

**mozilla**  
**CONNECTED HOME**  
Scenarios for the IoT Design Sprint

## CONNECTED HOME

Social relationships  
of people to objects.

## CONNECTED HOME

Social relationships  
among people.

## INTERESTING OBJECTS

which have personal  
stories attached.

## PEOPLE AND DIFF. WAYS

they pass through  
the home.

## DATA

THAT FLOWS THROUGH OUR LIVES

## CONTROL

INSIDE AND OUTSIDE OUR HOMES

## PRIVACY

AND ITS SOCIAL PRACTICES

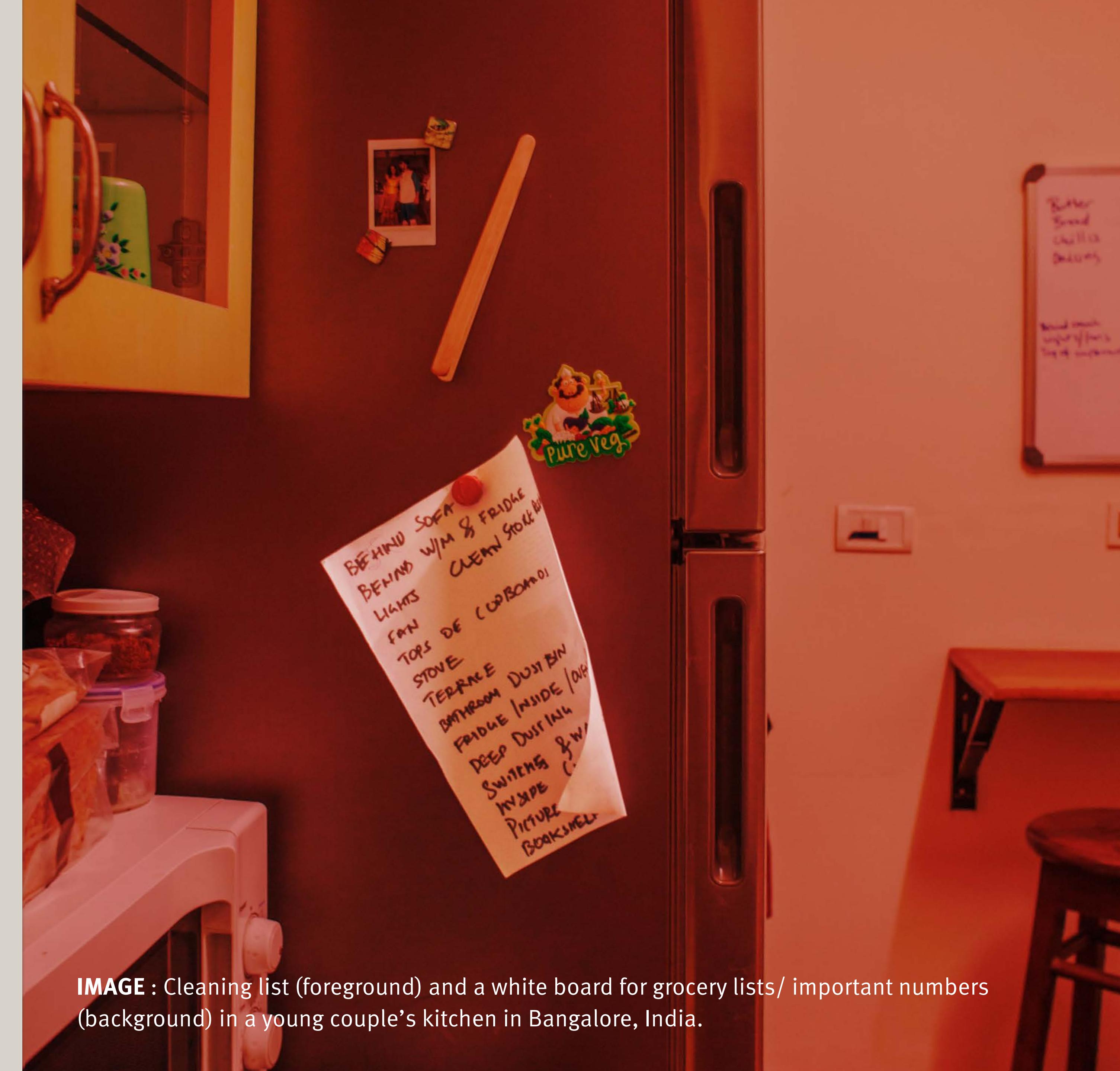
## SCENARIO 1 | Overview

### Forgetful reminders for physical social networks.

Every home has an array of tangible (usually physical) interfaces and objects through which members share different kinds of information.

These rituals and objects of communication constantly evolve with time - what starts as functional and utilitarian often transforms into playful and emotive.

The information generated and shared, is often ephemeral in nature, and highlights the right for objects to forget ‘gracefully’.



**IMAGE :** Cleaning list (foreground) and a white board for grocery lists/ important numbers (background) in a young couple's kitchen in Bangalore, India.

## SCENARIO 1 | Inspiration

Forgetful reminders for physical social networks.

**Marianne, Anne and Jessica are housemates, who have been living together for 2 years. They describes themselves as ‘friends first, roommates later.’**

Anne is an enthusiast for DIY-for-home projects, and painted one side of the fridge with chalkboard paint. This has over time become a softer way of documenting shared responsibilities for the home.

The content of the fridge has undergone several revisions. It was earlier used to document money owed between the roommates. But nowadays it is used to manage pet feeding schedules, as well as keep an inventory of things needed (mostly shared groceries) for the house. This shared message board also transforms into a fun drawing surface for friends, during get-togethers or parties.

