Feed me, Feed me
An Exemplar for Engineering Adaptive Software

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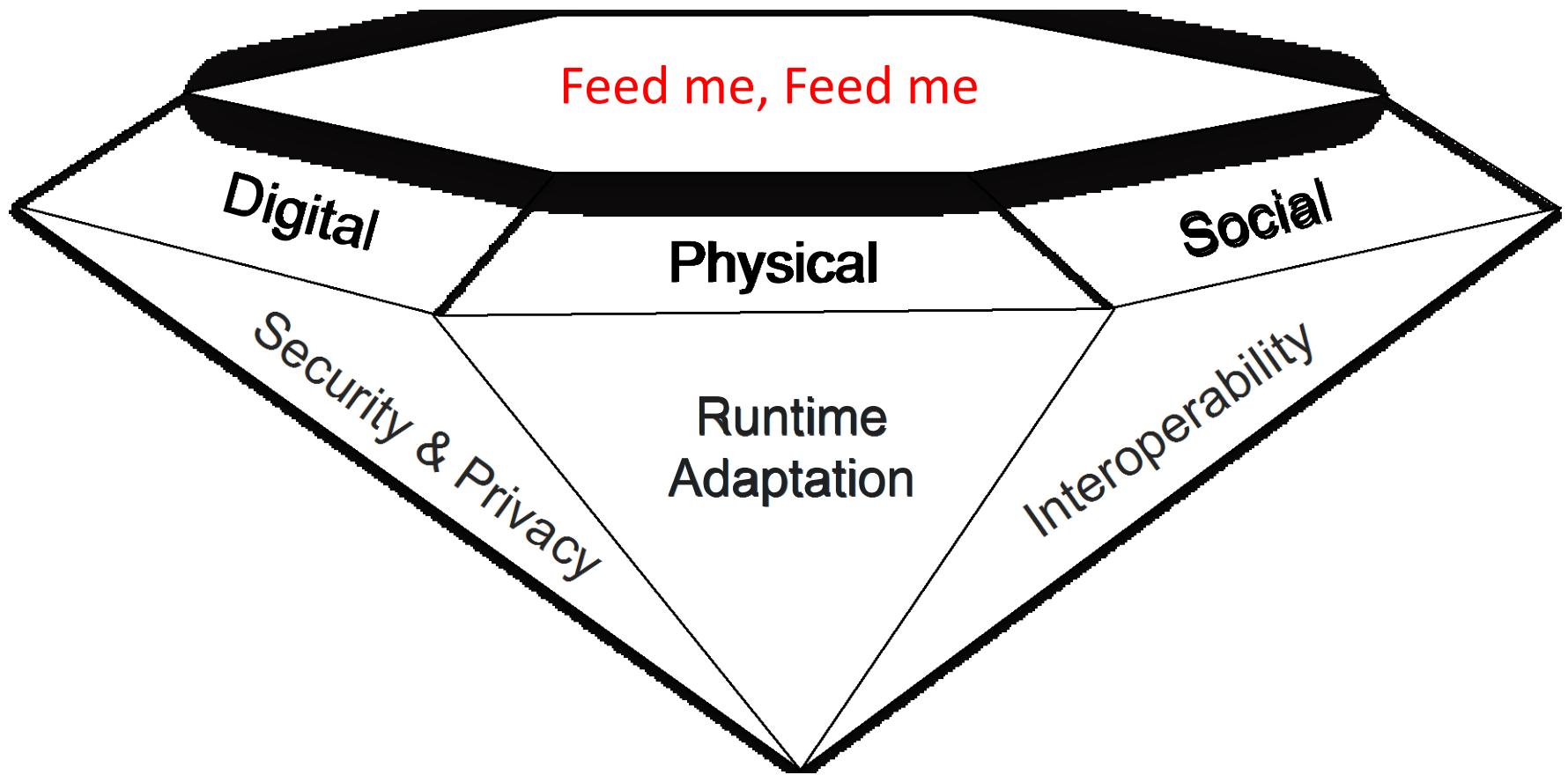
Exemplars for Adaptive Software

↗ Exemplars*

   ↗ Description of a typical problem in some application domain

   ↗ e.g., meeting scheduler, lift management, …

   ↗ Drive, communicate, and compare research

↗ SEAMS Exemplars http://self-adaptive.org/exemplars

(*) Feather et al., Requirements and Specification Exemplars, ASE Journal, 1997

The Many Facets of Adaptive Systems

Demonstrator

Feed me, Feed me
A day with Charlie

https://www.youtube.com/watch?v=pQdGoLSlXIM

Methodology

- ContraVision*

  - Explores users' reactions to futuristic or controversial technology

  - Positive and negative versions of the same story

  - Elicit a wide spectrum of requirements

(*) Mancini et al., Exploring Users' Reactions to Futuristic Technology, CHI 2010

