Journal of Events
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 7th and 8th 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
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 resistors)
- 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?
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.
Overview: Model of What’s in the Box

Vision for our Future City

Build piece by piece (DUPLO brick approach)

Ingredients list

Increasing technicality

Level 1 - Strategic

Level 2 - Process

Level 3 - Technical Specification
## Overview: Matrix of Smart City Documents

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

### 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
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?
Themes that will drive projects:
- De-risk
- Clarity
- Investment Environment

Projects likely to include:
- Creating an economic and environmental case
- Finding and using current Smart City examples

Themes that will drive projects:
- De-risk
- Clarity
- Investment Environment

More Smart Cities

Projects likely to include:
- PAS

Themes that will drive projects:
- De-risk
- Procurement
- Clarity
- Overview

Integration/Interoperability

Evidence Base

Benchmarking and Measurement

Recommended Processes
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 practice.
- 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.’
Next Steps

Overview
• We need to build the ‘lid of the box’ and the components that sit within it
• We’ll agree owners to drive each component
• We’ll run a market engagement workshop to test our thinking

Advisory Group
Next Steps

V-flet
• We agree with the principle of the V-flet
• We envisage 2-3 tailored communications for key audiences with consistent theme and messaging
• We now need to commission it

Sponsor Group
Success
• We now need to build out and validate the plan
• We must agree the new ways of working (together and with customers) for the advisory group
• We will begin to define how we intend to accelerate the creation of products
Event Two Output
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 Hearndshaw
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

<table>
<thead>
<tr>
<th>Business Case</th>
<th>Business Model</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles Lowe</td>
<td>Dennis Moynihan</td>
<td>Alison Jarrett</td>
</tr>
<tr>
<td>Nick Bromley</td>
<td>Lorne Mitchell</td>
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<td></td>
<td>Steve Turner</td>
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</table>

<table>
<thead>
<tr>
<th>Procurement</th>
<th>Value Chain</th>
</tr>
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<tbody>
<tr>
<td>Philip Atkinson</td>
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<td>Rakesh Bhana</td>
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<tr>
<td>Michael Mulquinn</td>
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</tbody>
</table>
Business Case
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

<table>
<thead>
<tr>
<th>What is the area of guidance?</th>
<th>What does it cover?</th>
<th>What content does it need to include?</th>
<th>Priority L/M/H</th>
</tr>
</thead>
</table>
| The Plan                     | • Audience/participants  
                              | • Vision  
                              | • Define projects  
                              | • Cost of projects  
                              | • Criteria measures  
                              | • Solutions  
                              | • Costs ‘do nothing’  
                              | • Quantify benefits  
                              | • Funding  
                              | • Risks  
                              | • Financial costs and returns  
                              | • Risk ratios  
                              | • Buy-in. |
| How to prepare Business Case | • Vision  
                              | • Objectives  
                              | • Business Case  
                              | • To engage and to encourage  
                              | • Benchmarking/baseline/ do nothing vs do something  
                              | • Risk  
                              | • Stakeholders  
                              | • Economic, social, environmental benefits and structured experience sharing  
                              | |
| Problem diagnosis            | • How to identify challenges  
                              | • Baseline your town/city  
                              | |

"Missing Link"
An awareness programme of “An Engaging Vision”

Then -
• The Business case  
• Procurement  
• Funding  
• Business Model
Business Model
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 ≠ £ = data behaviour?
- Therefore JV (PPP)
- Partnerships re: Eco services
## Business Model – Areas of guidance

<table>
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</thead>
<tbody>
<tr>
<td>Business model articulation</td>
<td>Supply and demand focused key questions –</td>
<td>• Guidance for creating a new value chain in a smart city context and identifying the SME’s position in it</td>
<td></td>
</tr>
<tr>
<td>Ecosystem / Third parties</td>
<td>• Gap analysis</td>
<td>• Set of questions for self diagnosis and basis for discussion</td>
<td></td>
</tr>
<tr>
<td>Product / service definition</td>
<td>• Strategy to bridge the gaps. Public funding as last resort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 page guide for city leaders (possibly published quarterly?)</td>
<td>• Case studies showing how ‘Smart’ changes existing processes</td>
<td>• List of contacts?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Different Business Models for cities to become smarter, mapped against a citizen journey</td>
<td>• Case studies and examples. Supplier profiles?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How to create a more collaborative environment at R&amp;D stage to bring in private sector earlier-on in the procurement process</td>
<td>• Interviews with city leaders who are at the front</td>
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</table>
## Business Model – Areas of guidance

<table>
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</thead>
</table>
| 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 | • Understanding the strength of new commercial partnerships in the smart city  
• Valuing assets and resources other than cash (physical assets and infrastructure, relationship with citizens, experienced staff, city brand and profile etc)  
• Working through silos and departments to build a coherent offer; facilitating involvement of other public sector and third sector organisations  
• Understanding where the costs are borne and the benefits fall to ensure a satisfactory and equitable outcome | M |
## Business Model – Areas of guidance

