



“E-Collaboration and Information Management: An Inside View of Britain's Railway Market”

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Why information?

My inspiration...

“information is an unusual good: the more widely is shared, the more people benefit from it”

(UK Government, 2013)

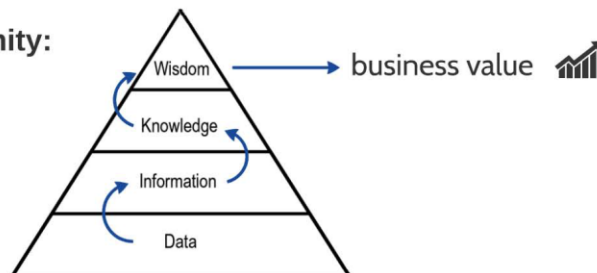


“There is a growing realisation that information is an organisation's third capital asset and should be given the same level of focus as cash and human resources”

(Hulme, 2012)



challenge & opportunity:



objectives + methodology

Objective 2: BIM - Awareness, perceptions, expectations (Large firms & SMEs)

Objective 3: BIM - Barriers and actions to be overcome (Large firms & SMEs)

Quantitative analysis (Survey among the Rail Alliance members)

From the interviewees' sample & targeting of practitioners

BCRRE

railalliance

NetworkRail

Qualitative analysis (Personal interviews to a number of the survey's participants/practitioners)



What is e-collaboration?



'...collaboration among individuals engaged in a common task using electronic technologies.'

Kock et al. (2001)



What is BIM?

BIM = technology + collaborative work process

(software + 3D models + collaborative work process + information management + asset management + more...)

“ **Building* Information Modelling (BIM):**
 “the process of generating, building and managing data through the life of a project by using model-based technologies linked to a database of project information”
 (Crossrail)

**Building = the verb not the noun, which describes the process of developing information models to improve the business performance.*



Why BIM?