User Perception of Technology
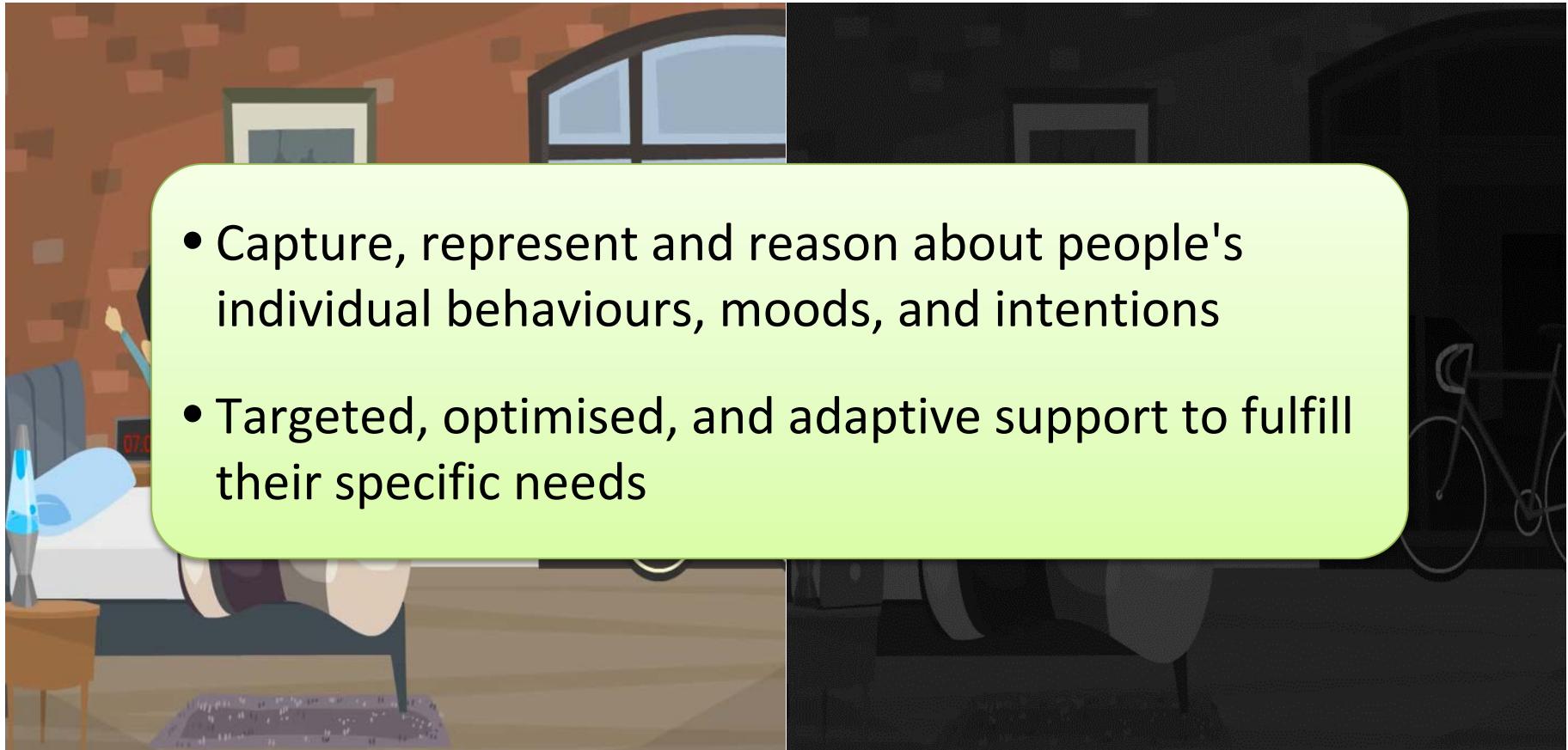
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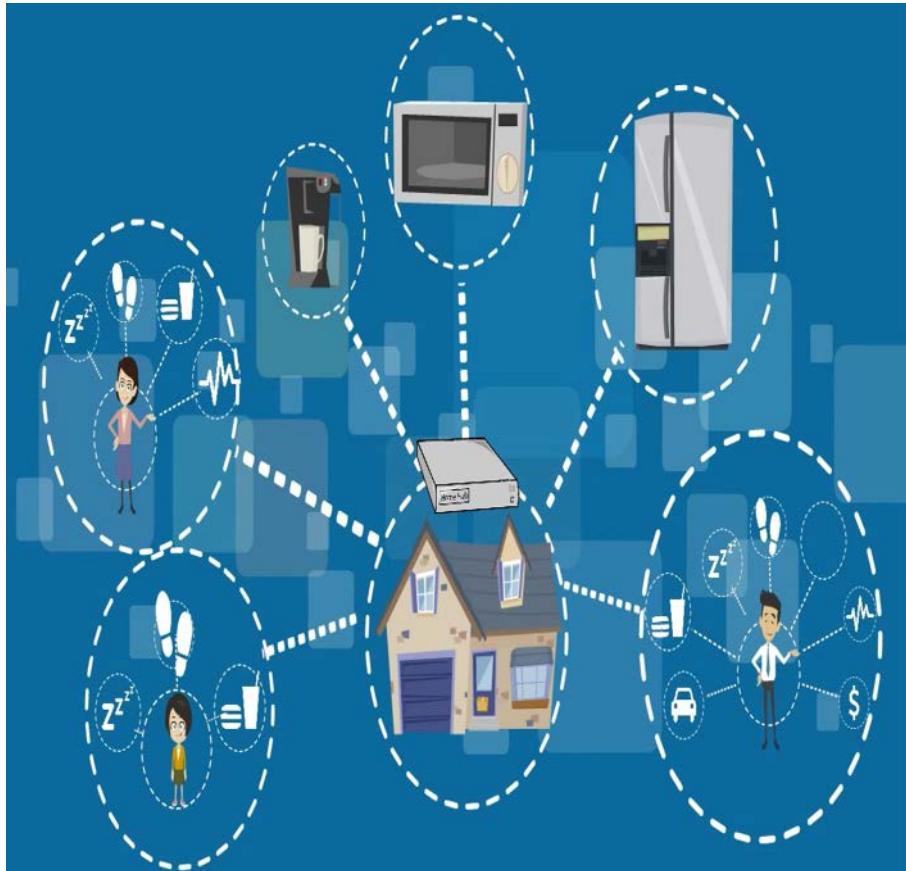
