

Local Government Embracing Innovation

Llewelyn Morgan - Head of Innovation Oxfordshire County Council



Transport Impact In Oxford

Transport
Responsible
for 27% CO2 in
UK
Est. 17%
Oxford

45000+
Cars into
Oxford in
peak hrs

40% trips through
traffic

2nd highest level of
Cycling in UK



Science Transit Strategy

Innovation in Transport

- Creating an ecosystem of innovation
- Oxfordshire Living Laboratory

Intelligent mobility

- Optimised movement of people irrespective of mode

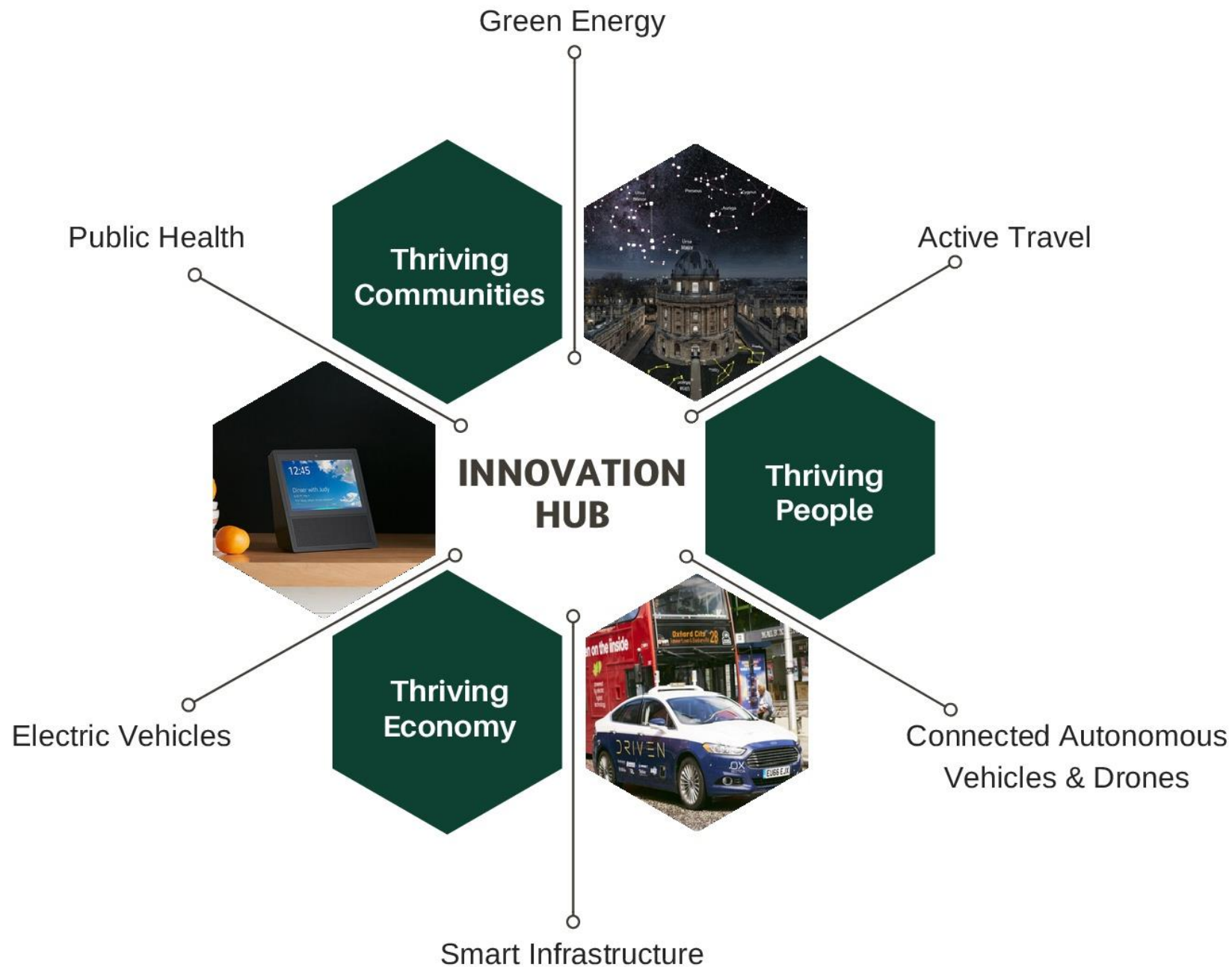
Key infrastructure Improvement

- Improve connections between key locations along the knowledge spine

Key route & service enhancement

- Improve connections between key locations along the knowledge spine

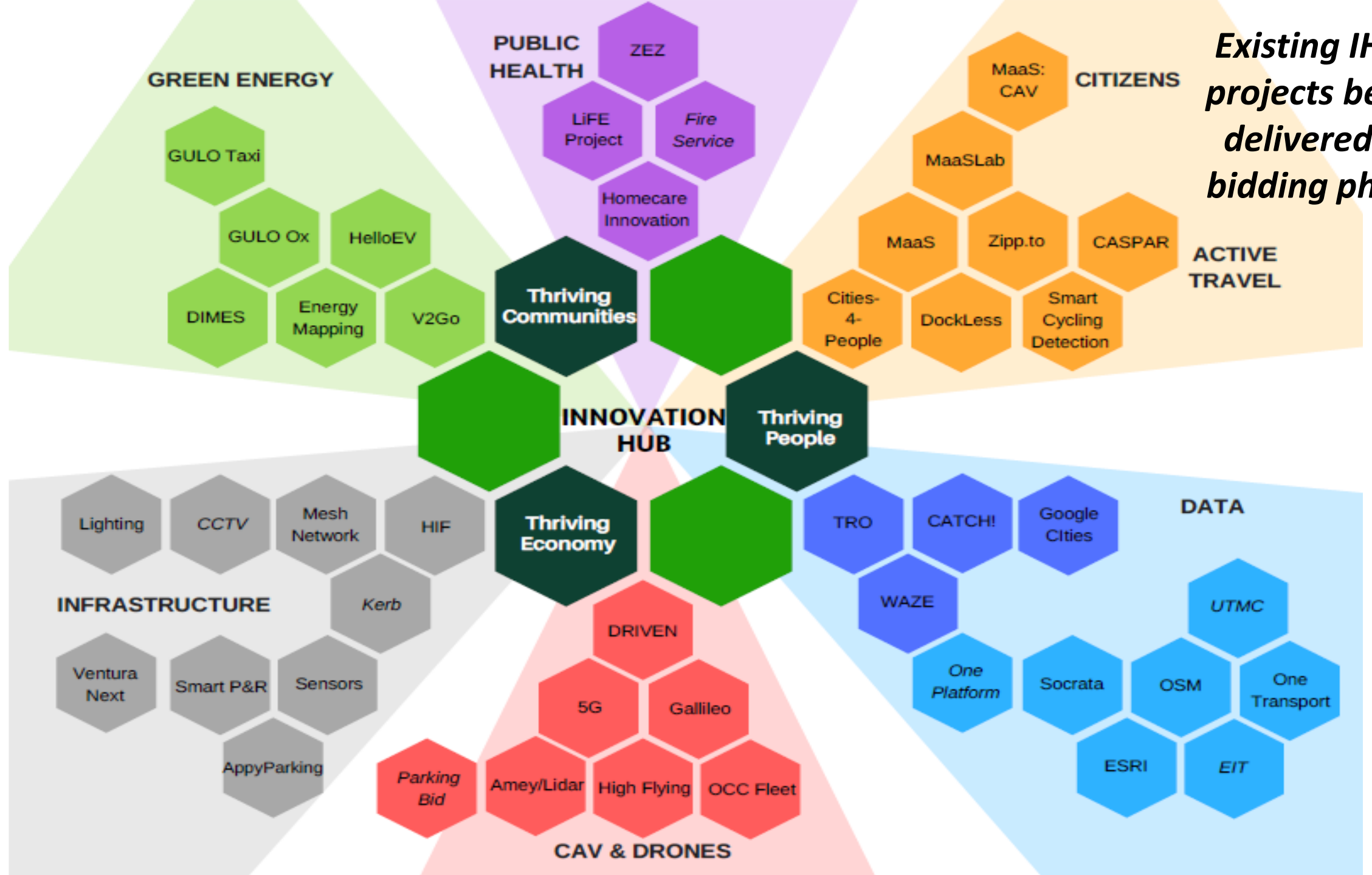
Multiple lead deliverers and project partners – consortium approach to project delivery and funding





