



mediaresearch

Goldsmiths

UNIVERSITY OF LONDON



HITACHI
Inspire the Next

MaaS Scotland Annual Conference

Workshop – Behavioural Change

23rd June 2022

Andrew Broadbent (Hitachi Europe Ltd)

Prof. Jonny Freeman (Goldsmiths, University of London)

Support people's happiness through realizing a sustainable society with data and technology

Society People

Planetary Boundary

Social and economic development that protects the earth

Environment

Resilience

Safety & Security



Well-being

A society in which every individual is comfortable and active

Fulfilling life

Respect for Human rights

Respect each other

Power Grids

- Interconnection of renewable energy plants through HVDC



Railway Systems

- Delivered hybrid multiple units for Europe
- Approx. 50% less energy consumption compared to current diesel trains
- Up to 95% recyclable



Nuclear Energy

- Contribute to Fukushima and resume existing projects
- Promote the new design (e.g. SMR) reactors with advanced technology



IoT

- Global data integration for the basis of CO₂ calculation and timely disclosure



EV mobility

- Higher efficiency motors and components
- Electrified together with First Bus transport in Glasgow



Wide range of green technologies for a green society

Sustainability scoring



- Achieved CDP's Highest Score of "Grade A" in Climate Change and Water Security

COP 26, Glasgow 2021



- Held the Hitachi European Innovation Forum
- Hosted "Towards Net Zero – Greening Cities Through Low Carbon Connected Urban Transport" event

WEF, Davos 2022



- Hitachi participated in the mainstream climate leadership panel with the Alliance of CEO Climate Leaders

Hitachi R&D : Green Mobility

– innovative solutions creating impact

Can we empower people to make better transport choices?



How can we create a more conscious Logistic ecosystem?

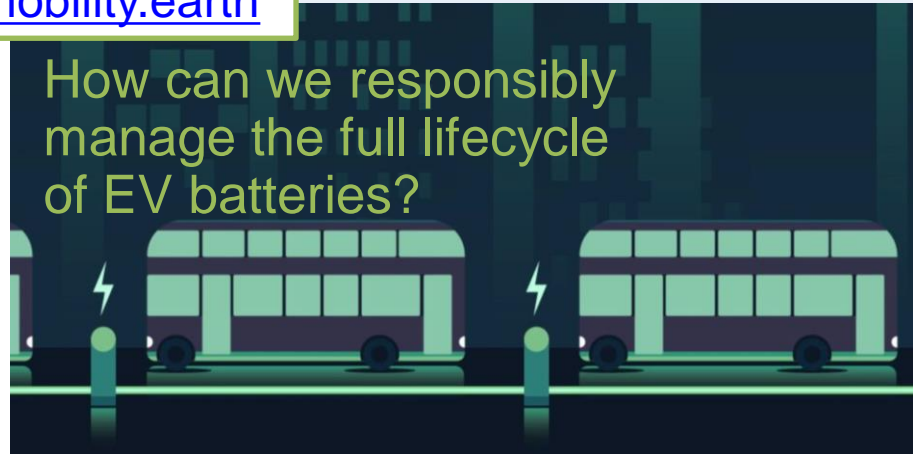


www.greenmobility.earth

How can we create the most efficient EV journeys?

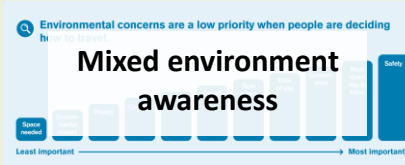
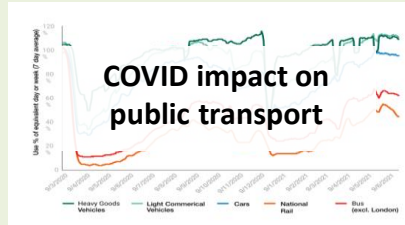
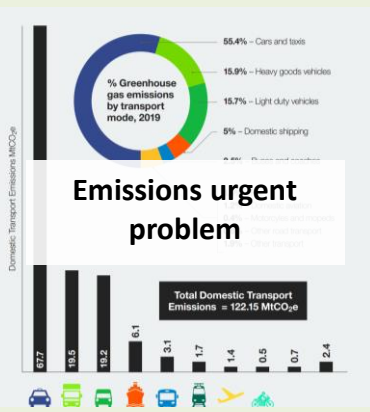


How can we responsibly manage the full lifecycle of EV batteries?



Dynamic pricing - what is the potential to motivate sustainable transport habits?