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User Perception of Technology
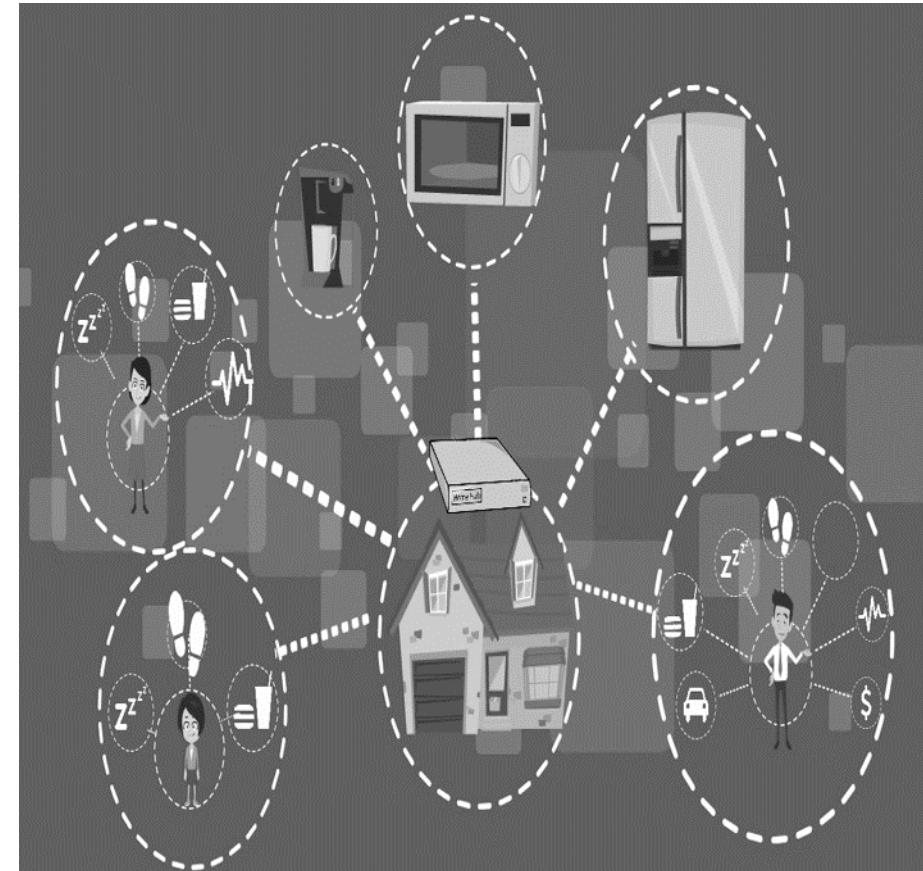
- Capture, represent and reason about people's individual behaviours, moods, and intentions