*"I LIKE HOW PEOPLE JUST FILL IN THE BLANK SPACES ON THE BOARD. ITS ALWAYS FUN TO SEE WHAT WILL TURN UP. BUT SOMETIMES THE DRAWINGS ARE NOT THAT PALATABLE, IF YOU KNOW WHAT I MEAN." - ANNE*



## SCENARIO 1 | Inspiration

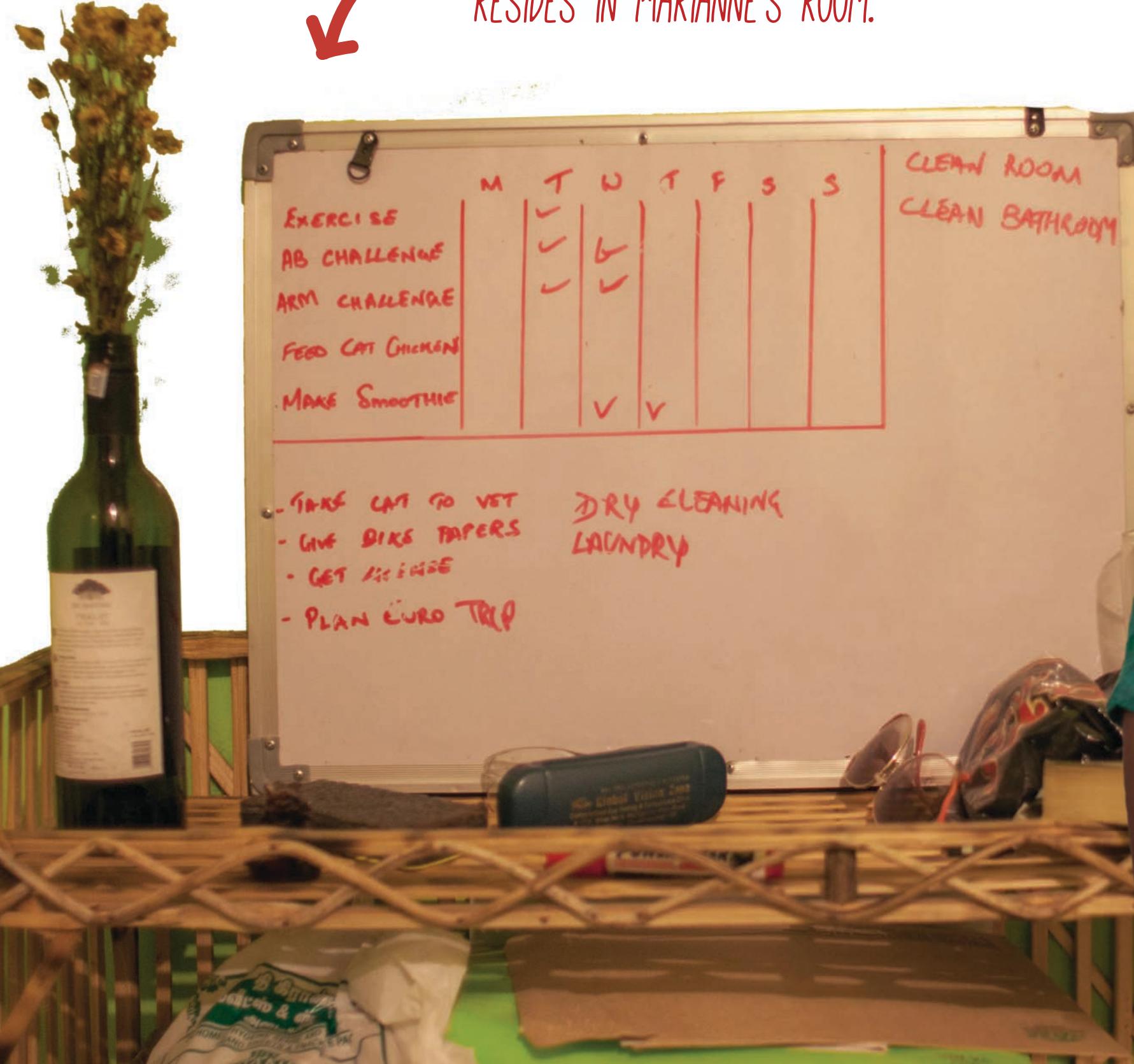
Forgetful reminders for physical social networks.

"I USED TO MAINTAIN A WHITEBOARD TO MANAGE SHARED TASKS AMONG THE HOUSE-MATES. SOMETIMES I'D WRITE PASSIVE AGGRESSIVE MESSAGES, WHEN PEOPLE SKIRTED THEIR CHORES. I REALISED NO-ONE REALLY GAVE A DAMN, SO I SHIFTED IT TO MY ROOM AND USE IT FOR PERSONAL REMINDERS NOW!" - MARIANNE



Small Video of the roommates talking about the Chalkboard fridge:  
<http://bit.ly/tangible-house-comms>

THE 'PASSIVE AGGRESSIVE'  
WHITE-BOARD THAT NOW  
RESIDES IN MARIANNE'S ROOM.



## SCENARIO 1 | Opportunity & Challenges

Forgetful reminders for physical social networks.

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**Physicality, social behaviours and materiality are all closely linked - the materiality and tone changes the cultural use. There is a powerful opportunity for IoT to open up and enable completely new forms of tangible communication that are highly resonant with existing behaviours of adaptability in our homes.**

1

Beyond simple notions of ‘message boards’, how can we think of this as a challenge about “physical social networks” that uses IoT to connect people in a nuanced way?

2

How can we learn from the rise of ‘ephemeral communications’ (think snapchat) and from the way things disappear / fade away or decay?

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**CHALLENGES :** What happens when the social network of one home is shared between many homes? How does the physical synchronise with the digital?

