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## Standards in Industry 4.0

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## Role of standards in support of innovation

- Report by IfM identified how successful innovation systems (US & Germany) adopt strategic approach from an early stage.
- Technologies at different stages of emergence require different response from standards.
- Companies at difference stages of maturity also require different standards response.
- *Critical to success of strategic approach is the partnership of standards development organisation with convening partner.*

June 2012

### Role of Standardisation in support of Emerging Technologies

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#### **A Study for the Department of Business, Innovation & Skills (BIS) and the British Standards Institution (BSI)**

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# New approach to handling complex issues – Smart Cities

## Future Cities

- Partnership between BSI and Future Cities Catapult – **Cities Standards Institute.**

- Builds on:
  - PAS 180 smart cities terminology
  - PAS 181 smart cities framework
  - PAS 182 smart cities data concept model
  - PD 8101 planning of future city developments
  - PD 8100 Overview of smart cities

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27 October 2014

### Catapult and BSI Launch Future Cities Standards Institute

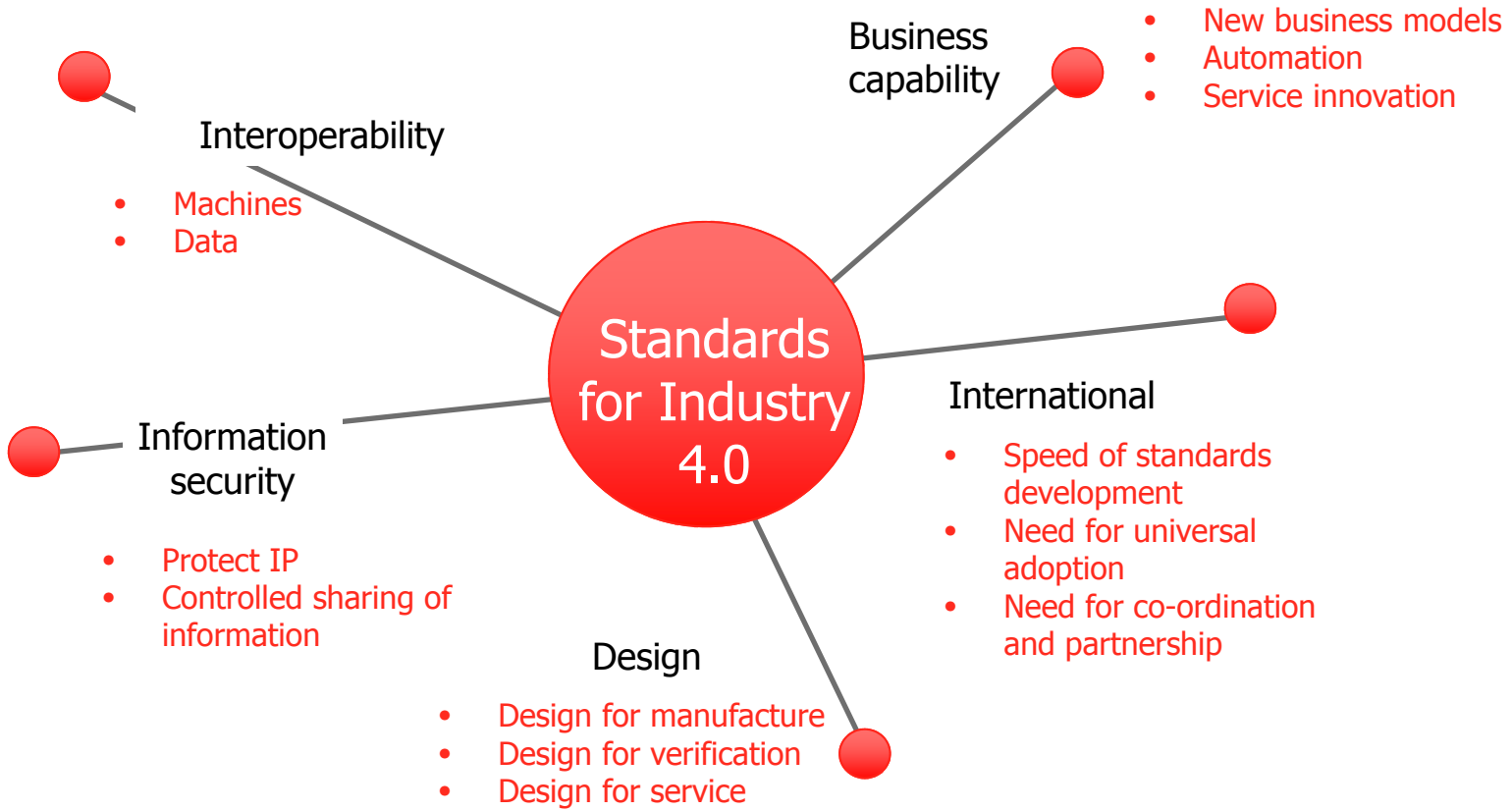
This week saw the first working session of the Future Cities Standards Institute, a new partnership between the Future Cities Catapult and the British Standards Institute (BSI). The Future Cities Standards Institute, housed at the Future Cities Catapult, will drive the development of a coherent standardisation work programme to create the right condition and help future cities market to flourish.

