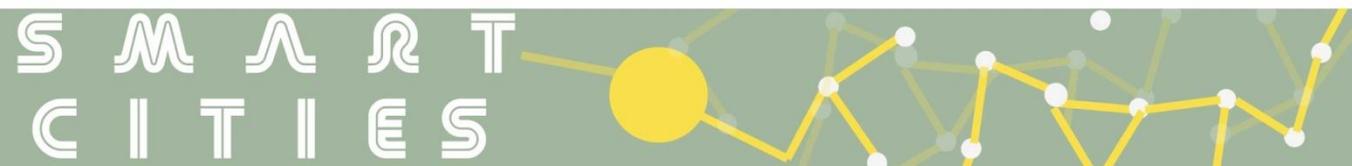
## Scope of the work

The group was tasked to continue to develop the guidelines for Value Chain, pushing towards a completed work product that builds upon existing material and thinking, their work so far, and feedback from colleagues. Specifically the group considered:

- The existing material that can be used, and the additional content required
- How to communicate as clearly and concisely as possible
- The audience it is written for
- How the work product interlinks with the other areas: Business Case, Procurement, Business Model, and Finance

## Introduction

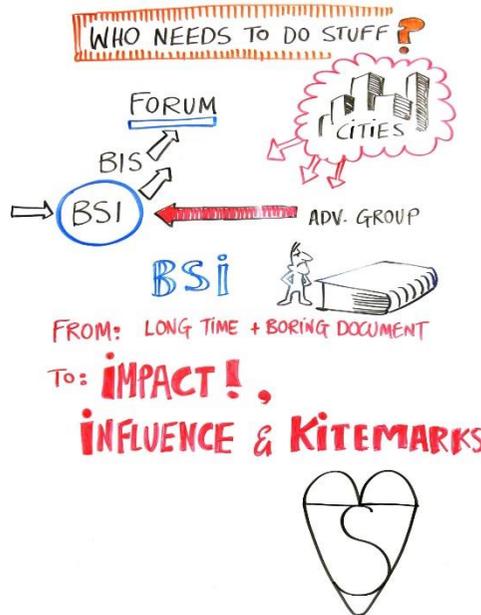
- Inter-dependencies and synergies exist between the four topics of: Business Case; Business Model; Financing; & Procurement.
- There is also a logical order that a city will take in addressing these four topics – dependent on the specific smart city investment under consideration.
- In addition, there are also some externalities beyond these four topics that should be considered to ensure guidance within the four areas are managed best
- The 'Value Chain' team addressed these considerations





**Value chain – the story**

# Value Chain – overview of the story



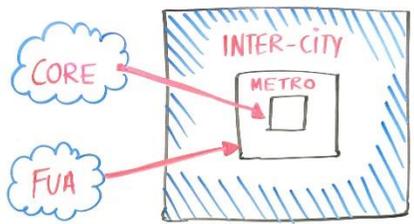
**SMART is .....**

CONTEXT { INTEGRATED  
X-DOMAIN  
SYSTEMS  
& ICT-ENABLED

**1.**

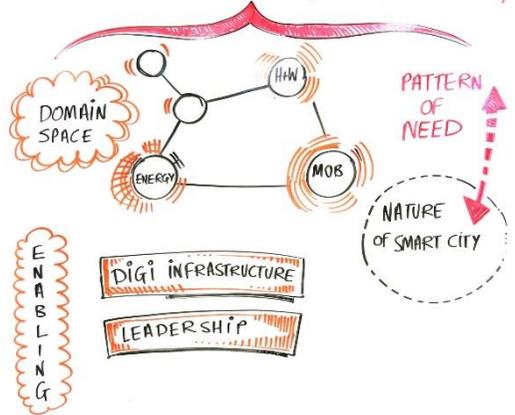
**FOCUS:**

MAP DOMAIN RELEVANCE



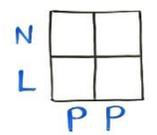
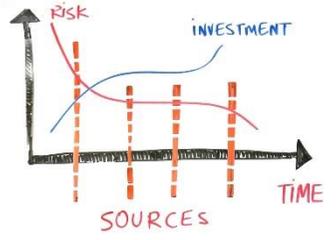
**2. STRATEGIC DESIGN**

