

# BACK TO THE FUTURE – VISIONS FOR AGE-FRIENDLY COMMUNITIES IN 2030 AND BEYOND

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AAL Forum 2016

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# Agenda

- Future visions from the past
- Emerging trends in human-computer interaction
- Interactive design fiction session
- Summary and next steps

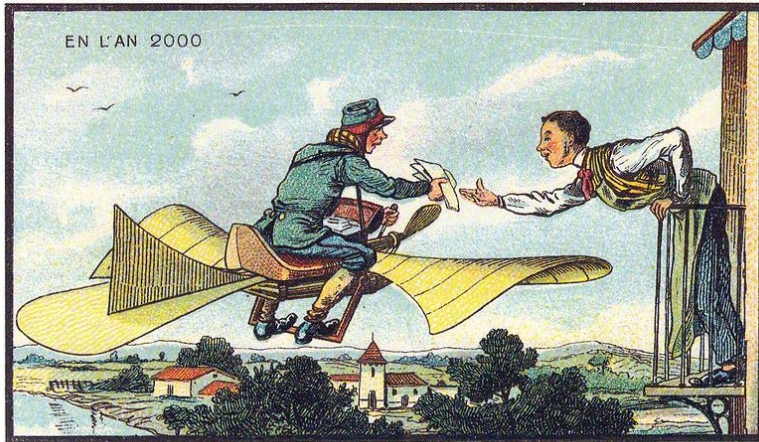
# Scope & Goals

- **Scope: Growing older in 2030 and beyond**
  - What can we learn from technology visions from the past?
  - To what extent can novel human-computer interaction techniques contribute to the design of future AAL solutions?
  - What are future visions beyond smart cities and smart homes?
  - Which new approaches can be enabled by advances in artificial intelligence?
- **Goals:**
  - Discuss visions for future informal care
  - Develop ideas for concrete solutions and concepts for age-friendly communities of the future

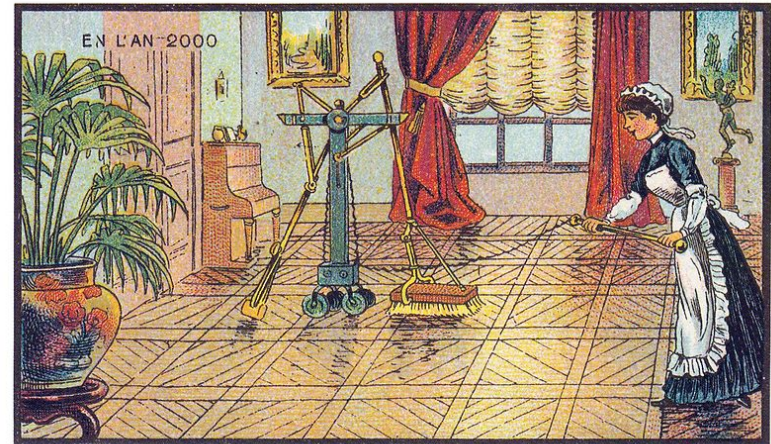
# FUTURE VISIONS FROM THE PAST

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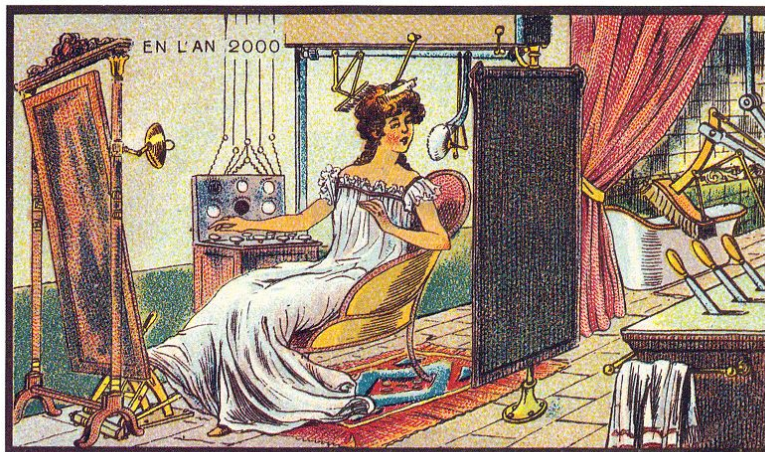
# A 19<sup>th</sup> Century Vision of the Year 2000