BIM = e-collaboration + information management = innovation = game changer

AEC Industry

Transformation of stakeholders' relationships = opportunities

technical core + social parts = a complicated process

cost + change management

knowledge management

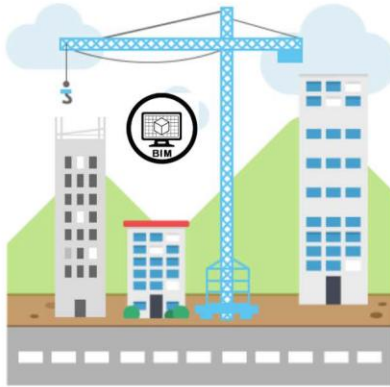
The UK Government's BIM Strategy

UK's industry adoption of BIM + internet

BIM advantages



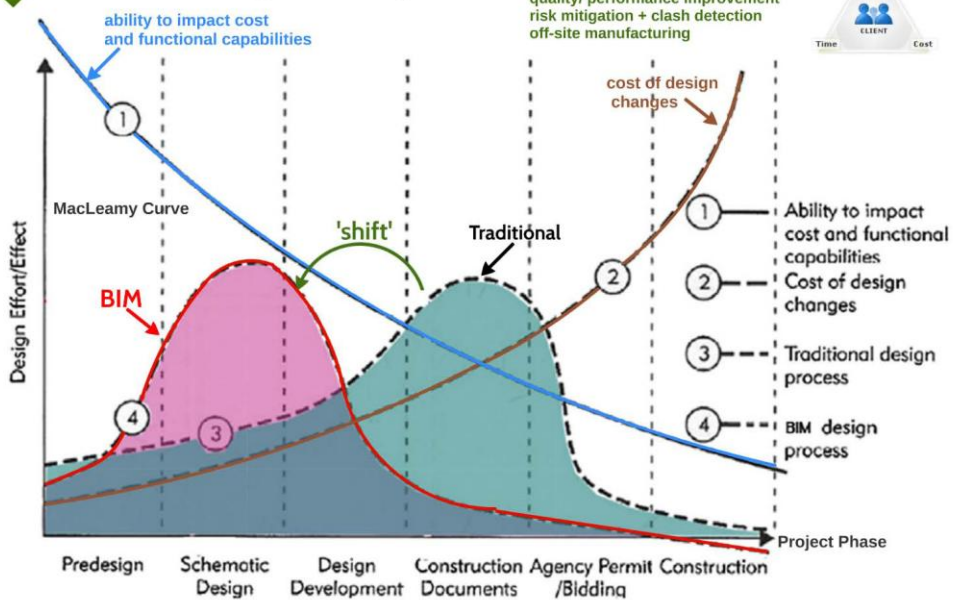
✓ AEC Industry



source: BIM Source

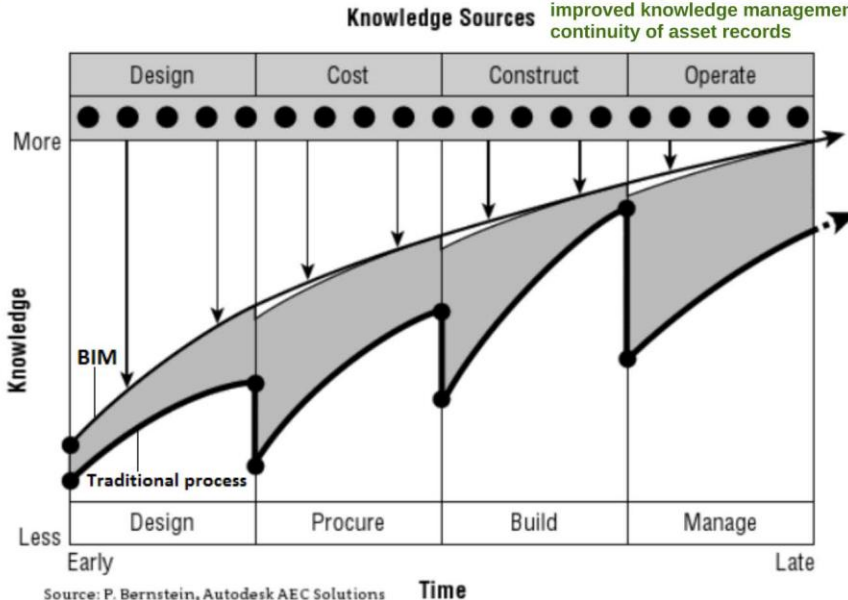


✓ cost + change management



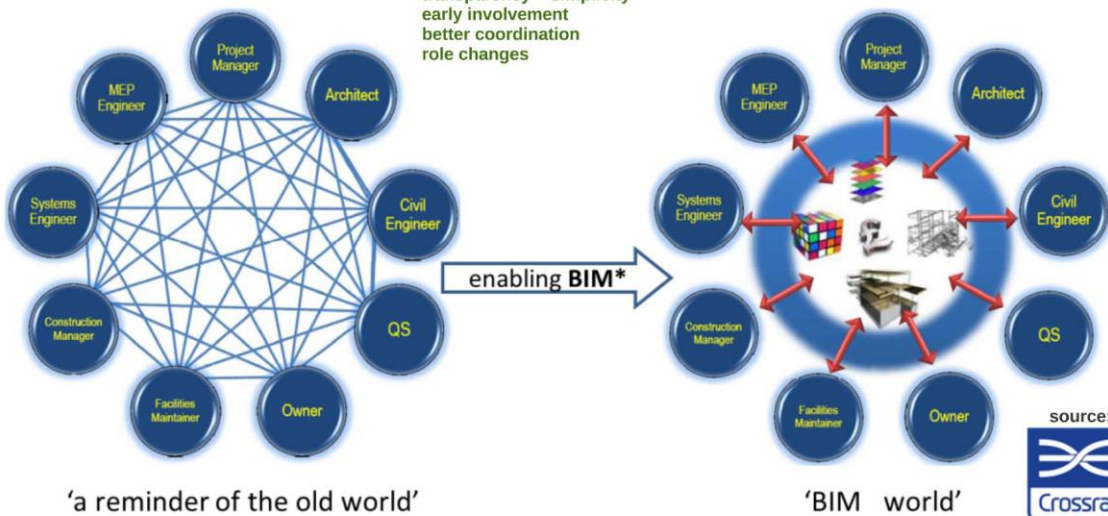
knowledge management

information capturing
 information waste reduction
 improved knowledge management
 continuity of asset records

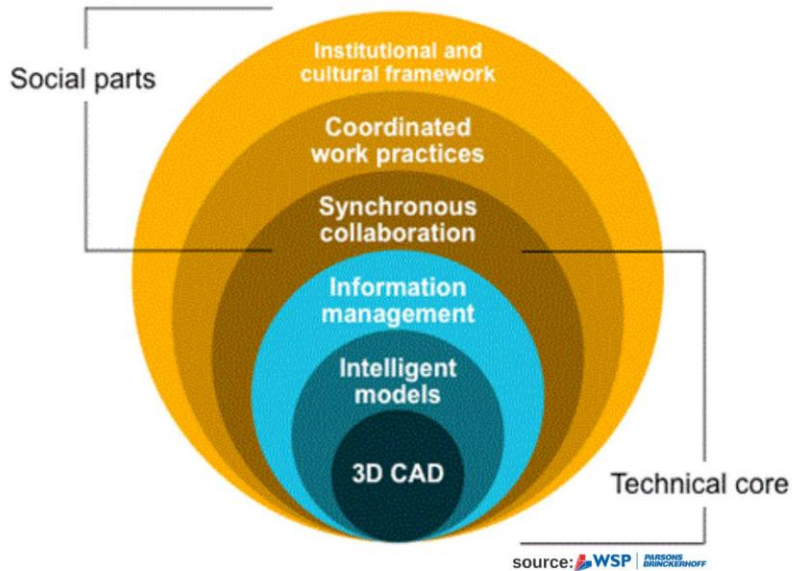


Transformation of stakeholders' relationships = opportunities

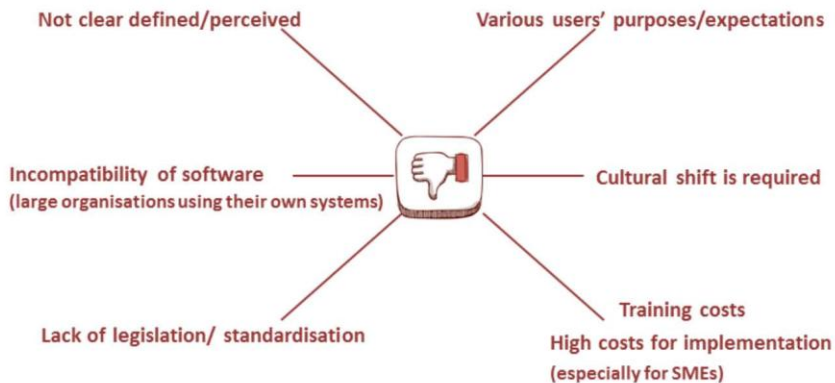
transparency + simplicity
 early involvement
 better coordination
 role changes

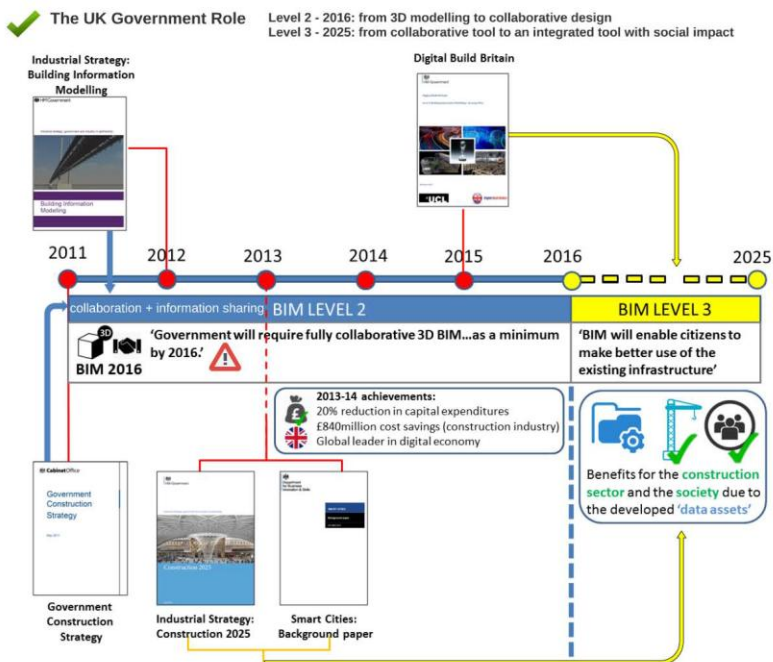


 **technical core + social parts = a complicated process**




disadvantages






✓ **Britain's railway: adoption of BIM + interest**


 collaborative 3D environment = contractual requirement
 Crossrail BIM 'academy' = interoperability
 1 centralised set of linked databases