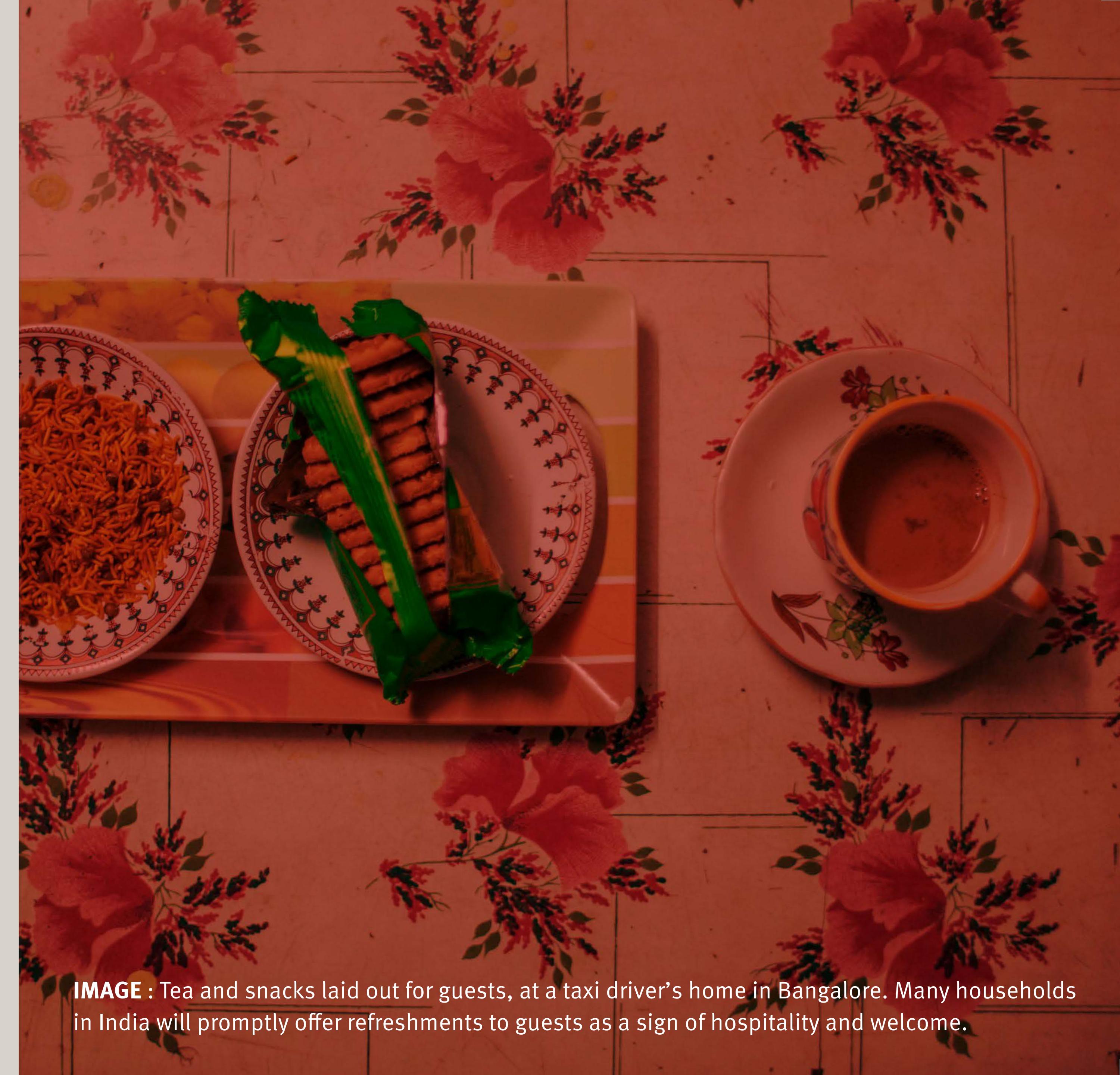
## SCENARIO 2 | Overview

### **Gastgeberschaft** and the Internet of Things.

**'Gastegeberschaft'** refers to 'hospitality' or 'good host' in German.

Homes have different objects, customs and rituals that provide subtle cues to its inhabitants and guests, on how to navigate what they can or cannot do in that space - where to sit, what cupboards they can open, what tasks people can join in on, and what is off limits.

These unseen rules can give us a lot of insight into people's preferences around access and control, and the warm and genial ways in which they assert it, while they share their space with others (family, guests/ home help etc.)



**IMAGE :** Tea and snacks laid out for guests, at a taxi driver's home in Bangalore. Many households in India will promptly offer refreshments to guests as a sign of hospitality and welcome.

