DIGITAL DEEP DIVE

Harnessing digital technology and data to deliver smart growth

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Introduction

Harnessing digital technology and data to deliver smart growth

The natural environment provides resilience, resources for growth and social capital for people and businesses. The value of natural assets is often overlooked in planning and management of cities, landscapes and sectors. These assets are at risk from over exploitation, degradation and the effects of climate change, creating risk for the businesses that rely on them.

A smart growth approach is one that enables business to optimise the opportunities that come with addressing environmental challenges. This may be through the reduction of risk, cost cutting efficiency or the identification of new products or opportunities.

Within the food and beverage sector soil, water and habitats are critical natural assets. Degradation of these assets will have a direct impact on the food and drink sector that employs 3.7million people, produces 60% of our food and contributes 7% of GDP. At a city level, understanding shared interests and multiple benefits can help drive collaboration and support strategic investments. Both will provide positive outcomes for the environment, with the potential for smart agriculture to reduce food waste by 20% globally, and a 5% CO_2 emissions savings from smart building and smart city mobility by 2030[1]

Digital transformation provides an opportunity for better informed decision making on managing the natural environment, and enabling smart growth through identifying opportunities for efficiencies, collaboration, and action.

Business in the Community has partnered with Anglian Water and Capgemini to develop a digital framework to accelerate solutions for the environment.

The digital deep dive set out three objectives for the day:

1. Create data sharing frameworks that can meet challenges for rural, urban and smart growth areas
2. Identify ways digital technologies and data can help meet these challenges
3. Create a set of recommendations on using digital solutions too improve sustainability in rural, urban and smart growth areas.

Participants delivered these objectives by working in groups focused on rural, urban and smart growth. Each group developed a framework for these areas.

BITC's Environment team and Taskforce will adopt these frameworks and apply them to the smart growth strategy. The frameworks will be piloted within existing programmes to demonstrate to business the opportunities for leveraging digital technology and data to deliver smart growth.

[1] #System Transformation, GeSI and Accenture strategy 2016

Harnessing data for the natural environment

A framework for action

The natural environment is monitored by a range of stakeholders from landowners to private companies to government to ensure it can continue to deliver assets in line with their individual requirements. However, the natural environment is a system, with each part interdependent on others. Working collaboratively through open data will help all stakeholders improve environmental management decisions for themselves and others who rely on these assets. The framework will create a central repository of open data, and data providers will should be incentivised to input data. The interface will be intuitive, providing constructive advice on optimal land management practices.

Delivery of the framework

It is proposed that the framework will be piloted in the CAMEO, East Anglia. This will build on existing catchment management approaches led by the Anglian Water and CAMEO catchment partnership.

The pilot will work with business, government, farmers and start-ups to deliver a cross industry, whole supply chain data sharing platform. It will engage with farmers through established facilitation funds led by Natural England and will work to inform retailers of land management risks.

BITC will work with participants to convene all stakeholders to develop a detailed, shared plan for the pilot.

Recommendations

- Government need to work collaboratively to ensure that digital solutions to environmental challenges are embedded as part of cross departmental effort to deliver the 25-year environment plan.
- In the longer term this should be supported by a policy framework
- Business across the supply chain need to commit to open data as part of a pre-competitive approach to managing the environment

The Land App

The Land App is an easy to use, collaborative, online mapping platform to help people design and manage land-based projects, unlocking a wide range of economic, environmental and social benefits.

The Land App aims to help land managers make long term decisions on how to manage the land for long-term profitability and sustainability.

Defra

Defra collect data on England's natural environment including land, water and air. Driven by the 25-year plan on the environment Defra are exploring new ways in which data can support better decision and deliver a sustainable approach to managing the natural environment

Water Resilient Cities

Green infrastructure can reduce flood risk, improve health and create a better environment for urban communities. Atkins have been developed a spatial mapping tool that identifies opportunities for green infrastructure within existing cityscapes that can estimate the costs of the infrastructure, as well as the benefits it will provide.

Corby Water Recycling

Anglian Water faces increasing quality standards, a growing population and manage the implications of a changing climate. Digital technology has helped drive efficiency. Anglian's Corby Water Recycling Centre are driving greater efficiency by using real-time data to empower employees to make the right decisions at the right time. This has reduced the need to invest in additional infrastructure, reducing future costs.

