Technology for Older Persons

Context and Preconditions

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Technology for Older persons - Overview

- Some background information
- Older people's experiences and needs – findings from several R&D projects and studies
- Context and preconditions for fruitful implementation and application of technologies, systems and services
- Technology potential and limitations
- Present and future challenges.

Background: The empirical basis

Lessons learned from several projects

The sources: Projects and studies

- **AGE research projects**
  with Focus on ICT, health and independent living
- **the "sentha" project**

- **A study on "The potential of ICT in Supporting Domiciliary Care – The Carers' Perspectives"**
- **and several other projects and studies.**

Background: Ageing in technological societies

- **In modern societies, significance of technology has increased in all domains of life.**

- **Technology is transforming the way we work, live, play – and age.**

  Mobility, communication, working life, entertainment, health care are no longer conceivable without technical support.

- **This holds also for older people‘s living environments.**

- This is all the more important
  - **in view of the increasing risk of competence loss in old age,** and
  - **in view of demographic changes – the ageing of societies.**

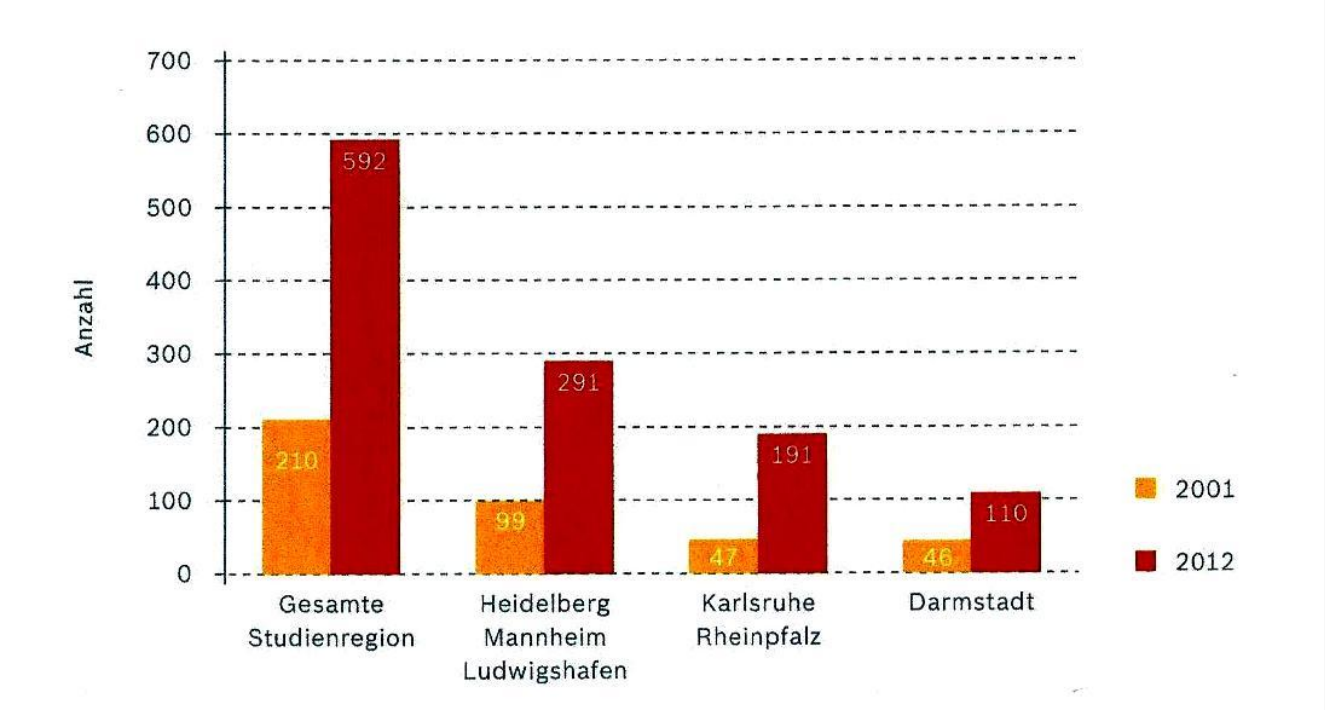
Background: Demographic Changes

Older persons are the share of the population growing most rapidly:

By 2047, there will be 2 billion older people worldwide

(UN: World Population Prospects, the 2010 Revision)

In Germany, the number of persons aged 100 has tripled within the last 10 years



Background: Demographic Changes

The changing demographics of modern society include

- increasing proportion of older people
- particularly strong growth among the very old

- trend towards living alone
- reduction in the size of the households due to decreasing birth rates
- shrinking family networks
- families' diminishing potential to care for older individuals.

Older persons – what we know

Older persons are the share of the population growing most rapidly

These older persons are not a homogeneous group –
they are men and women, young and old, of various ethnicities,
healthy and chronically ill, active and secluded, affluent and poor,
skilled and clumsy, technology experienced or digitally illiterate,
living in urban and rural areas - - -

