

**MCKINSEY GLOBAL INSTITUTE**

# Life long learning and the future of work

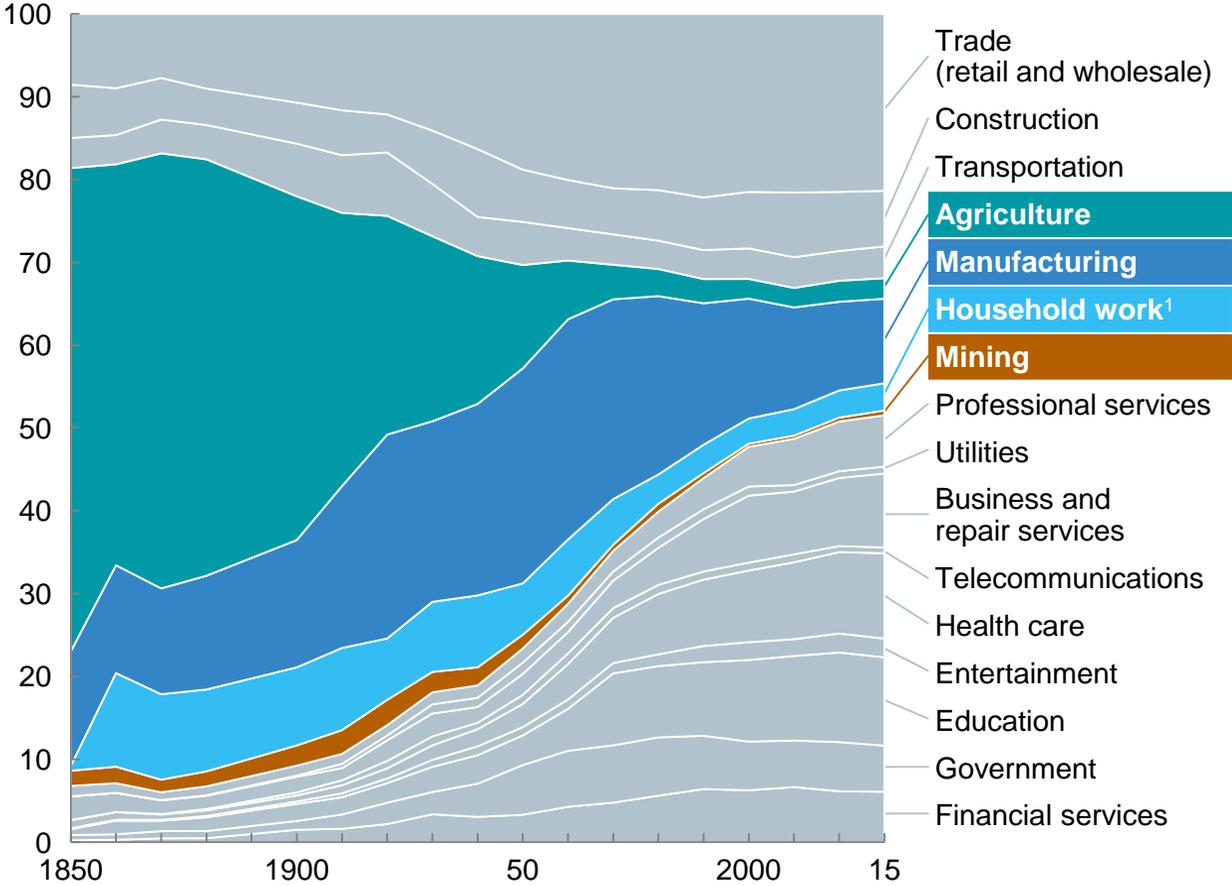
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# History shows that technology has created large employment and sector shifts

**Large-scale sector employment declines have been countered by growth of other sectors that have absorbed workers**

Share of total employment by sector in the United States, 1850–2015



<sup>1</sup> Increase from 1850 to 1860 in employment share of household work primarily due to changes in how unpaid labor (slavery) was tracked.