 2014 Asset Management strategy
 working on its procurement strategy
 follow UK Government BIM strategy

 *engine for growth*
 use of a common data environment
 readiness to adopt BIM Level 2
 appointment of BIM specialists

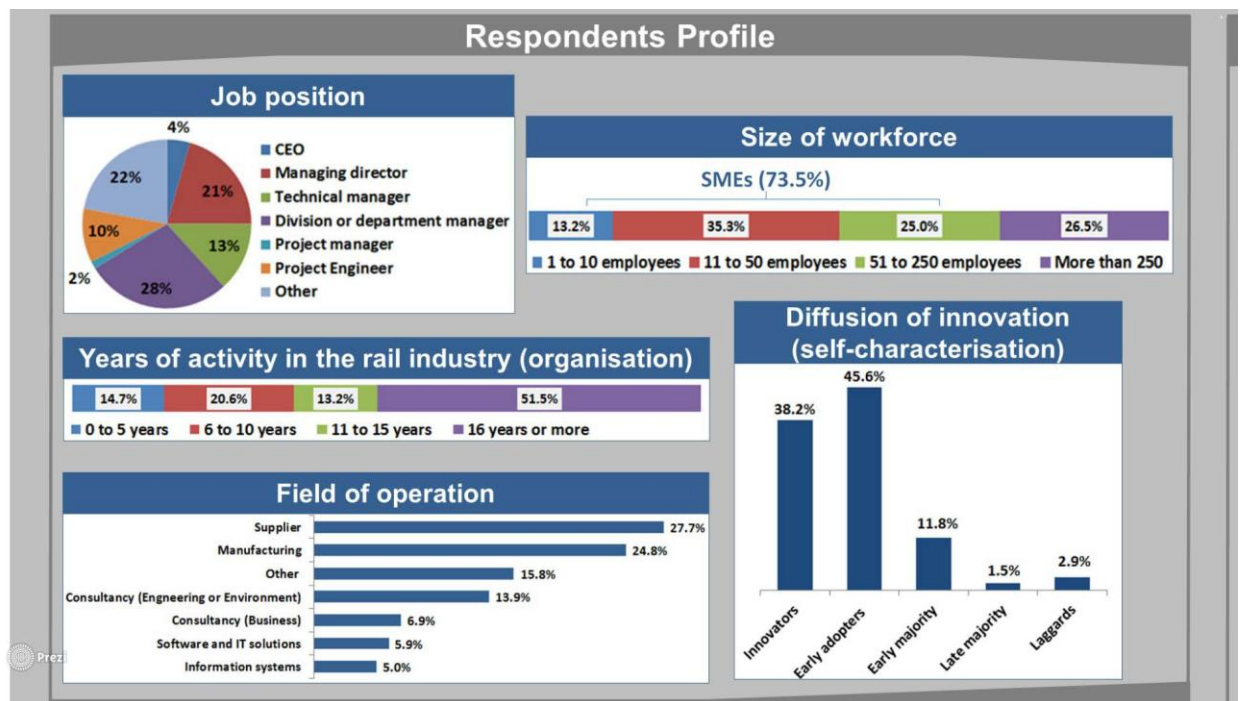
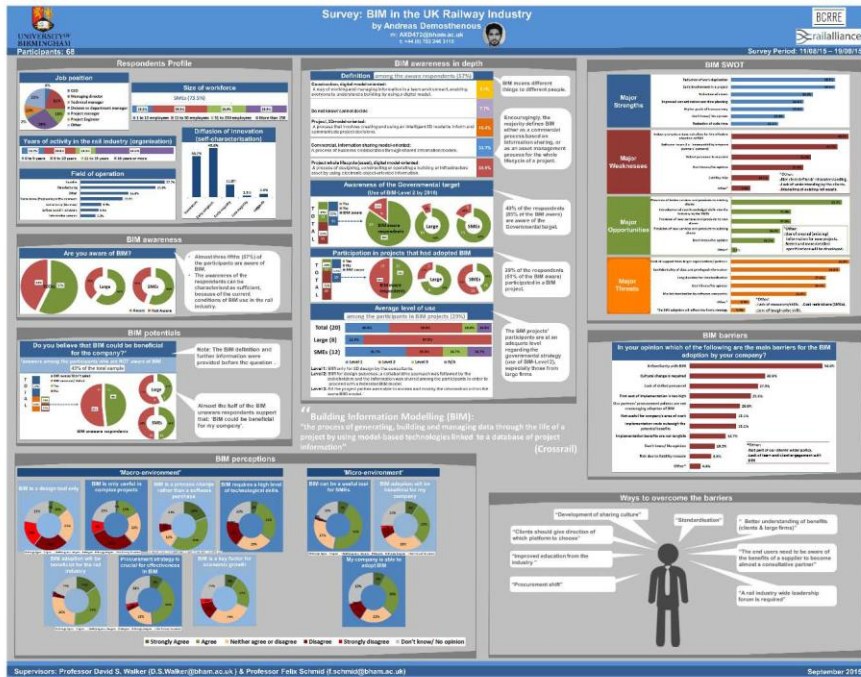
 research interest