- Targeted, optimised, and adaptive support to fulfill their specific needs

Runtime Adaptation
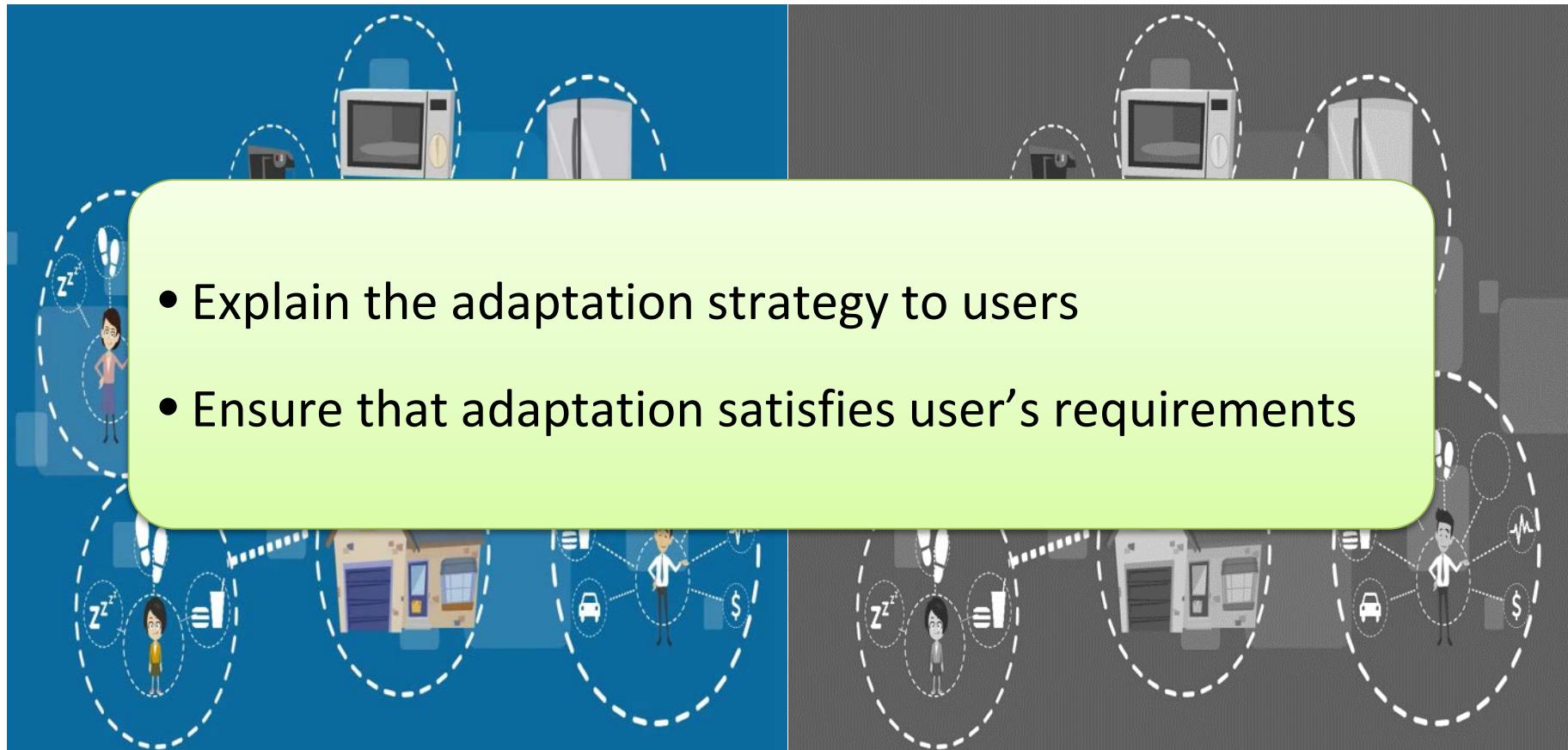
www.youtube.com/watch?v=pQdGoLSlXIM