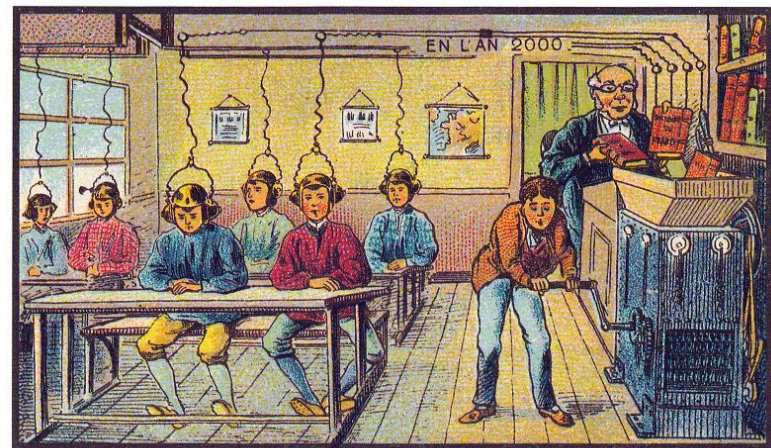
The Rural Postman



Electric Scrubbing



Madame at Her Toilette



At School

Jean-Marc Coté et al. (1899-1910) En L'an 2000

# Visit to the World's Fair of 2014



Source: Project ChefMyself



Source: Project Connected Vitality



ear

either be common nor  
14, but they will be in



Source: Robosoft

# Innovation driven by Assistive Technology



Telephone (1877),



Transistor (1947), John Bardeen and colleagues



Scanner & OCR (1975), Ray Kurzweil

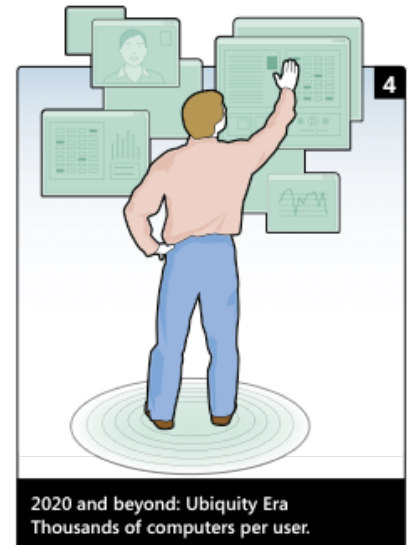
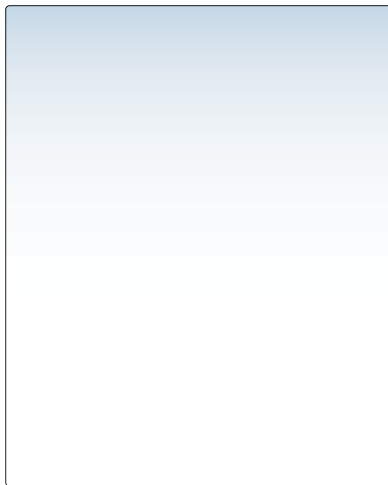
# EMERGING TRENDS IN HUMAN-COMPUTER INTERACTION

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# Changing computers

- Computer-driven revolutions



Harper, R. H. (2008). *Being human: Human-computer interaction in the year 2020*. Microsoft Research Limited

# Major changes

- Changing Computers
  - New forms of interaction
- Changing Lives
  - New forms of growing older
- Changing Societies
  - New forms of social participation

# Future trends

## 5 trends in human-computer interaction

- Mobile computing
- Tactile computing
- Social computing
- Affective computing
- Wearable computing

# Mobile Computing

- Enabler for systems that fit naturally into peoples' complex dynamic lives
- Dynamic research area
- Future direction: “digital ecosystems”



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# Tactile Interaction

- Multimodal user interfaces: combination of movement, touch or haptic interaction
- More immediate feedback through touch
- off-loading information from the visual channel to sense of touch



