Federal Ministry
of Labour
and Social Affairs

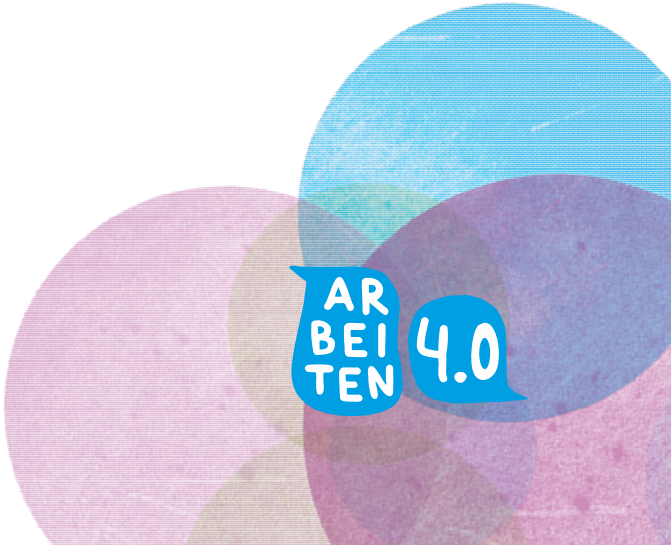
ARBEIT
WEITER
DENKEN

On Digital Economy and its Implications for Employment

Labour 4.0 and Inclusive employment (for persons with disabilities) in Gemany in the age of digital economy

Jakarta, 26.-27.4.2017

Michael Schmidt, Chair – Central Staff Council



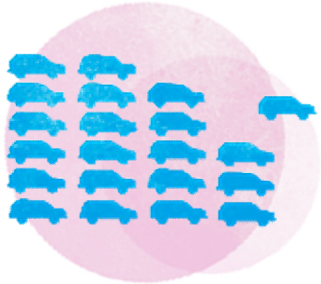
The debate about the future of work has been going on for a while

Heading towards work 4.0

Work 1.0

- Birth of the Industrial Society
- First workers' organisations

END OF 18TH CENTURY



Work 2.0

- Mass production
- Beginnings of the welfare state

END OF 19TH CENTURY

Work 3.0

- Globalization
- Information technology
- Advancement of Social Market Economy

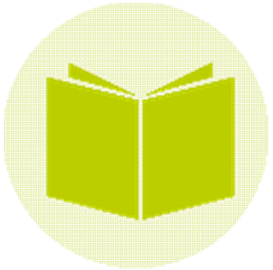
1970s - 2000

Work 4.0

- Interconnected, digital, flexible work
- Rising human-machine-cooperation
- "New Social Compromise"

TODAY

The Dialogue „Work 4.0“ in Germany at a glance



GREEN PAPER

KICK-OFF SPRING 2015

CONFERENCE SPRING 2016

FINAL CONFERENCE FALL 2016

POLITICAL DIALOGUE WITH ASSOCIATIONS (CALL FOR COMMENTS)

