MooDoor:

An Interactive Door with Emotion Display to Strengthen Social Capital and Community Resilience

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MooDoor

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chi 2019

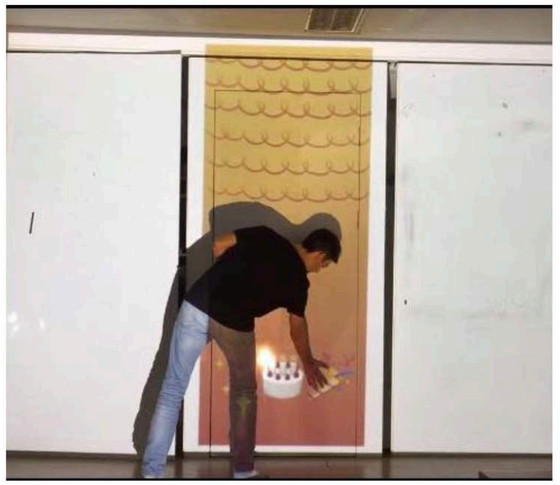
Agenda

- Design Solution for 2019 OzCHI SDC
- Understanding Background Knowledge
- Narrowing Down the Ideas
- Designing Features and Interactions
- Conclusions

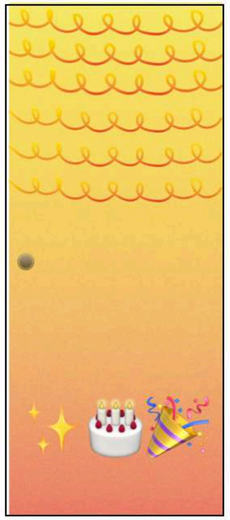
Student Design Challenge: Our Approach

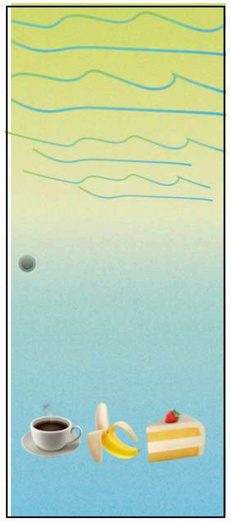
Building Community Resilience: Smart City Technology to Support the Development of Social Capital