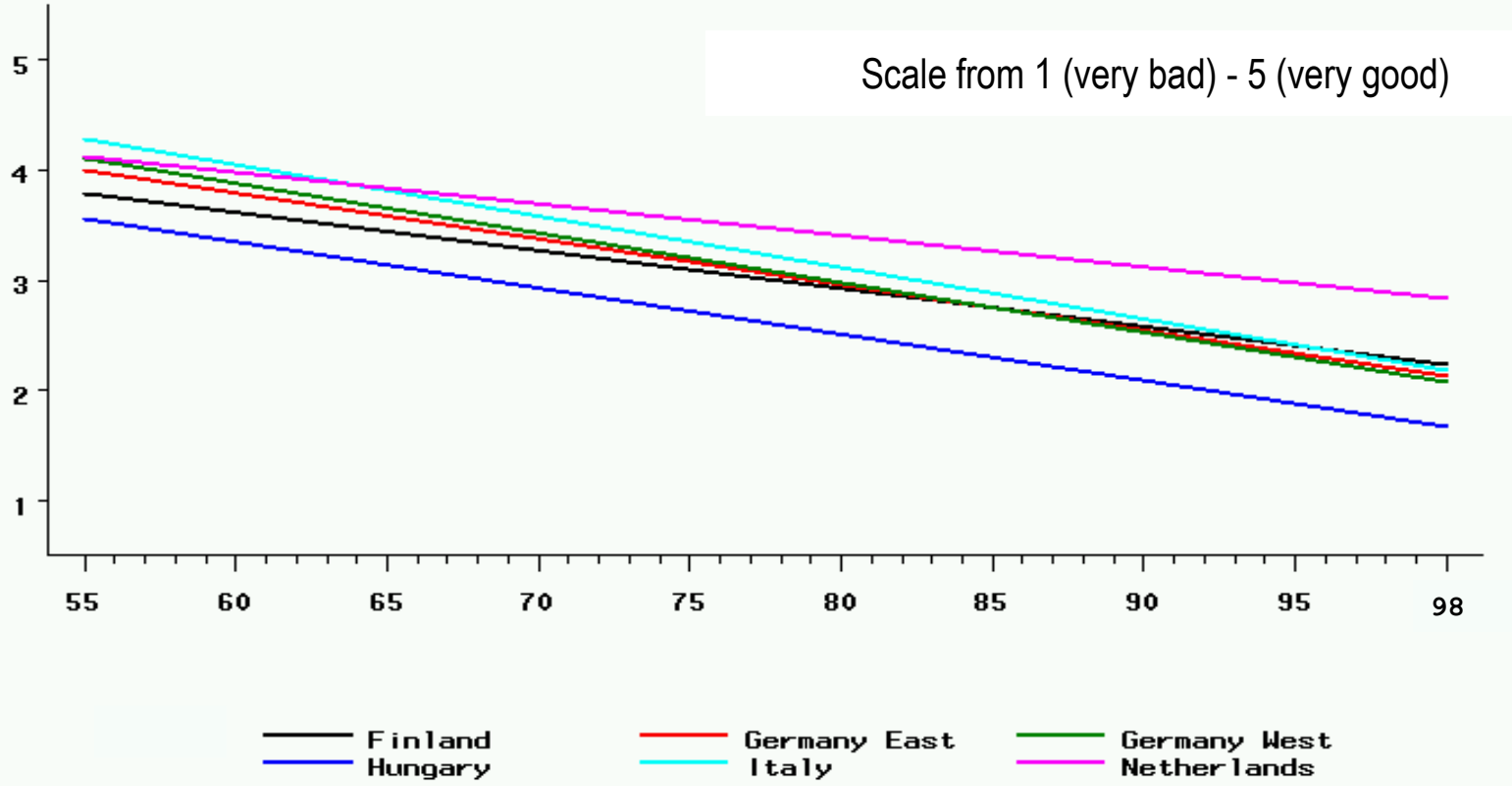






Increasing risk of competence loss

Activities of Daily Living (ADL; %)



Data base:
The MOBILATE Project

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Older persons – their basic needs and fears

Older persons are not a homogeneous group - - -

- **but their basic needs and fears are similar:**

- Community participation / contribution to local communities
- Social isolation / loneliness
- Security and Safety
- Forgetfulness
- Keeping healthy and active / Checking up on care provision
- Accessing information / Keeping up to date
- Getting access to shops and services
- Mobility inside and outside the home

Key challenges – and the potential of technology

In view of …

- decreasing familial and professional support options,
- increasing risk of competence loss,

technological devices and systems have the potential of …

- providing assistance in everyday tasks,
- compensating for diminishing competencies,
- providing information, advice and assistance,
- helping to gaining new skills through online learning and training
- supporting social contacts, building new relationships and maintaining societal participation.
- increasing access to healthcare (which is particularly important in remote rural areas),
- improving quality of care.

But . . .

Key challenges – and the potential of technology

New Information and Communication Technologies …

- offer new opportunities,

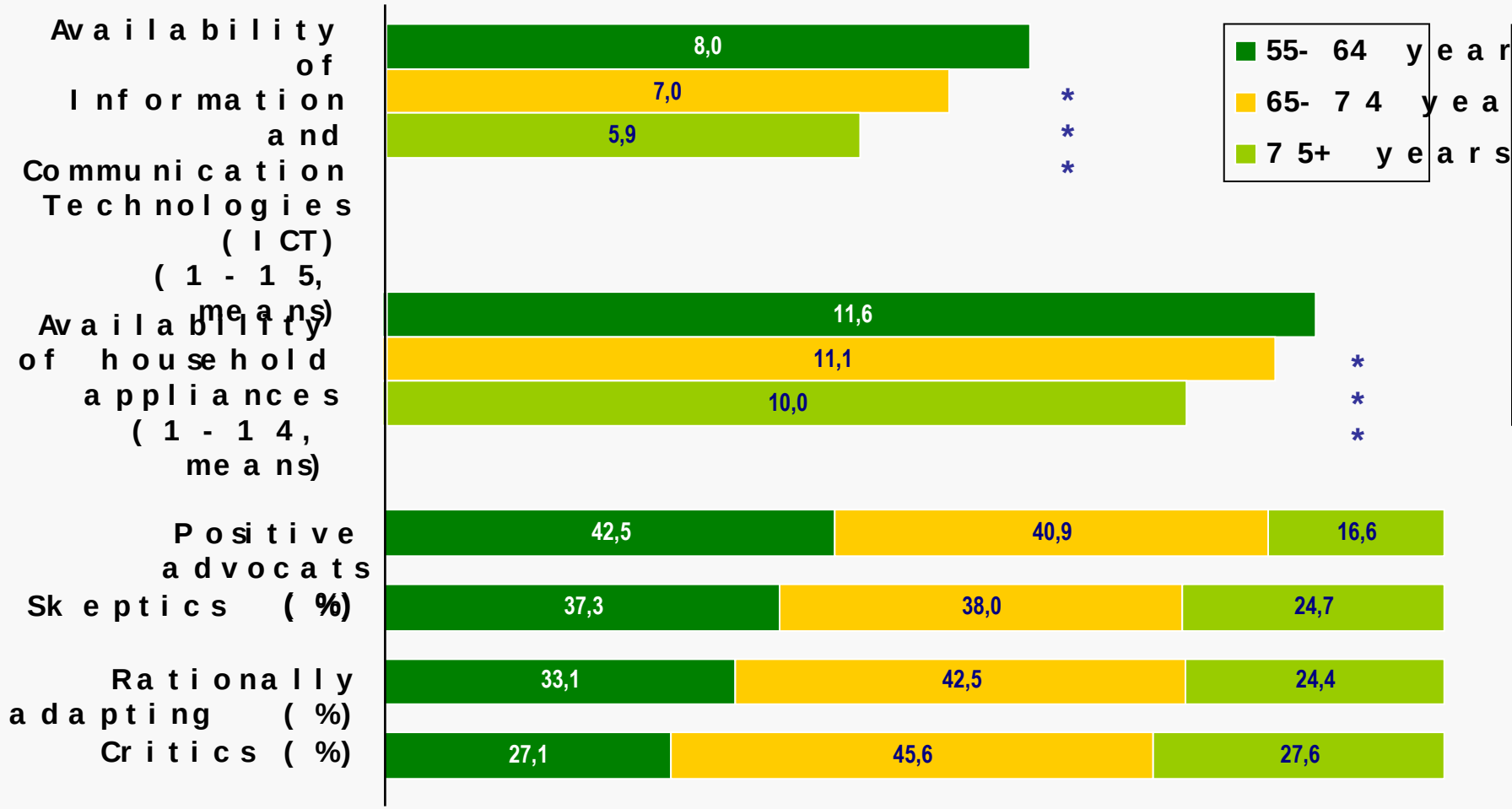
  but …

- are connected with barriers
- require equipment and skills.

The individual older persons differ regarding …

- social, educational, and cultural background
- competencies, self-perception, expectations and interests
- life styles and learning experiences
- intellectual functioning and learning capacity.