CITIZENS' DIALOGUE: ARBEITENVIERNULL.DE, ONLINE-QUESTIONNAIRE , FILM FESTIVAL

EXPERT DIALOGUE: CIRCLE OF EXPERTS/WORKSHOPS, FOCUSING ON CRUCIAL ISSUES

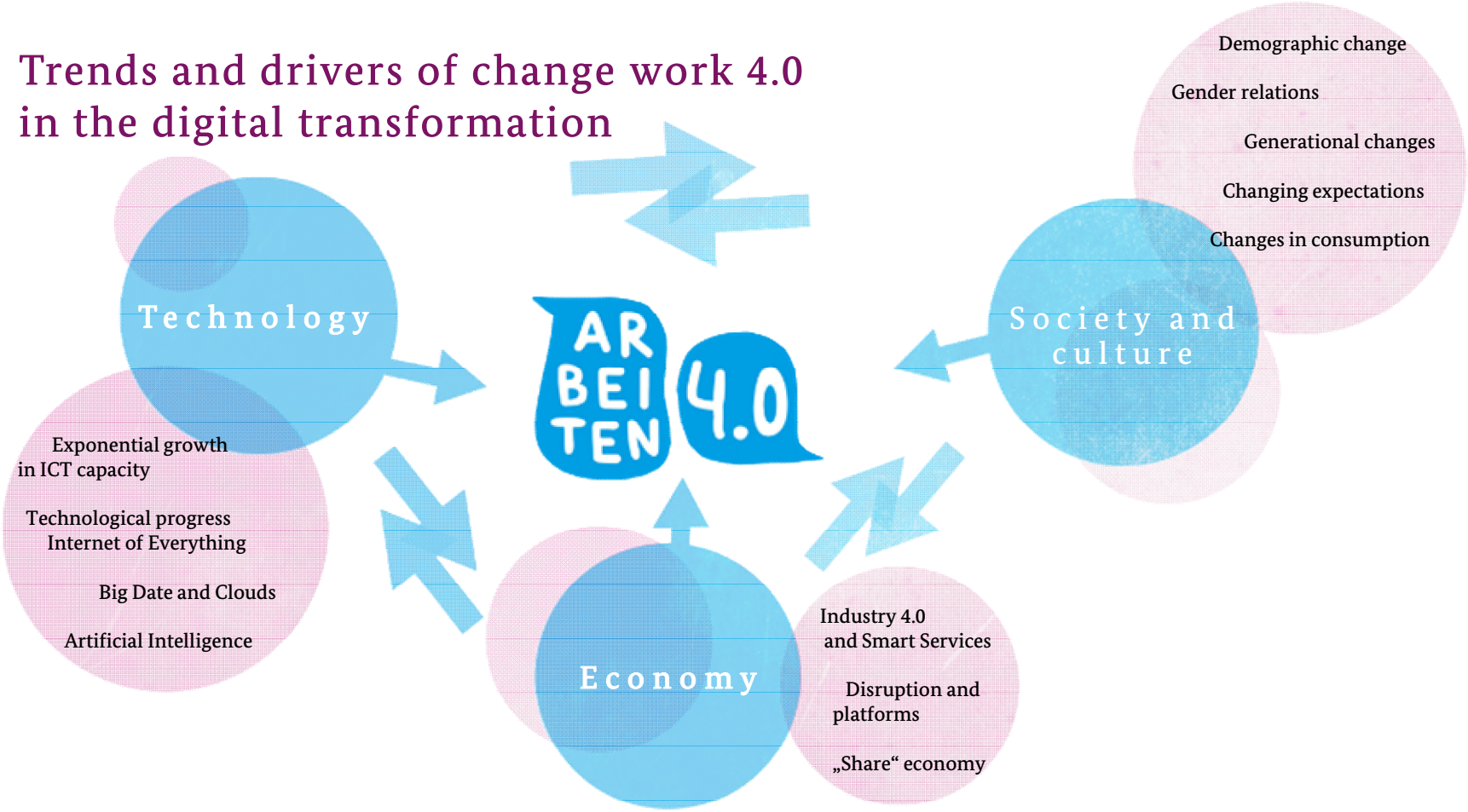
WHITE PAPER

Work 4.0 – the white paper

A reference document of the dialogue process

- **Background Analysis** :
  Trends and drivers of change, areas of tension, conflicting priorities in economy and society.
- **Mission statement**:
  What is decent work in the digital age?
- **Areas of action:**
  Shaping labour and social policy for the future of work.

