Social influence and the adoption of low carbon *digital* innovations

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SILCI
Social Influence and *disruptive* Low Carbon Innovations

Tyndall°Centre®
for Climate Change Research

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European
Research
Council

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Life is digitalising

The Atlantic [www.theatlantic.com/photo/2018/11/smartphones-are-everywhere/575878/]

Digital *consumer* innovations can potentially help reduce emissions in (at least) five ways.

(1) Shift from owning to **accessing**.

car clubs

ride-sharing

shared ride-hailing

Digital *consumer* innovations can potentially help reduce emissions in (at least) five ways.

(1) Shift from owning to **accessing**.

(2) Increase **utilisation** & reduce waste.
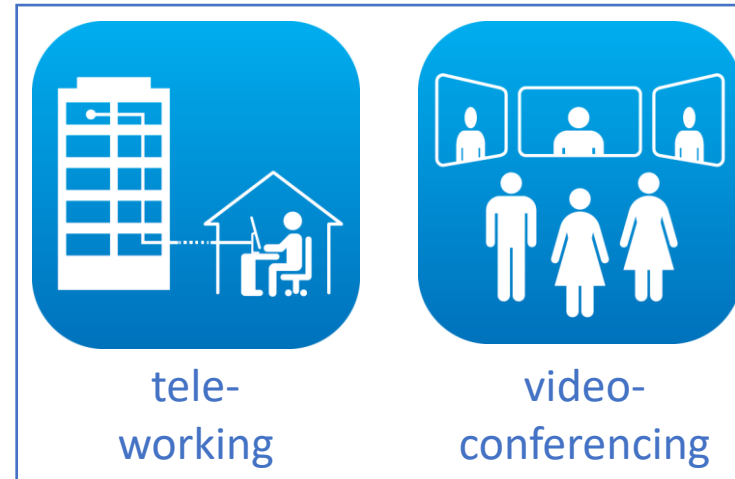
P2P car-sharing

P2P electricity

11th hour apps

Digital *consumer* innovations can potentially help reduce emissions in (at least) five ways.

(1) Shift from owning to **accessing**.

(2) Increase **utilisation** & reduce waste.

(3) Substitute for physical **movement**.

tele-working

video-conferencing

digital farmers markets

Digital *consumer* innovations can potentially help reduce emissions in (at least) five ways.

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(3) Substitute for physical **movement**.

(4) Improve **control** & management.
(+ electrification of end-use)

smart heating

smart lighting

electric vehicles

e-bikes

Digital *consumer* innovations can potentially help reduce emissions in (at least) five ways.

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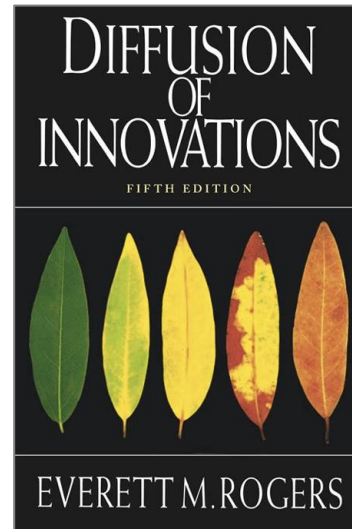
(5) Improve **system performance**.

smart home appliances

PV + storage

electric vehicle-to-grid

How do new things spread?
The **diffusion of** digital low-carbon **innovations**

Diffusion =
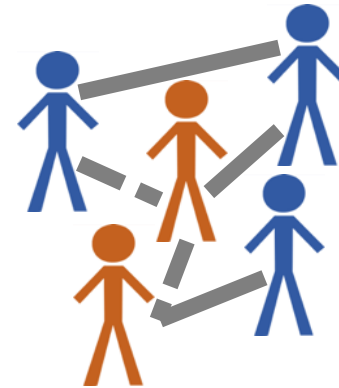*Communication over time about an innovation among members of a social system*