2020s



Short term - 2030s



- Trends: decarbonisation of transport, greater electrification, COVID impact on public transport, modal shift to private car use
- Variety of ticketing solutions globally and some of these have aspects of dynamic pricing in relation to capacity management and peak lopping for public transport
- Government loss of fuel tax revenue and potential for some form of future 'road pricing' ..
- Will public be attracted to adopting a dynamic pricing across all travel modes that could be linked to additional factors - air quality, modal choice, congestion, price of energy,

- i2 media research is a strategic research consultancy specialising in psychology, design and UX.
- Based at **Goldsmiths, University of London** i2 conducts academic and applied research.
- i2 is user-centred meaning we focus on understanding user needs, motivations, behaviours and attitudes and testing and evaluating solutions with users.
- By focusing our research and evaluation on the people you're creating *impact for*, we provide you with actionable insights to drive forward your ambitions, revenue generation and the overall impact of your organisation.
- We have a 20-year track record and have delivered over 300 projects since our formation.

The i2 media research team on this study



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Media Psychology
Audience Insight



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Specialisms:
Psychology of the environment
Quantitative methods



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Technical Director

Specialisms:
Web front and back end
VR, AR
Complex systems

Discovery research, Spring 2022

Desk Research

- What has been tested?
- What works?
- What research gaps?

Consumer & Key Opinion Leader Research

- Responses to concept of pro-environmental dynamic pricing?
- Appeal/opportunities?
- Barriers/ concerns?

What is the potential of dynamic pricing to motivate sustainable transport habits?

Develop an evidence base for key hypothesis

- Are more environment and sustainability aware people more responsive to dynamic pricing based on environmentally relevant variables (e.g., air pollution, carbon impact of transport mode)?

Explore potential, through secondary and primary research

- What are customer challenges in selecting mode of transport?
- What approaches are most promising?

What are prevalent consumer attitudes to dynamic pricing (any sector)?



- Consumers were quick to note the **negatives**
 - Lack of transparency and profit which felt exploitative were root causes of consumer frustration
 - Unfair for those on lower incomes

“There isn’t transparency, you don’t know when the cheap prices are coming”

- Noted positives for some customer groups, those with more time/flexibility can take advantage of lower prices
- Broadly accepted as a supply and demand fluctuation

“it’s disappointing but you can rationalise it. It’s supply and demand, it comes down to availability and you can charge more when it’s less available”

- When asked directly consumers would keep dynamic pricing models given prevalence and positives for some



What influences consumer acceptance of dynamic pricing based on environmental/sustainability variables?

- All would like to make more sustainable travel choices
- Inequality and convenience noted as key barriers to dynamic pricing based on environmental variables

"A lot of people who don't have a lot of money would buy an old car because they can't afford a cleaner newer one, so it would be hard for poorer people"

"Deep down we all care about the environment. But in any given situation you're going to rely on the convenience of the travel. I'm going to think about how I'm going to get from A to B."

- Be mindful of time windows on dynamic pricing (short journeys, real time variations, vs longer – term planning)
- The variables need to be personally meaningful, this is a design challenge





How do consumers make decisions on mode of transport?

- Cost, safety, convenience and availability are key travel decision considerations

"A day return (by train) seemed the easiest option, especially with the ULEZ charges which we'd now get stung with. The costs were similar probably by the time you added the ULEZ charge, but the train was more convenient, and simple."

- Cost can be higher for increased safety or convenience
- "I think about safety at night, I'd spend more money on an uber to be safe"*
- Contextual factors change priority of decision-making
 - What else do I want to achieve? (work, social)
 - Is my route going to be disrupted? (weather, busy events/traffic)
- Environmental factors were not mentioned in initial enquiry



Segmentation of travellers / consumers taking account of all relevant variables predictive of transport mode decisions:

- Life stage
- Resources
- Context (e.g., urban/rural)
- Attitudes to environment and sustainability



From MaaS platforms, we know the journeys passengers make.

We need more information on WHY.





PLUS, multiple important considerations:

- Messaging is critical
- Any new approaches must be perceived as fair
- Relevance is greater in urban areas
- Simplicity is Key (KISS: Keep It Simple Stupid)
- Most sustainable options should always be cheapest
- Explore how to reward desirable behaviours
- Importance of transparency, and comparability
- Carrots and sticks need to be big enough
- Interoperability is key
- Engage large employers
- Need a multi-modal, trusted broker: key role for public sector
- Include ACTIVE transport in MaaS
- Understand WHY consumers make the decisions they do

- Welcome feedback on our findings
- Ideas developed for addressing the WHY in MaaS platforms:
 - Stochastic experience sampling
 - Looking for partners with a MaaS platform to collaborate
- Committed to substantial R&D, focused on behavioural science for behaviour change:
 - Hitachi Europe Ltd and Goldsmiths partnership
 - Open to engaging with current and future pilots & demonstrator projects
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