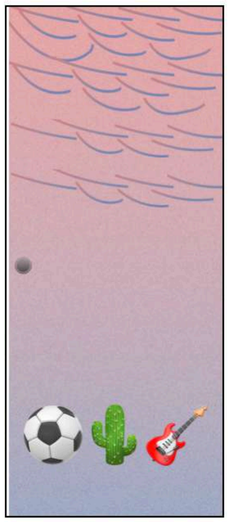




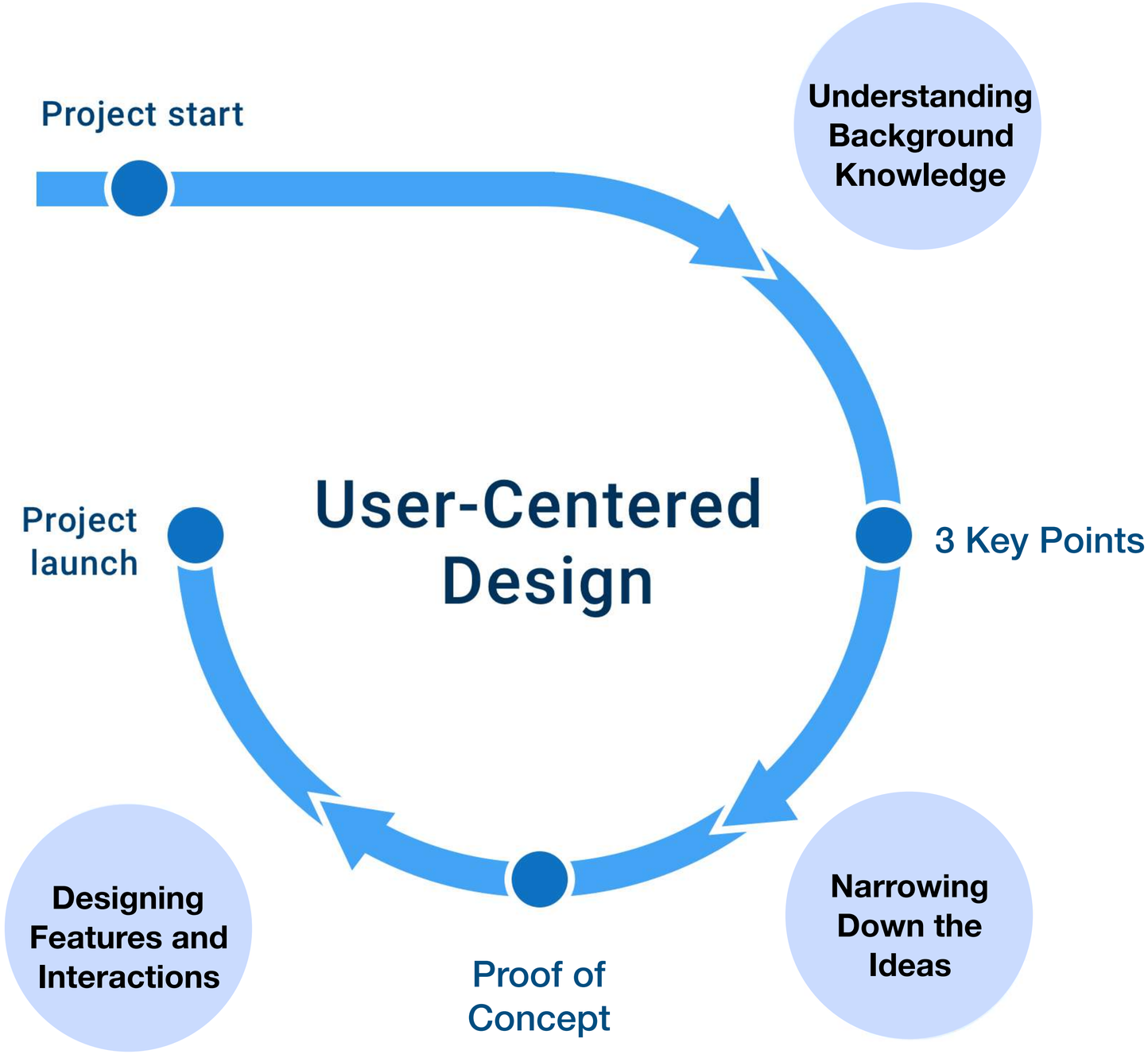








- Interactive door equipped with a digital display that shows the user's emotions.
- It promotes neighborhood bonding in the context of a local community and smart city.


Project start
Understanding Background Knowledge
User-Centered Design
3 Key Points
Project launch
Narrowing Down the Ideas
Designing Features and Interactions
Proof of Concept