We used Rogers' **Diffusion of Innovations** as our analytical framework

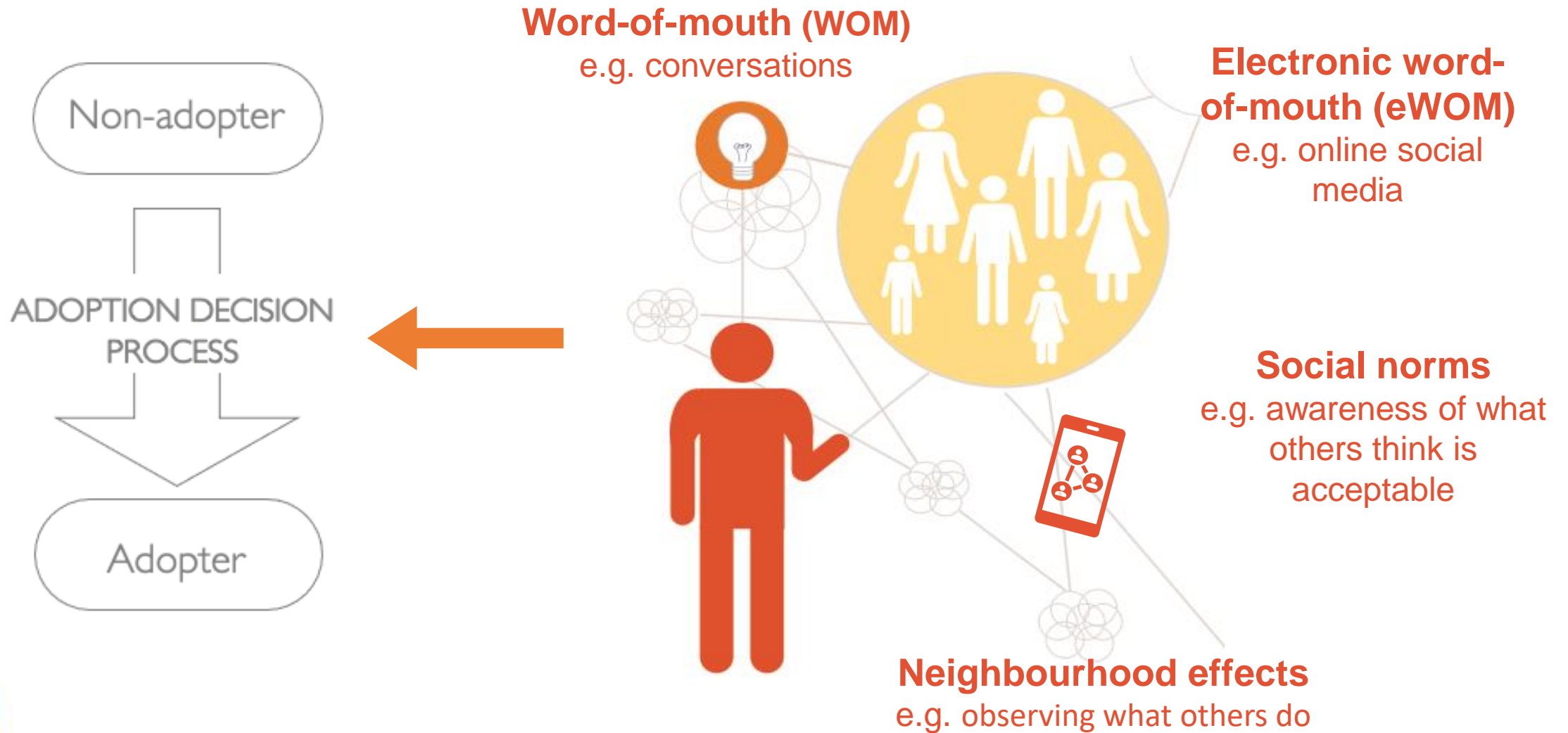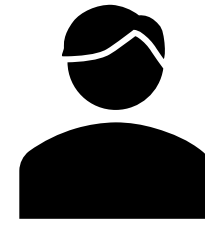**Adopter Characteristics**

Innovation Attributes

Social Networks

Social Influence (Information flows)