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Runtime Adaptation

- Explain the adaptation strategy to users

- Ensure that adaptation satisfies user's requirements

Security & Privacy
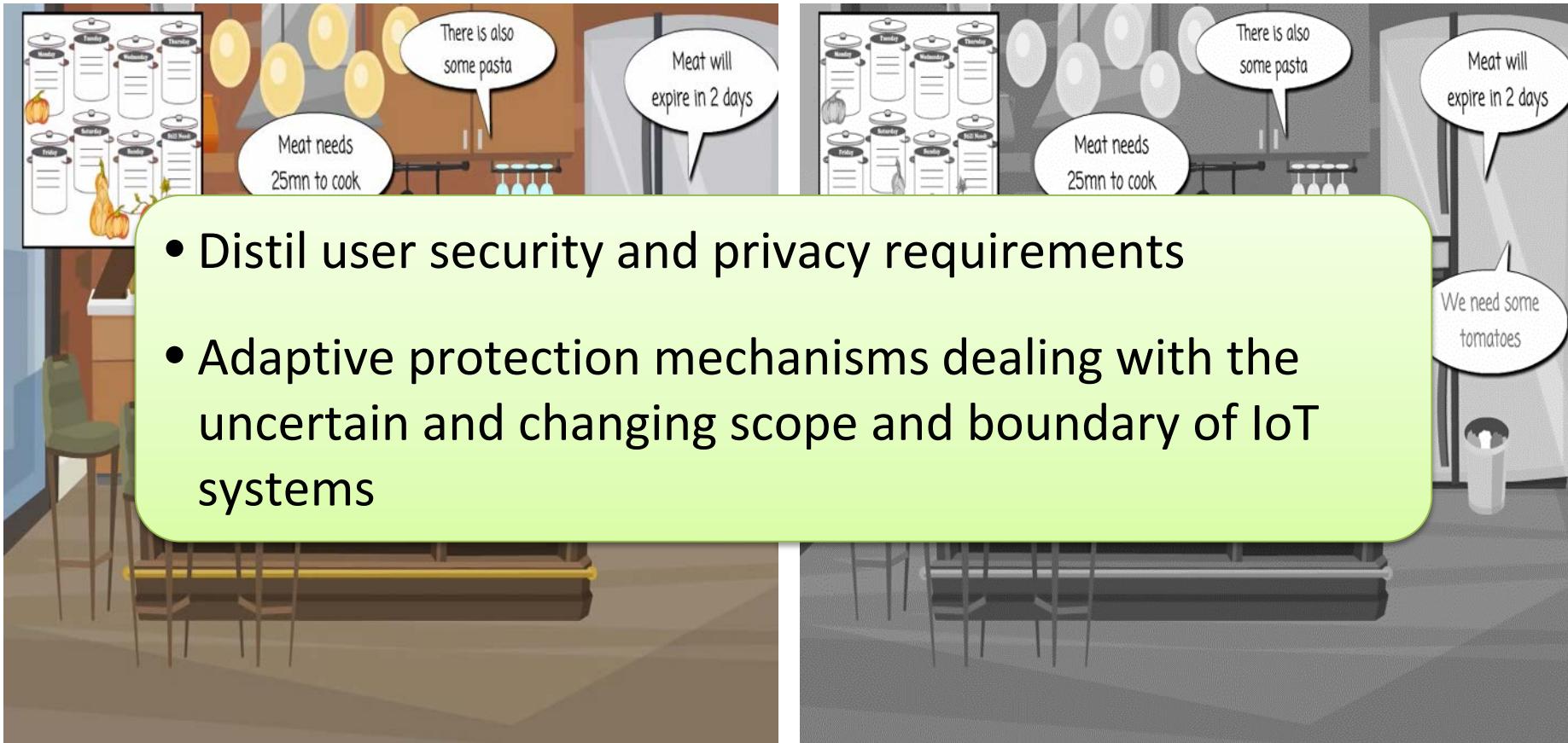
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Security & Privacy
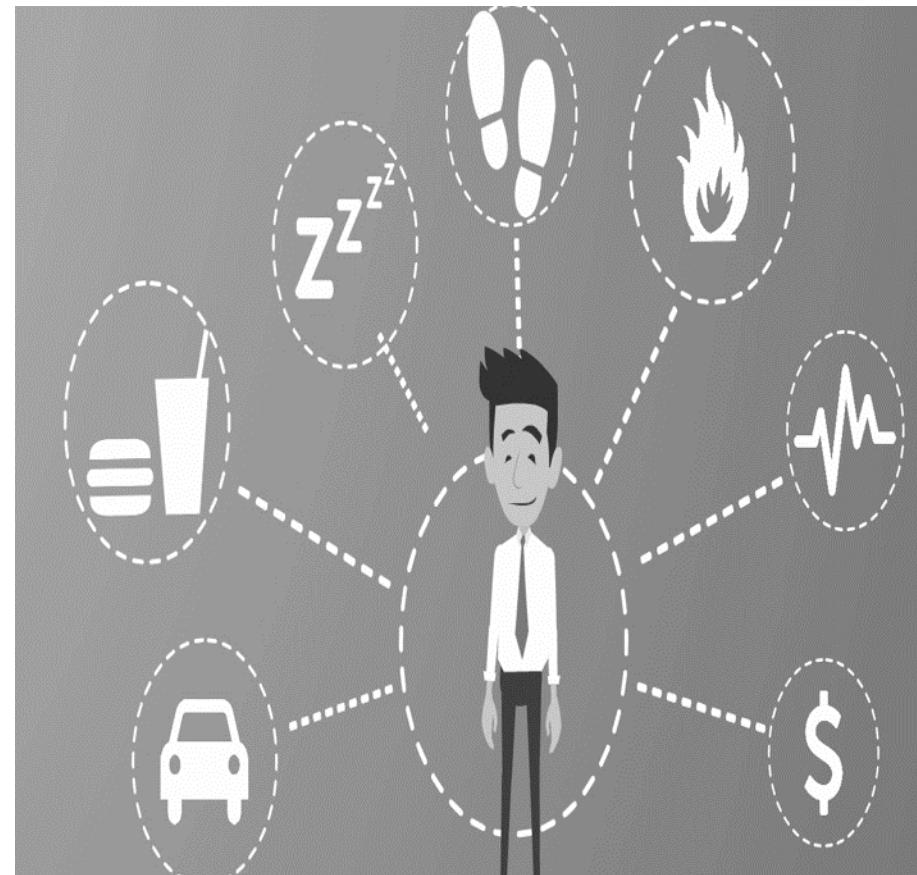
- Distil user security and privacy requirements