The first session brought together over 25 experts from the private sector with representatives from government, cities and smaller companies to brainstorm areas where standards will help grow the market for future city solutions.

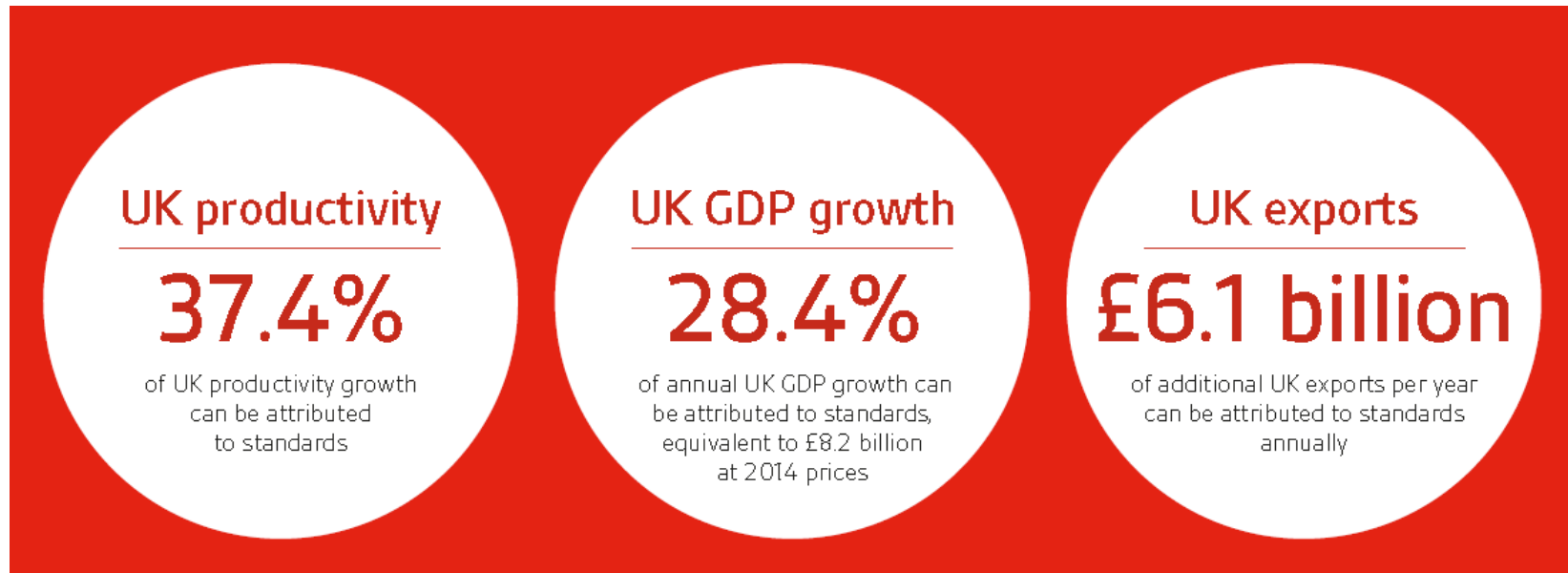
The Future Cities Standards Institute builds on work by BSI to develop 3 standards in this area: [PAS 180 on smart cities terminology](#), [PAS 181 a smart cities framework](#), and [PAS 182 a smart cities data concept model](#), as well as PD 8101 around planning of future city developments and PD 8100 'Overview of smart cities' which will be published by end of the year. Please see the [BSI website](#) for regular updates on these.