Related work

- **Community Resilience**

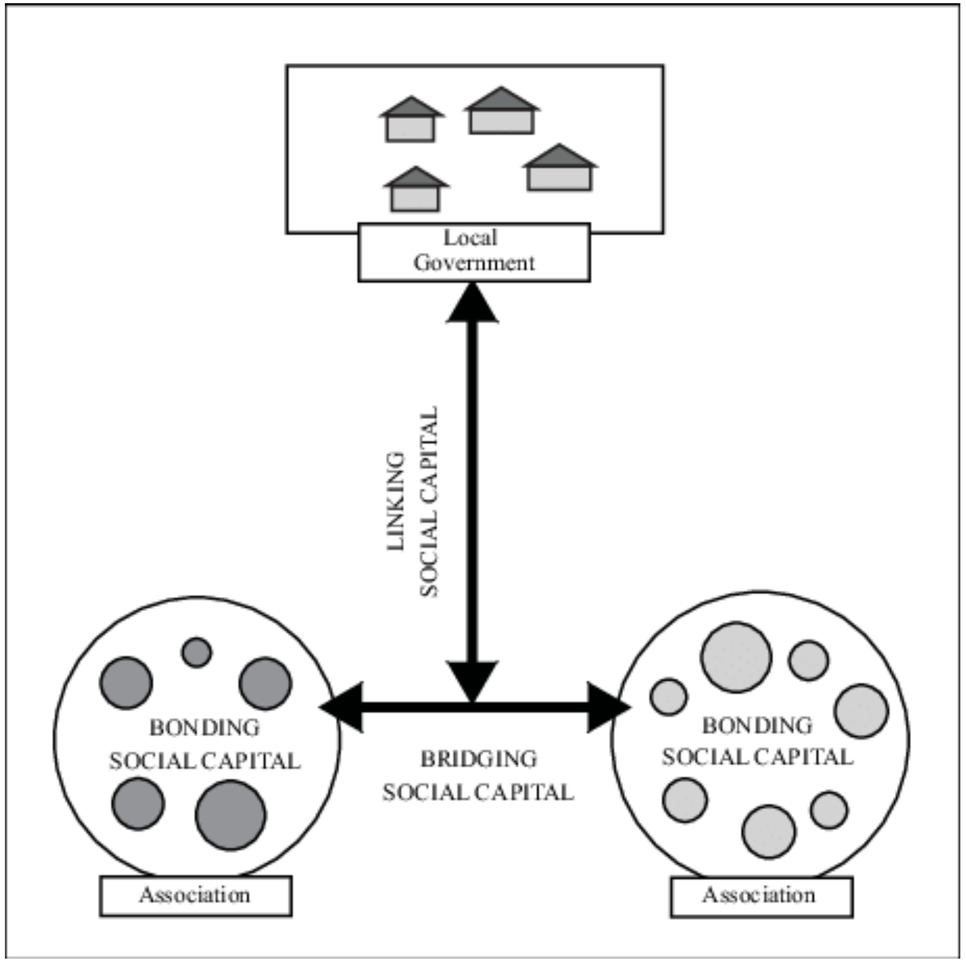
  - The collective ability of a community to deal with stressors and efficiently resume the rhythm of daily life through cooperation following shock.

- **Social Capital**

  - The network that connects individuals to each other either through weak or strong ties.

  - Bonding, Bridging, Linking

Social capital plays a critical roles in disaster survival and recovery (Aldrich & Meyer, 2015)



Related work

3 strategies for increasing social capital (Aldrich & Meyer, 2015)

timebanking.com.au

Time banking and community currency programs



Focus group meeting and social event.



Redesign architectural structures

Related work

Technology enhancing social capital

Social media,Crowdsourcing platform
Location-based marketplace



Tangible technologies

Related work

Focus on increasing **BONDS** between individuals and **LINKS** between individuals and government to enhance **community resilience.**

Strategies for increasing social capital

Time banking and community currency programs.

Focus group meeting and social event.

Redesign architectural structures

Technology for increasing social capital

Social media,Crowdsourcing , Location-based marketplace

Tangible technologies

3 Key Points

1. Bonding and linking
2. Redesign architectural structures
3. Tangible technologies



Design Principle

“Make technology accessible for everyone”

Narrowing Down the Ideas

Goal Identify user pain point by persona, storyboard.



Design Theme: Think from our experience

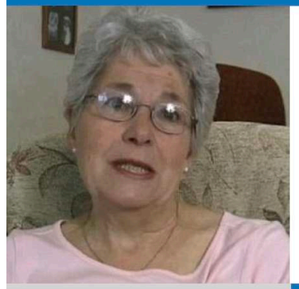
Enhancing neighborhood connection to strengthen social capital, enabling a community resilience to cope with earthquakes.

Persona: who to design for

- Behavior
- Goal
- Personality
- Frustration

Elderly resident

Muriel



Personality

- Extrovert
- Generous
- Warm-hearted

Goal

- Generates social bonding with neighbors and young generation.

Behavior

- Actively chatting with neighbors
- Take a walk everyday
- Love cooking

Frustration

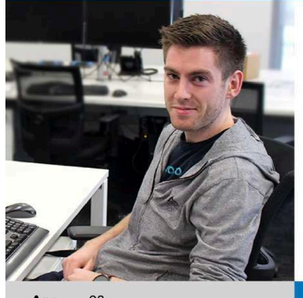
- Forgetful (Sometimes leaves the stove on.)
- Sometimes need help for household chores.