- INDIVIDUAL CITY LEVEL
- COLLECTIVE
- VISION
- ROADMAP
- LEADERSHIP
- FOCUS
- FOCUS
- ROADMAP
- POLICY/REGULATION
- SOCIETY
- TAXONOMY



**3.**

DOMAIN SCENARIOS/  
STORIES



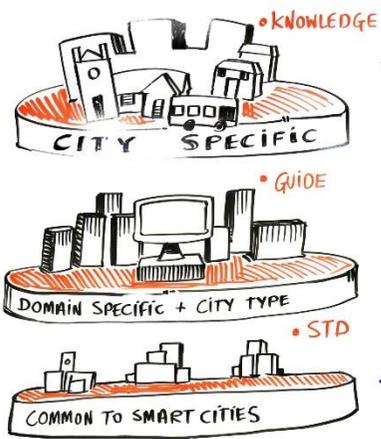
(A) BCASE/MODEL/FUND/PROJECT

- (B)
- (C)
- (D)

DELIVERABLE =  
• PROCESS  
• IDEAS+OPTIONS  
• EXAMPLE

**4.**

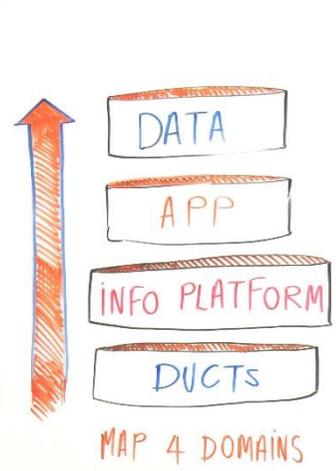
TIERS OF BSI GUIDANCE



JOINING UP  
DOMAINS

**5.**

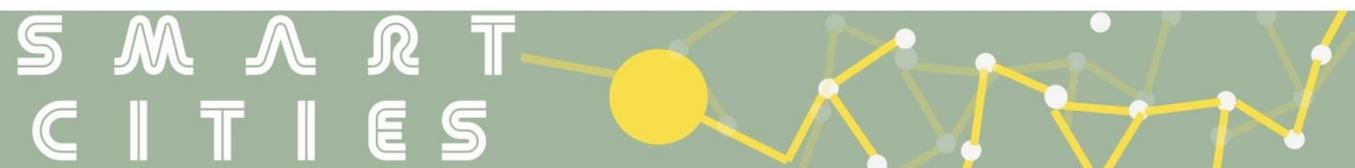
SERVICE LAYERS



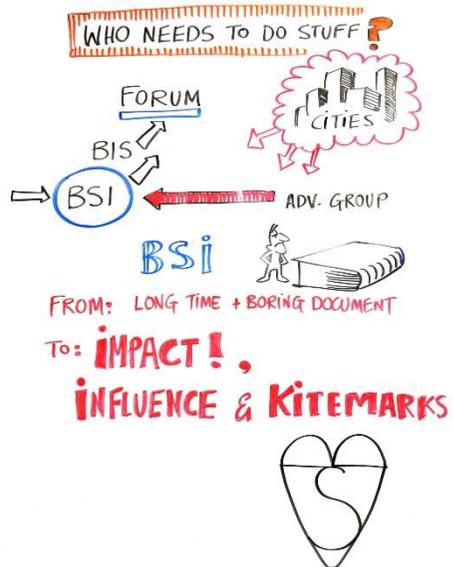
ENOUGH  
COMMONALITY?

WHAT'S  
MISSING?