## SCENARIO 2 | Inspiration

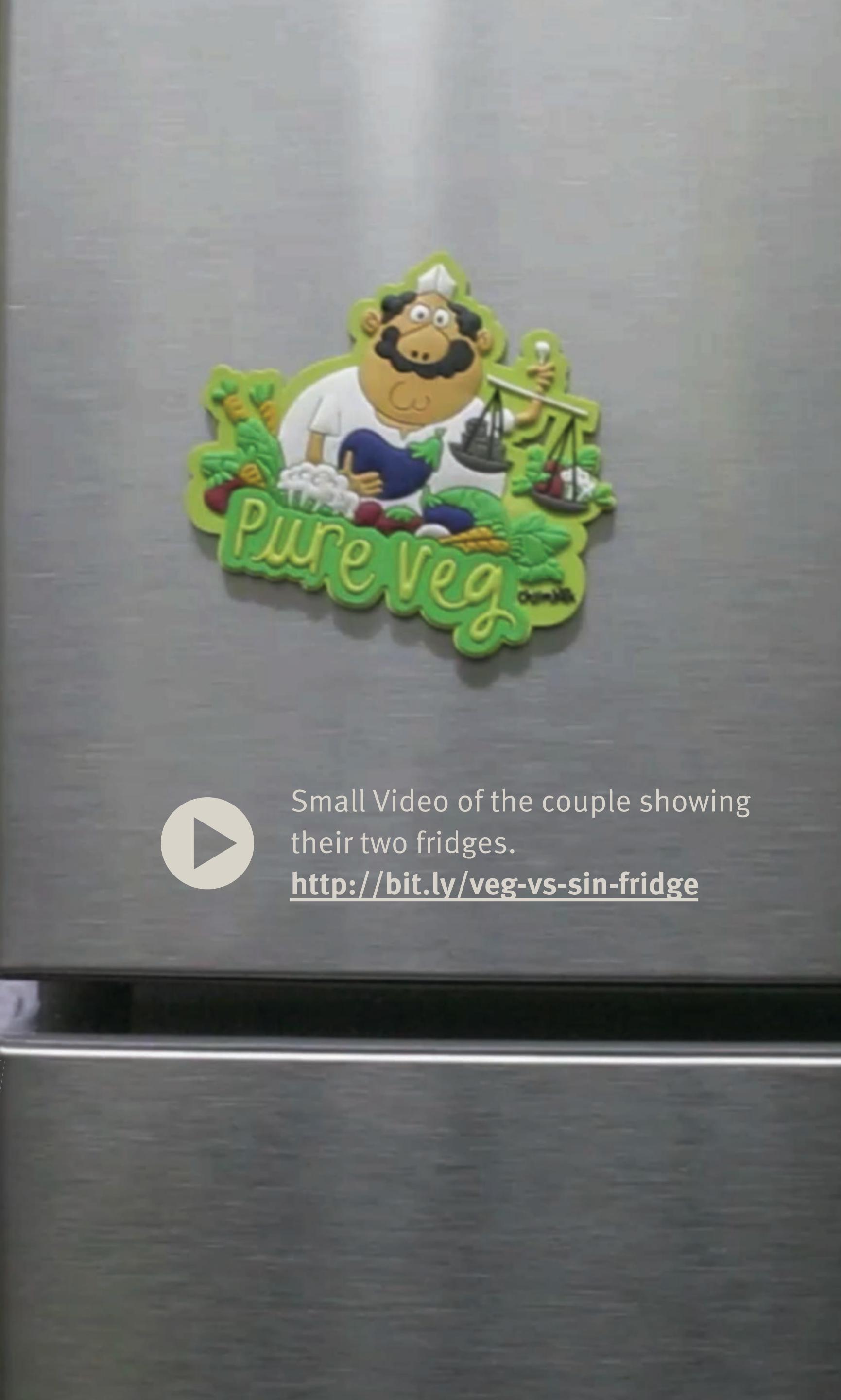
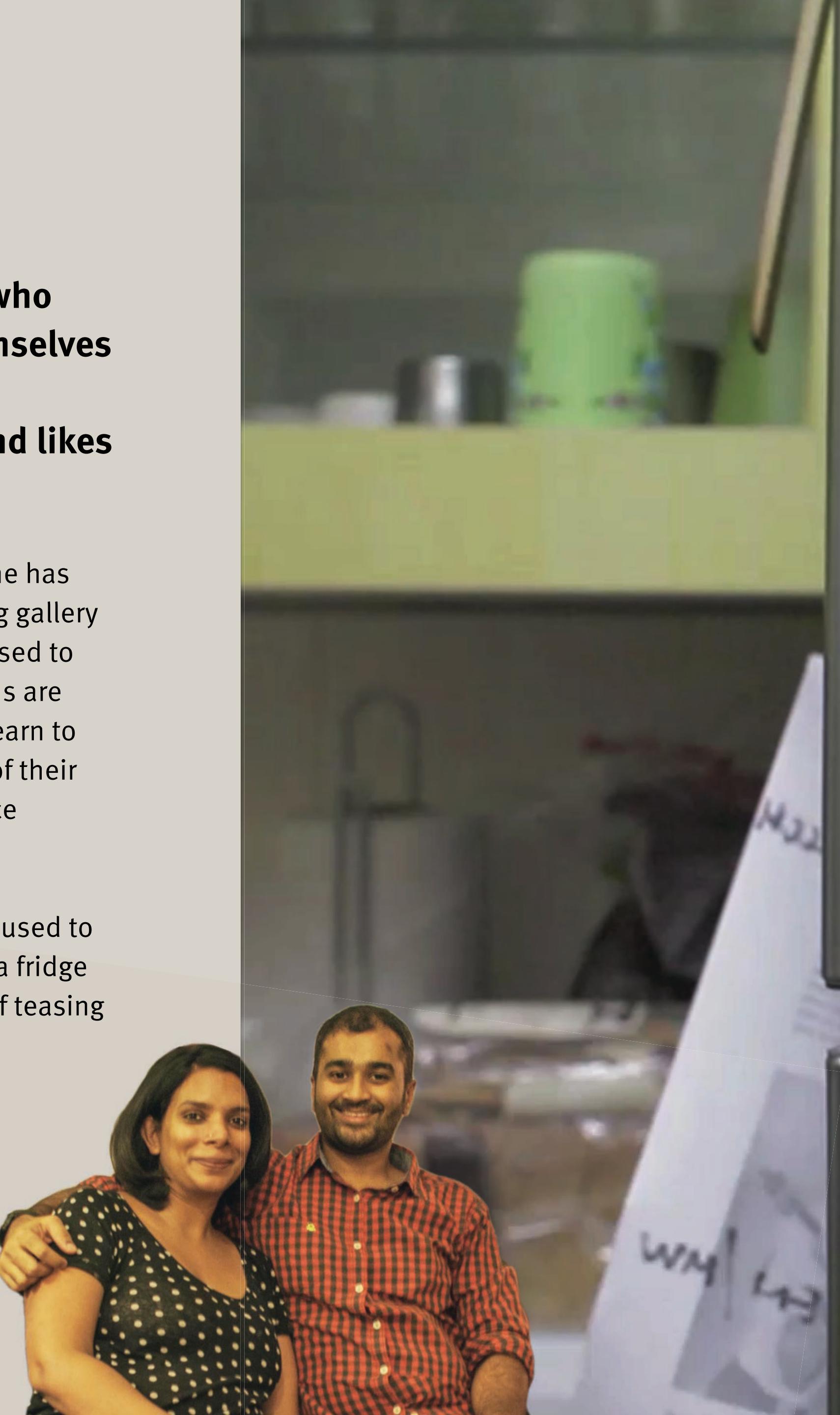
### **Gastgeberschaft and the Internet of Things**

**Abhinav and Mallika are a married couple who recently had their first child. They call themselves polar opposites - he likes minimalism and functionality, whereas she is a collector, and likes things with with sentimental value.**

Abhinav is a vegetarian, while his wife is not. Their home has two fridges - one in the kitchen and one in the adjoining gallery area. The larger fridge, on Abhinav's mom's behest is used to only store vegetarian groceries. [These kind of situations are commonplace in Indian households, where members learn to adapt to and accommodate customs and sensibilities of their family members, even if they aren't residing in the space permanently.]

The other fridge is jokingly called the 'sin fridge' and is used to store everything from meat to alcohol. Abhinav placed a fridge magnet that says 'pure veg' as a tongue-in-cheek way of teasing Mallika.

"THE 'VEG FRIDGE' HAS THIS REALLY NICE COMPARTMENT FOR DELI MEATS, ITS A SHAME ITS NOT USED AT ALL! I ONCE SNUCK SOME COLD CUTS IN IT, AND KEPT IT LABEL SIDE DOWN SO NO-ONE WOULD NOTICE, BUT HE DID!" – MALLIKA



Small Video of the couple showing their two fridges.

<http://bit.ly/veg-vs-sin-fridge>

## SCENARIO 2 | Inspiration

### **Gastgeberschaft** and the Internet of Things

Their spacious kitchen also has a small retractable table and 2 stools for when they are entertaining other couple friends for dinner.

They don't like to prep everything before the guests arrive, and like to invite them into the kitchen, to hang out with them as they cook, or even ask them to help out in some cases.