Age 75
Job Retired
Status Widow
Green Finger

 # Festival Lover
 # Live Alone
 # Restrict Mobility

New-comer

Shy Larry



Personality

- Introvert
- Curious
- Mild

Goal

- Blends in with the community quickly.
- Stops being alone.

Behavior

- Watch local news every morning.
- Comment online.

Frustration

- Too shy to interactive with neighbors.
- No friends to play soccer.

Age 28
Job Computer engineer
Status Single
Soccer Lover

 # New Member of the Community
 # Tech-savvy
 # Netizen

Community Opinion Leader

Jack



Personality

- Problem solving oriented
- Accommodating
- Practical

Goal

- Completes the job efficiently and makes everyone happy.
- Enhances the cohesion in community

Behavior

- Solve the problem of residents.
- Communicate with government or police.

Frustration

- Everyone doesn't express opinions.
- Low residents participation in community affairs.

Age 48
Job Chief of community council
Status Married

 # Community First
 # Community Weaver

Problems

Problem Detected:

> People do not often interact with each other.
>
> People seldom express their emotions.

How can technology solve the problem?

Why door?

Affordance of Door

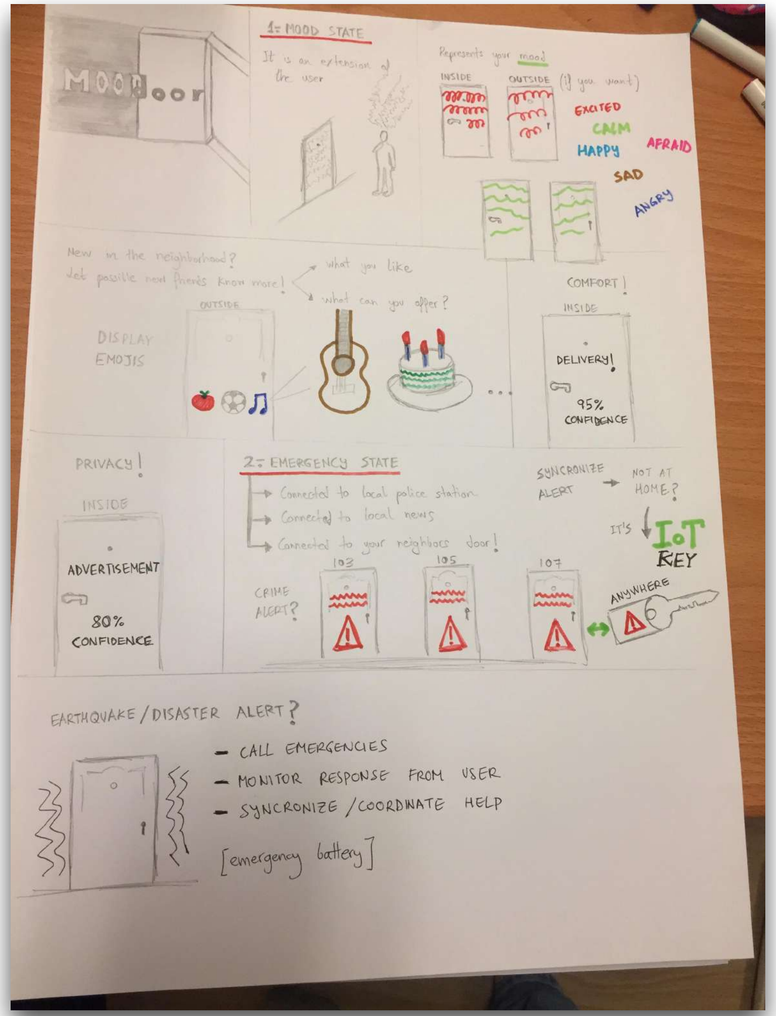
1. Door blocks two worlds away .
   Door bridges between two worlds.
2. Door as a communication medium.
3. Door as a way of self-expression.