Our Track Record





Existing IHub projects being delivered or bidding phase

Connected Autonomous Vehicles

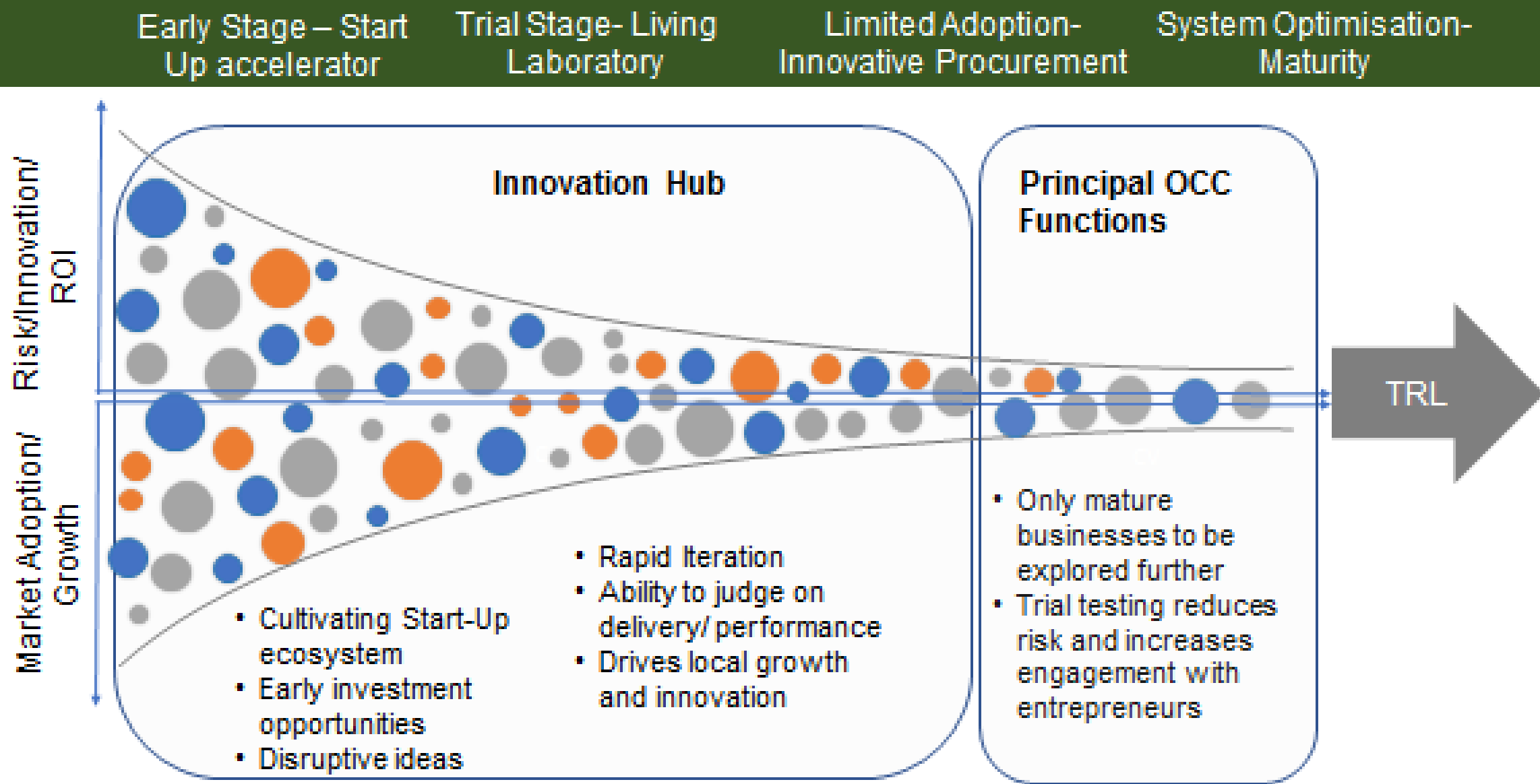


- Trials
- Standards
- Planning
- Communications
- Network Management
- Infrastructure
- Simulation/Modelling
- Education
- Strategy & Policy
- Drones

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Innovation Funnel Diagram



(The different circles represent different projects/companies)

