CONSENSUS BRIEFING NOTE 1

Change Labs
Sites of Experimentation for Sustainable Living
This Briefing Note provides an overview for government, corporate and civil society actors interested in learning about experimental approaches to designing solutions for sustainable living – a collection of activities we term ‘Change Labs’.

Change Labs are typically concerned with prototyping and trialling new policy, product, service or behavioural innovations with people in real-life settings. This allows for the iteration and improvement of ideas with the ultimate goal of mainstreaming successful innovations.

This Briefing Note outlines some generic approaches adopted by Change Labs for sustainable living and includes a series of illustrative international case studies. These cases exemplify a variety of Change Labs often involving collaboration between commercial, government and academic partners operating in diverse settings and at different scales. Despite this diversity, Change Labs often follow similar processes of experimental design (outlined below) and share key characteristics as detailed overleaf.

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**Change Labs**

**Generic Process**

<table>
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<th>Co-creation</th>
<th>Exploration</th>
<th>Experimentation</th>
<th>Evaluation</th>
<th>Implementation</th>
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<td>Involving users in understanding needs &amp; opportunities for change</td>
<td>Co-designing, exploring and refining ideas for change</td>
<td>Testing ideas with users in simulated or real-life settings</td>
<td>Evaluating user responses &amp; improving ideas</td>
<td>Application &amp; mainstreaming of innovation</td>
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Key Characteristics

Change Labs

Radical innovation
Focusing on radical improvements to products, services and policies to enhance efficiencies, user experiences and sustainability.

Iteration
Developing, prototyping, applying and evaluating concepts in experimental settings to manage innovation risk before upscaling. Failure is accepted as inherent in the learning process of Change Labs.

Collaboration
Typically involving multi-disciplinary teams to address complex societal challenges and cross-sectoral actors to enhance spin-off opportunities for supporting identified innovations.

User-engagement
Engaging with users from design phases (to gain in-depth understanding of their needs) to full experimentation (to evaluate responses and ideas for improvement). This real-life, real-time evaluation enhances chances of innovation success in the real world.

Transformative knowledge
Testing ideas that can be upscaled to yield large-scale technical, social and/or economic transformation.

Learning and re-framing
Facilitating critical thinking, reflection and change in everyday assumptions, behaviours and actions.
Change Labs Case Studies

Multiple Applications and Scales

Change Labs have been used by a range of actors for different purposes and at different geographical scales. We have classified our case study labs according to their different experimental settings ranging from City Labs to Simulated Living Labs and In-House Labs.

City Labs

City Labs often include trialling new policies, public services, social innovations or community initiatives within a particular geographical region. These processes are frequently initiated by government or civil society but are typically collaborative, involving cross-sectoral interests. Our case studies highlight a spectrum of experiments that focus on novel ways to address societal needs for sustainable transport, civic engagement, accessible food and enhanced city living.

Simulated Living Labs

Simulated Living Labs involve the co-design and evaluation of innovative products and services with users in an imitation ‘home’ environment. As our case studies illustrate, these are often university or corporate sector-led and focus on fine-tuning new technology, product, service or experience prototypes based on user feedback, experiences and needs.

In-House Labs

In-House Change Labs have similar features to Simulated Living Labs however take place in real home settings. They aim to reduce potentially misleading impacts of observing behaviour in simulated environments and provide feedback from real-users in real time situations. Our In-House case studies outline experiments in behaviour change and new systems for more sustainable household consumption.
Case Studies

City Labs

**Oxford Road Corridor**

**MANCHESTER, UK**

A low-carbon urban laboratory led by a public-private partnership that aims to monitor and redevelop Manchester’s physical infrastructure to achieve environmental protection and economic growth. This urban lab includes investments in transportation upgrades, communication networks, energy efficient retrofits and smart metering in a unique business location in the city. By deploying novel approaches to sustainability, the project aims to produce new knowledge that can feed into future policy development and sustainable city design.

**GOAL:** Developing a low carbon zone within Manchester using innovation and partnership as principle drivers.

**WHO:** Manchester Metropolitan University, The University of Manchester, the Central Manchester University Hospitals NHS Foundation Trust, and Bruntwood property company.

