Delivering effective and inclusive infrastructure

Increased investment in national and local infrastructure across the UK is fundamental to increasing productivity and economic growth. There is a pressing need to adopt a broad, integrated approach to infrastructure planning, valuation and engineering.

About the research

Infrastructure is the foundation that prosperous economies and societies are built and function upon. However, ineffective infrastructure business models are providing poor value to taxpayers, consumers and businesses – impacting negatively on the future of infrastructure services such as sanitation, drinking water, heating, mobility and communication.

Narrow views of infrastructure can constrain innovative thinking and limit the development and implementation of alternative business models. A broader and more integrated approach that considers the whole infrastructure system from physical components through to the services it provides is essential to unlock new opportunities for business model innovation and capturing economic, social and environmental value.

A crucial step is to recognise the potential of infrastructure to convert financial value into societal value, moving beyond benefit-cost analysis to capture long-term, whole-life benefits and to help build more resilient and inclusive economies and communities. National-level policy also needs to take more account of the needs for local infrastructure, and how infrastructure is being funded, financed, planned and governed.

Researchers at the iBUILD Centre have drawn on research findings from their extensive evidence base, as well as analysis and discussions with a wide range of infrastructure stakeholders (including local communities, business, and local and national government), to outline a set of five priority areas and 14 policy recommendations – addressing the challenges of effective infrastructure delivery locally and nationally.

Policy recommendations

- Adopt a broader, integrated and more holistic appreciation of infrastructure
  - Governments, advisors, planners, engineers and other stakeholders should use a broader definition of infrastructure to include the full range of opportunities from alternative business models.
  - Housing and ‘hidden infrastructure’, such as efficiency measures, should be considered alongside large-scale capital investments as part of infrastructure planning.
  - Reforms in policy, institutions and regulation are needed to facilitate an integrated approach to local infrastructure across different sectors.

- Enable greater action at the local scale that reflects the distinctive nature of local areas but also connects with the national level
  - Individuals and communities should have an Infrastructure Service Guarantee, ensuring a minimum level of service that is achieved with an engineering solution and business model appropriate to the local situation.
  - Greater local autonomy is required in the planning, funding, financing and delivery of infrastructure to maximise the effectiveness of local infrastructure business models.
Policy implications - continued

- **Facilitate and capture all forms of long-term value**
  - Measures of social and environment value must be incorporated into infrastructure appraisal frameworks to achieve the widest possible set of mechanisms to capture revenue and other values.
  - Develop and implement a quantitative framework within the infrastructure appraisal process that can assess the value of flexibility and resilience across the whole infrastructure system over the long term.
  - Resource assessments must become routine to identify the potential for land and infrastructure assets to generate long-term, stable revenue streams and sustainable growth, and not just one-off windfalls from selling off capital assets.
  - Employ a new approach to infrastructure economics that recognises the long-term and system-wide value of infrastructure provision and the alternative forms of investment necessary to realise this value.

- **Align organisational capabilities and apply ‘circular economy’ principles for more efficient infrastructure delivery**
  - The government’s Project Initiation Routemap toolkit has demonstrated many cost-reduction benefits and should be made standard practice for all public-funded projects.
  - Infrastructure design should be grounded in circular economy principles (maximum use and recycling of resources) to consider the whole-life material and resource demands of infrastructure pipelines, to identify opportunities to reduce overall energy consumption and waste.

- **Accelerate uptake through practical action and demonstration**
  - Establish full-scale urban demonstrator sites for applied research into integrated infrastructure planning and testing of innovative infrastructure business models.
  - Develop alternative business models by collaborating with the widest range of stakeholders, and integrate the assessment of a broad range of values with the design of engineering solutions.

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