

# Innovation Inaction or In Action?

## The Role of User Experience in the Security and Privacy Design of Smart Home Cameras

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# Introduction

- Smart homes offer great promise but have clear security and privacy risks
- Demographically-diverse home users drive a need for user-centered security and privacy
- Looking beyond usability, we look at how designers factor *User Experience (UX)* principles into the security and privacy design of smart cameras

# Methods

- 20 employees from 3 companies (6, 8, 6)
- Recruitment from online platforms
- Semi-structured interviews (~52 minutes)
- Remote interviews (Zoom, Skype)
- Grounded Theory analysis (155 codes)

# Results

- Stakeholders divided into 6 groups according to job responsibilities: security, regulatory, UX, management, software and hardware.
- Five themes identified through Grounded Theory:
  - Development Process
  - UX in Security Design
  - UX in Privacy Design
  - Innovation in Security and Privacy Design
  - Trust

# Development Process

- Agile methodology
- Data protection regulation and compliance
  - Delayed Effect
  - Obtaining consent
  - Withdrawing consent

# UX in Security Design

- UX was not explicitly factored into security design
- Incompatibilities between UX & Security Design
  - Lack of security expertise in design teams
  - Security seen as a technical-only problem
  - Designers had no sight of security requirements

# UX in Privacy Design

- UX was factored into privacy design
- Alignments between UX & Privacy Design
  - Giving users control
  - Being transparent with users
  - Obtaining explicit consent

# Innovation in Security and Privacy Design

- *UX helped* design innovative privacy solutions
  - Novel features evaluated with usability testing
  - Novel features supported with qualitative-quantitative research
- *UX did not help* design innovative security solutions
  - Need for tried-and-tested established solutions
  - New solutions increase uncertainty



# Trust

- *Improved UX* to build and nurture trust:
  - Creating a customer-first culture
  - Take an interest in protecting user privacy
- *Tried and tested security* to protect trust relationships:
  - Policies to deal with security vulnerabilities
  - Requirements for responding to security incidents

# Implications

- Innovation in security and privacy design
  - Established security solutions
  - Security solutions from reputable vendors
- Security design in agile development
  - Security by design in agile
  - “Security says no”

# Conclusion

- Explicitly innovate through UX of security
- Align security and privacy in UX
- Factor UX into data protection compliance

# Thank You

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