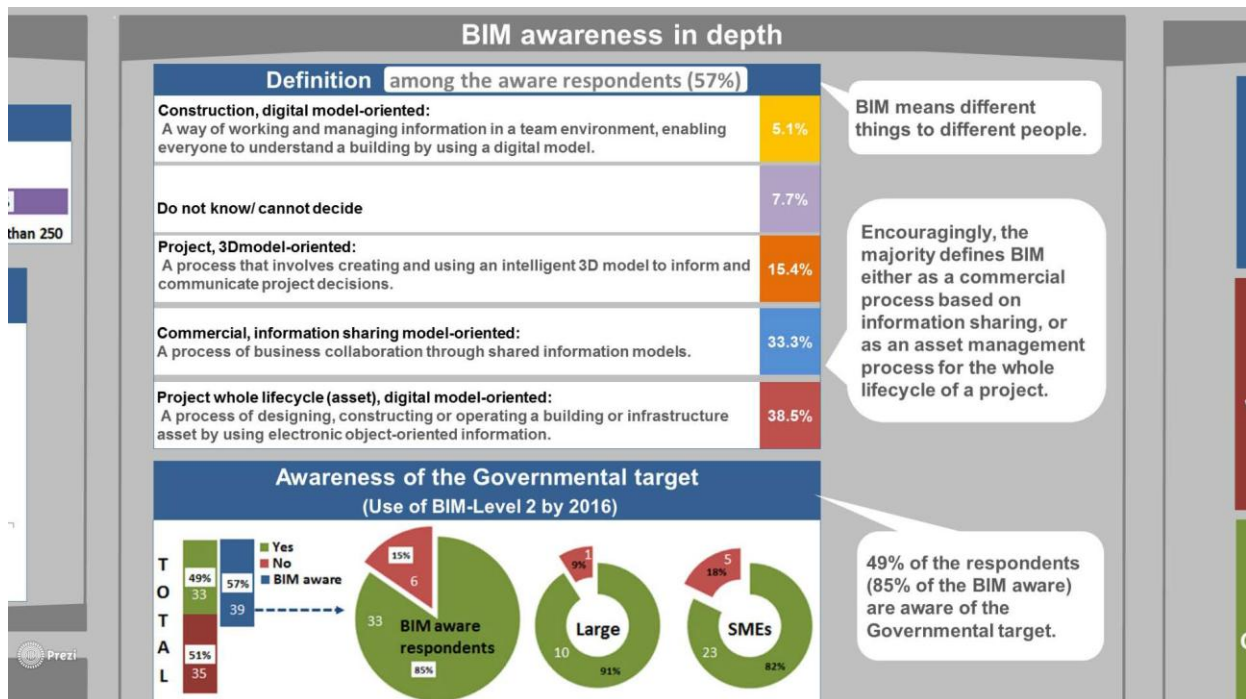
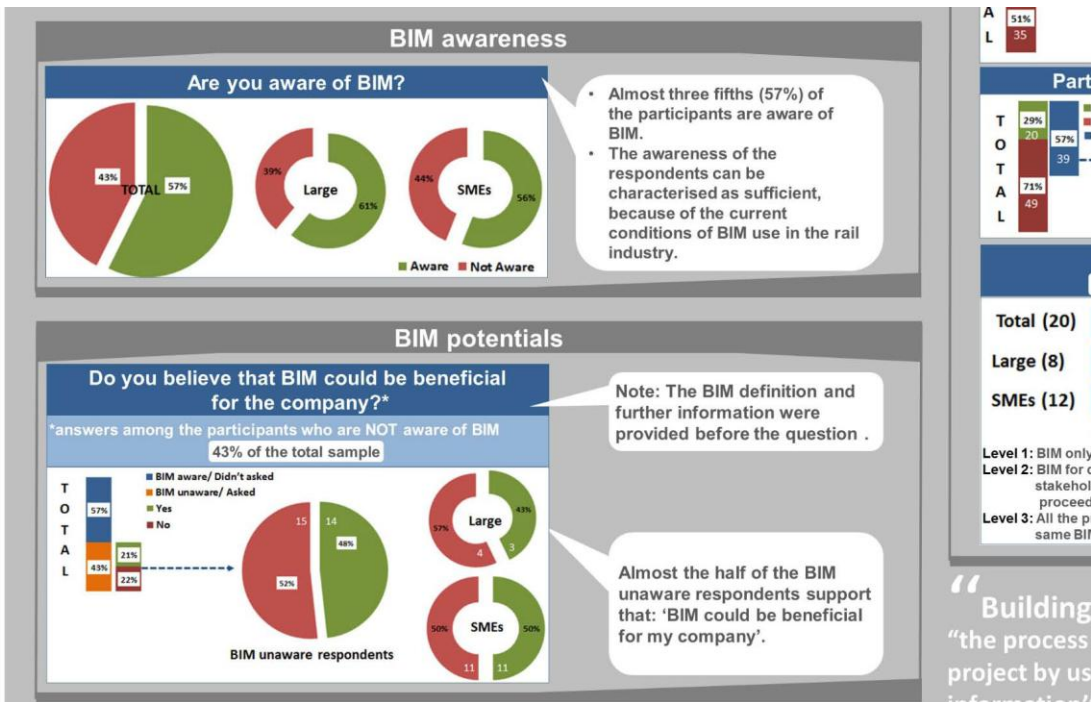
"We want to build, operate and maintain a virtual railway before we go anywhere near a shovel"
 (MacNaughton, 2015)

