



Connected and Fair

Ethical IoT for Social Housing



Outline

- Overview of ethics
- Importance of ethics for IoT
- Connected and Fair research
- Ethical principles
- Key messages and recommendations



What is ethics?

- A system of moral principles that guide individuals or groups
- Asks questions about what is right and wrong
- Rights and responsibilities
- Informs decision making

“Ethics comes before the rules, during the rules and after the rules.”

- Professor Luciano Floridi, Digital Ethics Lab - University of Oxford

What is ethical practice?

1. Beneficence - *“Do good”*
2. Non-maleficence - *“Avoid harm”*
3. Autonomy - *“Preserve human agency”*
4. Justice - *“Fairness and equity”*
5. Explainability - *“Understandable”*

What influences ethics?

- Personal characteristics and upbringing
- Social norms, cultural factors, religion
- Other contextual factors e.g. geography, politics
- Legal considerations
- Time

Why is ethics important for us?



Ethics examples

- “Disreputable landlords abusing tenants via technology, e.g. keeping heating too low, using stats to disguise disrepair, blaming tenants for damp caused by disrepair etc”
- “Extra environmental impact”
- “Most people are fully capable of adjusting their heating etc as required. This technology is fine for incompetent people... who should be looked after in care homes!”
- “What is all this technology doing to our health?”
- “The landlord will have their own agenda and tenants will be powerless”

How can we contribute?