Equipment and attitudes among German older persons



Note: * p<.05; ** p<.01; *** p<.001. Database: Sentha Survey 1999

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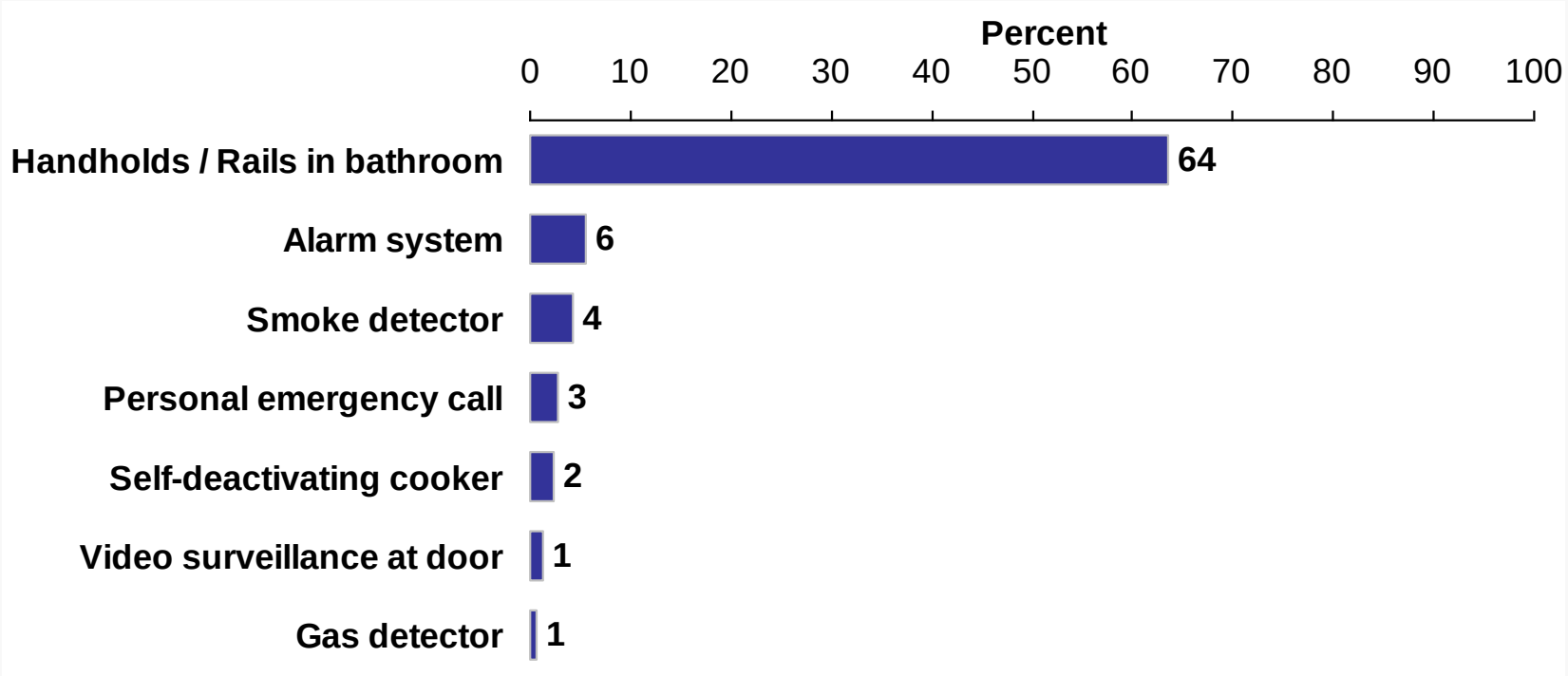
ICT – Problematic Devices

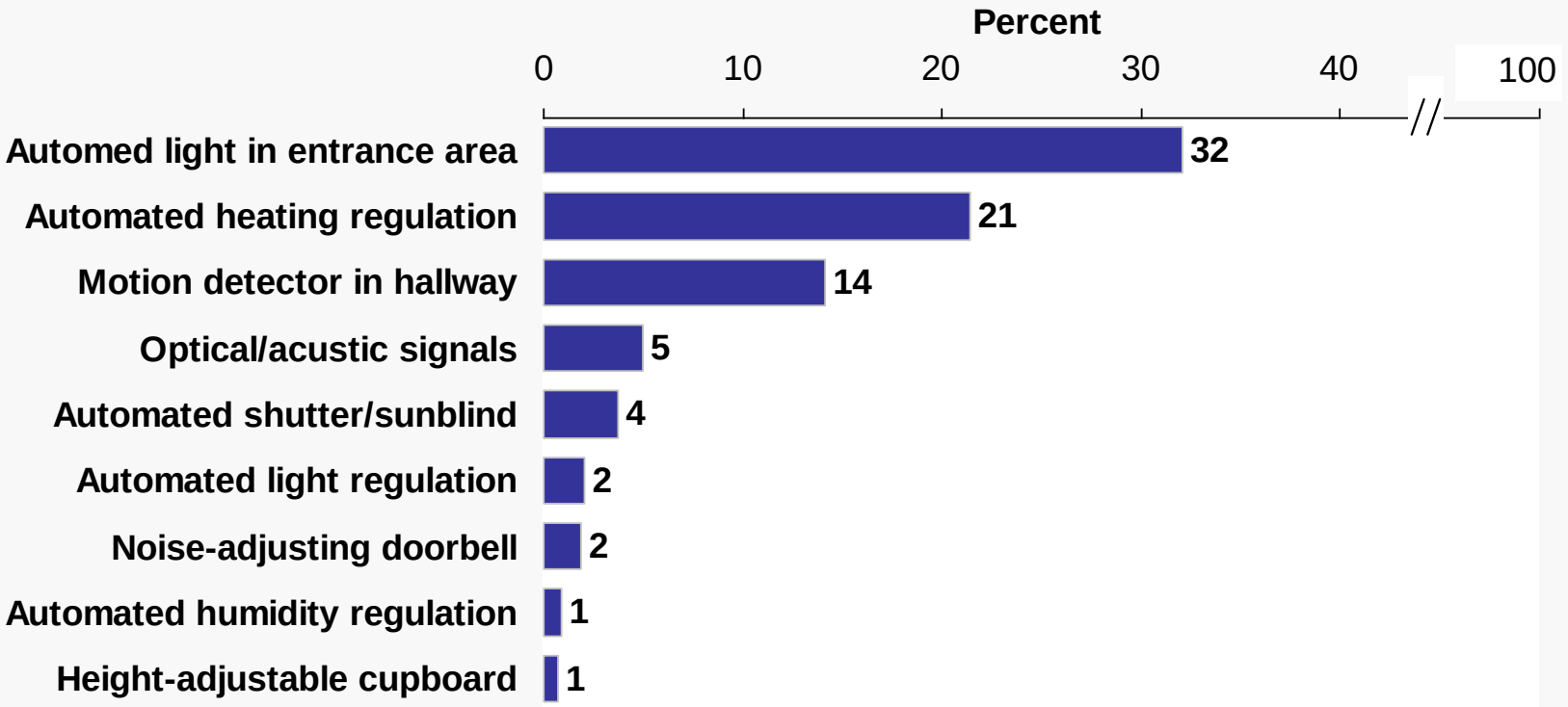
Device	Equipment	Bad experiences	Fears	Need for simplification of use
Video recorder	52	23,1	16,4	33,2
Computer	11	18,0	19,3	24,8
Modem, Internet access	5	17,5	12,7	17,5
Video camera, Camcorder	13	16,3	12,5	19,0
Mobile phone	8	13,7	7,7	18,8
Answering machine	20	11,9	5,4	8,7
Fax machine	7	11,8	7,5	11,8
TV set	99	11,2	5,7	8,9
Cordless phone	30	10,3	4,9	6,8
Teletext	63	8,1	5,5	10,3
Stereo system	60	7,8	5,6	9,5
CD player	47	6,5	3,5	5,9
Cable connection	92	6,1	3,5	4,1

The percentages refer to the respondents who are equipped with the respective devices.
All further devices asked for (telephone with cord, radio) were mentioned by less than 5% in all aspects.