# Industry 4.0



## Productivity growth – role of standards\*. #BSI8bn



\*Centre for Economics and Business Research (2015). ***The Economic Contribution of Standards to the UK Economy***, published by BSI, June 2015. Research funded by the Department for Business, Innovation & Skills (BIS).

# Manufacturing Sectors in the UK

## Productivity Trends

### Aerospace & defence

- Productivity growth very high and are heavy standards users.
- Significant supply chain innovation.

### Automotive

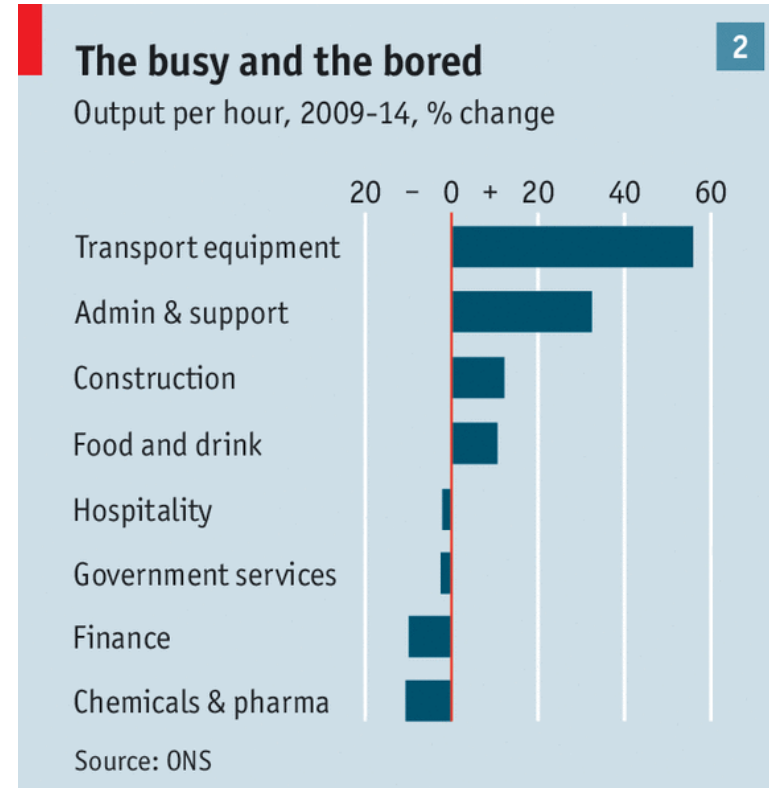
- Similar productivity growth to aerospace also heavy standards users.
- Mix of supply chain innovation and technology adoption.

### Food & Drink

- Huge sector for the UK, and routine users of standards, with productivity growth around 10% 2009-2014.
- Low take up of technology in the supply chain – evidence of reliance on low paid labour. Significant productivity gains from new technologies if adopted.

### Chemicals & Pharma.

- Productivity shrank and relatively low users of standards.
- Move away from large facilities towards much more adaptive, flexible manufacturing facilities producing smaller amounts of purer material. Includes personalised medicines manufacture.



Economist.com

## **What is BSI doing about it**

### **Research**

- Establishing where the UK strengths and opportunities lie.
- Who the major players are (stakeholder map).
- Identify existing standards and where they are useful.

### **Next steps**

- Develop a standards plan.
- Lead in areas of UK strength.
- Partner with others where appropriate

### **International partnerships**

- IEC/ISO.
- DIN.