Storyboard: display usage flow

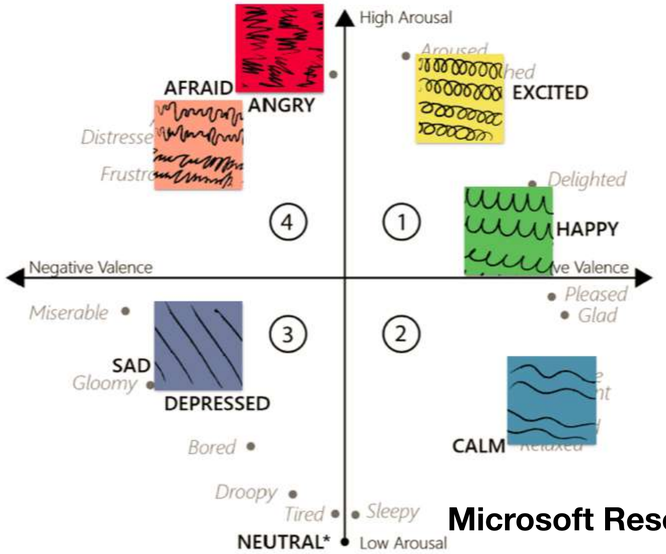
2 Usage Scenarios

1. Daily connection for enhance social bonding
2. Improve linking with authorities under adverse events.



Design Review





Microsoft Research (Ubicomp'14)



British Airways: The Happiness Blanket



Microsoft Research (Ubicomp'14)

Proof of Concept:

Enhance social bonding and linking by a tangible daily object that is accessible for everyone.



MooDoor Design







Design Rationale

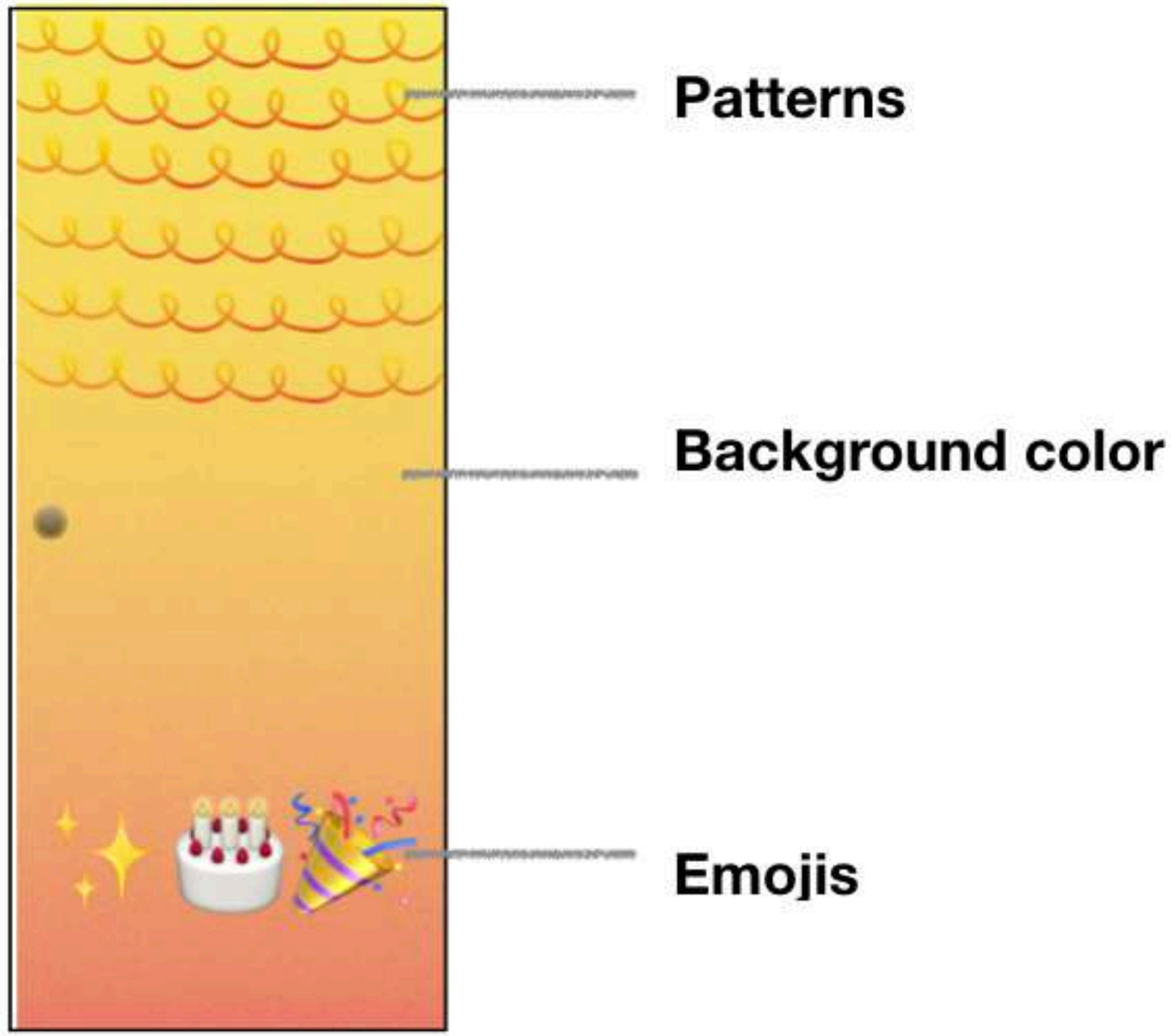
> ***“How do we present individuals’ emotions explicitly via the door?”***
> ***“How do we leverage communities’ interactions via interacting with the door?”***