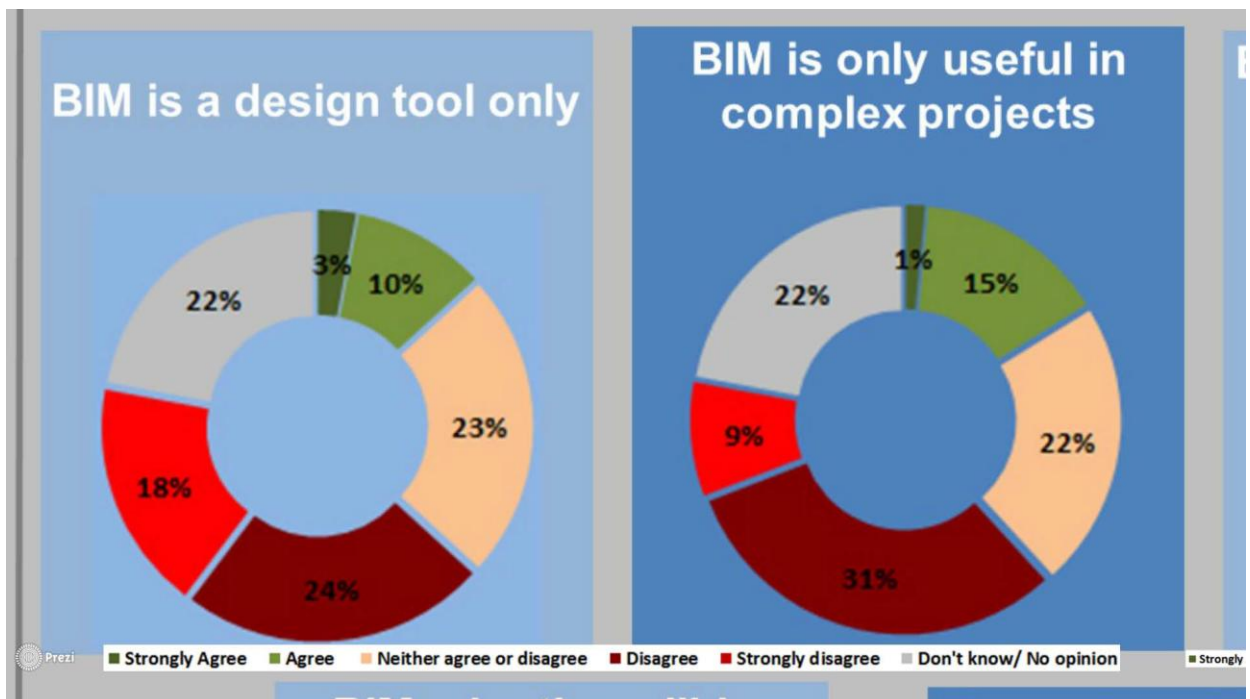
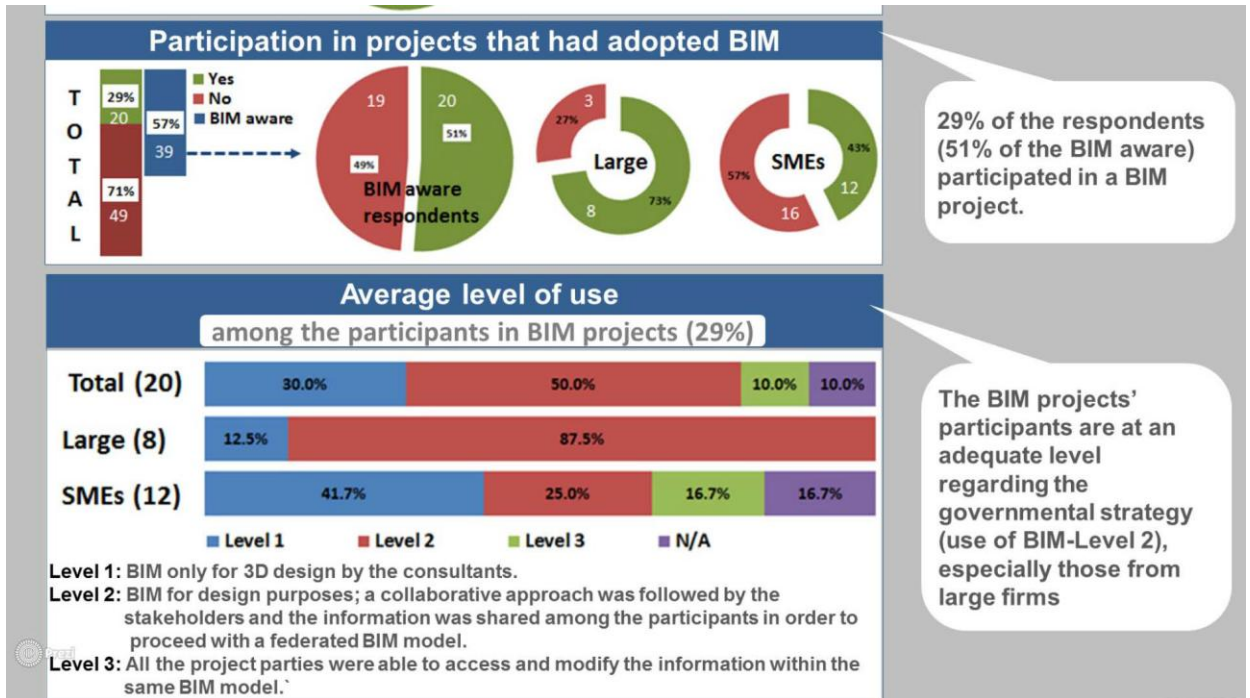
 support of firms (SMEs)
 appointment of BIM specialist
 support seminars + training