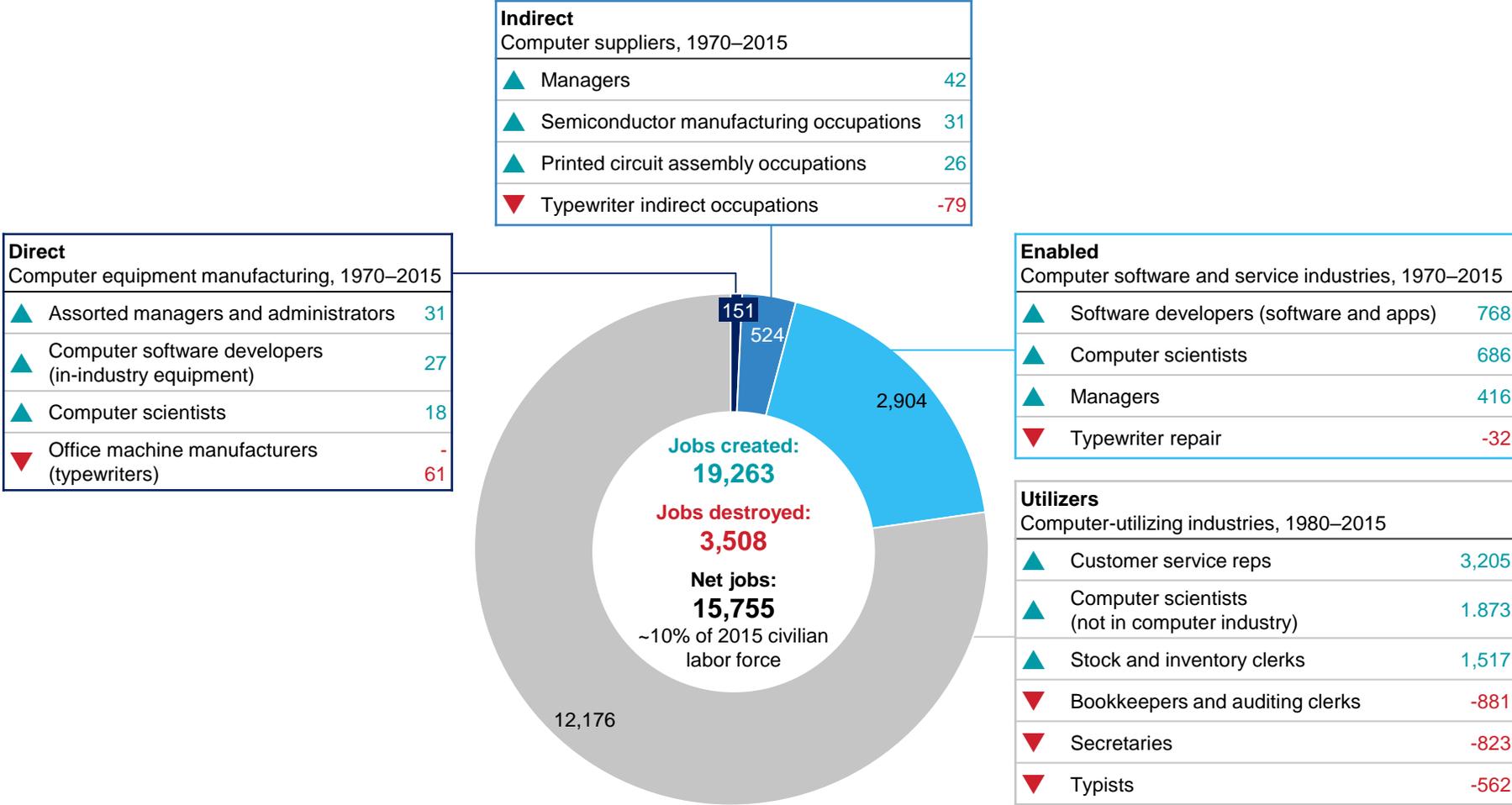
NOTE: Numbers may not sum due to rounding.