"WHEN I GO TO SOMEONE'S HOUSE FOR DINNER I DON'T LIKE WAITING OUTSIDE THEIR KITCHEN. SO WE MADE THIS SIDE-TABLE IN OUR KITCHEN, SO THAT THE GUESTS CAN SIT AND MINGLE WITH US WHILE WE COOK FOR THEM. THEY CAN KEEP THEIR DRINK GLASSES, OR EVEN HELP US OUT. WE LIKE THIS A LOT, ITS ONE OF OUR FAVOURITE THINGS IN THE KITCHEN" - ABHINAV



THE GUESTS' TABLE AND BENCH IN ABHINAV AND MALLIKA'S KITCHEN.



Small Video of Abhinav and Mallika talking about entertaining guests.  
<http://bit.ly/guests-in-kitchen>

## SCENARIO 2 | Opportunity & Challenges

### *Gastgeberschaft* and the Internet of Things

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**Technology platforms can often fall into the trap of being neutral and cold. We want to explore how ‘warmth’ can be added to them, and how one can navigate these unseen rules, rituals and social behaviours of a home in an inviting way.**

**1**

How do you make “hospitable” tech through IoT, in a way that is respectful of how people use things and the content that they have.

**2**

How can we make the settings of a connected space much easier to control. For e.g Could you apply the same interfaces that you have for light (e.g. dimmer) for digital privacy?

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## SCENARIO 3 | Overview

### Mindful Fitness and Wellbeing

How do we know how a family member or loved one is doing? Specially in the context where one is separated by distance?

Technology connects diasporas in very direct ways - from a mother calling her daughter to ask whether she's eaten, to a family installing a cctv camera to make sure their aged parents living in another city are okay - but often doesn't take into consideration issues of control and access.

In instances where technology is not used (because of choice, access or effectiveness), people often use their (intimate or personal) knowledge of each other's routines and activities to 'interpret' rather than 'monitor' their well being.



**IMAGE :** Grabs from CCTV footage installed inside the house of an aged couple's home (who live with a care-taker) in Indore. Their children live in different cities of the country, and use this as a way of knowing they are alright by themselves.

## SCENARIO 3 | Inspiration

### Mindful Fitness and Wellbeing

**Farida lives with her husband and 3 kids in a large joint family in Bangalore. Her mother's house, is a few blocks away from hers, and Farida refers to it as her 'happy place', as it is filled with caring and open people.**

Farida's mother is a headmistress at a local school. She's also the figurehead for the household. Ever since Farida's father took to saint-hood, her responsibilities have increased. Her mother is, according to the Farida, a workhorse - both within the home and outside it.

Farida is increasingly concerned of her mother's well-being, and feels that she exerts herself even when she doesn't have to. And even though her mother's obstinance makes Farida love and respect her more, she wishes she could make her life easier in any way possible.

**"EVEN THOUGH ALL OF US HAVE KIDS, MY MOTHER STILL TREATS US LIKE ONE. WHEN I COME OVER SHE WILL RUN INTO THE KITCHEN AND START MAKING ALL MY FAVOURITE FOODS OR SNACKS. SHE REALLY SPOILS ALL OF US." – FARIDA**



## SCENARIO 3 | Overview

### Mindful Fitness and Wellbeing

"SHE'S (MOTHER) ALWAYS IN THE KITCHEN. EVEN THOUGH THERE ARE PEOPLE IN THE HOME TO HELP WITH THE CHORES. SHE'S ALWAYS DOING THE DISHES OR COOKING OR SOMETHING ELSE. I HAVE TRIED TALKING TO HER MANY TIMES, BUT SHE DOESN'T LISTEN TO ME ONE BIT. SHE DOESN'T LISTEN TO ANYONE." – FARIDA

FARIDA DOING THE DISHES BEFORE HER MOTHER COMES BACK FROM WORK.



AN AWARD FELICITATING FARIDA'S MOTHER FOR HER CONTRIBUTION AS THE SCHOOL HEADMISTRESS.



## SCENARIO 3 | Opportunity & Challenges

### Mindful Fitness and Wellbeing

**How can we look at new ways of changing how health and fitness is delivered through IoT? Can we explore new relationships between existing domestic objects and rituals, to gather a healthy and mindful perspective on fitness and wellbeing of those we care about ?**

**1**

Can we find new ways of obtaining socially meaningful health & fitness data, and subtly enriching lives of those, who are unable, or not wanting to (for any reason) sign up to the current sports wearables culture of steps, miles and calories burned?

**2**

How do we consider the viewpoint of people not currently included in this technology trend and look at what might work for, say, a family concerned about the fitness and wellbeing of an elderly relative? Or to look at how parents of young children are integrating physical activity and mindfulness into their lives?

**CHALLENGES :** How do we ‘reflect’ rather than monitor how the family member or loved one is doing? What are the rights for privacy, even from family members ? How do we break away from the stereotypical fitness technologies that are about competition or body image?