- Adaptive protection mechanisms dealing with the uncertain and changing scope and boundary of IoT systems

Interoperability
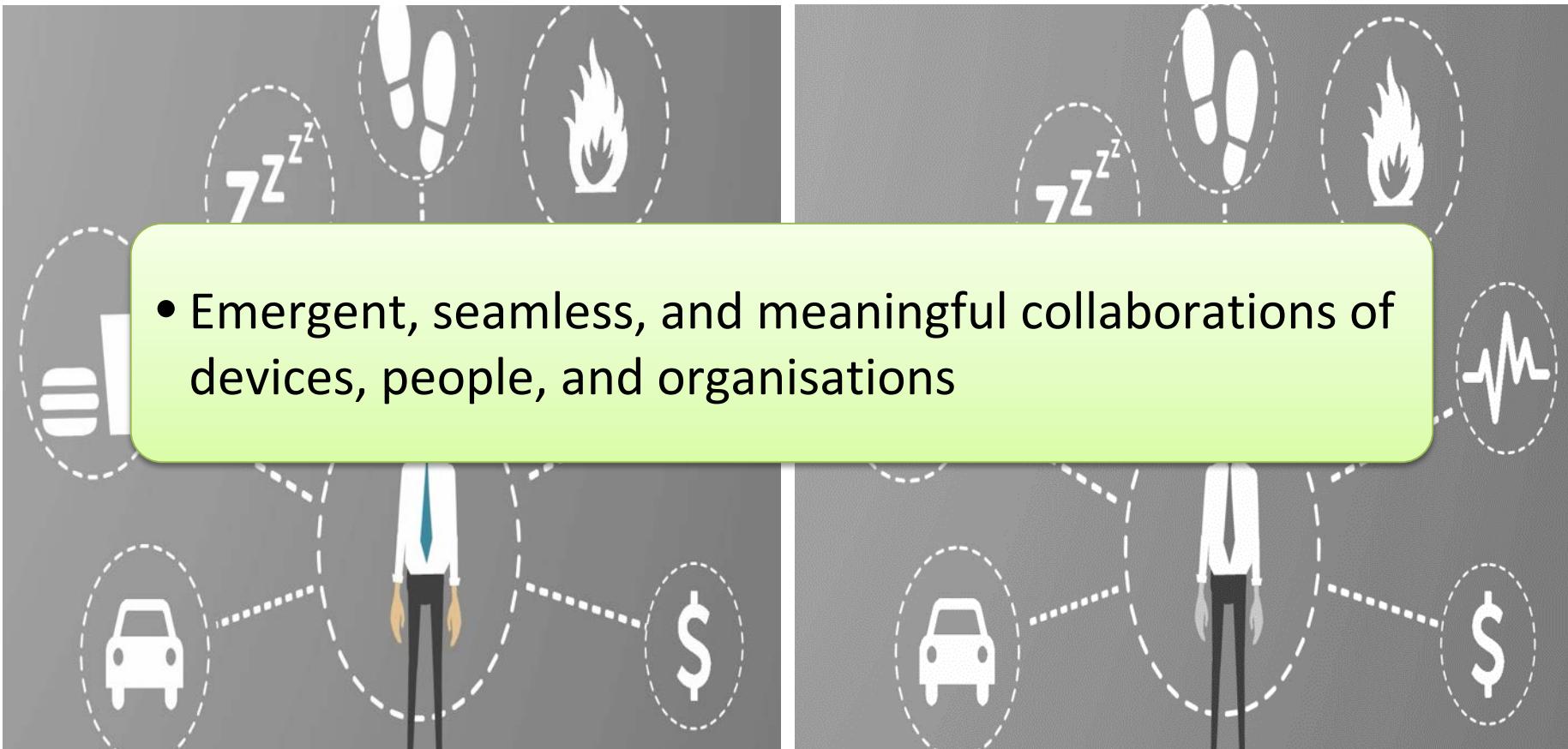
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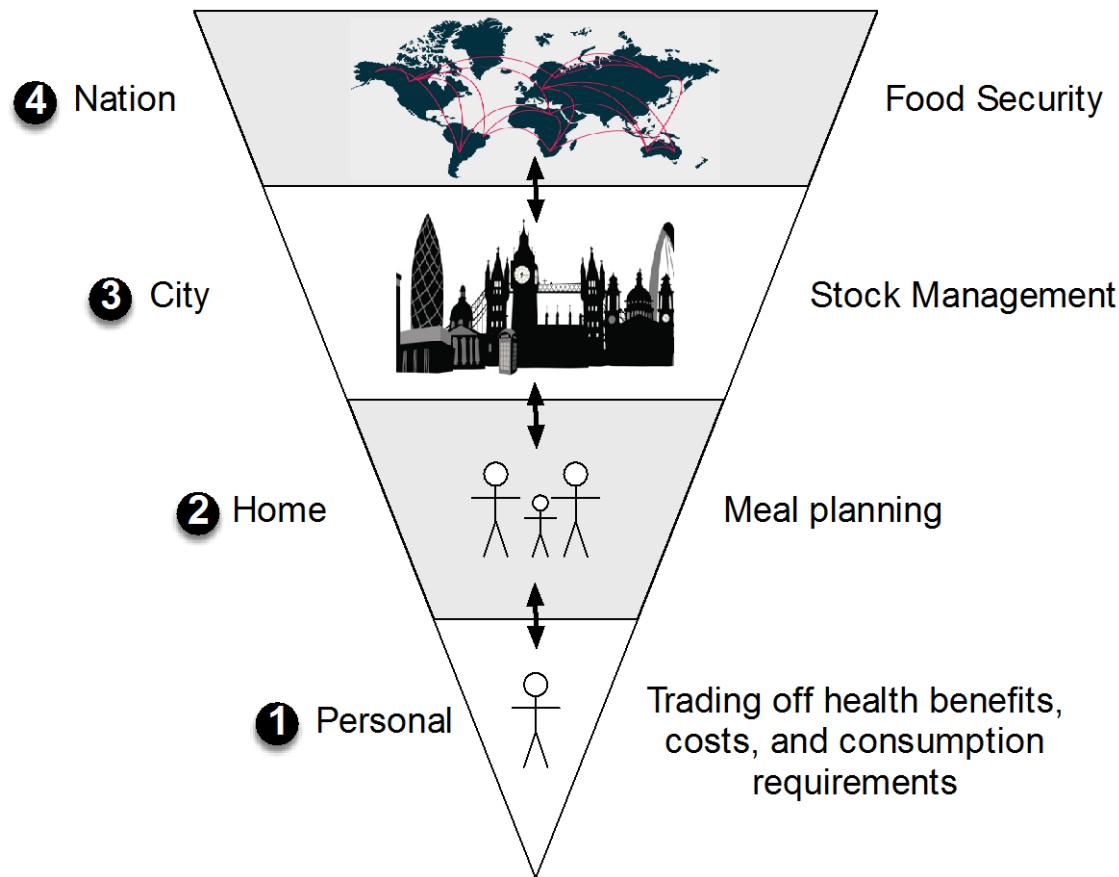