Smart Urban Spaces

A framework for action

Cities are natural hubs for data, from personal devices, pollution monitors, transport use and spatial planning. In most cities this data is not collated to create single comprehensive views, although some apps such as city mapper have started to combine data sources. There is untapped potential in access to this aggregated data. It could help reduce congestion, strengthen the sharing economy and create a more efficient urban environment, creating healthier, cheaper and better cities for people.

The proposed framework for smart urban spaces is for a city hub. This will be a central repository of open data that is accessible to all and has a visual interface. It should include a range of data, both environmental and social. It should be a user-led collaborative space, requiring inputs from city users. The hub will have a dual purpose, enabling the production of city focused resources and as an education tool to users how to own, use, value and share data.

Delivery of the framework

Manchester should be the pilot for this approach, building on BITCs existing work in the city. The first phase will be to convene and engage data owners to input into the hub. The second phase will be running hackathons with local groups to develop city level resources.

Recommendations

To enable the realisation of this framework the following issues need to be addressed.

- Better protection of personal data. Data from personal devices could provide a rich source of information on how people use and move in cities, any data would have to be anonymised to protect personal privacy and in line with GDPR.
- Open data. A collaborative approach will be critical in delivery shared value.

Transforming the Future

A framework for action

The digital revolution will transform the way society works, businesses work and how we interact and work with between each other. It will allow us to work together, as part of a community.

Aggregating data from multiple sources provides a richer picture of business, communities and the natural environment, that goes beyond monitoring basic outputs and inputs. The framework for action in the future focuses on creating greater transparency in our use of resources. Technologies such as blockchain will enable us to provide a digital finger print for products, monitoring them for environmental and social standards throughout the supply chain.

Suggestions for the pilot included dynamic regulatory standards, tracking through a plastics value chain and monitoring of deforestation commitments.

Delivery of the framework

This framework can be delivered through the commitment of businesses

to BITC's digital priorities. This framework calls for businesses to:

1. Protect, support and empower customers

2. Embrace the changing nature of work

3. Deliver innovative products and services that serve society

4. Drive a transparent, inclusive and productive value chain

These commitments will help harness the power of digital technology to deliver on the responsible business agenda.

Recommendations

1. For business to commit to the digital priorities for responsible business
2. For government, regulators and business to work together towards greater transparency within supply chains
3. For government to support the transparency of data and incentivise business to operate within a pre-competitive environmental space

Energy efficiency

Capgemini work with water utilities to optimize efficiency using digital technology. Most water companies have energy high on their agenda and are investing in energy extraction from sewage & renewables. Digital technology works across the utility value chain to drive efficiency and reduce risk. Disruptive technologies and renewable energy will be integral in satisfying future energy demands of the utilities

ESG Risk Screening

Technologies such as AI, machine learning, big data management, knowledge-sharing platforms, IoT and block chain have made their way out of the research labs and int mainstream business. Anthesis are investing in big data applications, knowledge-sharing platforms and artificial intelligence and exploring their application to the many sustainability challenges faced by clients.

Conclusions

Within all three frameworks there were clear commonalities on how we need to manage data and digital technologies to harness its capacity to deliver for the common good:

- Open data. To optimise commercial social and environmental returns, business, government and individuals should collaborate to share data.
- Privacy. Data should be used responsibly; individual data should be anonymised whilst working with business to optimise transparency.
- Centralising data from multiple sources with a trusted broker can help identify new opportunities and maximise efficiencies
- Common standards and governance are needed to support a collaborative approach
- Data should be accessible to non-data experts, this can be supported by data visualization and/or intuitive interfaces

Next Steps

Digital technology and data are a cross cutting theme for the BITC Water and Healthy Ecosystems programme. These frameworks will be adopted into programmes on healthy ecosystems, water resilient places and the circular economy of water and developed as an integral part of the project.

Digital is a priority theme across BITC. We recognise that digital transformation will create rapid changes for business with a mix of challenges and opportunities for business, society and the environment. To support business to adapt to responsible business within the digital transformation BITC has developed the digital priorities for business.

You can find out more about these by linking through too our website.

Links and resources

This workshop was facilitated by Capgemini at their ASE. They have provided a number of resources to capture the process and the learning that came from it. If you would like to read and see more about this digital deep dive please follow the links to our online event review and video of the day.

Thank you……..

To Anglian Water and Capgemini for supporting, facilitating and helping to deliver this event.

Thank you to the organisations who took part and sharing your knowledge with us