Cities fail to recognize full potential of smart technologies

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Cities are wasting the potential of smart technologies by failing to realise the value of their hidden infrastructure and digital assets.

A report published today by The Climate Group, Accenture, Arup and Horizon Digital Economy Research at The University of Nottingham says opening up data and digital assets is critical to accelerating low carbon cities.

The report, 'Information Marketplaces: The new economics of cities,' states that while cities are using information and communications technology (ICT) to improve their sustainability and efficiency, they are not recognising or measuring the full value of smart initiatives and are missing the opportunity to turn unused data and infrastructure into new low carbon solutions and services.

The report argues that the application of smart technology is being hindered because:

- technology-led experiments often fail to achieve useful outcomes for consumers and residents
- slow and complex municipal procurement processes make it difficult for small technology companies to participate and limit access to new solutions
- cities are unsure of the social and financial payback from the investments they are being asked to make.

Catherine Mulligan, Transitional Fellow, Horizon Digital Economy Research, said "Through using the data from their digital infrastructure as a market creation asset, cities will be able to capture significantly more value from smart city ICT investments. In addition, developing new information marketplaces will help cities create new industries and achieve sustainable economic growth".

Mark Kenber, CEO, The Climate Group, said: "Our cities sit on vast untapped resources of data and infrastructure that could be integrated to accelerate the clean revolution while improving the convenience and quality of urban life. To unlock that potential, cities need the right leadership to create a vision of social, environmental and economic goals that can be achieved by a more integrated application of smart technology."

The report highlights two key steps to maximize the smart technologies in cities:

Articulate the benefits

Cities must capture the potential benefits of smart technology initiatives with a common set of metrics that can be translated into financial and non-financial values of relevance to different stakeholders.

These will allow cities to:

- compare the relative benefits of projects and prioritise between them; a smart grid and a road pricing initiative for example.
- achieve economies of scale by identifying how a communications backbone, in this instance, could be used for both applications.

Simon Giles, Global Senior Principal, Intelligent Cities, Accenture, said:

"We need to reframe the intelligent city value proposition by measuring and articulating the full social, environmental and economic rate of return generated by city-wide initiatives. Only then can the private sector make the business case for participating. Only then can cities make the capital decisions that bring greatest value to citizens."

Freely available data

Research performed by Horizon illustrates that cities must provide open and free access to their data and digital assets in the form of Application Programming Interfaces (APIs). Making bus passenger data available, for example, could result in a range of real time commuter information services. Opening APIs will reduce the cost to third party developers of creating new information-based services and applications. It will also maximise competitive innovation by creating a level playing field for innovators.

"An intelligent city not only reduces carbon emissions, but attracts talent and investment through quality services and infrastructure and through convenience that delights residents," said Volker Buscher, Partner, Arup. "Cities must open up their digital assets and create a thriving information marketplace for innovations that achieve these aims. It will take courage for city leaders to challenge the cultural norms of their administrations and expose themselves to this form of dynamic collaboration."

The report makes several recommendations to policy makers and companies.

Local and national governments

- Encourage the use of common, international metrics to assess performance and to facilitate investment decisions

- Set national goals for cities to open access to data sets
- Start a debate on open data and on the role cities should play in creating growth opportunities.

Companies

• Understand the investment decision making process of cities to ensure private sector technology development aligns with public sector legal and procurement processes and timescales
• Encourage pre-procurement task forces, whereby companies can offer their technical expertise to help cities streamline procurement processes
• Use multi-partner trials to develop capabilities for longer term scaling of technology solutions

Provided by University of Nottingham