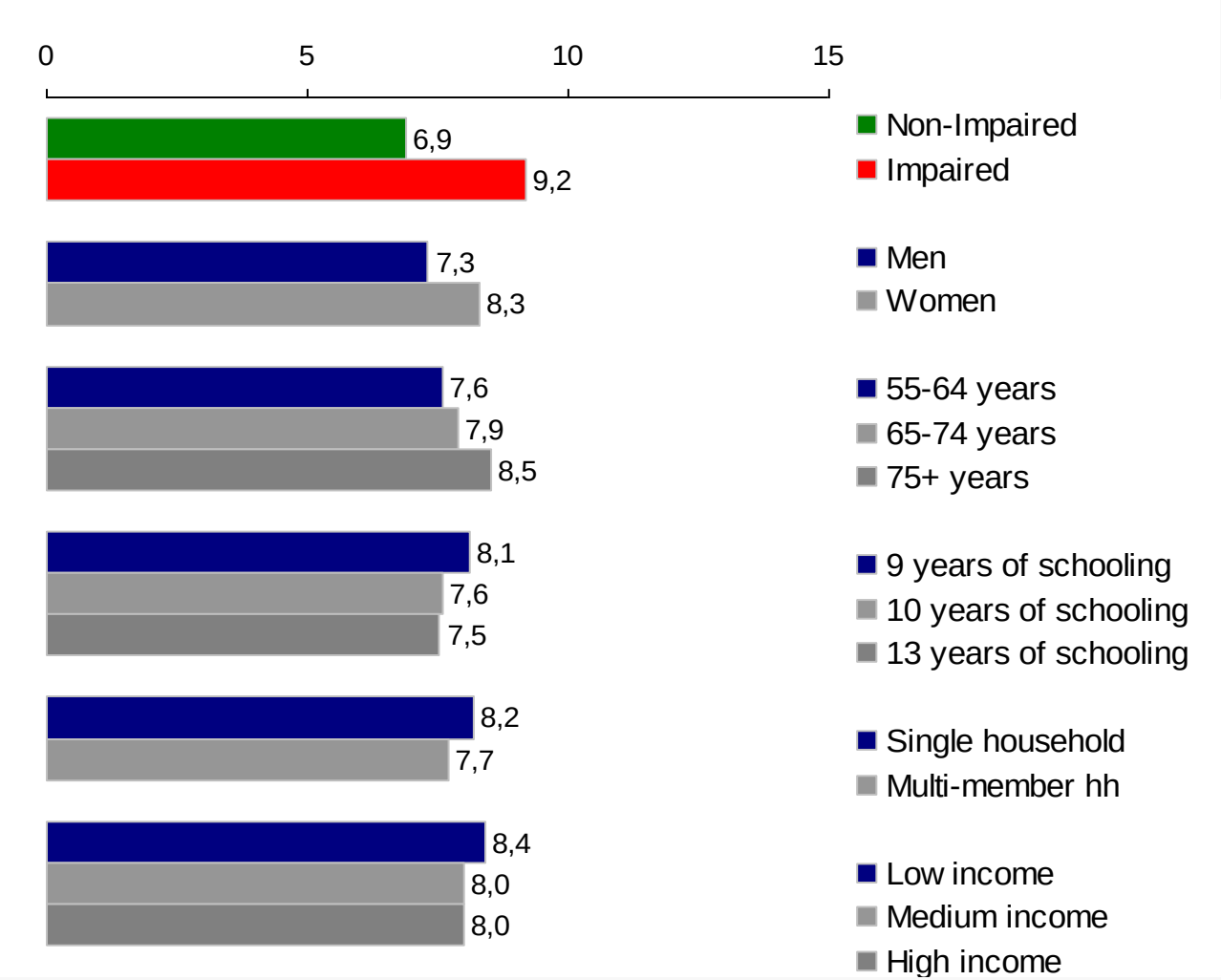
Equipment with Security Devices - Items



Equipment with Comfort Devices - Items



Fears reported regarding security

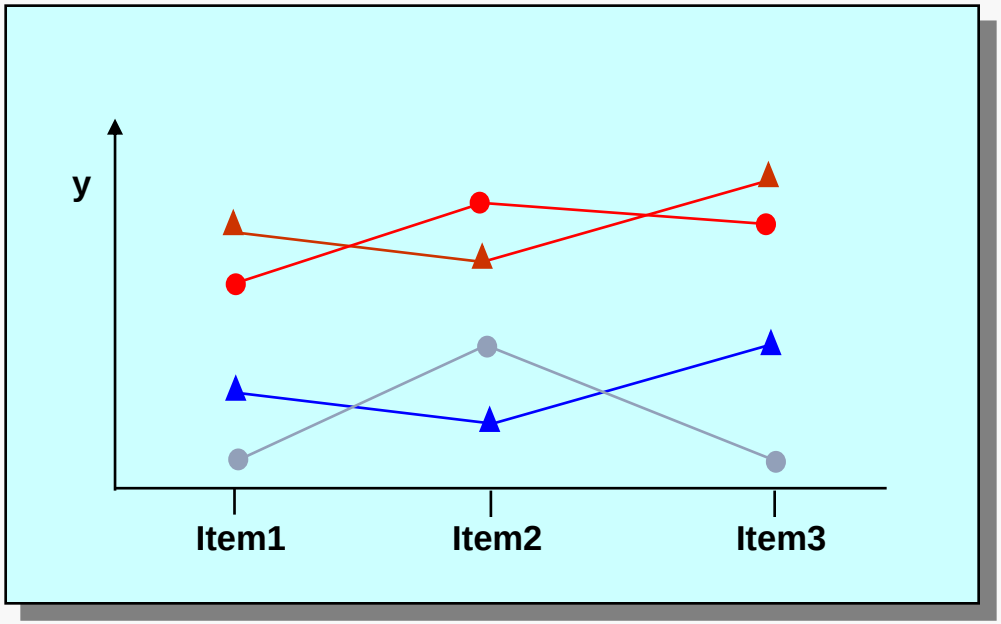


The potential of technology: Technology Profiles

Characters based on information on biographical and actual technology experiences and appraisal