- ANALYTICS
- PORTFOLIO OF PERMISSIONS
- PERSONAL CHOICE
- SYSTEMS THINKING AND BEHAVIOURS
- CONNECTED INFO



# The Value Chain Story-line (1) CONTEXT



## STRATEGIC SETTING

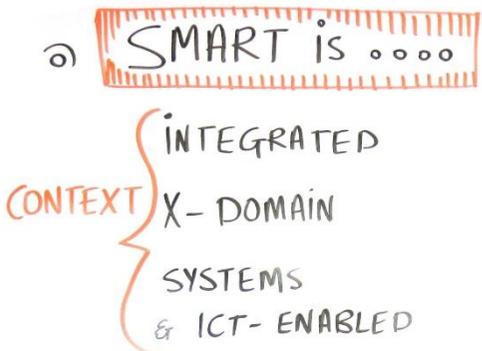
- These 4 topics are highly visible to city leaders, and vital topics in developing cities
- BSI thus has the opportunity to reposition what ‘standards’ mean, and what BSI impact can be through the impact of guidance material on these topics
- The majority of guidance foreseen will be of ‘level 1’ strategic form.
- For such guidance to have full impact, BSI should ensure ‘line of sight’ on these four topics through BIS, to the Smart Cities Forum – thus most importantly, to cities themselves
- The BSI Advisory Group initiative to develop communications materials for City leaders (“V-flet” etc) provide essential supporting actions
- The stated team ambition through developing guidance on these themes was to shift the perceptions of BSI to a body that delivers swift relevant hi impact, influential guidance – a ‘kite-mark’ of quality that will attract city attention to exploit the guidance.

## DEFINITION

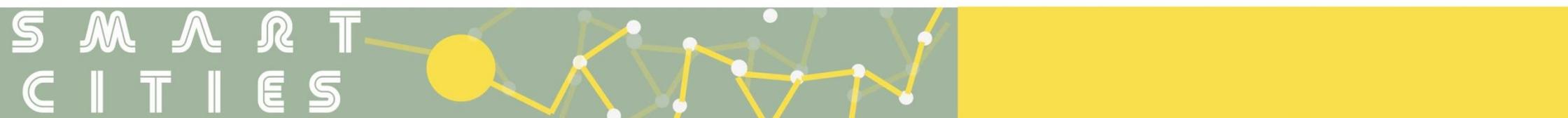
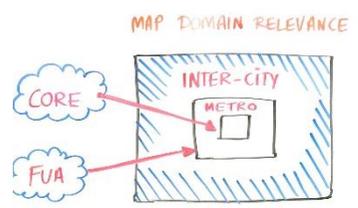
- Defining ‘Smart City’ is an important foundation for guidance on these four topics.
- There are multiple such definitions from a large variety of respected learned sources.
- Common themes however that emerge across all definitions include:
  - **Integrated** approaches across functions; between departments within organisations; as well as across the broader city stakeholder community
  - **Cross-Domain** – extracting synergies between various infrastructure and services
  - **ICT-enabled** – exploiting the potential that emerges through better use of growing volumes of data and information; and the potential that new technologies offer

## FOCUS

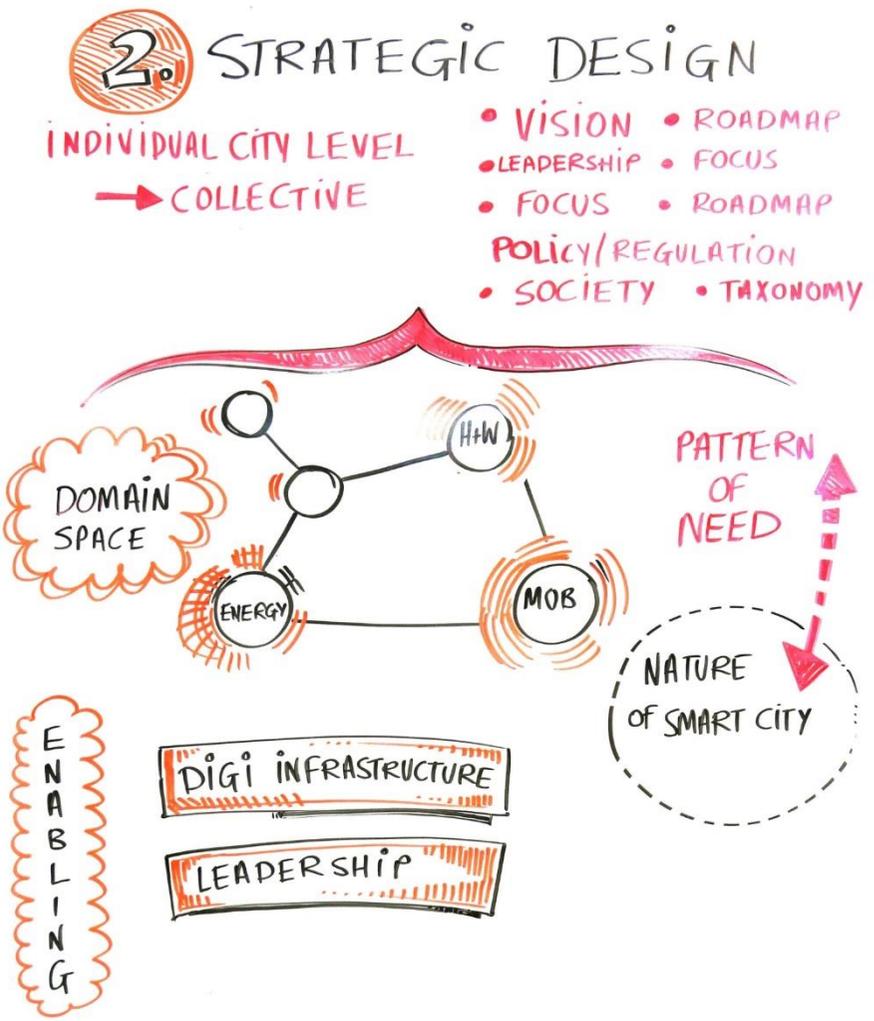
- Both Core City AND Urban Surroundings – ie Functional Urban Area (FUA) are both in focus. This is required as many major investments, and the potential value as a result of a ‘smart’ approach affects infrastructure and services that go beyond core city boundaries. Indeed the cross-administration nature of significant investment decisions is a major inhibitor to and potential of game-changing value
- Not in focus is ex-urban or inter-city matters (though potentially many principles will apply)