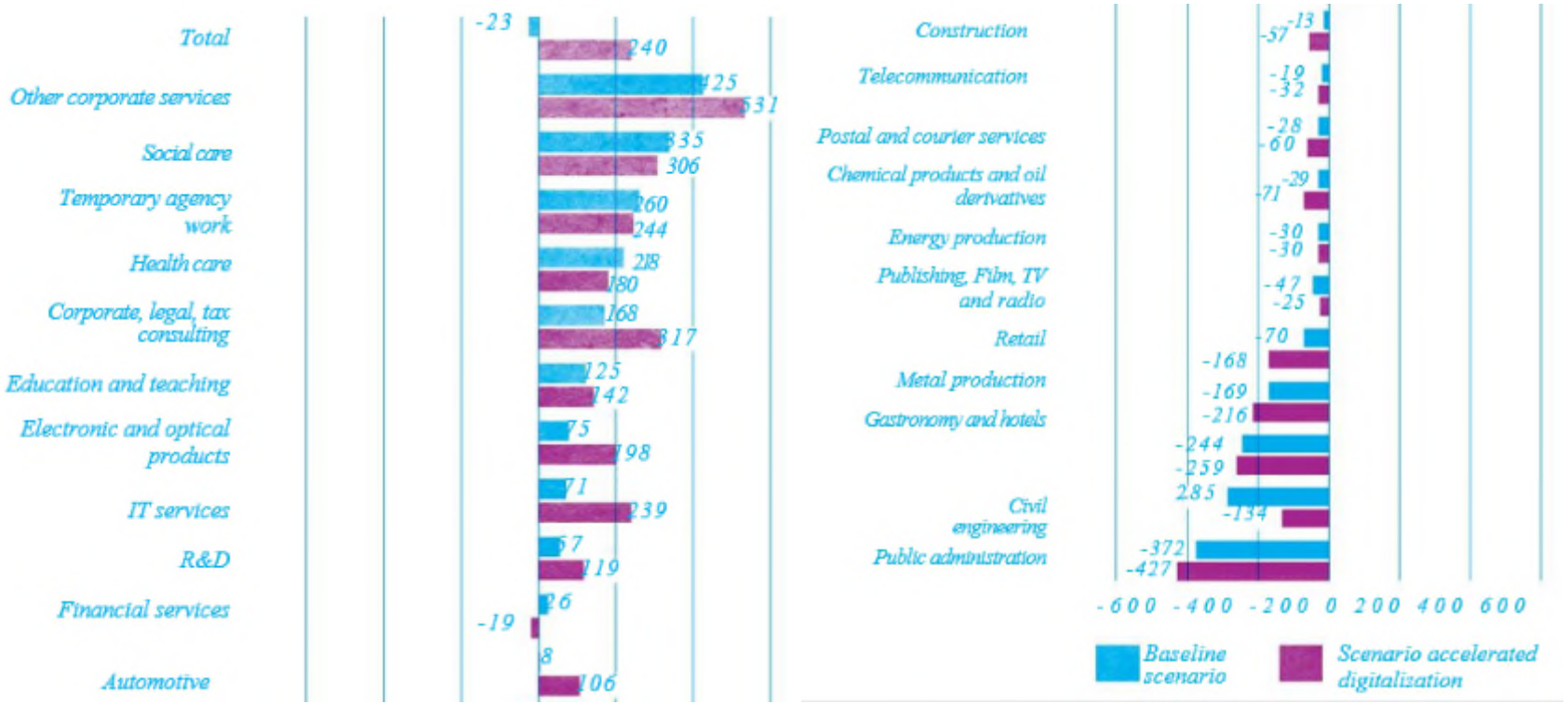
Trends and drivers of change work 4.0 in the digital transformation



Areas of tension in the world of work 4.0

Employment effects: structural change and changing tasks
Digital platforms: new markets and new types of work
Big Data: key resource of the digital economy
Industry 4.0 and human-machine interaction
Flexible working time and place: beyond presenteeism
Business organisation: breaking up of traditional structures

Employment forecasts see a small total effect of digitization, but massive structural change

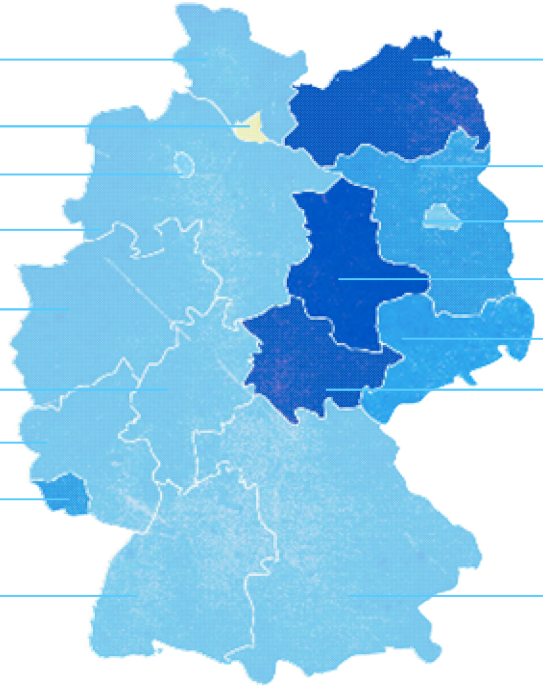


Change in number of active persons 2013–2030 in 1.000, Source: Economix 2016

Demographic change exacerbates regional differences and limits labour supply – active population by 2030