<table>
<thead>
<tr>
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</table>
| **Business Model (stakeholder) mapping toolkit (gap analysis)** | • Identifies who are the ‘customers’ for smart city products and services, and who are the providers/vendors.  
• Identifies the key questions to ask for each to help understand what makes a successful business model (upfront cost – revenue cost and savings – ROI)  
• With experience, a toolkit would suggest best practice from other examples, but also will facilitate ‘local’ specific answers. | **Potential customers**  
City leadership (mayors, departments), city supporters/utilities, local health services, commercial and industrial business, housing, citizens.  
**Questions to ask of each**  
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?  
**Questions for each**  
What do they want? How are they financed? What are their resources/capacity? What are their risks / barriers? What support could they use?  
**Potential vendors / providers**  
Big multinationals, utilities, universities, other cities, SMEs, individual innovations. |
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

<table>
<thead>
<tr>
<th>What is the area of guidance?</th>
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<th>Priority L/M/H</th>
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</thead>
</table>
| Procurement as a delivery mechanism | • How procurement is integral to the whole project lifecycle | • Early engagement (negotiated procedure)  
• Open question – not a rigid specification – for legal comfort  
• Should be constructive of itself | H |
| 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. | • Kit  
• Data  
• Terms & conditions of access  
• Interfaces  
• APIs  
• More? | • Checklist of the areas where openness might be important– both technical and commercial  
• Definitions of openness for each of these  
• Questions for bidders | H |
| What wider aspects ought to be considered for inclusion in procurement, over and above the solution required:  
• Promotion of Innovation  
• Provision of opportunities for SMEs  
• Wider social benefits  
• Etc | • How to de-risk ‘unconventional’ choices  
• How procurement is too important to be left to the procurement department – | • Projects bond or financial mechanism  
• Risk budget  
• Cultural change (in government)  
• Assessment criteria (not always just price) | |

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<table>
<thead>
<tr>
<th>What is the area of guidance?</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Early Engagement: How to include suppliers, funders and stakeholders in the process from the beginning</td>
<td>What are the different models of doing this appropriate to different scale and type of projects</td>
<td>The process to be followed for each model that allows all stakeholders to input without compromising the process</td>
<td></td>
</tr>
</tbody>
</table>
| Inclusion of SMEs | • Accelerators, including shared technology for due diligence  
• Framework deal for incubator  
• A single online aggregation site of tender opportunities in the UK suitable for SMEs | | |
| Alternatives to Procurement | A review of alternatives to conventional procurement including:  
• Incubators and accelerators  
• JVs  
• SPUs  
• PPPs | • Case Studies  
• When is it appropriate?  
• When is it legally safe?  
• What type of business model is suited to each act? | |
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
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

<table>
<thead>
<tr>
<th>What is the area of guidance?</th>
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</tr>
</thead>
</table>
| Governance Models             | • Multi-level governance co-ordination  
• JV and taxation structures  
• Examples of legal frameworks |                                                                                                     |                |
| Funding Models                | • Current available models                                                       | • Indication of risk  
• International models case studies  
• Social, environmental and economic value                                                                 |                |
| De-risking Investment         | • Enabling testing/pilot procurement realisation  
• Central government guarantee in place of grant | • The creation of a national data basis (future cities catapult)                                       |                |
### Sources of Finance – Areas of guidance

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</table>
| Guide for Capital Accounting  | • Guidance for different models and sources of finance | • Balance sheet with taxation effects  
  – This would help with efficiency |               |
| Procurement Guidelines        | • Understanding European regulations for different funding models | • European case studies  
  • Link to other working group |               |

### What else?
- Political timescales (terms)
- Financial devolution for cities
- Funding across portfolios
Value Chain
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
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)
STRAATEGIC 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.
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

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.

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 (e.g. 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

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<tbody>
<tr>
<td>‘City’ Governance</td>
<td>• Boundary busting</td>
<td>• Long term planning framework</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cross-party / Cross industry</td>
<td>• Best practice for cross-authority board</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Consider metro-feeder areas not just core areas</td>
<td>• Long term outcome measurement</td>
<td></td>
</tr>
<tr>
<td>Domain Scoping</td>
<td>• Cross city common outcomes</td>
<td>• Domain taxonomy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Existing best practice paradigms/solutions</td>
<td>• Maturity model</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Maturity model</td>
<td>• Solution mapping</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Refers joining up domains</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joining up domains (Economy, environment, people, mobility, living, governance) as each becomes more mature.</td>
<td>• Life cycle elements of design, implementation, delivery, maintenance, renewal in one/each domain in relation to others</td>
<td>• Quality and age of data-Gartner ‘layers’</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>• Taxonomy</td>
<td>• Data and service management, interfacing and sharing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Managing &amp; handling parallel but distinct programme lifecycles</td>
<td></td>
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# Value Chain – Areas of guidance

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</table>
| Identity                      | • Role-based access  
• Consumer ID  
• Data protection  
• Security  
• Privacy | 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. | See The Story-line (2) – STRATEGIC DESIGN for possible continuum |