1.  
FOCUS :



# The Story-line (2) – STRATEGIC DESIGN

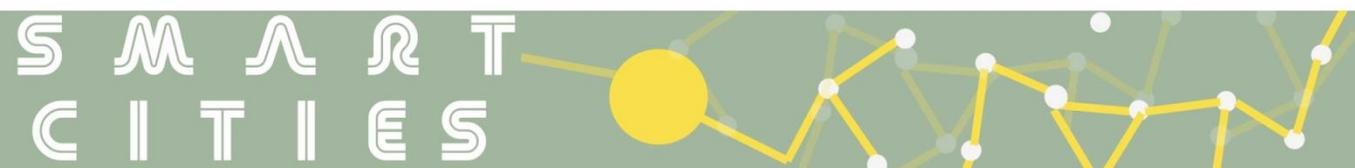


## STRATEGIC DESIGN

- Consider two ‘layers’ of topics that affect how the business case is made and received; the appropriate business model selected; financing options explored and fund sources engaged; and procurement or acquisition of the project administered.
- Enabling ‘Horizontals’ that set a vital context to a major initiative. These include: clear **vision** of what a smart city means for the specific city; alignment across the affected **leadership** community; focus on scope; clarity of roadmap; understanding of policy and regulatory needs; understanding and engagement of society. And for collaborative initiatives a common taxonomy / protocols to help support common solutions.
- Domain ‘Verticals’ that will typically deal with a lead domain (eg transport; health & wellbeing; economy etc), however must also ascertain the dependencies and synergies across domains.
- Step 2 will inform: what is common to all smart cities; priorities; features specific to domains / themes; and thus: what level 1 (guide) 2; (process); 3 (tech std) guidance is needed.

## RECOMMENDED ACTIONS

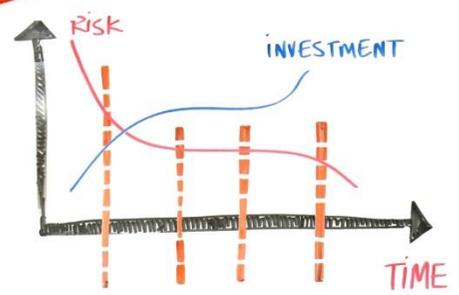
1. Building on Arup TSB Demonstrator competition report, develop the ‘patterns of need’ expressed by UK cities, and map to domains / orgtns types etc (ie horizontal and vertical mapping)
2. Workshop with city groupings that represent common needs. Assess commonalities and differences; develop ideas on outline requirements. Request views on what guidance (and type) is required
3. Through this, assess individual city and more importantly aggregated demand needs – i.e. where common solutions may hold potential, and thus where guidance and standards may be most needed.