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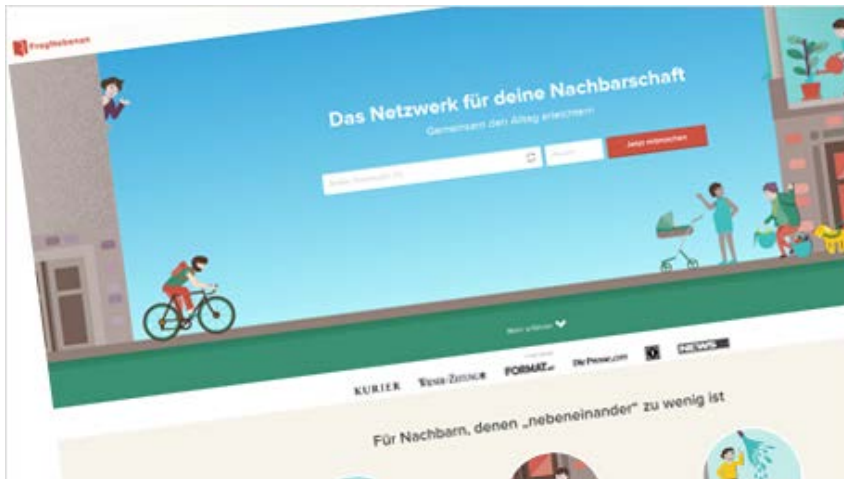
# Tactile Computing

**Example:** Ultrahaptics

<https://www.youtube.com/watch?v=EZAH7GU1MJs>

# Social Computing

- Online social interaction influences the way we work, live, etc. (social networks)
- User-generated content (Wikipedia) – producer and consumer at the same time
- Sharing economy (Aribnb, Uber, community support)



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# Affective Computing

- Consider human emotions for the design of interactive systems
- Affective computing, affective interaction, technology as experience
- Future vision: „Her“



Affective computing: Q Sensor



Affective interaction: eMotoApp



# Wearable Computing

- Devices worn under, over, or in „clothing“ (e.g., Smart Clothing‘)
- Bearable computing (e.g., implants)



Source:

[www.news.networkmagazine.com.tw](http://www.news.networkmagazine.com.tw)



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Source: [www.mytechnews.de](http://www.mytechnews.de)

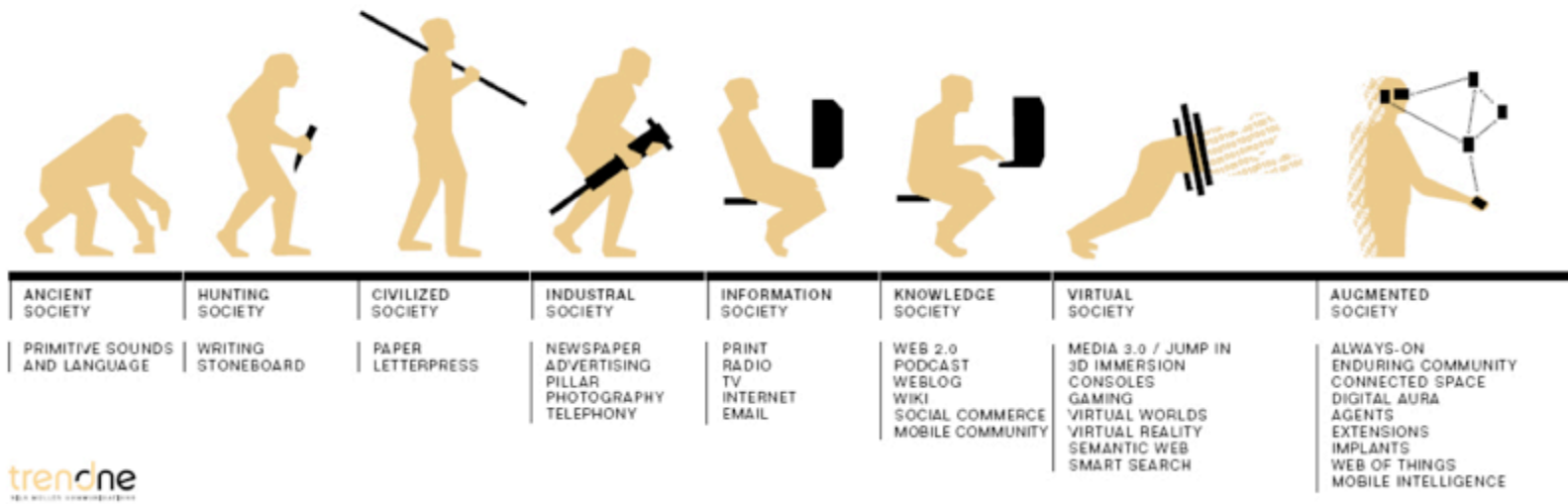
# Wearable Computing

**Future:** Smart contact lenses

[https://www.youtube.com/watch?v=IK\\_cdkpazjI](https://www.youtube.com/watch?v=IK_cdkpazjI)