Baseline

Schleswig-Holstein	−4,1
Hamburg	0,1
Bremen	−2,0
Niedersachsen	−3,8
Nordrhein-Westfalen	−4,0
Hessen	−4,1
Rheinland-Pfalz	−4,4
Saarland	−10,1
Baden-Württemberg	−1,8
Mecklenburg-Vorpommern	−13,8
Brandenburg	−10,8
Berlin	−2,8
Sachsen-Anhalt	−15,1
Sachsen	−10,4
Thüringen	−14,6
Bayern	−1,6

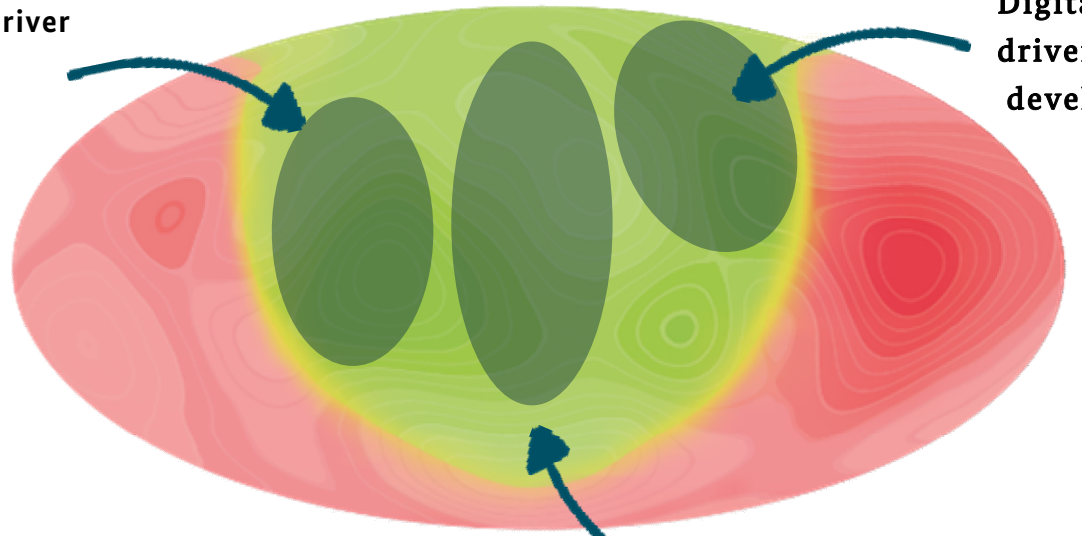


Change in number of active persons 2013–2030 in %, Source: Economix 2015

There are widely divergent views on digitalisation across the population

Digitalisation as a driver of negative developments

This group is skeptical about digitalization. They fear an **increasing workload** and **blurring boundaries** between working lives and private lives.



Digitalisation as a driver of positive developments

For this group, digitalisation means increased **individual capacity to perform** well and opportunities for **self-realisation**.

This group is moderately optimistic. Agreement with new technology for them is tied to personal gain in autonomy and work content.

Digitalisation as means to an end

SOURCE: BMAS/NEXTPRACTICE 2016

Mission statement: decent work in times of digital change

Normative position of the German Federal Labour Ministry regarding what characterises good work in a world of work 4.0. Five dimensions are crucial:

- Fair wages and social security for dependent employees and self-employed workers
- Chances for integration into work for everyone, securing individual employability over the whole career span
- Diversity as the new normal: stronger life-phase orientation instead of rigid models of work organisation (in one place, with fixed working times)
- High job quality with a view to flexibility demands (places and times), human-machine interaction, data protection
- Social partnership, co-decision making, and participation of employees in the design of their working conditions

Areas of action

- Skills and qualification
- Working time
- Digital services, platform work
- Human-machine interaction: Data protection, OSH
- Co-decision making and social partnership
- New types of employment
- Social security in the digital transformation

Employment and qualification: towards an “employment insurance”

Key elements

- Short-term: Labour market intelligence through continuous forecasting and monitoring of emerging mismatches
- Medium-term: Early investment in maintaining skills through employment agency
- Long-term: Prevention paradigm in LMP, entailing independent skills assessment, legal entitlement to counseling about continuous education,
  legal entitlement to continuous education