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Interoperability
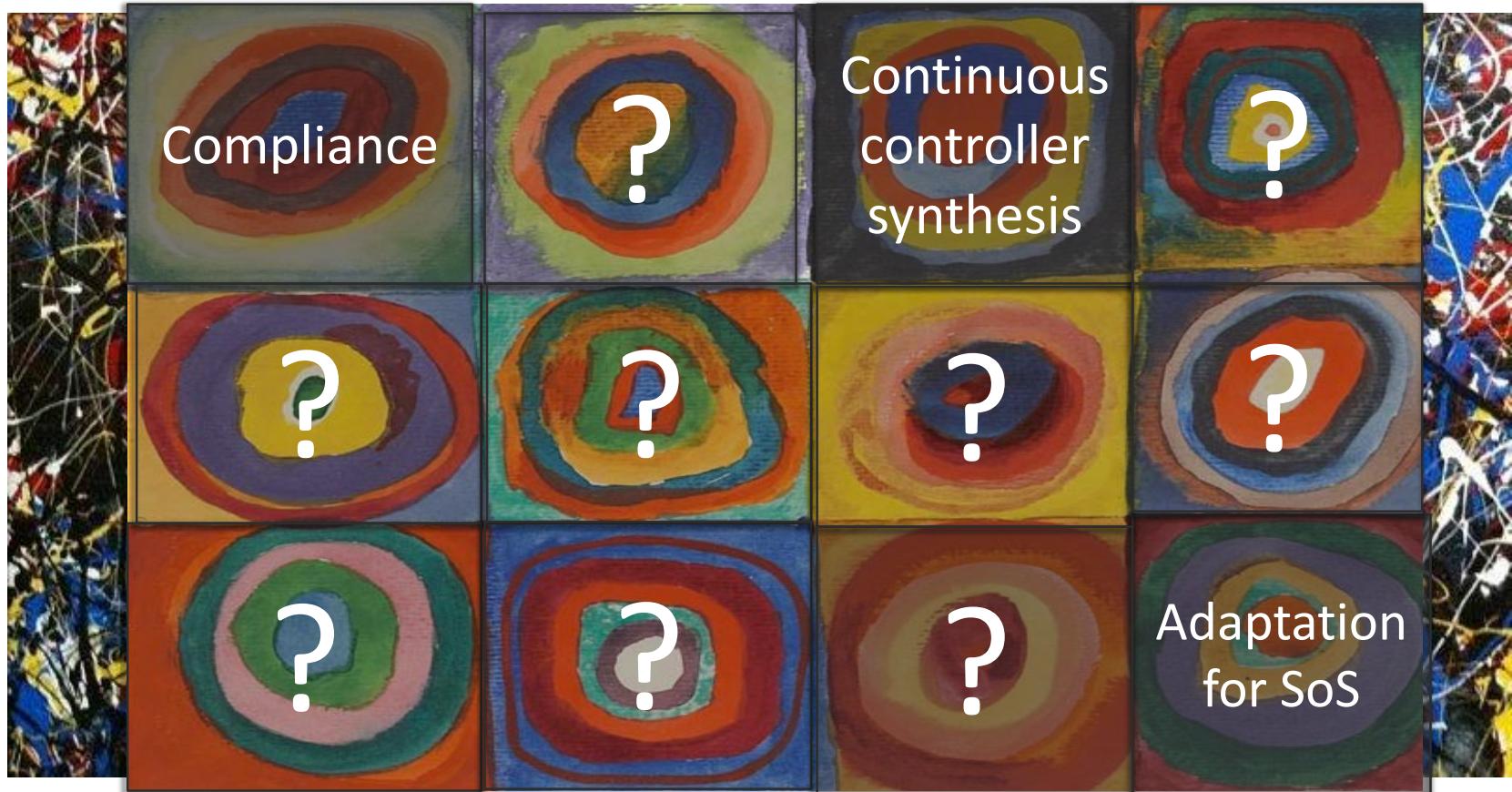
- Emergent, seamless, and meaningful collaborations of devices, people, and organisations

From Individual to Nation

4 Nation — Food Security

3 City — Stock Management

2 Home — Meal planning

1 Personal — Trading off health benefits, costs, and consumption requirements

Next…

Compliance

Continuous controller synthesis

Adaptation for SoS

Thank you

www.amel.me

http://sead1.open.ac.uk/fmfm/

Adaptive Security and Privacy
www.asap-project.eu