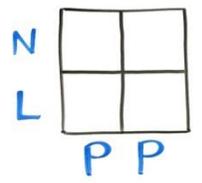
# The Story-line (3) – DOMAIN SCENARIOS



## DOMAIN SCENARIOS / STORIES



### SOURCES



(A) BCASE/MODEL/FUND/PROJECT

(B)

(C)

(D)

### DELIVERABLE

- PROCESS
- IDEAS+OPTIONS
- EXAMPLE

## SCENARIO DEVELOPMENT

- For those high impact areas of need (eg hi budget; major transformation foreseen; failing services; etc), develop example scenarios: stories that feel very real and are easy to use to engage leaders. These should span major infrastructural (eg built environment) and service (eg elderly care) initiatives. 4-6 such scenarios should provide sufficient breadth to address diverse choices and options for the four topics in consideration.
- Develop ideas and guidance structured by typical phases of such major developments. Outline the typical levels of funding and risk build up for such developments over time.
- Consider typical sources of funds for the 4-6 scenarios; with actual examples from UK / international cities; considering Local / National and Public / Private sources There may also be relevant consideration of international funding
- For each scenario develop the vision. value chain / process that would typically apply for each of the four topics (Bcase; B Model; Funds; Proc't). Elaborate with examples.

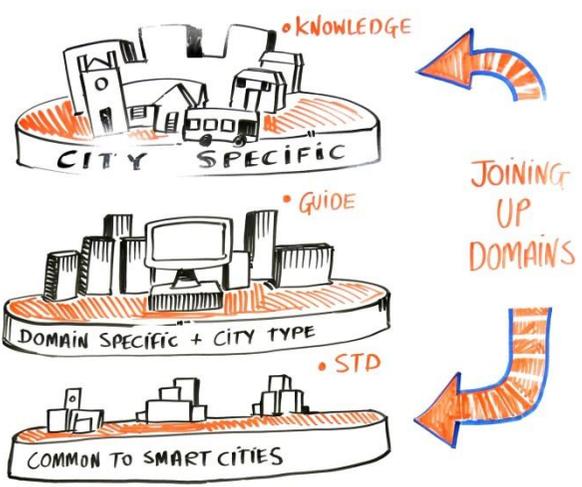
## Recommended Actions

1. Scenario development & validation – as part of preparation for, and capture of, the city workshops described earlier. Forum / BIS / BSI discussion point.
2. Develop strategic level 1 guidance: likely a short descriptive overview. BSI led



# The Story-line (4) – GUIDANCE

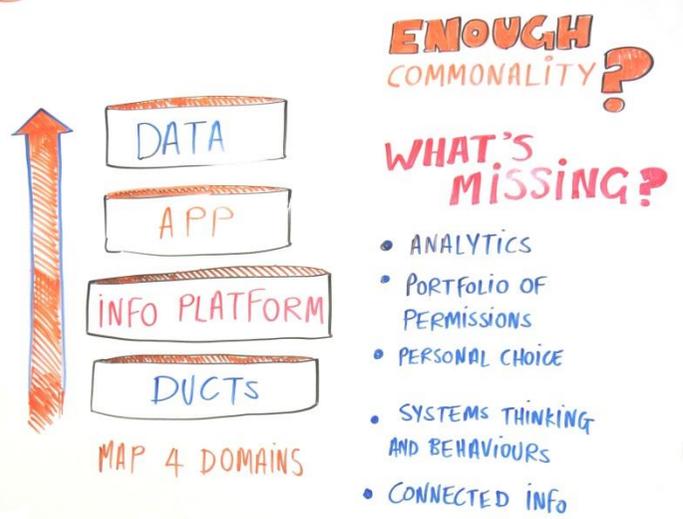
## 4. TIERS OF BSI GUIDANCE



### TIERS OF GUIDANCE

- Three tiers of need were identified:
  - Common needs that address most smart cities – be they of a detailed technical nature [e.g. on specific procurement choices (process), or particular products (tech specs)] – may well be best captured as a portfolio of technical or process standards
  - Domain-specific or city-type-specific needs may well be best captured as guidelines
  - Individual city specific needs are perhaps best addressed through knowledge and experience sharing.
- BSI can play different and valuable roles across all these. the need for a joined up view across the tiers will form a coherent portfolio of means by which UK cities build capacity with confidence.