Why are Local Authorities essential

Multiple Timescales

Now/Minutes

Emergency/Incident Management

Minutes/Hours

Traffic Management

Hours/Days

Asset Management

Months/Years

Education Authority

Years/Decades

Urban Planning

Oxford Cornmarket 1900

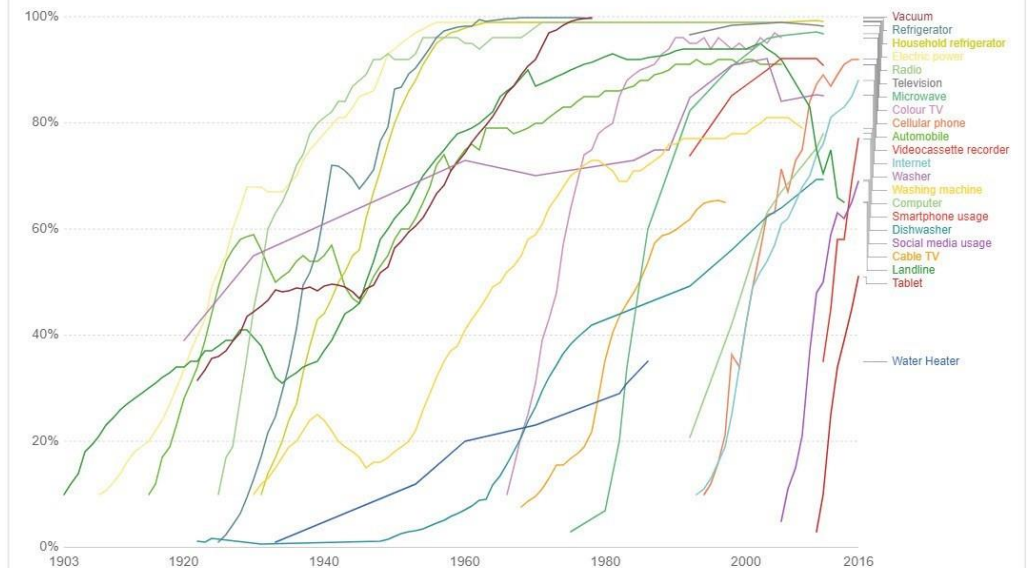


Oxford Cornmarket 1920



Technology adoption by households in the United States

Technology adoption rates, measured as the percentage of households in the United States owning, or the adoption rates of, a particular technology. See the sources tab for definitions of household adoption, or adoption rates, by technology type.



Source: Comin and Hobijn (2004) and others

OurWorldinData.org/technology-adoption/ • CC BY-SA

Multiple Domains

Urban

- Many varied interactions, low speed, high infrastructure

Peri-Urban

- Fewer and varied interactions, low speed, low infrastructure

Highways

- Many homogeneous interactions, high speed, high and predictable infrastructure

Rural

- Few but varied interactions, high speed, low and variable infrastructure

OXFORDSHIRE
>SMART
>COUNTY

Project LEO

Local Energy Oxfordshire

Delivering a transformative integrated smart local energy system to maximise prosperity from local energy systems and demonstrate new value creation opportunities.

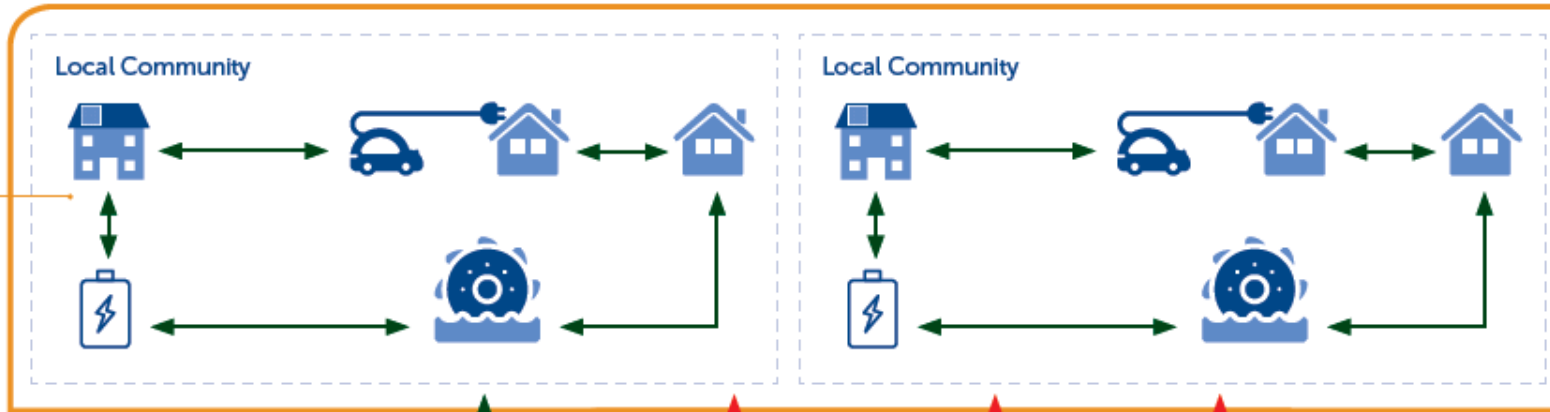


Objectives

The specific objectives of Project LEO are described below. The main innovations to be trialled are:

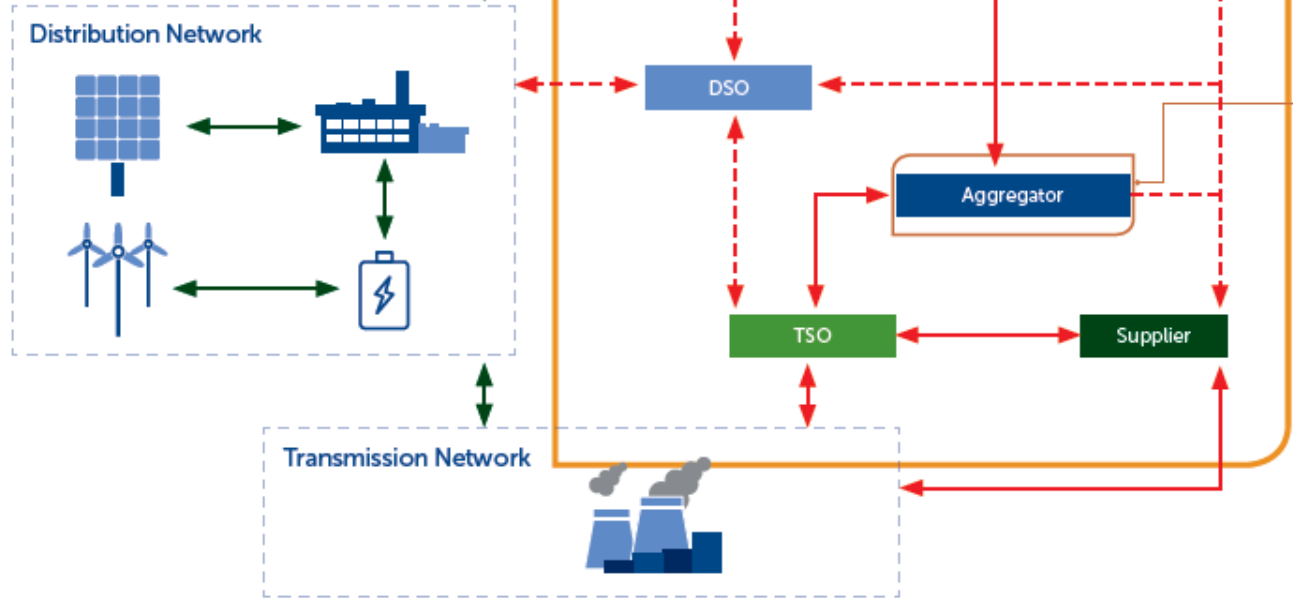
- 1.** Demonstrate a commercially viable local energy market that operates at the scale of a county.
- 2.** Demonstrate assets working in consort (as if behind the meter) to maximise commercial opportunity.
- 3.** Inform the role of a DSO acting as a neutral market facilitator in a market with competitive range of service providers.
- 4.** Inform the use of smart flexibility, including storage, Vehicle to Grid (V2G), smart heat, to overcome grid constraints.
- 5.** Develop new business approaches to fund renewable generation in a post-FiT world.
- 6.** Inform the interaction between different emerging commercial Marketplace Operators with the DSO Market Integrator and DER/Service Providers.
- 7.** Deliver a model for future local energy system mapping across all energy vectors through the use of multiple data sources and analysis tools.

LEO enables local energy trading



LEO delivers a mature, quantified, and engaged supply of flexibility within a regional bound

Adapted from the SSEN
"Supporting a Smarter
Electricity System –
Our Transition to DSO" paper