Analyses

- Factor analysis
- Cluster analysis
- Q-Factor analysis

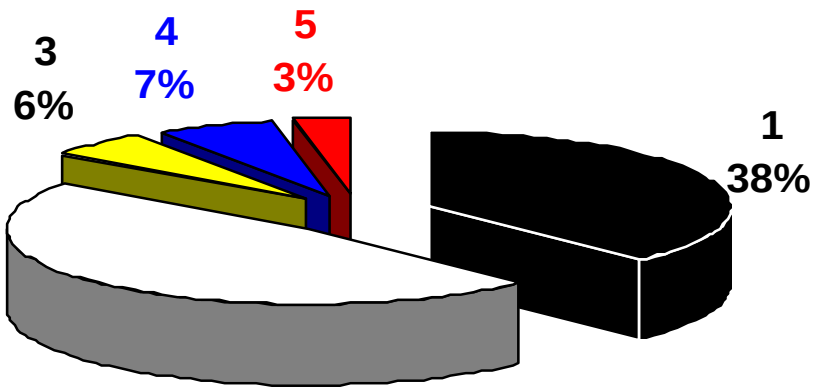


The potential of technology: Technology Profiles

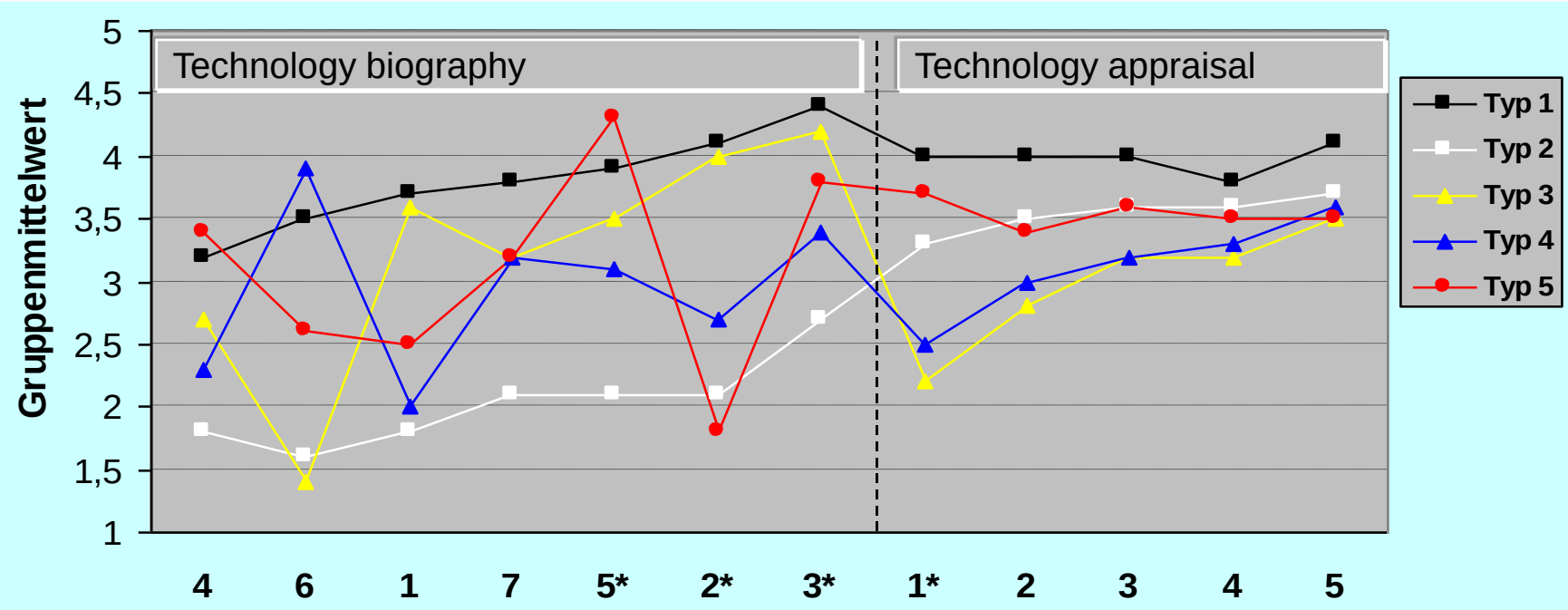
	Respondents		
	n	%*	cum %
Type-1-profile	591	**37,7**	37,7
Type-2-profile	579	**47,3**	85,0
Type-3-profile	100	**5,5**	90,5
Type-4-profile	91	**6,5**	97,0
Type-5-profile	44	**3,0**	100,0

