

7 steps to ensure Roomba's adoption

6 months of tracking the adoption of a vacuum cleaning robot



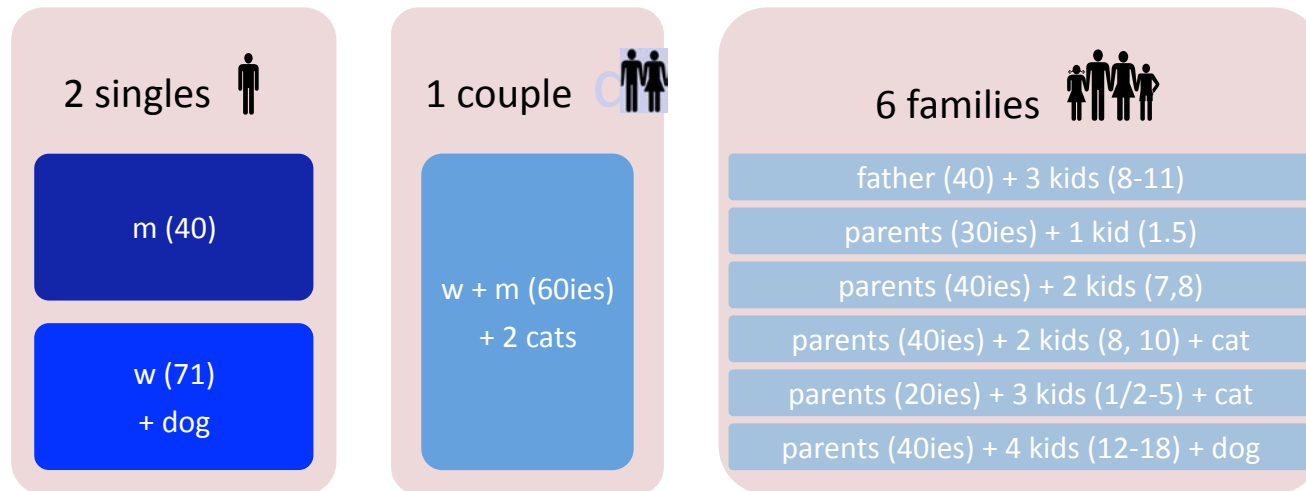
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3 key research questions

1. How does the Roomba adoption process look like?
2. What is the impact of a vacuum cleaning robot on the family ecosystem?
3. How are robots perceived? Does it evolve over time?

Study Design & Sample

- 6 months ethnographic study (9 households)



- Combination of qualitative + quantitative methods:
 - Household visits with interviews, observations, home tours
 - Cleaning + Roomba diaries

Key findings

1. Roomba adoption

- 3 out of 9 households adopted Roomba
- Decision was made fast (in first 2 weeks)

2. Impact on family ecosystem

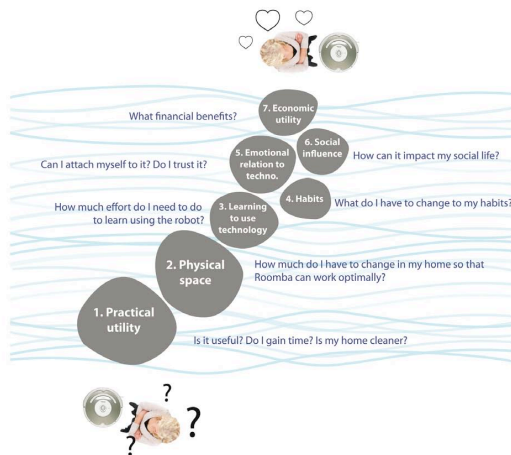
- Roomba did not impact cleaning roles
- Roomba encouraged few social interaction

3. Perception of robots

- Roomba was not considered as a robot
- Robot's acceptance was higher after the study

Take away:

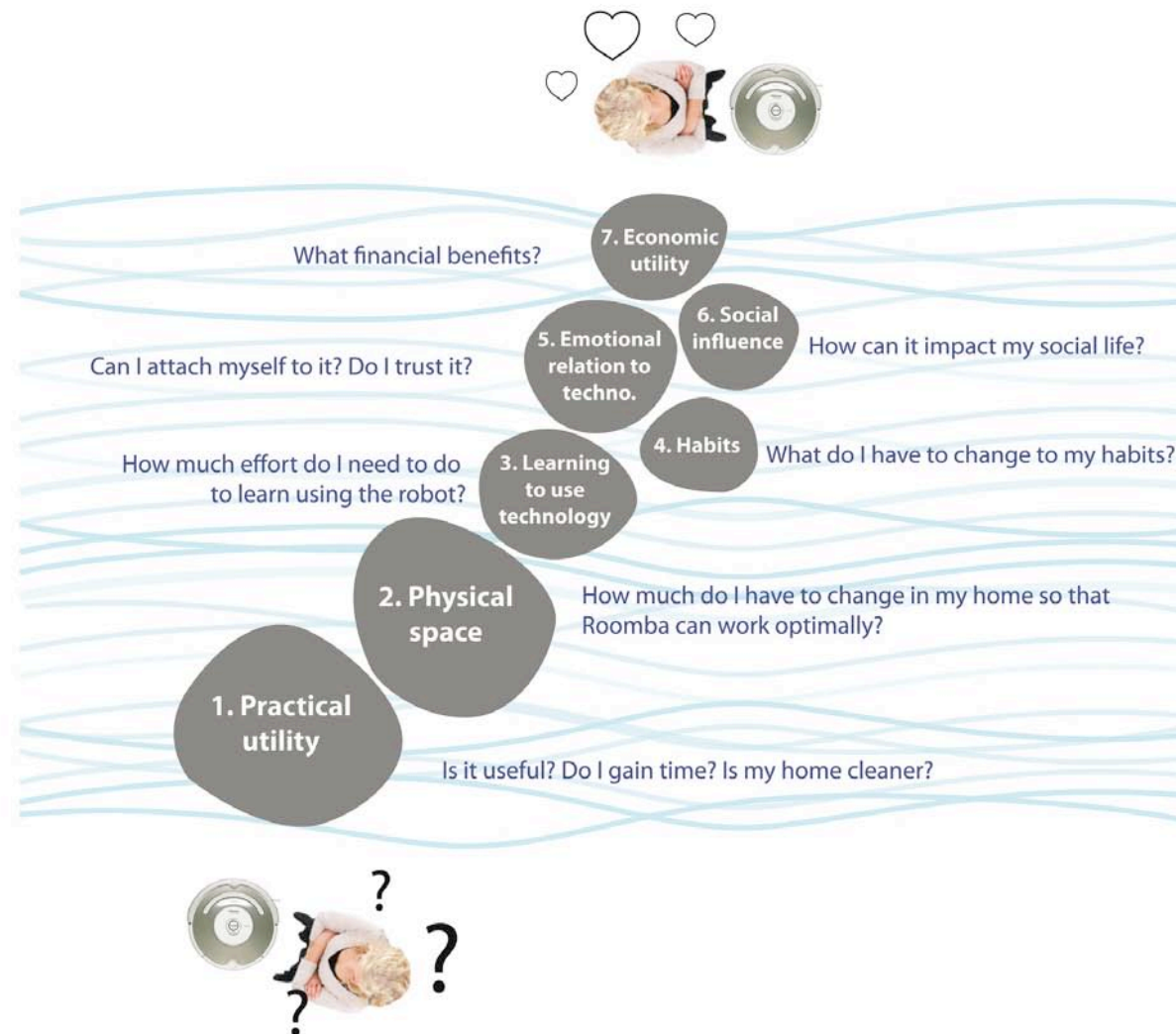
7 adoption steps **check list**



- We believe that this list is solid:
 - Matches existing models of technology adoption (e.g. TAM3, Venkatesh)
 - Matches my personal experience along these last 10 years
- I potentially can be applied outside robotics: e.g. ICT

Take away:

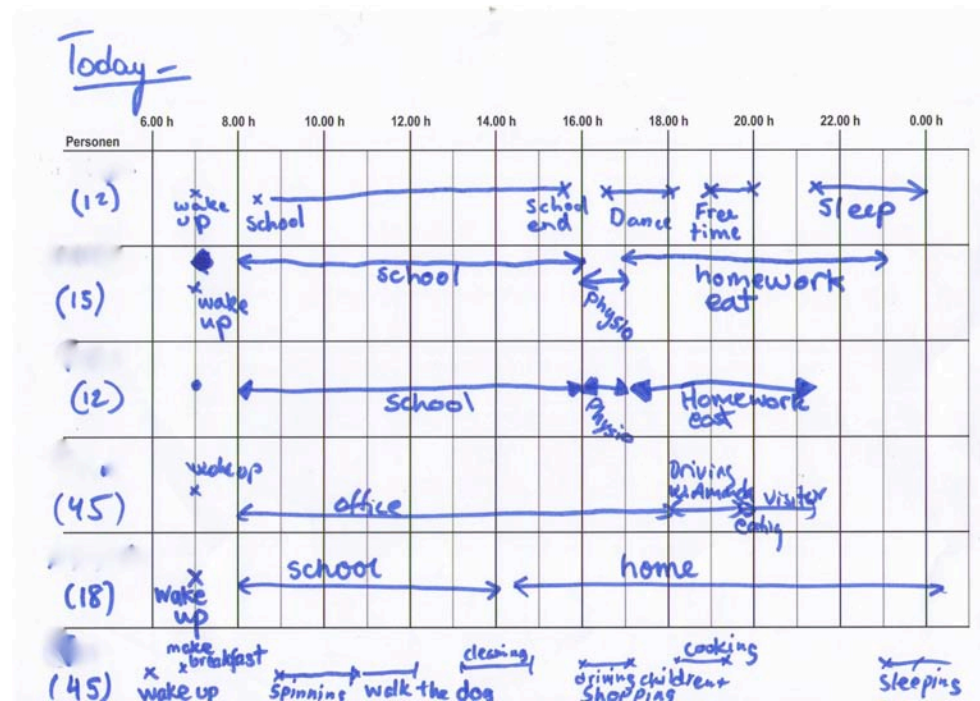
Check if your technology can jump accross the 7 steps towards full adoption



Step1: practical utility

Do I gain time? Is my home cleaner?

- People who fully adopted Roomba could **feel a clear utility** in using Roomba:



- The others not: *"I clean faster and better than Roomba. I lose time when I am using Roomba."*

Step 2: physical space

How much do I have to change in my home for Roomba?

- All our Roomba full adopters either had an **optimal environment for Roomba to work** or adapted their physical space to the robot to make it to work optimally

Before Roomba:
routers cable: on the ground



After: router on the wall,
furnitures moved accordingly



Placing a table on the sofa to
let Roomba vacuum optimally



- The others not...

Step 3: learning to use technology

How much effort do I need to do to learn using the robot?

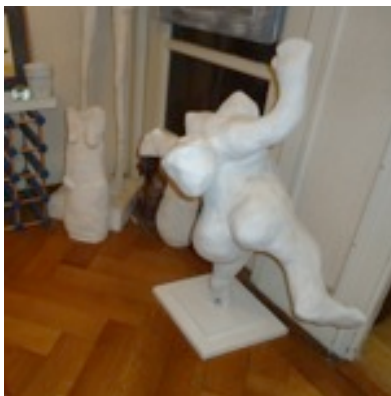


- Roomba rejectors or low users have not taken the **time to learn to use Roomba optimally**, and have not been therefore able to trust its functioning
 - One mother did not bother learning how to use the virtual walls (infrared barriers for Roomba)
 - Others said: *“We don’t trust it fully”, “Shau mal, was macht er jetzt? Jetzt dreht er weg. Er ist doch noch nicht fertig hier”* complaining about the fact that Roomba appears to move around in an uncoordinated way
- Full adopters trust Roomba fully, and knowhow to use it optimally, namely when they are away

Step 4: habits

What do I have to change to my habits?

