IMPROVING INDOOR ENVIRONMENTS FOR OLDER ADULTS

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Perspectives in Assistive Technology
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In 2050, 33% of population will be over 60 years old.

Decrease of fertility rate within worldwide developed markets.

Increase of healthcare costs and welfare system.
WHAT IS HAPPENING?

How many devices will be connected in the future?

In 2018 more than 17 billion connected devices were in use worldwide.

This number will grow to nearly 22 billion devices for the year 2025.

WHAT IS HAPPENING?

https://vimeo.com/313924443

Source: the funny Internet
IF I WERE IN YOUR SHOES?
THE LIFE AS A GRANDPA

Imagine to have a look at a website.
THE LIFE AS A GRANDPA

Imagine to have a look at a website:
Reduced ability to focus.
THE LIFE AS A GRANDPA

Imagine to have a look at a website: High glare sensitivity.
Imagine to have a look at a website: Low contrast sensitivity.
THE LIFE AS A GRANDPA

Imagine to have a look at a website: Glaucoma.
THE LIFE AS A GRANDPA

Imagine to have a look at a website:
Macular degeneration.
THE LIFE AS A GRANDPA

Imagine to listen to a song: What can you hear?
THE LIFE AS A GRANDPA

Imagine to climb stairs too big for you: Can you easily climb them?
THE LIFE AS A GRANDPA

Imagine to open a jar with working gloves: How can you do that?
THE AGE EXPLORER SUIT

1. SIGHT
2. SOUND
3. MOBILITY
4. MOVEMENT
5. TOUCH
6. WALKING

Source: Meyer-Hensel Institute in Germany
HOW TO ADDRESS CHALLENGES?
IoT FOR BETTER LIVING
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Health and Fitness wearable devices
KITCHEN

Smoke sensor prevents fire and can unobtrusively monitor people

Smart lighting system detects when people are at home

Smart dishwasher knows when energy is cheap and starts automatically

Smart plugs can remotely control home appliances

Smart oven can be controlled via smartphone

Flooding sensor prevents water damage & sends alerts on smartphone
LIVING ROOM

Connected speakers know when you are at home and play music.

Smart thermostat detects which is your favourite temperature.

Smart plugs turn on/off appliances remotely, when needed.

Smart trackers remind where things are left.

Lifestyle monitoring systems support in daily activities & keep people fit.

Energy trackers notify when energy is cheap and makes home safer.

Robotic devices help in connecting and socializing with people.

Curtains and windows change automatically when people comes in/out.

Smart lighting system adapts light according to user needs.
BEDROOM

- Lighting system sets scenarios for waking up/going to sleep
- Surveillance systems keep home secure and prevent theft
- E-Health devices monitor physical status and send information
- Monitoring devices keep you under control and tell info to doctors & familiars
- Security systems keep home safe and secure
- Vacuum robot keeps the house always clean
RESTROOM

- Lighting systems control lights & energy consumption
- Smart plugs turn off systems if there's a warning
- Anti-flooding systems switch off water meter in case of flooding
BUT, THE REALITY...
... IS OFTEN DIFFERENT
HOW DO WE DESIGN SOLUTIONS...
AGE-FRIENDLY DESIGN

WE HAVE TO TAKE ADVANTAGE OF THE TRANSFORMATIVE IMPACT THAT GREAT DESIGN AND EMERGING TECHNOLOGIES WILL HAVE ON CREATING SUSTAINABLE, SUPPORTIVE AND CONNECTED COMMUNITIES FOR THE AGING POPULATION AND THOSE WHO CARE FOR THEM.

Source: FROG Design - Ageing By Design
USABILITY

Is the extent to which a **product** can be used by specified **users** to **achieve** specified goals with **effectiveness**, **efficiency** and **satisfaction** in a specified context of use.
Why can’t my technology be as easy to use as my garage door opener? One button and it opens or shuts the door. Simple, elegant.
NAVIGATION & FAMILIARITY

How easy is for users to accomplish basic tasks the first time they encounter the design?
CONSISTENCY

When users return to the design after a period of not using it, how easily can they reestablish proficiency?
ERROR PREVENTION & FEEDBACK

How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
VISUAL CLARITY

Is what you see what you understand?
QUESTION:

Which tap is easier to use?
FLEXIBILITY & EFFICIENCY

Once users have learned the design, how quickly can they perform tasks?
AND THEN, ONE OF THE MOST VALUABLE
SATISFACTION

How pleasant is the design to be used?
HOW CAN WE ENHANCE SATISFACTION?
HOW CAN WE ENHANCE SATISFACTION?
HOW CAN WE ENHANCE SATISFACTION?
WHY MOST OF OUR HOUSES ARE NOT EASILY ACCESSIBLE?

IS IT JUST MATTER OF COST AND KNOWLEDGE?
IS MATTER OF:

KNOWLEDGE
IS MATTER OF:

KNOWLEDGE

AWARENESS
IS MATTER OF:

KNOWLEDGE

AWARENESS

USABILITY
IS MATTER OF:

KNOWLEDGE

AWARENESS

USABILITY

ACCESSIBILITY
IS MATTER OF:

KNOWLEDGE

AWARENESS

USABILITY

ACCESSIBILITY

ERGONOMICS
IS MATTER OF:

KNOWLEDGE

AWARENESS

USABILITY

ACCESSIBILITY

ERGONOMICS

DESIGN
THE WORLD IN YOUR HANDS
YOU CONTROL
GOOD DESIGN ENABLES, BAD DESIGN DISABLES!

Paul Hogan, EIDD-DFA Europe president Emeritus

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