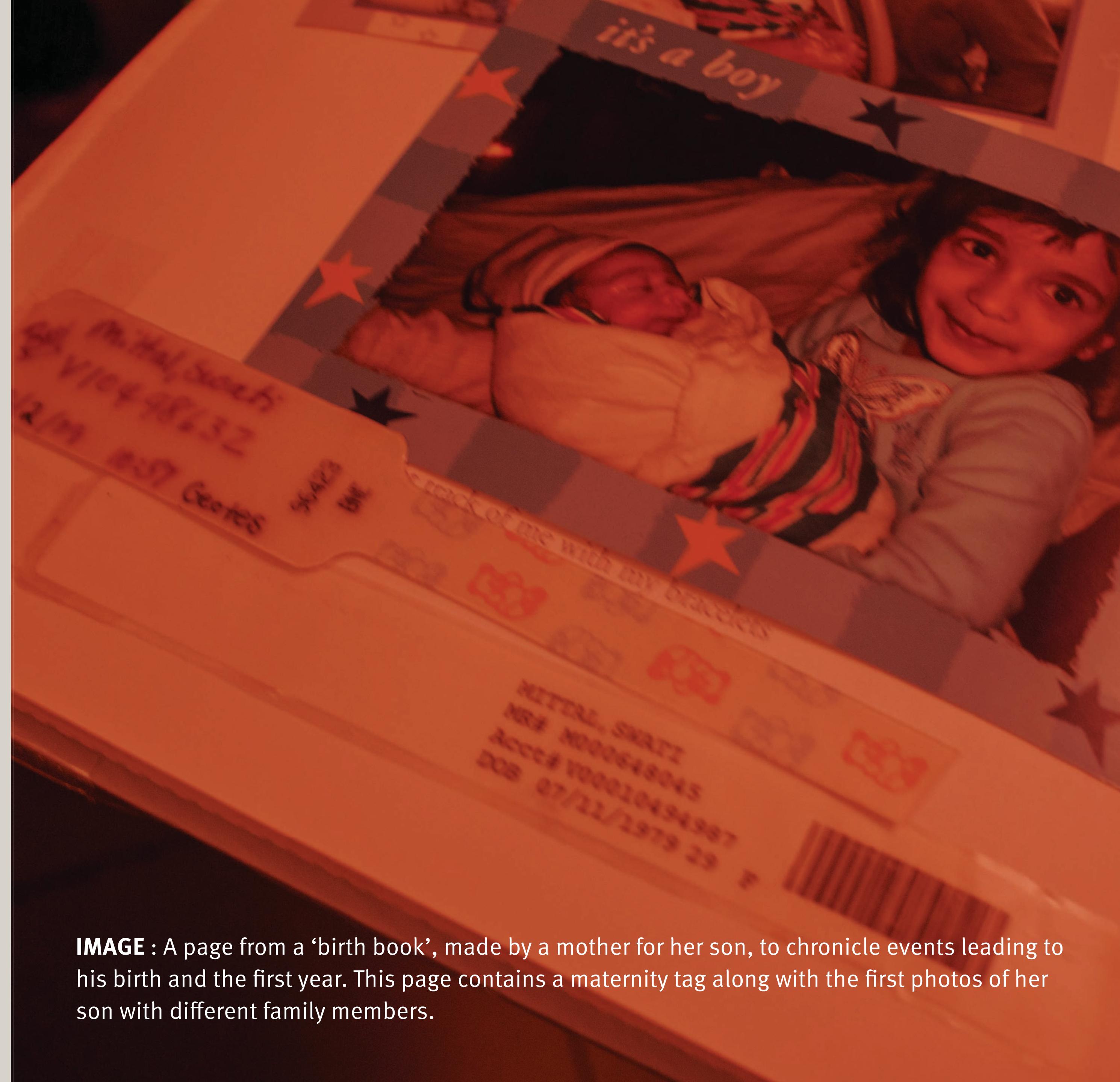
## SCENARIO 4 | Overview

### Shaping the camera of the future.

People are accumulating larger, and more diverse media collections while juggling between physical and digital platforms.

While managing and consuming this media is complicated, involving multiple rituals and strategies, people find inventive methods to navigate around content privacy, life-story oriented essaying, and archiving.

Intended audiences and technology shapes people's orientation towards sharing - from ephemeral sharing within close networks (whatsapp groups/ snapchat), curation and display for larger physical or digital social networks (photo books/ wall photos / facebook albums) to archiving (hard drives/picasa etc).



**IMAGE :** A page from a 'birth book', made by a mother for her son, to chronicle events leading to his birth and the first year. This page contains a maternity tag along with the first photos of her son with different family members.

## SCENARIO 4 | Inspiration

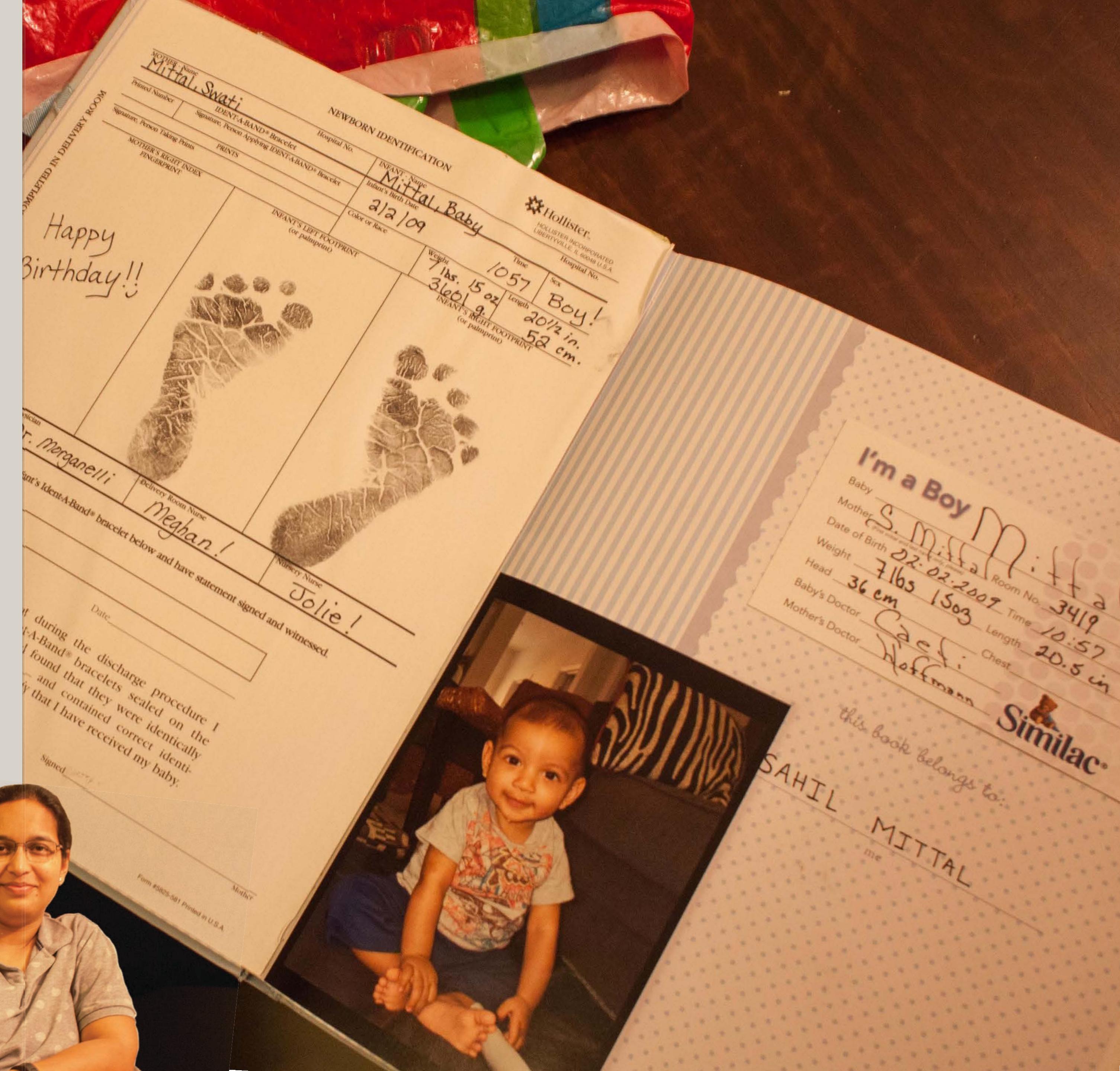
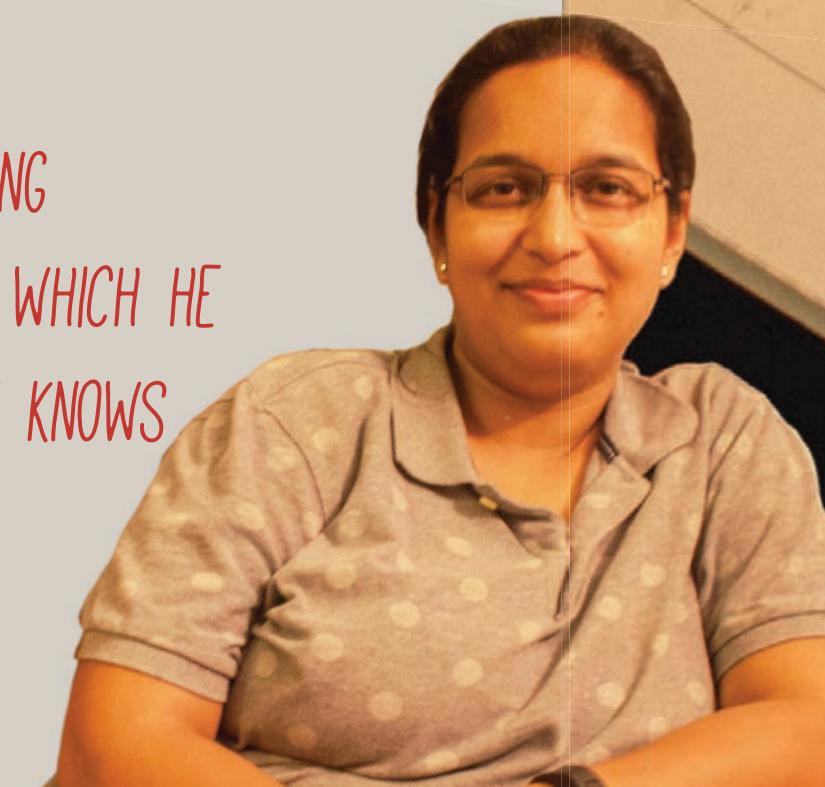
Shaping the camera of the future.

