Work 4.0

THE FUTURE OF WORK IN THE DIGITAL AGE
- A GERMAN PERSPECTIVE

The Many Futures of Work Conference, Oct 5 2017
Dr. Max Neufeind
German Federal Ministry of Labor and Social Affairs

Heading towards Work 4.0

Work 1.0
- Birth of the Industrial Society
- First workers' organizations

Work 2.0
- Mass production
- Beginnings of the welfare state

Work 3.0
- Globalization
- Information technology
- Advancement of Social Market Economy

Work 4.0
- Interconnected, digital, flexible work
- Advanced man-machine interaction
- "New Social Compromise"

END OF 18TH CENTURY
END OF 19TH CENTURY
1970s - 2000
TODAY
Holistic view on trends shaping Work 4.0

Technology
- Exponential growth in ICT capacity
- Internet of Everything
- Big Data and clouds
- Artificial Intelligence

Economy
- Industry 4.0 and smart services
- Disruption and platforms
- Sharing economy

Society and culture
- Demographic change
- Gender
- Generational changes
- Changing needs and expectations
- Consumption patterns

Dialogue process “Work 4.0” at a glance

KICK-OFF
SPRING 2015

CONFERENCE
SPRING 2016

FINAL CONFERENCE
FALL 2016

GREEN PAPER
POLITICAL DIALOGUE WITH ASSOCIATIONS
(CALL FOR COMMENTS)

CITIZENS’ DIALOGUE: ONLINE PLATFORM, SURVEYS, MOVIE FESTIVAL

EXPERT DIALOGUE: CIRCLE OF EXPERTS, WORKSHOPS

WHITE PAPER
Work 4.0 – The white paper

• 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.

1. There’s a future with (good) work
2. Toward a self-employed nation?
3. What workers want (and need)
4. Co-creating the future: innovation spaces
1. There's a future with (good) work
No “end of work”

47% vs. 10-15%

OECD (2016)

Robots coming for our jobs?

High-skilled workers
in non-routine occupations, particularly scientific and management positions

Medium-skilled workers
performing routine and manual tasks

Job stability
Wages

Compensating demographic change?

![Graph showing labor force and labor force (no refugees) from 1995 to 2030. Source: Economix 2016.]

Employment forecast: massive structural change

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<th>sectors</th>
<th>Baseline forecast</th>
<th>Digitalization scenario</th>
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<td>Social and public services</td>
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<td>Production</td>
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*Change in labor force 2014–2030 in 1,000, Source: Economix 2017.*
Employment forecast: massive structural change

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<th>Occupations</th>
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<tr>
<td>Farming</td>
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</tbody>
</table>

Change in labor force 2014–2030 in 1,000, Source: Economix 2017

Optimism – built on assumptions

- **Acceptance** of digital transformation
- IT-specific **continuous education**
- Digital skills as part of **vocational training**
- Investments in (digital) **capital goods**
- Digital in **care and administration**
The challenge

Skills agenda

Pace of change

Uncertainty about the exact nature of future labor demand

Diversity of workers and heterogeneity of business models

Skills agenda (to discuss)

Short-term

- Labor market intelligence through continuous forecasting and monitoring of emerging mismatches
- Considering demography, skills and regional differences

Medium-term

- Enhance employment agency’s role in maintaining skills
- Independent skills assessment
- Legal entitlement to counseling about continuous education

Long-term

- Comprehensive prevention paradigm in labor market policy
- Legal entitlement to continuous education
- “Opportunity account”
(Un)conditional basic income?

• UBI likely to increase polarization

• “opportunity account”
  • 10 – 20k €
  • at age 18
  • qualification, entrepreneurship, civic engagement

Securing employment: designing man-machine complementarity

Technology-centred complementarity

• Human as interim to automation
• Polarized organizations
• Digital Taylorism
• De-skilling

Human-centred complementarity

• Technology as amplifier
• Network organizations
• Job enrichment
• Up-skilling
Securing employment: designing man-machine complementarity

The role of social partnership

Container terminal
Altenwerder, Hamburg

2. Toward a self-employed nation?
Very limited today, potential for disruption

Do you currently work for money completing work assignments that you get through the Internet or an app?

- **no** = 99%

- digital sphere = 46%

- physical sphere = 40%

- simple tasks = 43%

- both = 22%

- skilled tasks = 34%

- additional income = 71%

- main income = 29%

Mostly male, educated, young, urban

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Prepare for potential disruption

**Agenda:**

- Short-term: continued structured dialogue with stakeholders about new forms of employment

- Medium-term: Inclusion of self-employed workers in to the (compulsory) statutory pension insurance

**Discussion:**

- Portability?

- New “standard employment relationship”?

- Future of the firm?
3. What workers want (and need)

Pluralization of needs

- Searching for meaning outside of employment: 13%
- Living comfortably from one’s work: 28%
- Balancing work and life: 14%
- Working in a community of solidarity: 9%
- Becoming prosperous by working hard: 15%
- High performance and dedication: 11%
- Self-realization in one’s job: 10%

Drivers and Trends

- Existence
- Economic interests
- Stagnation
- Convention
- Solidarity
- COMMON GOOD
- IDEAL
- PERFORMANCE
- STRUGGLE FOR EXISTENCE
- Materialism
- Social callousness
- Scope for action
- PERSONAL DEVELOPMENT
- Meaningfulness
- IDEAL

9% 14% 10% 11%
The study "Value Systems (Wertewelten Arbeiten 4.0) highlights the diversity in workers' preferences regarding work and the welfare state as a whole. The Federal Ministry of Labour and Social Affairs (BMAS) 2015a. Four out of five people in need of care are cared for at home (Federal Statistical Office (Destatis) 2015a). To date, it is predominantly women who reduce their gainful employment in favour of unpaid work. By contrast, 62 per cent of men's working time consists of paid work, while unpaid work accounts for just 38 per cent. (Federal Statistical Office (Destatis) 2015a). In the distribution of paid and unpaid work and a higher overall burden on households with workers face the additional responsibility of caring for infirm family members, on top of their work and parental responsibilities.33, 34 Matters which is exacerbated further in the absence of an adequate care infra-

""
End of one-size-fits-all policies

Established standards of protection

Plurality of companies’ and workers’ needs

Example:

Conditional, fixed-term clause to open regulations on maximum working time and breaks, if based on social partner agreements and scientifically evaluated.

The future is here — just not very evenly distributed

- SMEs are the **backbone of the German economy**: 3.6 million companies providing more than 60 percent of all jobs
- HR practices in SMEs **crucial for** qualitative dimension of **securing skilled labor** as well as **competitiveness** in the digital age
- But: **lack of awareness** in many SMEs

Thus:
- **Innovation spaces** and company-level policy labs as learning environments for labor market policy-making
- Close integration of research and innovation policy as well as **transfer into business**.

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**Promoting innovation spaces**

www.experimentierräume.de

- Showcasing new practices
- Introducing experts
- Connecting early adopters
- Funding innovation spaces
  - Leadership
  - Skills
  - Man-Machine-Interaction
  - Big data
  - AI
Promoting innovation spaces

BOSCH

- Powertrain unit (i.a. autonomous driving)
- Sales and R&D
- Agile / Scrum
- Focus on velocity, collaboration and transparency
- Real-life laboratory

Promoting innovation spaces

- 100 consulting centers all over Germany
- Robust agile process
- Crucial questions of digital transformation in SMEs
  - Business models
  - Innovation strategies
  - Work organization
  - Securing skilled labor
  - Leadership
  - Career development
- Goal: 2000 companies
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