(1) Design Features of *MooDoor*
appearance of the door

(2) Design Interactions of *MooDoor*
Mood Mode v.s. Alert Mode

Design Rationale

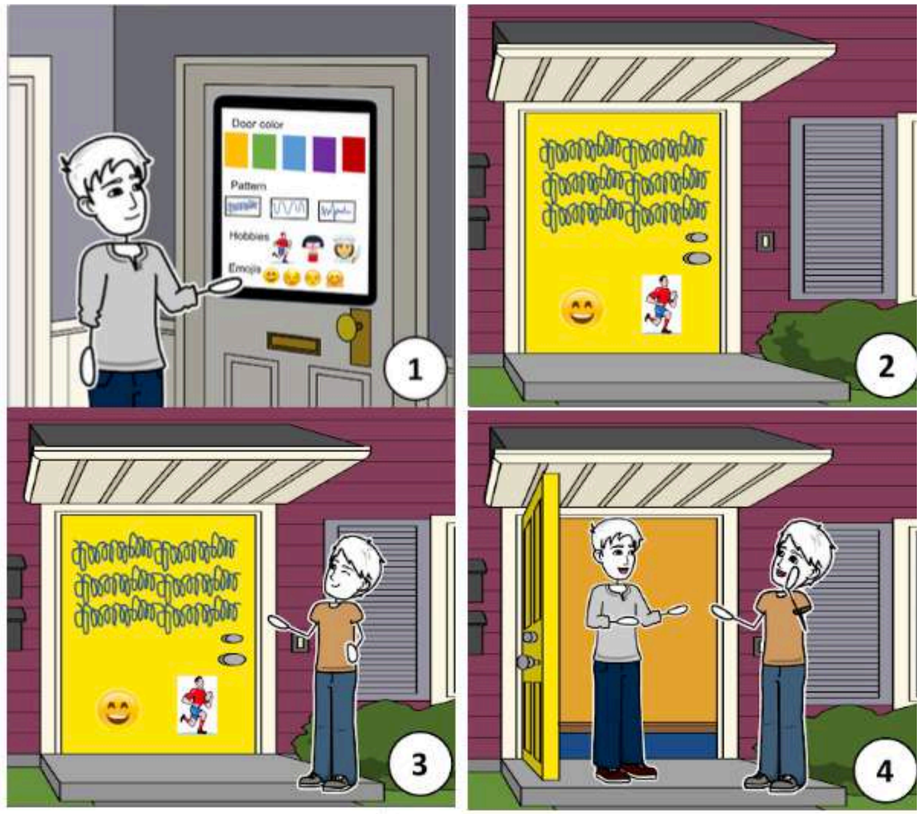
(1) Design Features of *MooDoor*
a embedded display panel to express the current mood of the user/household in a certain emotion code or pattern



Design Rationale

(2) Design Interactions of *MooDoor*

Mood Mode (Standard)