Types of Social Influence

Non-adopter

ADOPTION DECISION PROCESS

Adopter

Word-of-mouth (WOM)
e.g. conversations

Electronic word-of-mouth (eWOM)
e.g. online social media

Social norms
e.g. awareness of what others think is acceptable

Neighbourhood effects
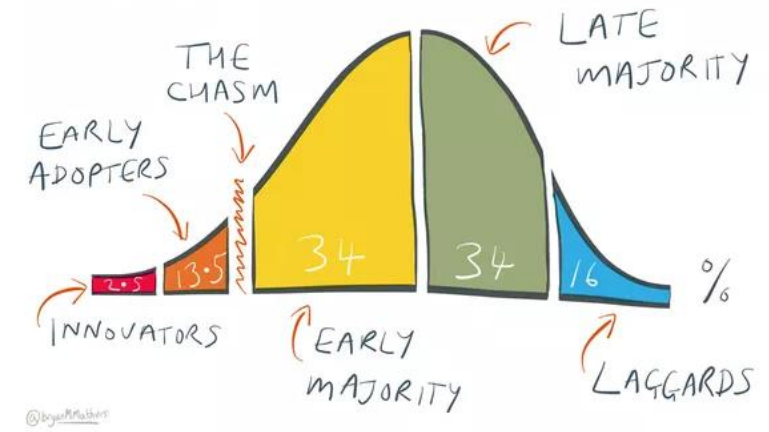e.g. observing what others do

Social influence in the adoption of low carbon digital consumer innovations

adopters

n=~100 per innovation
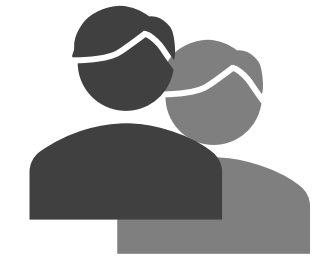
non-adopters

n=~100 per innovation

Commonalities across all innovations

vs.

**high propensity
non-adopters**

**low propensity
non-adopters**

WOM (word of mouth)
e-WOM
social norms
neighbourhood effects

Commonalities across all innovations

vs.

high propensity non-adopters   **low propensity non-adopters**

WOM (word of mouth)   + **
e-WOM   + **
social norms   + **
neighbourhood effects   + **

** p<.01
* p<.05

Differences across groups of innovations

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TRIAL

Cluster 1

11th hour apps   meal kits

Cluster 2

EVs   Elec. generation with storage

Cluster 3

smart heating   smart lighting

eWOM important for all

Roubix photo source: geekologie.co.uk

Differences across groups of innovations

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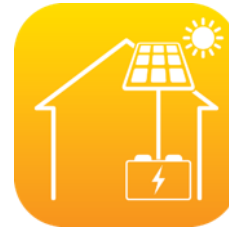
Cluster 1

11ᵗʰ hour apps

meal kits

Cluster 2

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Elec. generation with storage

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smart heating

smart lighting

WOM and social norms important

Roubix photo source: geekologie.co.uk

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Context characteristics and social influence mechanisms