Governance Ethics

Decision-making

Transparency

Trust

Purpose of data collection

Feedback and auditing

Codes of practice

Information

Technology Ethics

Embedded bias

Data quality

Data sharing

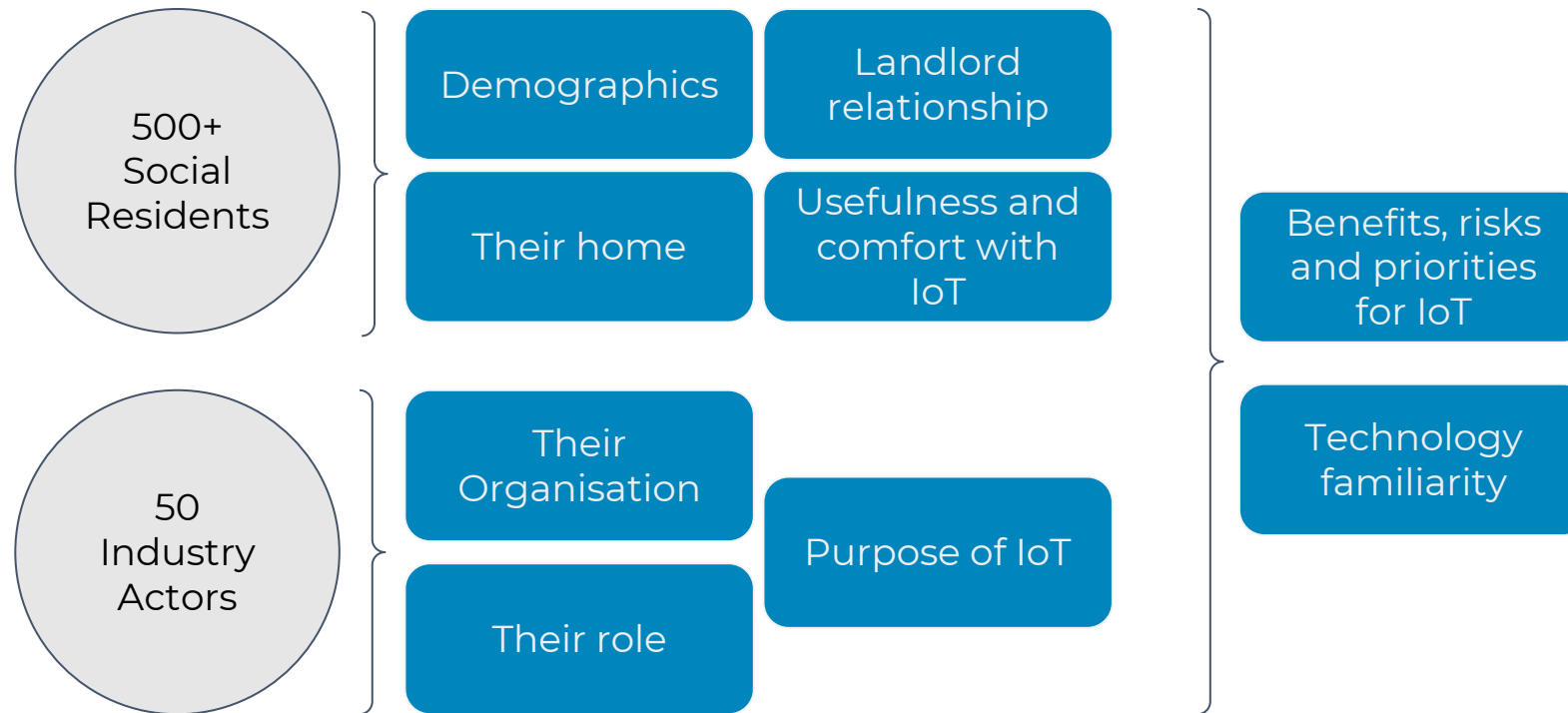
Data ownership

Fit for purpose

Usability

User empowerment

Connected and Fair Research



Connected Home Benefits and Risks

Benefits

- Improving resident safety
- Greater convenience
- Financial savings
- Social and environmental improvements
- Compliance

- Organisations > Residents

Risks

- Data privacy and sharing concerns
- High cost
- Lack of knowledge
- Lack of trust – technology and organisations
- Absence of regulation

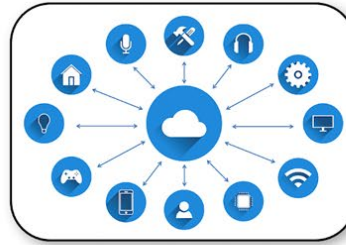
- Residents > Organisations

Resident acceptance

Connected fire alarms
Water leak detectors
Connected boilers
Temperature sensors
Indoor air quality sensors

Usefulness

Comfortable with technology



Convenience



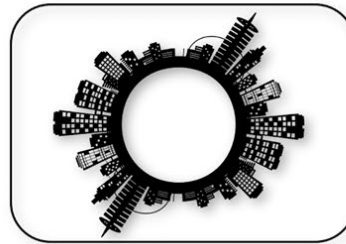
Compatibility with existing lifestyle



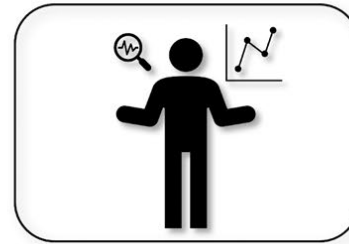
Risk



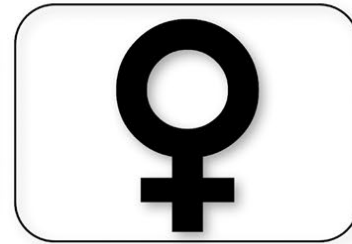
Ease of use



Trust in governance



Autonomy



Gender



Age

Ethical principles

- 1 Resident Privacy 
- 2 Avoiding Misuse of Data 
- 3 Fairness, Equity & Non-discrimination 
- 4 Improving Human Welfare 
- 5 Cybersecurity 
- 6 Public Awareness & Knowledge 
- 7 Transparency & Explainability 
- 8 Autonomy 

Key recommendations

Governance Ethics

Involve those most affected in decision making

Work collaboratively

Mechanisms for accountability

Ensure transparency to build trust

Contribute to public digital literacy

Key recommendations

Technology Ethics

Raise awareness of bias in people and algorithms

Use appropriate data for insights

Build systems that cater to a resident knowledge baseline

Use data to empower, not to have power over

Be clear and transparent on data purpose and ownership

Key messages

1. We have to operate ethically in the connected home sector
2. Everyone in the sector should be doing this, so we're actively promoting it and engaging in the conversation
3. There are two core approaches to addressing ethical issues - governance and technology
4. Everyone who is affected should have a say and we will facilitate this
5. It's not up to us to decide what is 'ethical'. Different situations will have different ethical issues