Working time: flexibility with autonomy

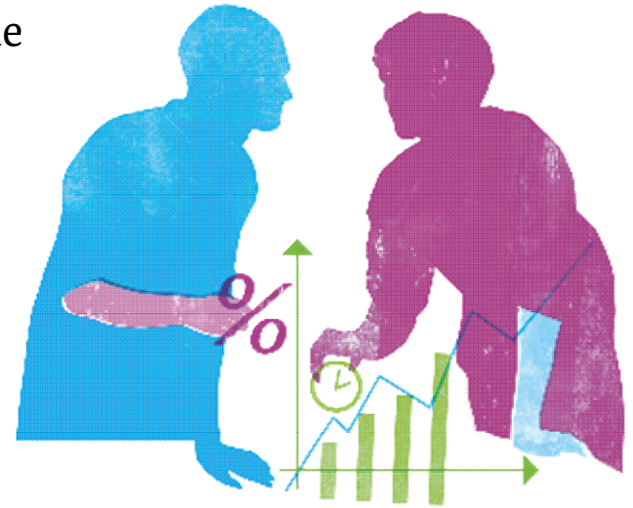
Key elements

- Short-term: legal entitlement to fixed-term part-time work (legislation in parliament)
- Medium-term: conditional, fixed-term clause to open regulations on maximum working time and breaks, if based on social partner agreements and scientifically evaluated.
- Longer-term: foster long-term working time accounts, continue scaling-up of care infrastructure, flexible transition into retirement.

Social security in the digital transformation

Key elements

- Short-term: continued structured dialogue with stakeholders about new forms of employment
- Medium-term: Inclusion of solo-self employed workers in to the (compulsory) statutory pension insurance
- Long-term: personal activity accounts.



Re-imaginging work – what‘s next?

Labour market policy as a learning system

- Stabilizing existing labour market institutions:
  autonomous collective bargaining, co-decision making
  at the company level in the digital age
- Testing new ideas:
  Innovation spaces and company-level policy labs as learning environments for labour market policy-making, close integration of research and innovation policy as well as transfer into business.
- Monitoring of developments and analysis of need for political action:
  regular, public, scientific reporting on trends and developments in the world of work, in collaboration with social partners
- Overall:
  Continuation of dialogue with stakeholders, citizens, experts that started with Work 4.0, particular focus on the future of social policy.

Opportunities and risks of digitalization in relation to persons with disabilities (1) - digital transformation has not really reached the welfare system yet

- Documentation of medical treatment processes/nursing documentation
- Aids for moving, transporting and lifting patients:
  Monitoring and control, also in the private area
- Logistics:
  Support services, household and cleaning assistants

Opportunities and risks of digitalization in relation to persons with disabilities (2)

- Orientation for end users, more and more often through the social media: spatial orientation guides
- Making homes and neighbourhoods safer:
- Robotics in nursing – robots used for physical tasks and for emotional outreach:
  Social activation for more communication, exchange and mutual help

Robots as assistants: Very controversial, in Germany experts are often skeptical, whereas patients often welcome them – they are not very much in use yet.

"Care-O-Bot" can handle routine tasks, but how about human proximity and warmth?

Bestic – table robot:

- „Left alone!“ oder: „Finally able to eat unaided again“!?
- Invented by a patient
- Developed by a Swedish start-up initiative.

Quelle: Google-Images, s.u.

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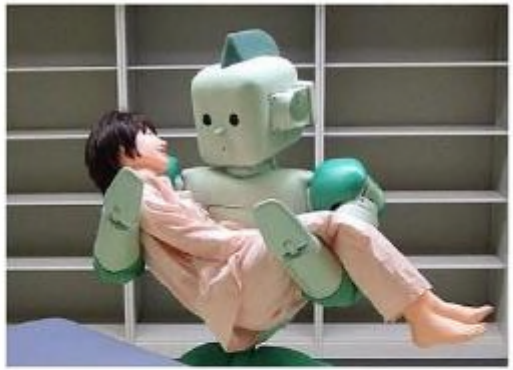
Components:

In Asia first positive experiences,
in Germany regarded with great skepticism.

Future applications .



in the distant future?