* weighted data

Datenbasis: **sentha** survey 1999
N=1405



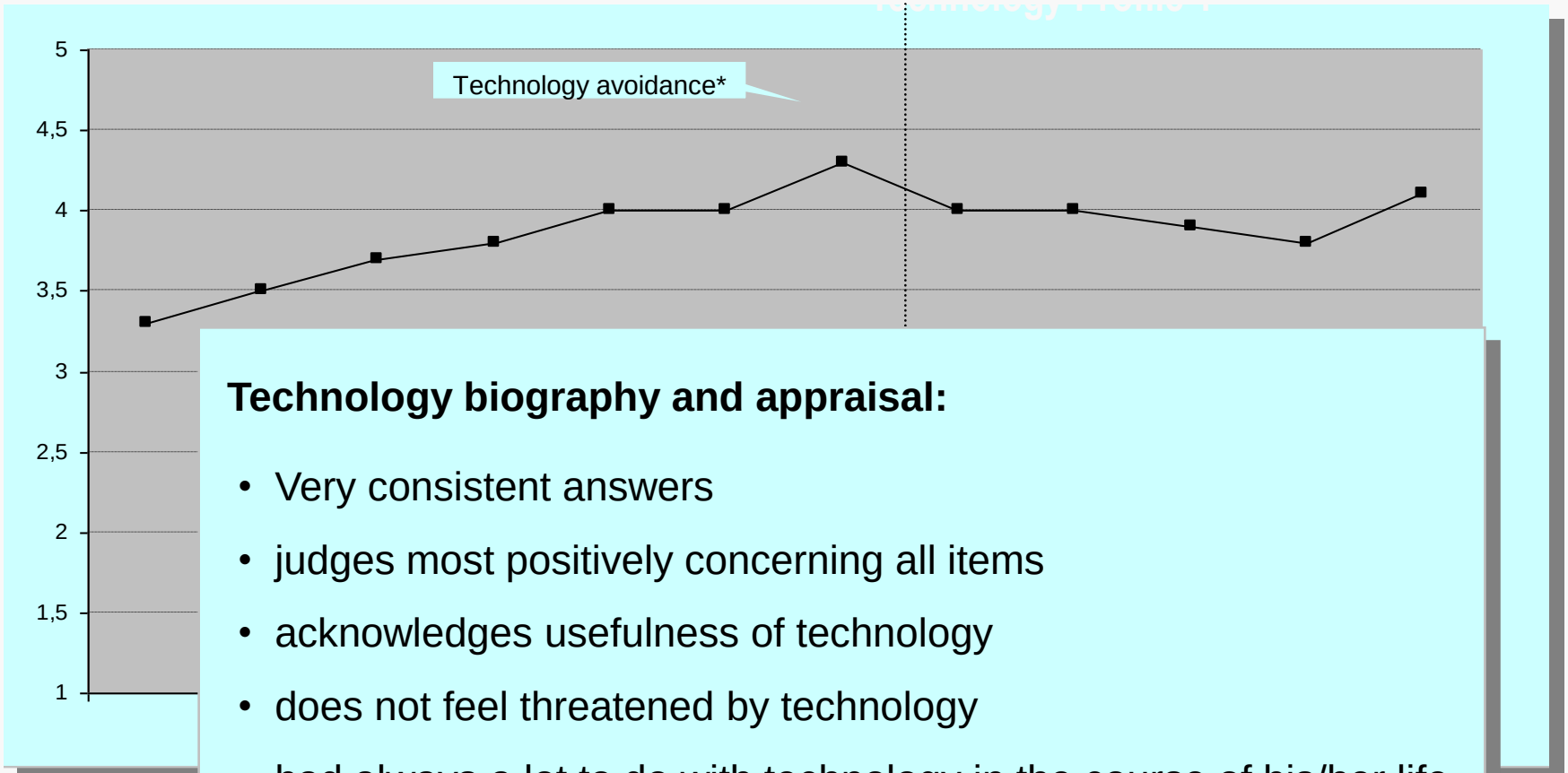
Technology Profiles - Overview



1 Always had a lot to do with technology;
2* No interest in a profession involving technology;
3* Avoided using technology if possible;
4 Interested in latest technological devices;
5* Insecure through complicated technology;
6 Enjoyed learning how to use a computer;
7 Interested in learning how to use new or improved devices.

1* Technology threatens people more than it helps them;
2 Technology has mostly improved life;
3 Technological advances are needed - you simply have to accept certain unavoidable disadvantages;
4 Problems will be solved by further technology;
5 Technology is needed for a modern standard of living, whether you want to or not.

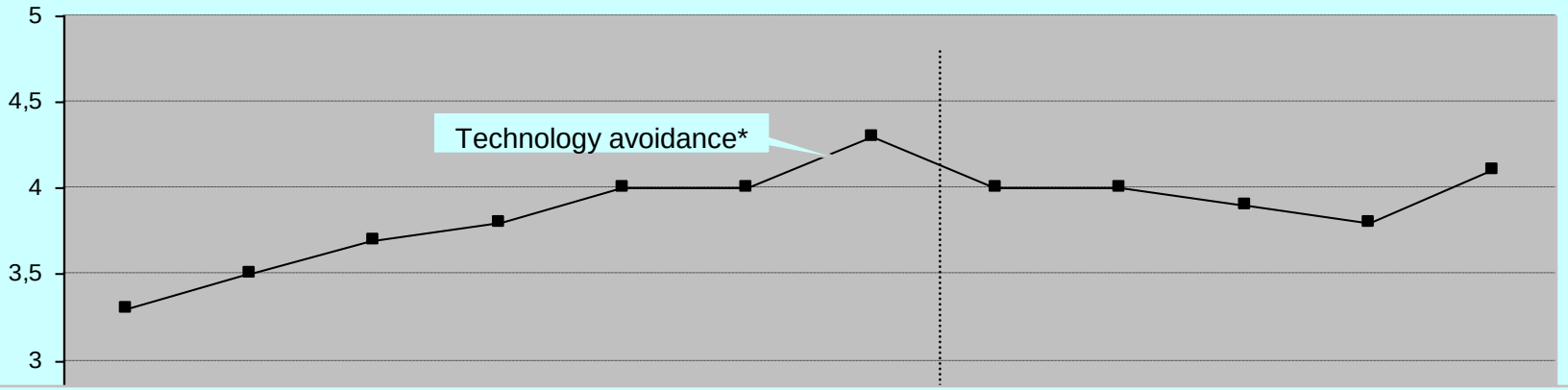
Technology Profile 1



Technology biography and appraisal:

- Very consistent answers
- judges most positively concerning all items
- acknowledges usefulness of technology
- does not feel threatened by technology
- had always a lot to do with technology in the course of his/her life
- is interested in new technologies.

Technology Profile 1



Social structure:

- male
- of younger age
- minor impairments
- higher education
- previously working fulltime
- living together

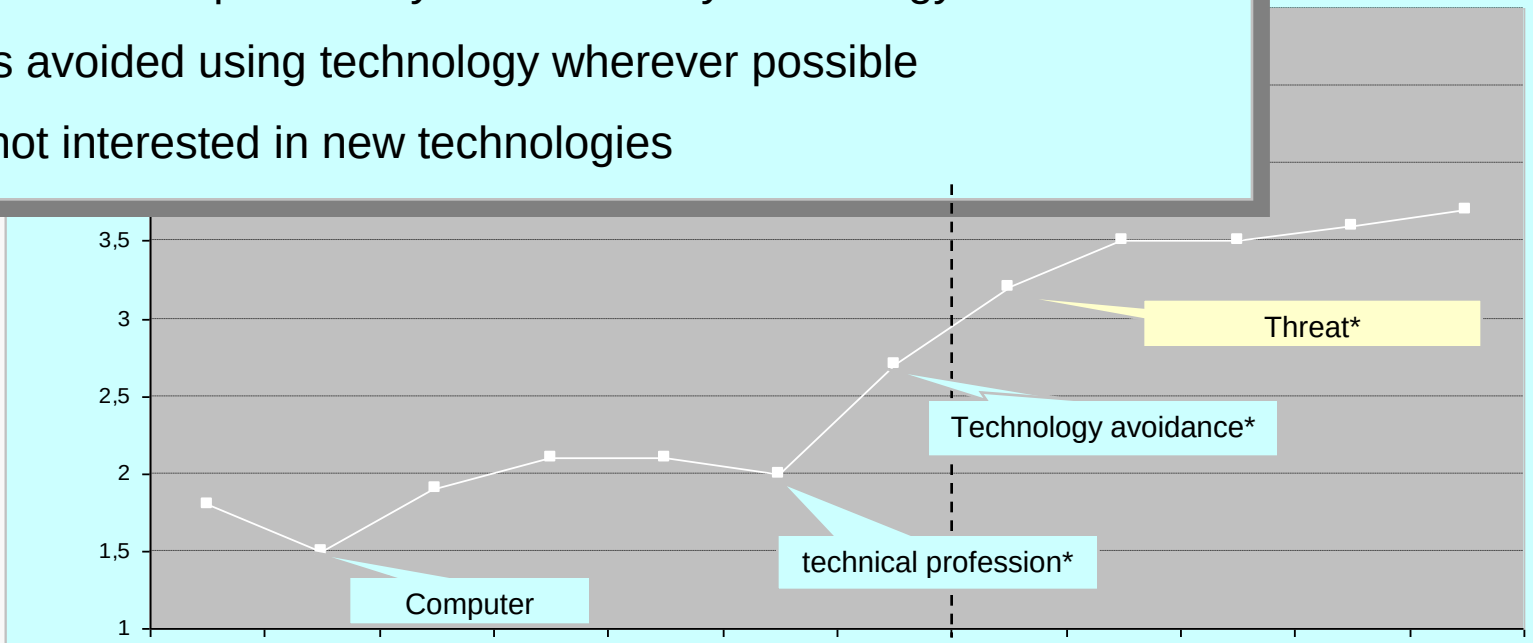
Dealing with technology :

- highest range of technology equipment
- few fears concerning appliances
- few wishes for easier handling.