**MORE INFORMATION:** [www.corridormanchester.com](http://www.corridormanchester.com)

**CityWatch**

**DUBLIN, IRELAND**

Using Dublin as a laboratory, the CityWatch collaborative research project is fitting sensors across the city to gather real-time information to improve city living. Some of the novel interventions being co-designed and tested include noise and pollution sensors, citizen smart phone sensors, civic engagement platforms and ‘gamification’ solutions. CityWatch ultimately aims to contribute to open data sharing, innovation and sustainable city reporting.

**GOAL:** A smart and sustainable city.

**WHO:** Trinity College Dublin, Intel Labs Europe and Dublin City Council.

**MORE INFORMATION:** [www.citywatch.ie](http://www.citywatch.ie)

**The Food Commons**

**INTERNATIONAL**

The Food Commons project promotes a more sustainable, accountable, local and fair food chain, urging cities internationally to re-imagine regional food systems. The model comprises a connected network of financial, organisational and physical infrastructure that supports local and regional food markets and enables small food businesses to operate effectively. Atlanta, Georgia in the United States was selected as a prototype site in November 2012 to initiate the programme, first on a neighbourhood scale and ultimately across the 10 county Atlanta metropolitan region to ensure universal access to healthy, sustainable, affordable food.

**GOAL:** Regional food security.

**WHO:** Food Commons (a non-profit organisation) with community and enterprise partners.

**MORE INFORMATION:** [www.thefoodcommons.org](http://www.thefoodcommons.org)

**LLGA Cities Pilot the Future**

**CITYMART.COM**

This initiative aims to accelerate efficiency and innovation in cities worldwide, providing distinct market opportunities in the process. Innovators are invited to provide novel solutions to complex city challenges via the CityMart.com platform, with winning entries piloted in cities around the world. Sustainability challenges addressed include the need to fight food waste and food poverty, engage in collaborative consumption, and manage traffic noise pollution in residential areas. Aiming to improve the opportunities and experience of citizens, the programme connects city authorities with social innovators from across sectors to co-design sustainable solutions for cities worldwide. Through providing a platform for piloting radical innovations in city experiments, CityMart aims to accelerate the mainstreaming of solutions for better city living.

**GOAL:** Addressing societal challenges in cities.

**WHO:** CityMart (non-profit organisation) platform, international partner cities and self-selecting social innovators.

**MORE INFORMATION:** [www.citymart.com](http://www.citymart.com)
Simulated Living Labs

MIT PlaceLab (House_n)
MASSACHUSETTS, U.S.A, INSTITUTE OF TECHNOLOGY

MIT are often credited as the original founders of the Living Lab concept. Their "House_n" project, in collaboration with TIAX LLC, involves a purpose built residential apartment in Cambridge, Massachusetts. This living laboratory represents a highly flexible and multi-disciplinary observational research facility for the study of human interaction with new technologies. Here, researchers can observe the behaviour of volunteer residents, with an end goal of refining user interface technologies aimed at helping people control their environment, save resources and stay healthy.

GOAL: Technology development and user interactions.
WHO: Massachusetts Institute of Technology and TIAX LLC technology company.
MORE INFORMATION: www.architecture.mit.edu/house_n/placelab.html

The Salford Energy House
SALFORD UNIVERSITY, UK

The Salford Energy House is the world's first energy house that has been reconstructed in a fully environmentally controllable chamber. Constructed with traditional building materials and with capabilities to simulate a range of weather conditions, it serves as a unique facility where researchers work with industry to develop and test new technologies and solutions to improve the energy efficiency of the existing UK housing stock.

GOAL: Energy efficiency in the home.
WHO: Salford University and industry bodies.
MORE INFORMATION: www.salford.ac.uk/energy/energy-house

Philips InnoHub
INTERNATIONAL

Philips Applied Technologies launched their first InnoHub in Singapore in 2004, providing simulated environments and support to foster break-through user and market ideas in an open innovation setting. The facilities are available for use by wider academic groups, enterprises and companies through membership or commission based fees. Entrepreneurs can avail of Philips' experienced consultants and Living Labs that simulate home, retail and healthcare environments with the aim of evaluating and accelerating innovations in lifestyle, health and wellbeing.