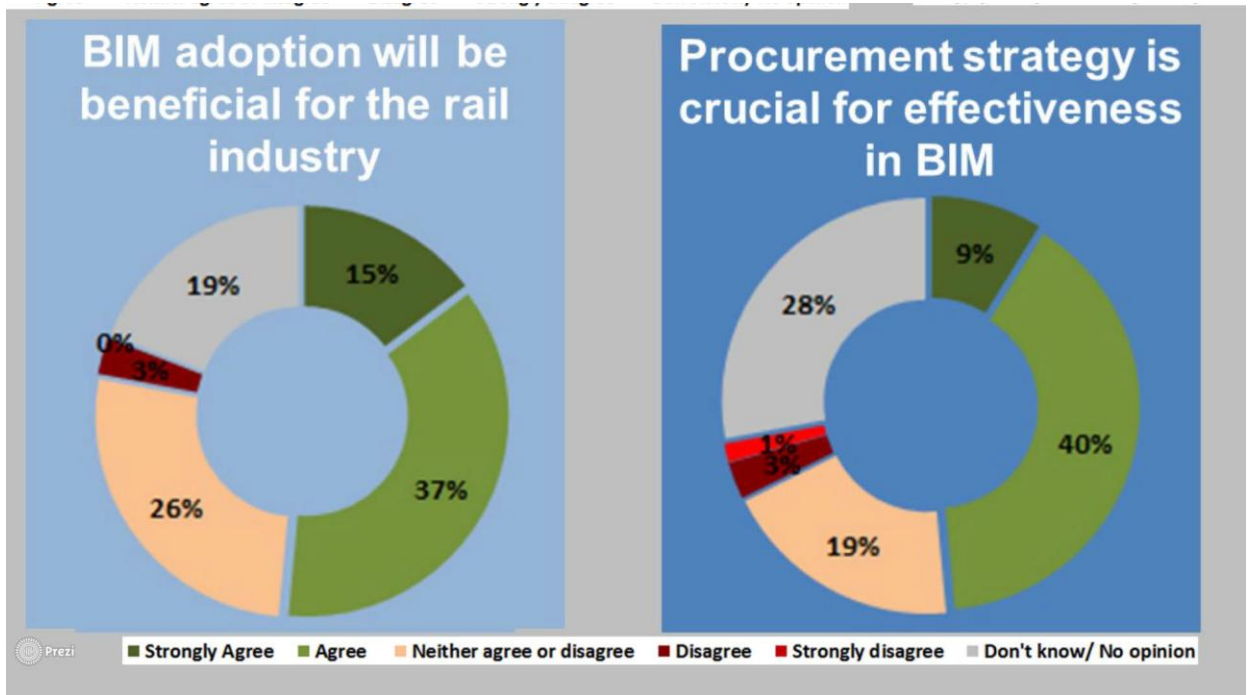
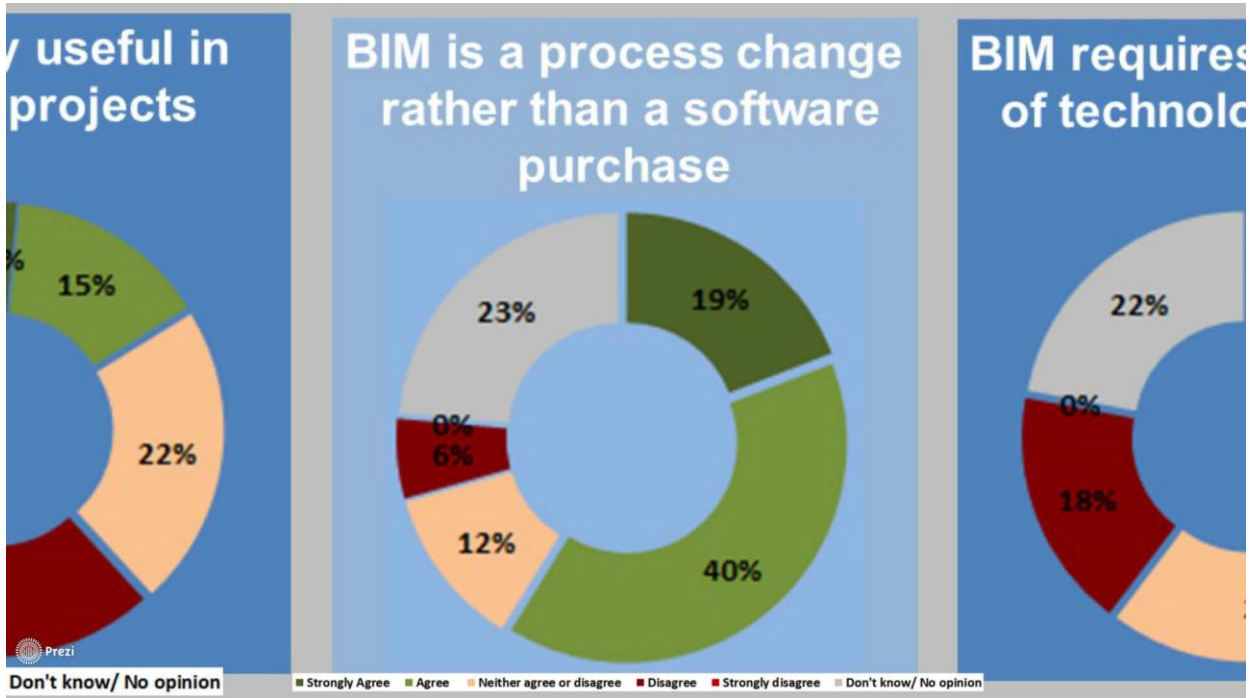
 BIM Level 2
 appointment of BIM specialists
 3D models transferred to 2D deliverables for the client
 progress monitoring