**Swati and Siddharth are a working couple, and parents to two kids aged 11 and 6. Siddharth's work keeps him extremely busy, and a huge chunk of the family responsibilities are handled by Swati.**

Having shifted 8 homes in the last 13 years of being married (5 of which were abroad in the US), means that most of their memories are in the form of photos and some memorabilia that she and Siddharth have accumulated over the years. Outside of some Facebook albums shared on the internet, most of the family photos are on 2 hard drives (one for backup) and picasa for personal storage and are solely managed be her. Swati calls herself the official archiver of the house.

Swati has also created a 'birth book' for each of her kids - a sort of journal with photos, words and saved objects, that chronicles their birth and childhood journey.

"SIDDHARTH IS TOO BUSY TO CONTRIBUTE TO STORING OR MAKING ANYTHING WITH THESE PHOTOS. THE FEW RARE OCCASIONS ON WHICH HE TAKES THEM, HE INSTANTLY 'WHATSAPPS' THEM TO ME, SO HE KNOWS THEY WILL BE SAFELY BACKED UP SOMEWHERE." – SWATI



## SCENARIO 4 | Overview

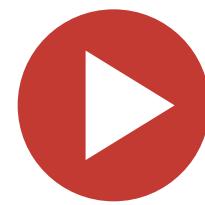
Shaping the camera of the future.



Small Video of Swati talking about her hard drive photo backups, and why its so important for her.

<http://bit.ly/official-achiver>

"I LIKE THAT THERE ARE ALL THESE TEMPLATES TO WRITE THINGS IN. ITS SO MUCH NICER THAN JUST PHOTOS. I FINISHED MY DAUGHTERS AND AM YET TO FINISH MY SONS! I HAVE BEEN TOO BUSY, I WILL HAVE TO MAKE UP SOME DATES AND WRITE UPS." - SWATI



Small video of Swati talking about her son Nakul's birth book.  
<http://bit.ly/the-birth-book>