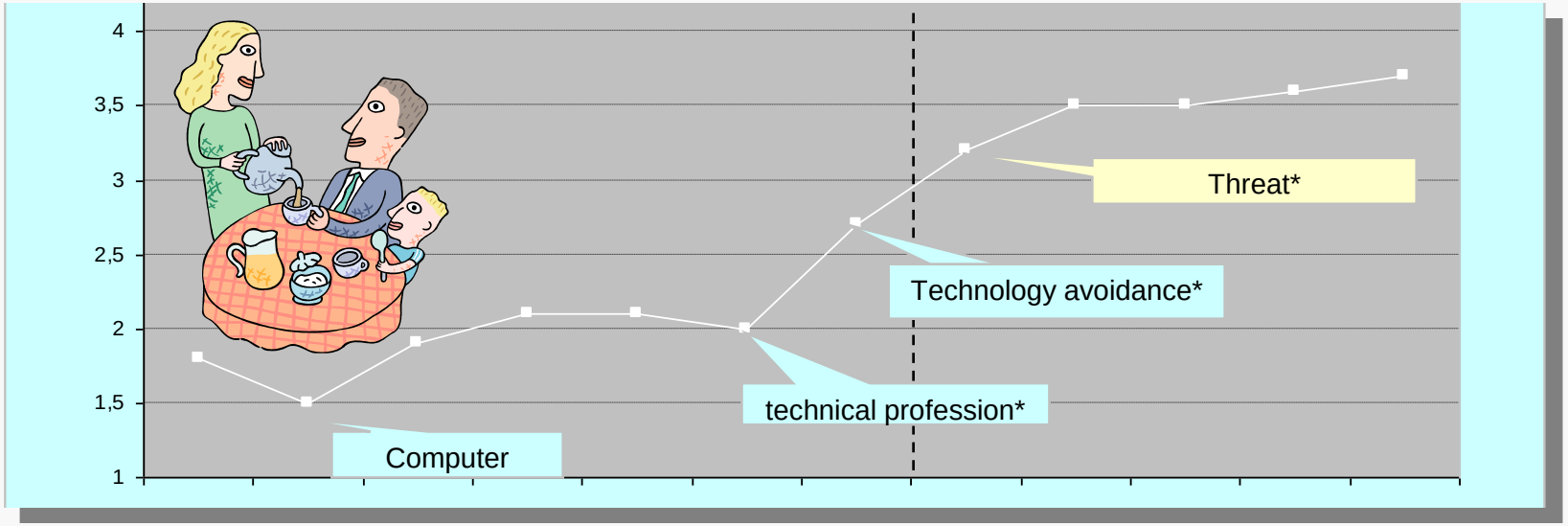
Technology Profile 2

Technology biography and appraisal:

- Had little contact with technology in the course of his/her life
- acknowledges the usefulness of technology
- does not feel particularly threatened by technology
- has avoided using technology wherever possible
- is not interested in new technologies



Technology Profile 2



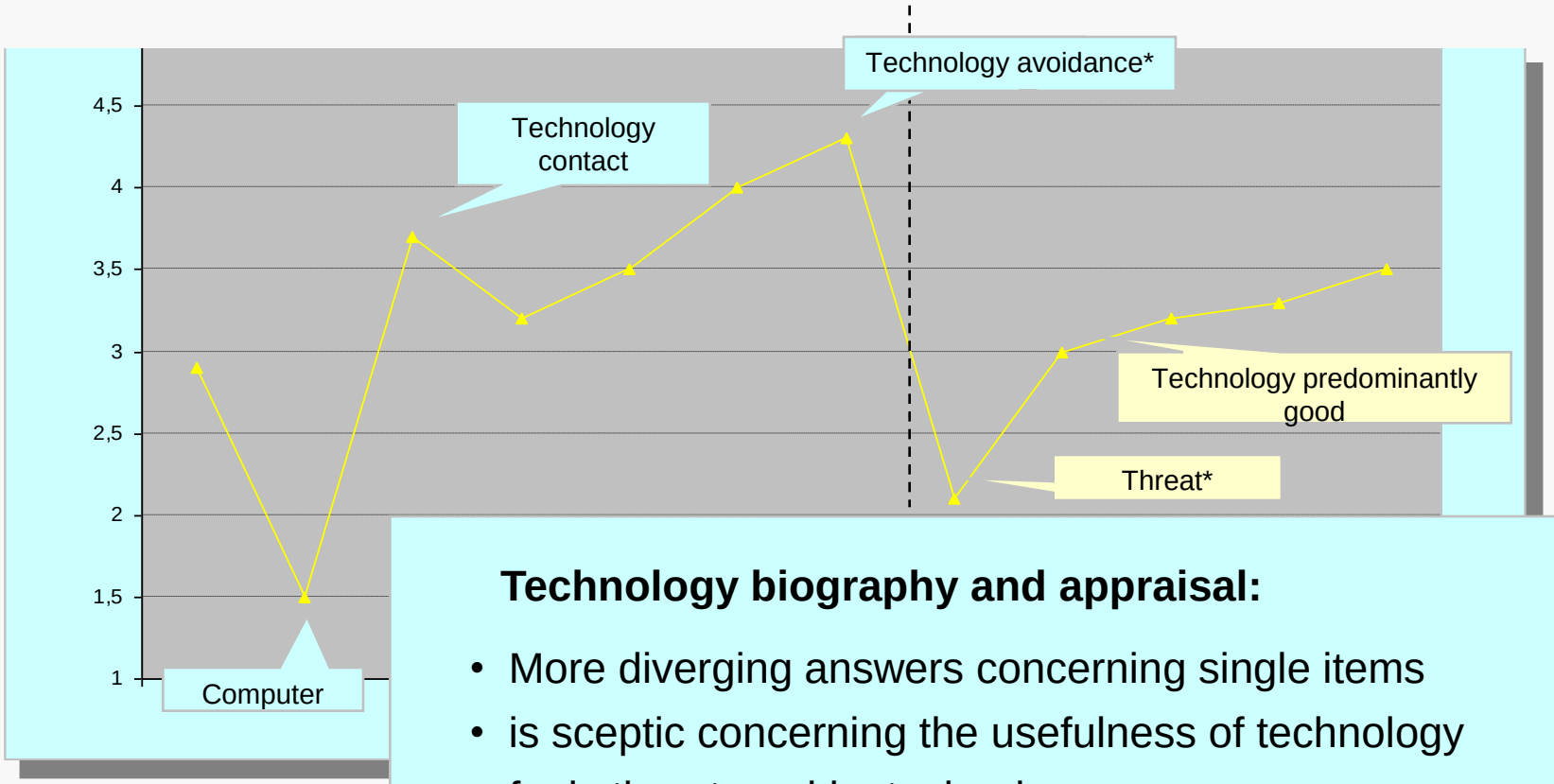
Social structure:

- female
- of older age
- serious impairments
- lower formal education
- previously working part-time or not at all
- often living singly

Dealing with technology:

- lowest range of technology equipment
- worst experiences with appliances
- strong fears concerning appliances
- frequent wishes for easier handling.