Trust in users

Peer-to-peer
ride-sharing
sharing personal
space within a
vehicle for a journey

Low salience

Smart home
technologies
use within home,
out of sight

Community-based

Digital food hubs
local community network
of food producers
and consumers

To aid diffusion of *digital* consumer innovations which can help reduce CO_2 emissions
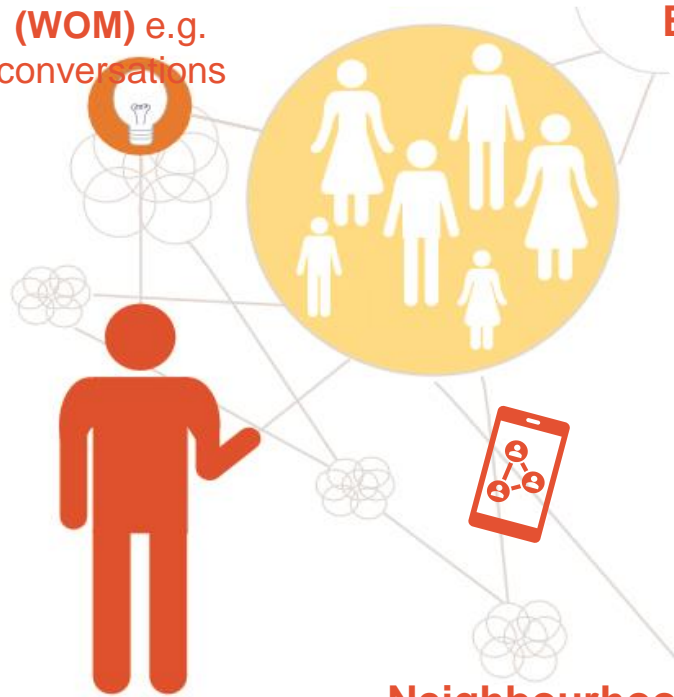
Word-of-mouth (WOM) e.g. conversations

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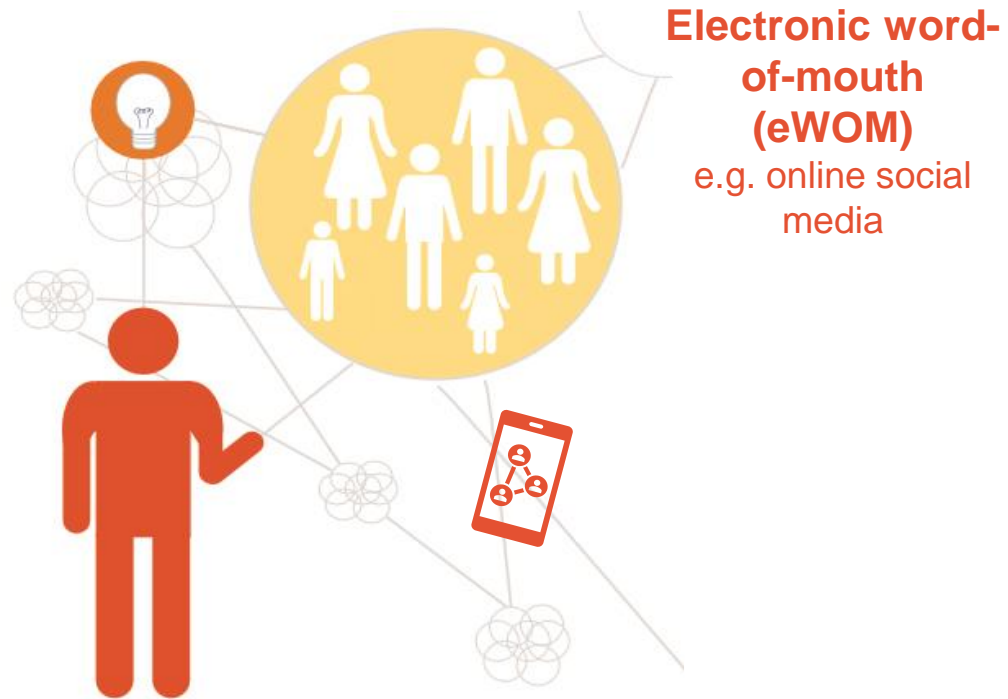
Social norms e.g. awareness of what others think is acceptable

Neighbourhood effects e.g. observing what others do

… social influence is important

To aid diffusion of *digital* consumer innovations which can help reduce CO_2 emissions

Electronic word-of-mouth (eWOM)
e.g. online social media

… **social influence is important**

eWOM is most important

To aid diffusion of *digital* consumer innovations which can help reduce CO_2 emissions

Social norms
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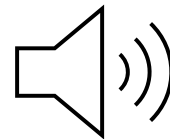harness innovation visibility

To aid diffusion of *digital* consumer innovations which can help reduce CO_2 emissions

Trust in users

Low salience

Community-based

… **social influence is important**

eWOM is most important

harness innovation visibility

tailor strategies to overcome barriers