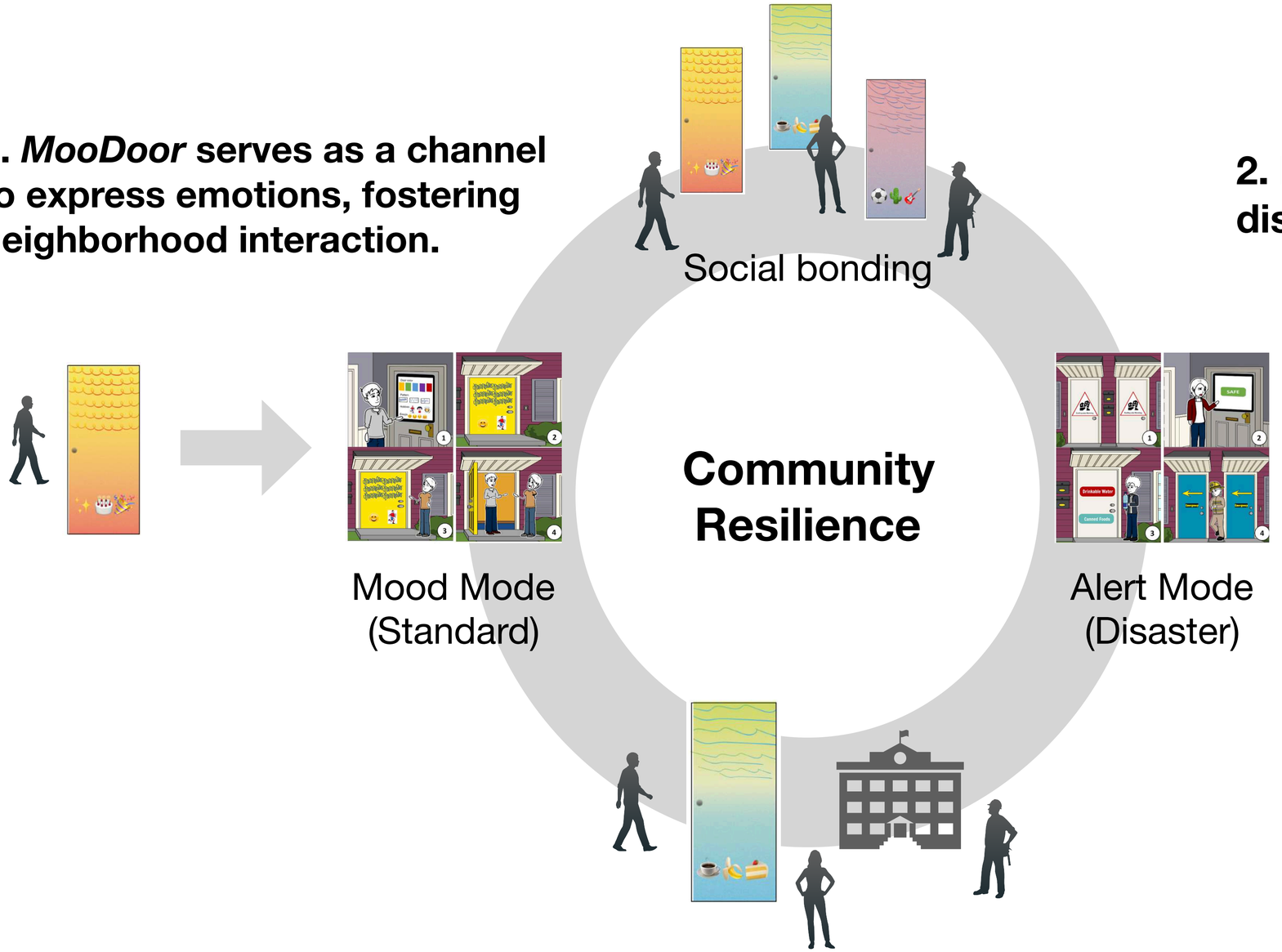


Alert Mode (Disaster)



Conclusion

1. *MooDoor* serves as a channel to express emotions, fostering neighborhood interaction.



2. MooDoor serves as a disaster management tool.

- Increase **social capital.**
- Stronger **community resilience.**

Thank you.











Mood mode is used for encoraging daily connections.



At the same time, *MooDoor* sends a signal to contact emergencies, synchronizes with other IoT devices and coordinates help for the ones in need.