## 5. SERVICE LAYERS

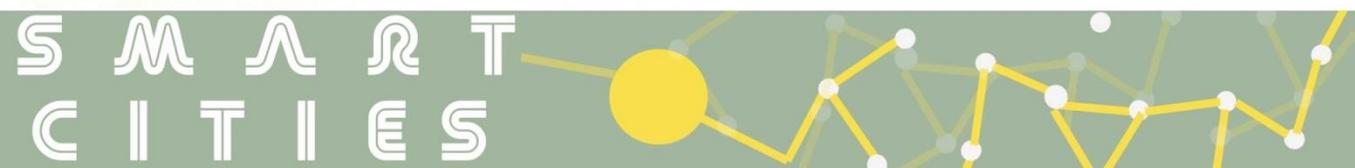


### Recommended Actions

1. Consider these tier needs in constructing the overall BSI Smart City portfolio

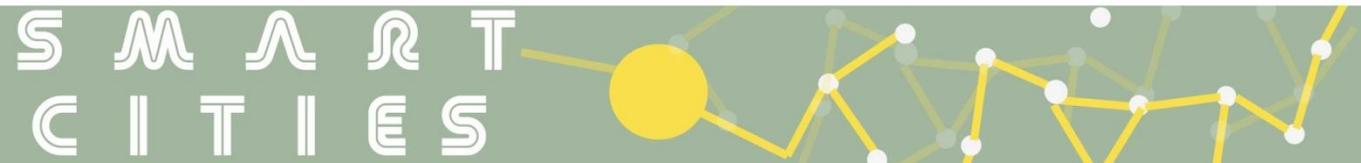
### SERVICE LAYERS

- At a more detailed level, and also something that can be developed for the scenarios, smart city initiatives can be presented considering service layers of:
  - **Users sign contracts for services that use applications on devices that are connected to infrastructure that undertakes processing within service providers who then invoice those users – I think we should see this as a continuum**
- Such 'systems thinking' can help address smart city initiatives to steer development of particular solutions and guidance on a particular service layer (eg policy guidance on data; technical guidance on devices; architectural guidance on inter-operability). This will establish conditions that facilitate better eg funding and procurement .

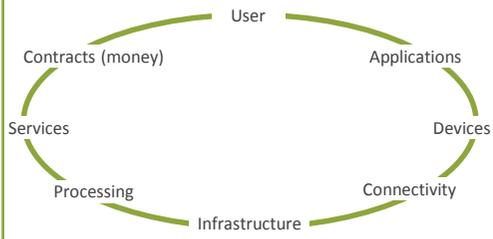


# Value Chain – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
'City' Governance	<ul style="list-style-type: none"> <li>• Boundary busting</li> <li>• Cross-party / Cross industry</li> <li>• Consider metro- feeder areas not just core areas</li> </ul>	<ul style="list-style-type: none"> <li>• Long term planning framework</li> <li>• Best practice for cross-authority board</li> <li>• Long term outcome measurement</li> </ul>	
Domain Scoping	<ul style="list-style-type: none"> <li>• Cross city common outcomes</li> <li>• Existing best practice paradigms/solutions</li> <li>• Maturity model</li> <li>• Refers joining up domains</li> </ul>	<ul style="list-style-type: none"> <li>• Domain taxonomy</li> <li>• Maturity model</li> <li>• Solution mapping</li> </ul>	
Joining up domains (Economy, environment, people, mobility, living, governance) as each becomes more mature.	<ul style="list-style-type: none"> <li>• Life cycle elements of design, implementation, delivery, maintenance, renewal in one/each domain in relation to others</li> <li>• Taxonomy</li> </ul>	<ul style="list-style-type: none"> <li>• Quality and age of data- Gartner 'layers'</li> <li>• Data and service management, interfacing and sharing</li> <li>• Managing &amp; handling parallel but distinct programme lifecycles</li> </ul>	High



# Value Chain – Areas of guidance

What is the area of guidance?	What does it cover?	What content does it need to include?	Priority L/M/H
Identity	<ul style="list-style-type: none"> <li>• Role-based access</li> <li>• Consumer ID</li> <li>• Data protection</li> <li>• Security</li> <li>• Privacy</li> </ul>	Signposting to other relevant standards and best practice e.g. OIX	
‘Layer cake’ of service value chain (including continuum of public services through to fully commercial – using open and propriety data).		Examples across different Smart City domains - economy, environment, people, living, mobility, governance.	<b>See The Story-line (2) – STRATEGIC DESIGN for possible continuum</b>