## SCENARIO 4 | Inspiration

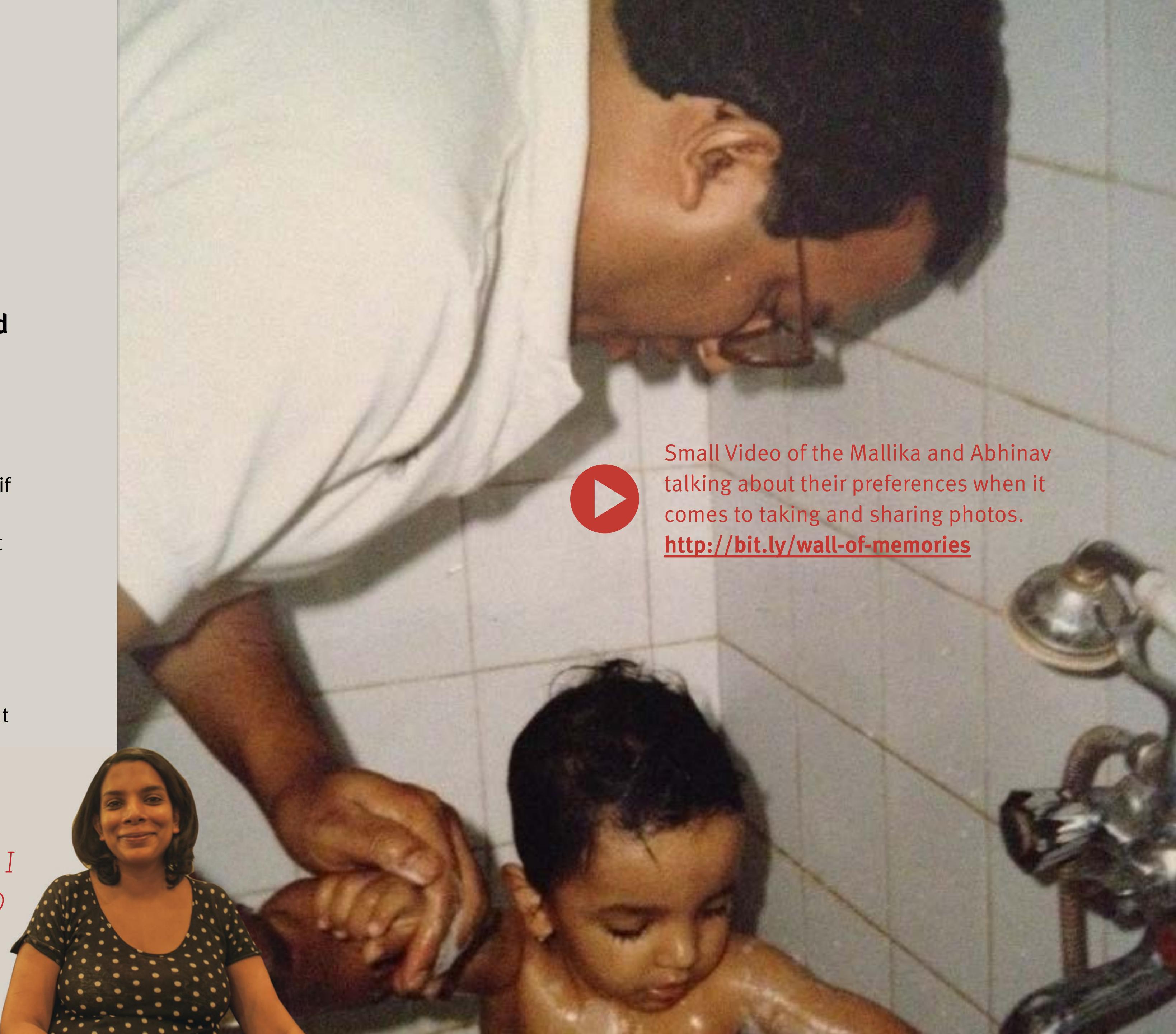
Shaping the camera of the future.

**Abhinav and Mallika are a married couple who recently had their first child. The birth of their son, Vigyaan has triggered them to document more, but the sharing is only limited to close and personal family members.**

The couple have a DSLR or phone camera lying handy for capturing everyday or special moments. Abhinav and Mallika both aren't very keen on using Facebook anymore. They rarely if ever post any personal pictures on the platform. Most of these photos are kept for personal use and not really shared, except for some on the family groups on Whatsapp.

Mallika wants to start printing photos, and display them on a wall in their living room, as she feels that photos on her hard drive 'just disappear' with time, while Abhinav doesn't want family photos out in the open - both of them have very different sensibilities when it comes to sharing memories.

"IF YOU GO TO MY ROOM IN MY PARENTS HOME ALL THE WALLS ARE FILLED WITH CHILDHOOD PHOTOS. SOME OF THEM ARE SO EMBARRASSING! I DON'T CARE WHAT ABHINAV FEELS, THERE'S GOING TO BE A WALL FILLED WITH FAMILY MOMENTS SOMEWHERE IN THIS HOUSE." – MALLIKA



Small Video of the Mallika and Abhinav talking about their preferences when it comes to taking and sharing photos.

<http://bit.ly/wall-of-memories>

## SCENARIO 4 | Opportunity & Challenges

Shaping the camera of the future.

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**How might we change audience and privacy settings in a camera for photo sharing? How could IoT shape the camera of the future? Can physical interfaces for sharing / permissions / open-ness / audiences for these photos create something that balances social behaviours and the privacy preferences of individuals?**

1

How can kids edit and contribute to the digital content as they grow? What rights do they have? Does a 5 year old have different rights from a 12 year old?

2

How we support family members who are responsible for ‘archiving’ as their collection changes over time - as they accumulate newer media at a rate faster than they can process or curate them.

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**CHALLENGES :** How do we accommodate for different materialities and different temporalities of sharing (ephemeral, curated and archived) in an easy way?

## SCENARIO 5 | Overview

# The Internet of other Living Things.

As our lives turn more and more functional, the need for building a reciprocal emotional relationship with our physical surroundings becomes more and more prominent.

Plants and pets reduce the estrangement we feel from nature, turning our homes into living landscapes rather than inert spaces.

Our plants or pets show an investment of care and effort, and the inherent dynamism that bubbles up from underneath can give us a lot of subtle and rich information on what's going on in our lives.

What do our plants / pets and the way they're growing say about us?



**IMAGE :** Timon, a rescued cat that is looked after by 5 housemates living together in an apartment in Bangalore. According to them “he adopted us, not the other way around.”

## SCENARIO 5 | Inspiration

The Internet of other Living Things.

**Abhinav and Mallika are a married couple who recently had their first child. Abhinav is an avid gardener, but hasn't been able to devote time to his vegetable patch ever since his son Vigyaan was born.**

Abhinav considers the terrace garden as his favourite part of the house. Its a space for the dogs to run about, to entertain guests during parties, and also had a small vegetable garden that he invested a lot to time and effort in, until very recently.

After the birth of his son, Abhinav hasn't been able to spend much time on the terrace or with his plants. He recently went upto his terrace after 10 odd days and was surprised at how different it looked - some of the hardier plants and shrubs that have survived have grown 2-3 times in size.

"I USED TO GROW A LOT OF DIFFERENT THINGS – BASIL, CHILLIES, LETTUCE, BOKCHOY ON THE TERRACE BEFORE. I HAVEN'T HAD MUCH TIME SINCE VIGYAAN WAS BORN, SO RIGHT NOW ALL THE PLANTS ARE DEAD. MAYBE I WILL THINK OF RE-STARTING THE VEGETABLE PATCH IN A YEAR, ONCE HE IS OLDER" – ABHINAV



Small video of Abhinav and Mallika showing their terrace garden  
<http://bit.ly/terrace-garden>

## SCENARIO 5 | Opportunity & Challenges

The Internet of other Living Things.

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**There are loads of existing IoT plant and pet-care products, but what if we viewed this as cultivating data that comes from them - what would this data look like? What hopes and fears surround this data?**

**1**

Can big data on social behaviours start to support how other living things are nurtured as our life changes (or vice-versa)?

**2**

What potential commercial applications are possible given that people spend a lot of money and time on taking care of pets and plants?

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