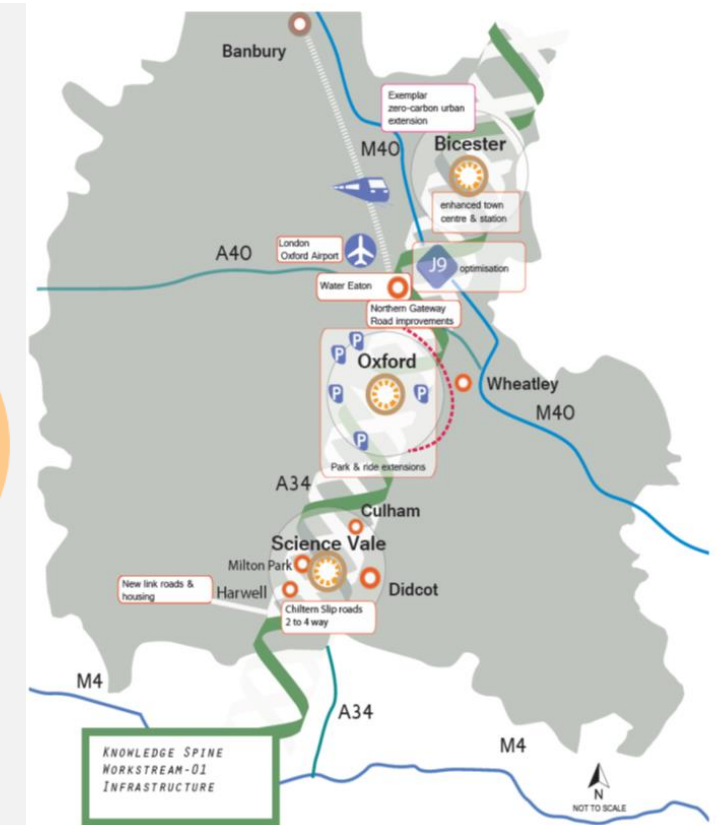
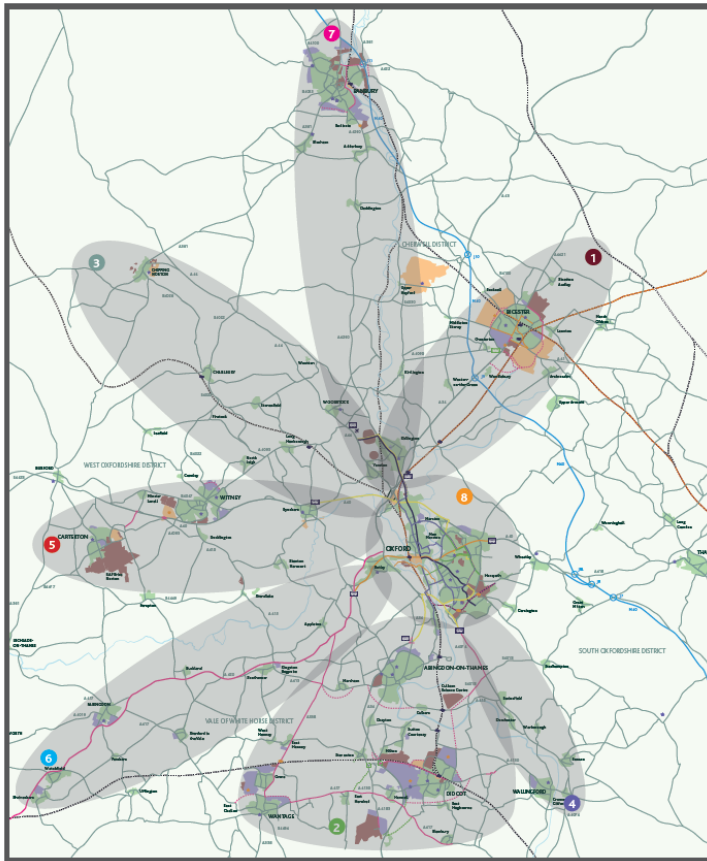


LEO develops the interaction between marketplace operators

TRANSITION delivers the data exchange requirements and trading opportunities for a flexibility market.

Existing information flow
New information flow
Electricity flow

Living Oxfordshire; County Living Lab



- ✓ Ideation, testing, scaling and validating through an integrated system
- ✓ Cross sector additionalities
- ✓ International partnerships
- ✓ Local knowledge and expertise
- ✓ Derisk internal and external investment
- ✓ Promote growth and equitable adoption

Disruptive change is happening faster than ever

Climate Change is THE biggest disruption

Leadership and Vision is vital

Councils need to embrace R&D style approach to Innovation

Change approach to risk – Not Changing is the greatest risk

Cross sector collaboration is key – solve problems quicker

Climate could also be seen as an opportunity for new sectors to develop



Get in touch; we are here to support others in delivery of innovation in public services

IHub Brochure overview of all our projects https://issuu.com/occir/docs/occ_ihub_q4_2019

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