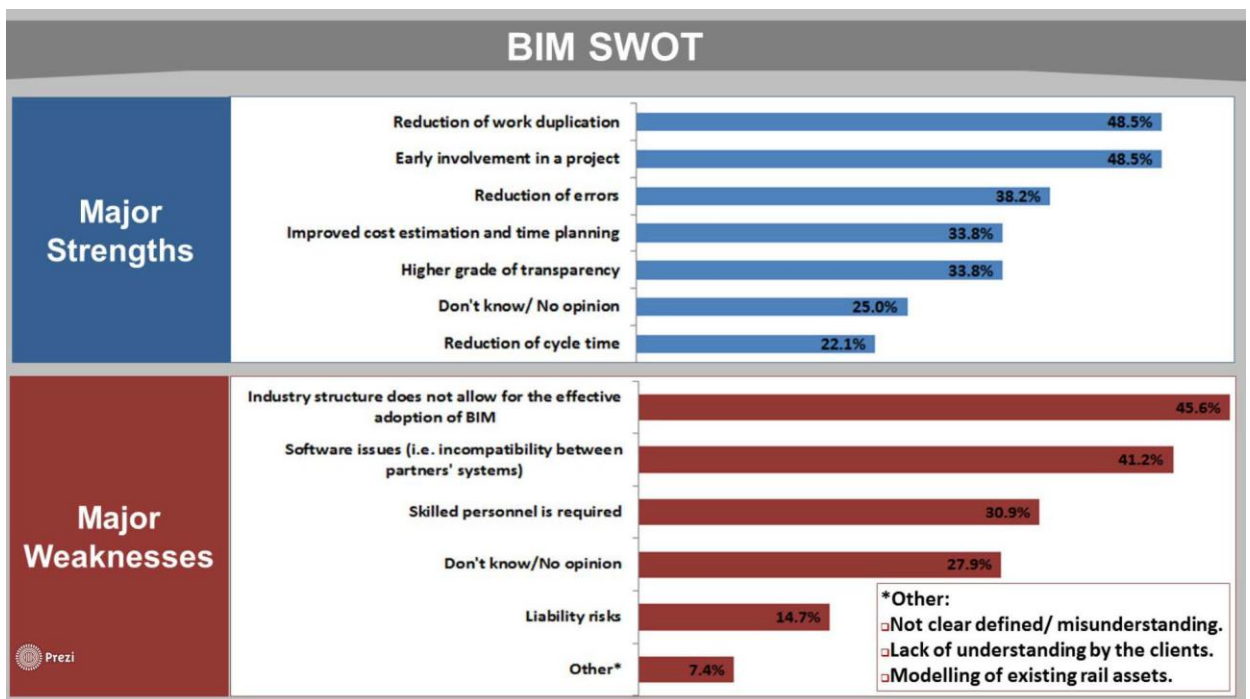
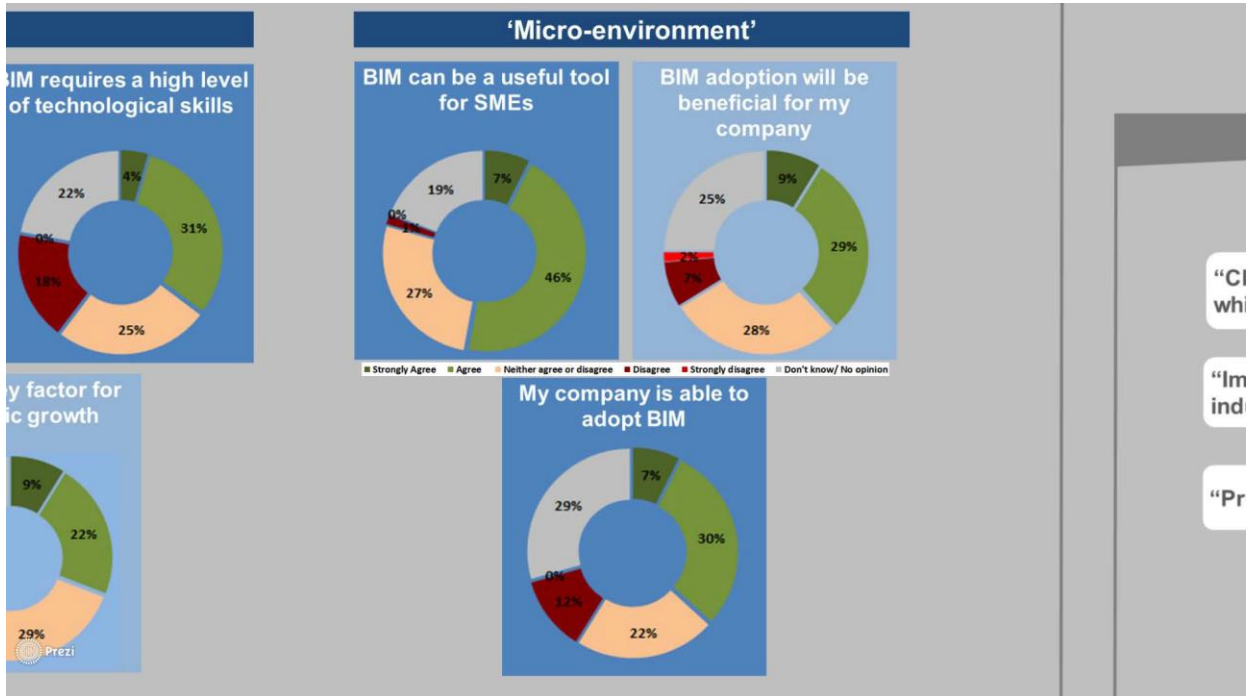
 