GOAL: Product innovation from idea generation to evaluation.
WHO: Philips Applied Technologies and self selecting entrepreneurs.
MORE INFORMATION: www.philips.com.sg/about/company/local/developmentmanufacturing/innohub/index.page

Since 2006, 340 Living Labs have become members of the European Network of Living Labs (ENoLL).
www.openlivinglabs.eu

From technology to social innovation labs

Socially-oriented Change Labs often draw inspiration from user centric and design thinking approaches applied in Living Labs. These processes are now being applied to assist the public sector in addressing social challenges. Examples include the innovation charity NESTA in the UK, the TACSI centre for social innovation in Australia, and Denmark's Mindlab, a cross-governmental innovation unit that involves citizens and businesses in developing new solutions for the public sector.
CONSENSUS HomeLabs
TRINITY COLLEGE DUBLIN, IRELAND

CONSENSUS is an Irish collaborative research project on sustainable household consumption and behaviour change, led by Trinity College Dublin. The first phase of CONSENSUS involved visioning workshops with stakeholders and citizens to co-design future scenarios for more sustainable food and water consumption in the home. A range of scenario concepts were proposed integrating social, policy and technical innovations for more sustainable everyday eating and personal washing practices. In 2014, CONSENSUS launched their HomeLabs project which will design and test these concepts with a selection of real life households. CONSENSUS HomeLabs include cross-sectoral actors to increase impact and learning.

GOAL: Sustainable energy and water consumption practices.
WHO: Trinity College Dublin with cross-sectoral collaborators.
MORE INFORMATION: www.consensus.ie/homelab

SusLab
INTERNATIONAL

SusLab represents an international infrastructure that supports the prototyping and evaluation of technologies for decreased energy consumption in the home. Using both real households and simulated life settings, the project aims to create living laboratories in different partner countries to develop and test innovative energy saving processes, products and system solutions with users. The SusLab platform allows the sharing of practices and ideas between nations and participants, increasing the prospect of success for new innovations.

GOAL: Reduced energy consumption.
WHO: 11 research institutions including TU Delft and Imperial College London.
MORE INFORMATION: www.suslab.eu

LEEDR: Low-Effort, Energy Demand Reduction
LOUGHBOROUGH UNIVERSITY, UK

LEEDR integrates social science, design and engineering disciplines to develop solutions for reducing domestic energy consumption within families’ everyday routines. Working with private sector collaborators, the research project tests social and technical innovations for energy demand reduction within real households in the UK, assessing their possible impacts on family life.

GOAL: To explore digital innovations for reduced energy consumption.
WHO: Loughborough University.
MORE INFORMATION: www.leedr-project.co.uk

“Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world”

Joel A. Barker, futurist & lecturer
Future Possibilities

Change Lab methodologies have been adopted worldwide, with fruitful results for identifying solutions to complex societal challenges, from sustainable resource use to community wellbeing. Although the common methodological process of co-creation, prototyping and experimentation originated in design and technology development fields, Change Labs are increasingly applied in the social sciences and by cross-sectoral actors to identify new services, behaviours and processes for sustainable living. Generating pivotal user feedback, the most successful experiments are those that balance the fine line between radicalism and reality to create implementable yet innovative results. The flexibility that Change Labs offer to experiment with radical innovations in controlled environments prior to mainstreaming, and the inherent learning processes that ensues, make them crucial in addressing key sustainability challenges of our time.

This publication was authored by the CONSENSUS research team in 2014. CONSENSUS is an Irish Environmental Protection Agency funded research project on sustainable household consumption and behaviour change. Launched in 2009, CONSENSUS has gained international recognition for its use of cutting-edge behavioural science and collaborative visioning exercises to generate innovations for sustainable consumption in the areas of water, energy, food and transport.

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