- Some households had issues using Roomba because it would force them **to adapt their habits**:
 - One participant had many statues on the ground she has built herself as well as piles of books
 - Other users liked eating in their living room and used to leave trays on the ground with for instance marmalade



Habits to change: being surrounded by your favourite objects, books, leaving trays with marmelade on the ground

Step 5: emotional relationship to technology:

Can I attach myself to Roomba?



- Being able to develop a sort of **emotional attachment** with Roomba helped for some to foster adoption:
 - Children invented games, theatre plays with Roomba
 - One elderly lady gave Roomba a name, « Elvis »
 - Another elderly lady used to talk directly to Roomba time “*Go and do your work in the kitchen...*”
- Nevertheless this phenomenon faded with the time

Step 6: social influence:

How can it impact my social life?



- Roomba had in some cases a positive **social influence** that supported adoption:
 - Many participants showed or even lent out Roomba to friends or colleagues.
 - One participant said *“It provides you a subject of conversation at work with your colleagues or when you have guests at home”*
- Nevertheless, it was not a key factor

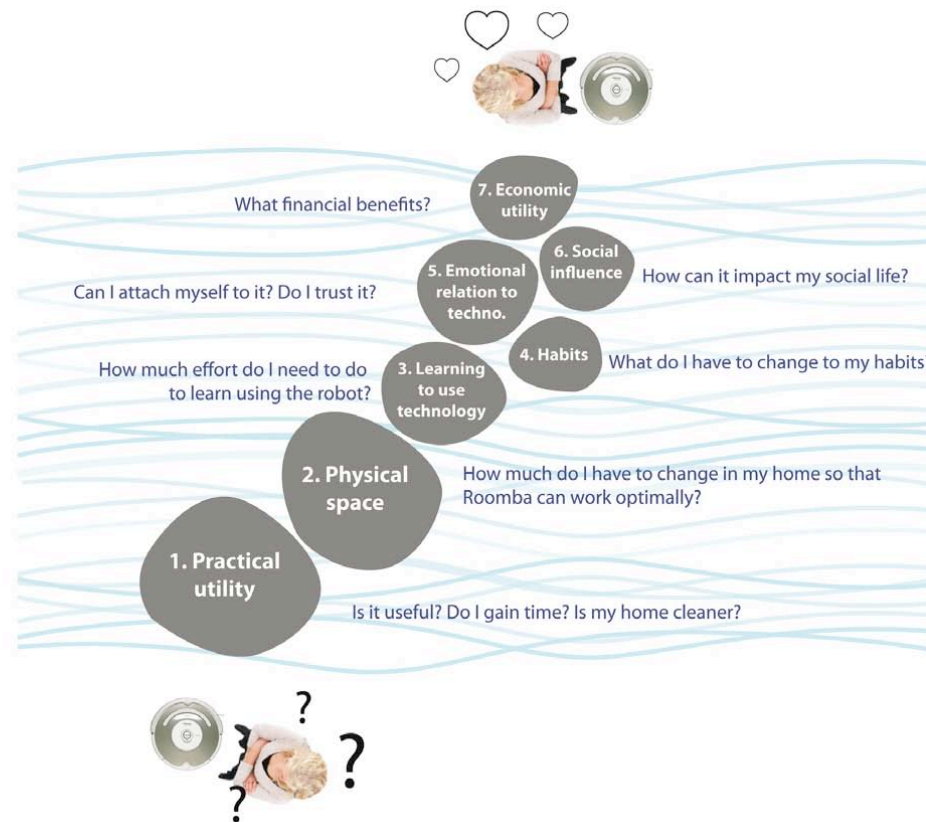
Step 7: financial utility:

What financial benefits?



- We gave Roomba for free. This is why **financial utility** was NOT a key factor for adoption in our research
- Nevertheless, it could have been a key factor
 - One of our participant said *“I am not sure I would have paid that much. When you buy Miele, you know what you get”*
 - Cost of replacement of spare parts and the longevity of the battery were also often mentioned as a potential issues

To conclude: Test out these steps



Refine them and challenge them...
...and give us your feed backs