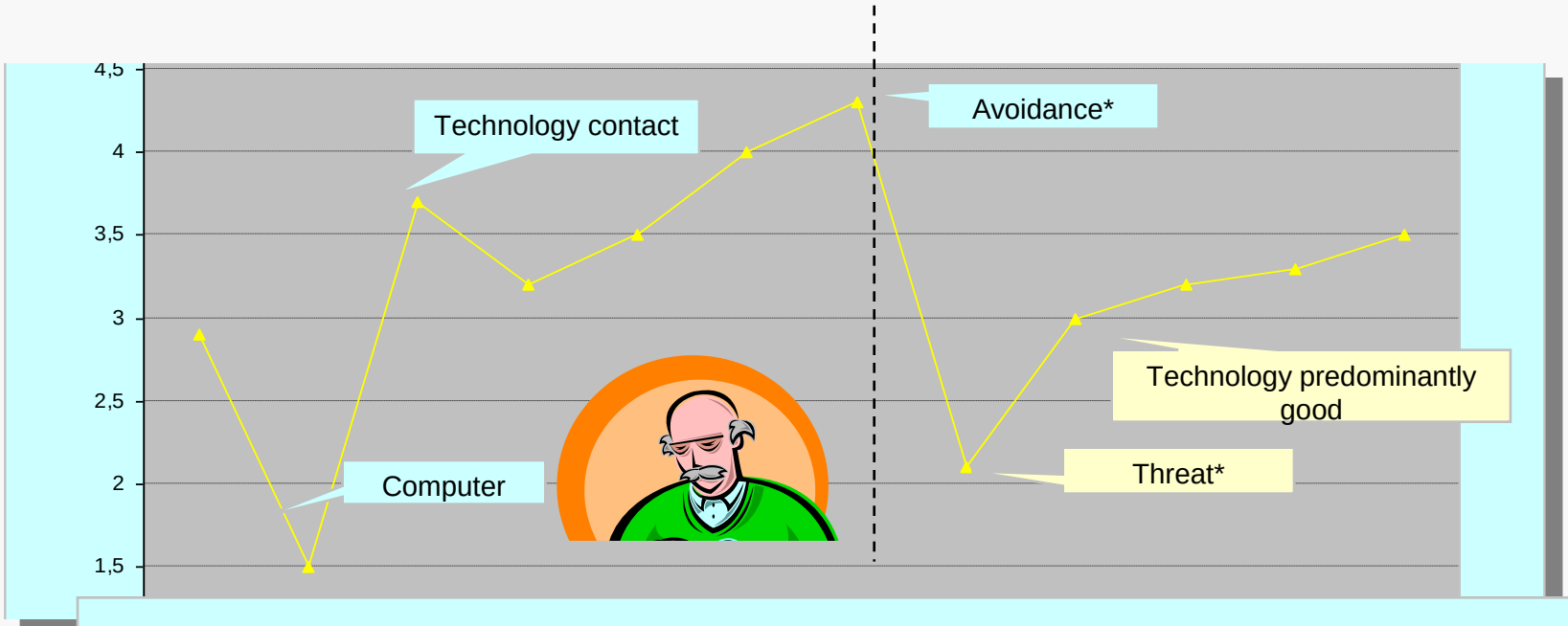
Technology Profile 3



Technology biography and appraisal:

- More diverging answers concerning single items
- is sceptic concerning the usefulness of technology
- feels threatened by technology
- had always a lot to do with technology in the course of his/her life
- is interested in new technologies,
- however, has a critical attitude towards the computer.

Technology Profile 3



Social structure:

- Predominantly male
- lower formal education
- previously working fulltime
- mainly living together

Dealing with technology :

- small range of technology equipment
- few bad experiences with appliances
- few fears concerning appliances
- few wishes for easier handling.

Technology potential and limitations

Technology is useful for older persons –

however, older persons are not a homogeneous group.

And they differ with regards to

- **Experiences and attitudes**
- **Abilities and resources –**

- **and, by this, their chances to benefit from technological developments differ very much.**

Technology potential and limitations

Until now, the younger, healthier, better educated and wealthier older persons profit most from technological developments.

Many services of general interest (transport, health and long term care, energy, water, postal services, etc,), government services, banking services and employment offers, **are more and more accessible via Internet than via other traditional print mediums.**

- This increases further **marginalisation of older people** who have not the digital literacy skills to buy, access and use this type of technologies.

Key challenges – and the potential of technology

What else do we know about technology for older persons?

- What we learned from several **EU projects**
- What we learned from a study on
  " The Potential of ICT in Supporting Domiciliary Care" –
  An IPTS funded Project – The Case of Germany (2009-2010)

  http://is.jrc.ec.europa.eu/pages/EAP/eInclusion/carers.html

High potential of technical systems and services

- Older Persons / patients living on their own have got a better feeling of safety
- Family carers are relieved of parts of their burden
- Portals and video-conferences: regular visual contact
- Interaction of confidence between the patients and nurses
- Success of vital signs monitors: easy to use, non-intrusive
- Empowerment through a deeper understanding: participants have become more aware of their own conditions – quality of life
- Improved quality of work of the health professionals.

Older persons' needs – what we learned

However . . .

Barriers (1)

Older persons

- Low readiness to inform oneself before being in need of support / care
- No knowledge about possibilities, costs and funding possibilities
- Fear of being dependent on or not being able to use technical devices
- Use of technology is seen as acknowledgement of being old and needing support.

Barriers (2)

Family & Other Actors

- ICT developers and users not speaking the same language
- Developers not involved with interests & problems of older people
- Resistance to abandon old practices: changing role of professionals
- Care workers' fear of loosing the job
- Not enough time to train staff and potential users.

Barriers (3)

Technology

- Deficient internet coverage
- Failure of technology to function / installation of equipment comes often up with problems
- The batteries in the devices: low power and capacity
- Inoperability of devices – e.g., videoconferencing system with TV set at home / different systems within social network
- Cost of infrastructures

Conclusions (1)

Older Persons

- Continue making ICT developers aware of older persons' interests and daily routines, of their needs and fears

Family & Other Actors

- Consider the time needed to train staff and potential users
- Learn more about attitudes, needs and fears of professionals
- Consider their changing roles and how they experience the "technological diffusion" in their relationships with the older persons.

Involve from the outset all persons / actors concerned

Conclusions (2)

Technology

- Continue making technologies accessible, affordable, reliable and interoperable
- Consider the need of technical support (installation, change of batteries, maintenance)
- Consider time and costs for training (both, older persons and staff)
- Clarify responsibilities in case of failure of the technology and of damages caused

→ **Improve the technologies and services further**

Conclusions (3)

Technology, Individuals & Society

- Adapt the systems to the conditions and requirements of the different phases of old age
- Consider the digital divide
- Ascertain privacy and data protection
- Respect decisions, dignity and integrity of individuals
- Balance independent living and risk of isolation
- Balance independence and control.

Consider the whole human-technology connections and context.

Thank you for listening!

- **Contact for further information**

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- See also

http://www.eesc.europa.eu/?i=portal.en.int-opinions.19621