 Institution of Civil Engineers
 BIM 2015 conference
 2015 conferences

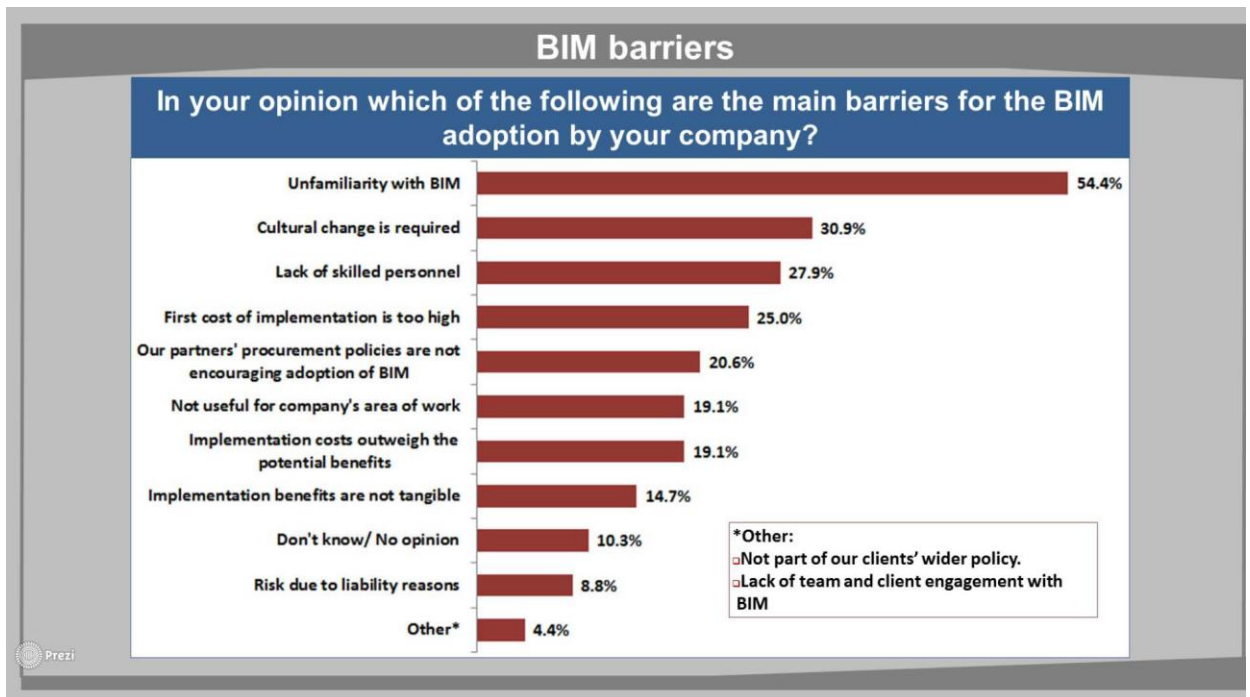
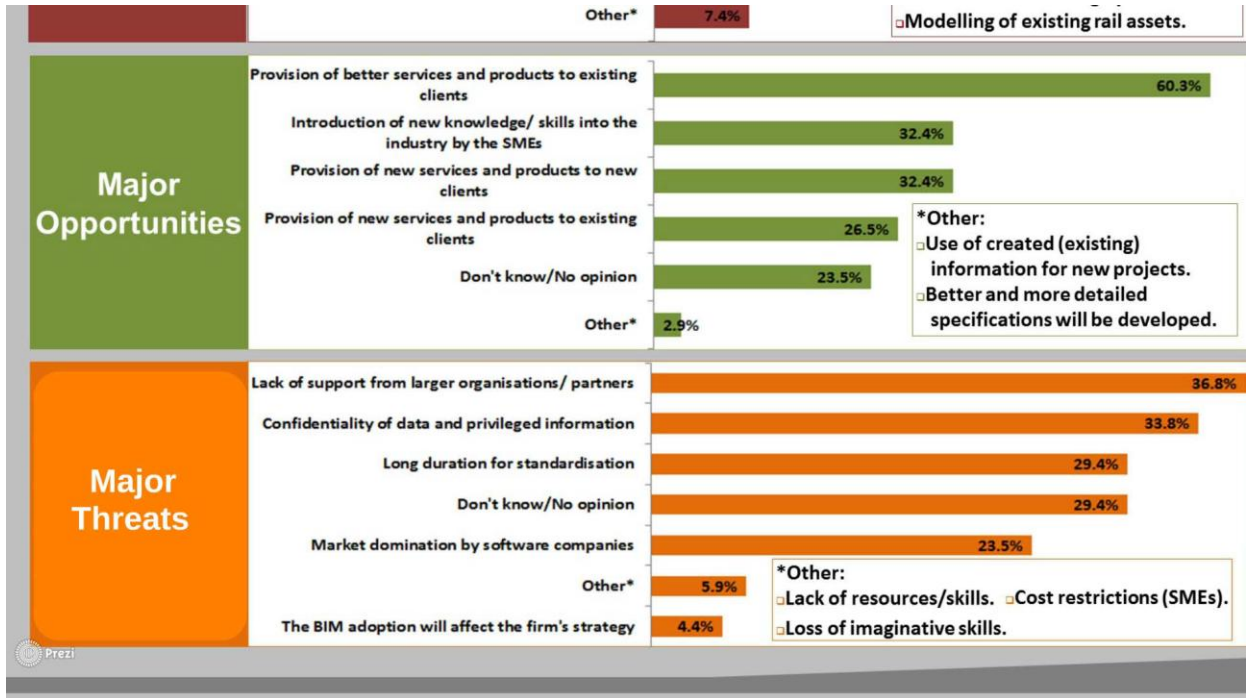












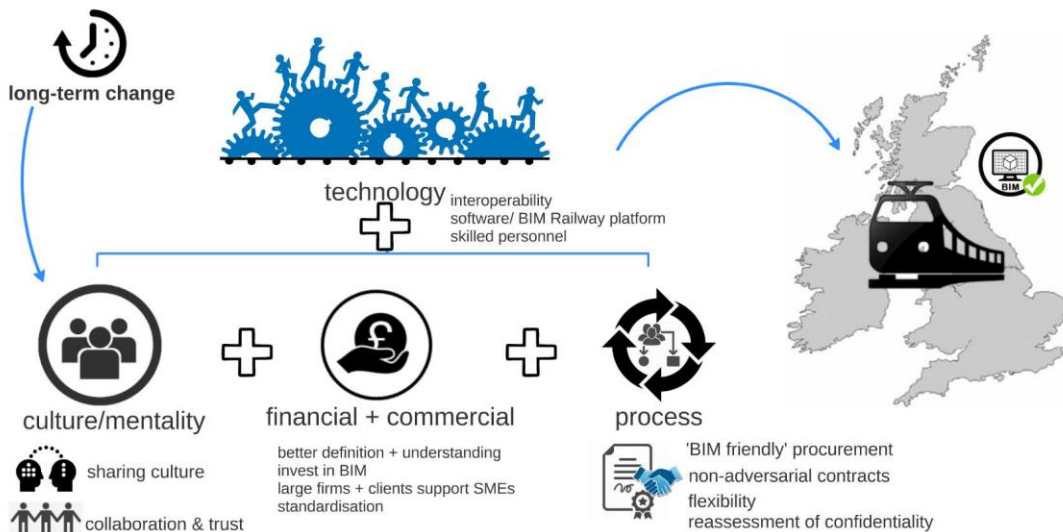
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Ways to overcome the barriers

- "Development of sharing culture"
- "Clients should give direction of which platform to choose"
- "Improved education from the industry"
- "Procurement shift"
- "Standardisation"
- "Better understanding of benefits (clients & large firms)"
- "The end users need to be aware of the benefits of a supplier to become almost a consultative partner"
- "A rail industry wide leadership forum is required"

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Conclusion





Recommendations

- Further investigation of the firms' innovative/BIM capabilities
- Comparative study (BIM in Railway vs BIM in AEC)
- Standardisation and regulations + clearer definition of BIM (Asset management + collaboration)
- Development of a BIM strategy for the industry - achievable & measurable targets
- Development of a collaborative 'BIM friendly' culture
- Creation of a multi-professional and cross-sectoral BIM panel
- Protection - Hazard of domination by software companies
development of a common BIM railway platform widely available at low cost
(BIM Task Group - supporting BIM software (COBie) is available for free)
- 'Crossrail Academy' paradigm



further opportunities

- **New business area - SMEs opportunity**
creation and management of information models for the existing UK railway assets
- **BIM for Asset Management**
information for the end-users (citizens, TOCs, FOCs), the network owner (NR) and the suppliers.
- **'Smart'/ Digital UK Railway**
Smart City concept, Digital Built Britain