Hypotheses (1)

(1) Loss of jobs due to new technologies

- **Substitution of routine activities, increasing demand for more abstract activities.**

- **Low-skilled workers with disabilities: simple activities either become more important as they supplement automated work processes or employment opportunities will decrease.**

(2) New employment opportunities for persons with disabilities

- **Person-related technologies offer new opportunities for persons with limited mobility, impaired vision or hearing.**

- **New opportunities for highly-skilled persons with physical or sensory impairments require expert counselling and tailor-made placement into work.**

- **But new opportunities also mean new barriers: higher requirements regarding responsiveness, greater visualisation and costs to purchase the necessary equipment.**

Hypotheses (2)

(3) New technologies may lead to exclusion

- **In the event of intellectual disabilities, learning disabilities, psychological disabilities: Digitalisation = increasing requirements regarding qualifications and power of concentration add to exclusion from the general labour market.**

- **Use of home office increases social risks for persons with disabilities: contacts with colleagues, worker representatives, appreciation of personal performance, networking through talking to co-workers informally at work.**

- **Provision of an adjusted workplace at the company and of an adjusted workplace at home – high costs.**

Qualitative examination

(1) Loss of jobs in former „niches“

- **Example telephone exchange: nowadays organised via web services and call centres**

(2) New employment opportunities under certain conditions

- **New types of work as e.g. Crowd Working, telework, home office etc.: Employment opportunities for small sub-groups of highly qualified persons with physical or sensory disabilities**
- **... if they are intellectually able to cope with complex work requirements, to handle new technologies and to follow and understand future developments**

3. Qualitative examination:

(3) New work areas for sheltered workshops

- **new work areas e.g. by scanning documents**
- **Secondary use of no longer needed corporate hardware, but only few niches – not expandable ad libitum**
- **On the other hand: increased competition, just-in-time manufacturing**

(4) Support by technologies does not work without compliance with defined prerequisites

- **Technologies must be sufficently accessible (also a cost issue), and compatible with the devices and programmes used**
- **Further framework conditions have to be observed: reduced wokload and time pressure, optimum management of processes and organisational structures**

3. Qualitative examination:

(5) Technologies – Opportunities and barriers acccording to type of disability

- **Physical impairment: various opportunities but more time consuming**
  - **control by speech recognition (clear pronunciation, no ambient noise)**
  - **newly developed prosthetic devices, connected to nerves.**

- **Visual impairment: Screen readers, audio versions, Braille Displays are all helpful, but software adjustments are necessary; increasing visualisation/complexity constitutes barriers.**

- **Hearing impairment: Help through hearing aids, (Cochlea) implants, sign language videos; adjusting the environment to specific communication needs.**

- **Cognitive impairment: Opportunities e.g. through smart glasses with control information, barriers through more complex work processes and higher qualification requirements.**

- **Psychological impairment: requires reliable, repetitive processes, stimulus-poor environments, no deadline pressure – made more difficult due to digitalisation.**

Conclusions

1. **Fewer persons with disabilities than persons without disabilities are economically active.**

2. **The digital transformation process increases barriers due to the increasing complexity of work processes and employment opportunities are decreasing.**

3. **Technologies may contribute to at least partly compensating in particular disabilities caused by physical and sensory impairments - provided the ambient conditions are tuned to them.**

4. **Persons with impairments need supportive framework conditions in training and employment in order to develop their potential and learn professional skills; these conditions do not always prevail.**

5. **An excellent qualification level is advantageous for persons with impairments if it is very specific and is in such high demand that the disability-related disadvantages are compensated in this way.**

6. **We need more research and better data.**

7. **Digital transformation is going to change social care systems.**

8. **The social care system fails to recognise and (co)shape the potential for more quality and efficiency and for innovative programmes.**

International dialogue on the Future of Work

- Learning from peers:
  Bi-lateral exchanges

- Feed-in to international fora:
  ILO Centenary Initiative on the Future of Work, OECD Jobs Strategy…

- German G20 Presidency:
  Future of Work as a priority area in the employment agenda in 2017

Central organisational tasks (1)

- Investments into the digital economy (employment) and development of business models and smart regulation frameworks for the social market economy (“good work”).

  Orientation of further training policies and employment promotion towards employability and avoidance of mismatch of supply and demand.

Central organisational tasks (2)

- Social state support of disrupted work biographies and transitions.

  Support of social and corporate level flexibility compromises: working time, work organisation, increasing the number of binding collective agreements (especially in the service industry), occupational safety and health (OSH) 4.0

Central organisational tasks (3)

- Social protection for “atypical” (non-standard) workers, above all for self-employed persons.
- Learning together from (digital) transformation: room for experiments/ practice oriented laboratories for corporate practice, agile working forms: leadership and participation, qualification etc.).