# Summary

- New technology is increasingly prevalent in all different areas of living
- => Integration of existing „systems“ – Smart Homes, Smart Cities



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# INTERACTIVE DESIGN FICTION SESSION

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# Scope & Goals

- Discuss trends and future visions for future
  - Communication
  - Informal care
  - Mobility
- Develop ideas for concrete solutions and concepts for age-friendly communities of the future, based on three scenarios
  - Helmut Schlingel
  - Luise Insel
  - Roswitha Blumenthal

# Scenario 1: Communication

**Helmut Schlingel**

**Age:** 81

**Place of residence:** Bregenz, Austria

**Family:** married, 1 daughter, grandchildren

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## **About and Family:**

- Lives outside the city
- Big house and garden
- Frequently in contact with his daughter, living abroad
- Well off

## **Health:**

- Heart problems
- No drugs
- Active in the garden
- Slightly overweight
- Hearing aid & reading glasses

## **Social:**

- Satisfied
- Like travelling with friends
- Good contact with his grandchildren

# Scenario 1: Communication

**2016**

*Helmut is an enthusiastic user of his new iPhone 6 and has a tablet since a couple of months. To talk to his grandchildren living abroad he uses **video chat on Skype**. He loves to travel a lot and regularly sends pictures using **Whatsapp**. This gives him a feeling of being connected to his family. Although he prefers to meet his friends physically, he also started sharing content on **Facebook**.*

**2030/2050**

- How will Helmut stay connected with his family and friends in the future?
- How will affective computing enable Helmut to share and experience emotions when communicating with his family?
- How will Helmut be able to share his travelling experiences beyond sharing pictures and videos?
- What kind of devices will Helmut use?

# Scenario 2: Informal Care

**Luise Insel**

**Age:** 84

**Place of residence:** Rostock, Germany

**Family:** widow, 1 son

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## **About and Family:**

- Living alone
- Cannot take care of herself
- Receives meals on wheels
- Frequently in contact with her son
- Well off

## **Health:**

- Diabetes
- Forgetfulness
- Overweight and rather passive

## **Social:**

- Hardly any friends
- No routine activity
- Mainly in contact with her nurse and her son



# Scenario 2: Informal Care

## 2016

Luise has been overweight her whole life. That's why she and has **troubles moving outside the house** and she is now also suffering from diabetes. She receives **regular support from a mobile care organization** and just took part in a study where she could use an an online platform that allows her to receive support from her neighbors (e.g., grocery shopping).

## 2030/2050

- How can new communities together with new technologies improve Luise's life?
- How can these new services be integrated in the public care system?
- Are there any challenges or ethical dilemmas due to the mobilization of volunteers in the "volunteering community"?
- How can Luise be encouraged to move outside her house?

# Scenario 3: Mobility

**Roswitha Blumenthal**

**Age:** 64

**Place of residence:** Suburb of Berlin, Germany

**Family:** married, 2 children, 1 grandson

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## **About and Family:**

- Studied at University
- Social Worker
- Children are living in the same city
- Regular contact with family
- Well off

## **Health:**

- Normal weight
- Eats healthy food
- Slightly restricted due to rheumatism

## **Social:**

- Regularly takes care of her grandchild
- Doing voluntary work
- Likes cultural events

# Scenario 3: Mobility

## 2016

Roswitha lives in the suburbs of Rostock. Since her daughter is a single parent she tries to support her by taking care of her grandson, who is 8 years old. Almost every day she picks him up from school, using her own car and likes to go with him to the zoo. Although she is still quite healthy and active, she sometimes has concerns driving with her car because traffic jams increasingly cause feelings of insecurity. Public transport systems are not an option for her, because there is only a bus going twice a day.

## 2030/2050

- How will future means of transportation increase Roswitha's autonomy and mobility?
- How can smart city infrastructures and alternative means of transportation increase Roswitha's feeling of safety?

# Next steps

- Summary on session website:
  - <http://aalforum2016.tech-experience.at>
- Potential follow-up activities
  - Drop us a mail

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