SOURCE: IPUMS USA 2017; US Bureau of Labor Statistics; Groningen Growth and Development Centre 10-Sector Database; Moody's; IMPLAN; US Bureau of Labor Statistics; FRED; McKinsey Global Institute analysis

# Technology drives the creation of many more jobs than it destroys over time, mainly outside the industry itself

## Example: Personal computers

Total US jobs created and destroyed by personal computers (examples listed are not comprehensive)  
 Thousand jobs

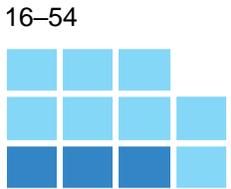


# Globally, up to 375 million workers may need to switch occupational categories

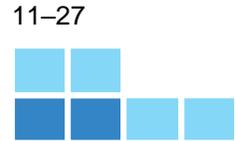
## Number of workers needing to move out of current occupational categories to find work, 2016–30 (trendline scenario)<sup>1</sup>

Million (1 block = ~5 million)

- Additional from earliest adoption scenario
  - Midpoint automation scenario
- 2030 workforce**  
*(% transitioning)*



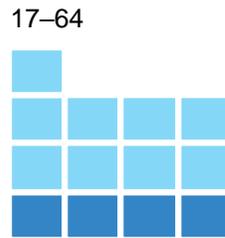
**United States**  
**166 million**  
*(up to 32%)*



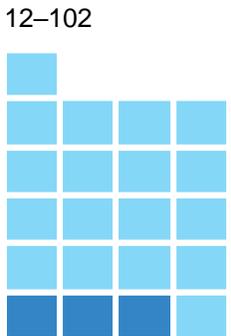
**Japan**  
**59 million**  
*(up to 46%)*



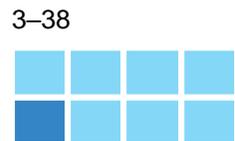
**Germany**  
**37 million**  
*(up to 33%)*



**Other advanced**  
**195 million**  
*(up to 33%)*



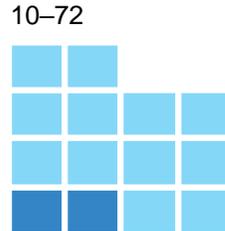
**China**  
**757 million**  
*(up to 13%)*



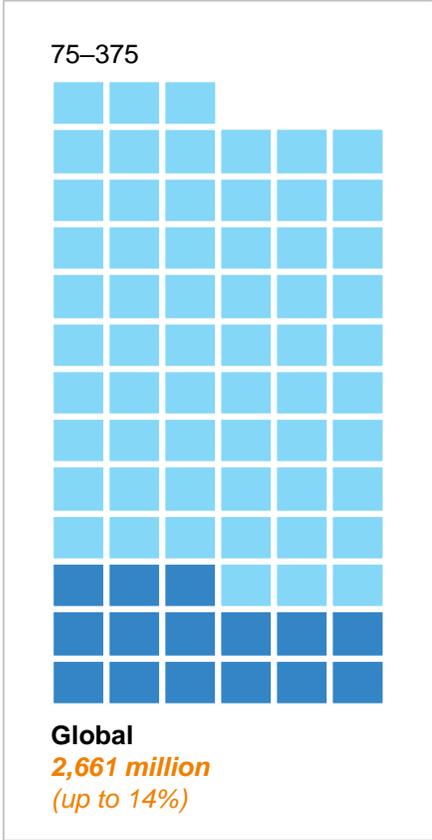
**India**  
**612 million**  
*(up to 6%)*



**Mexico**  
**68 million**  
*(up to 10%)*



**Other developing**  
**767 million**  
*(up to 9%)*



**Global**  
**2,661 million**  
*(up to 14%)*

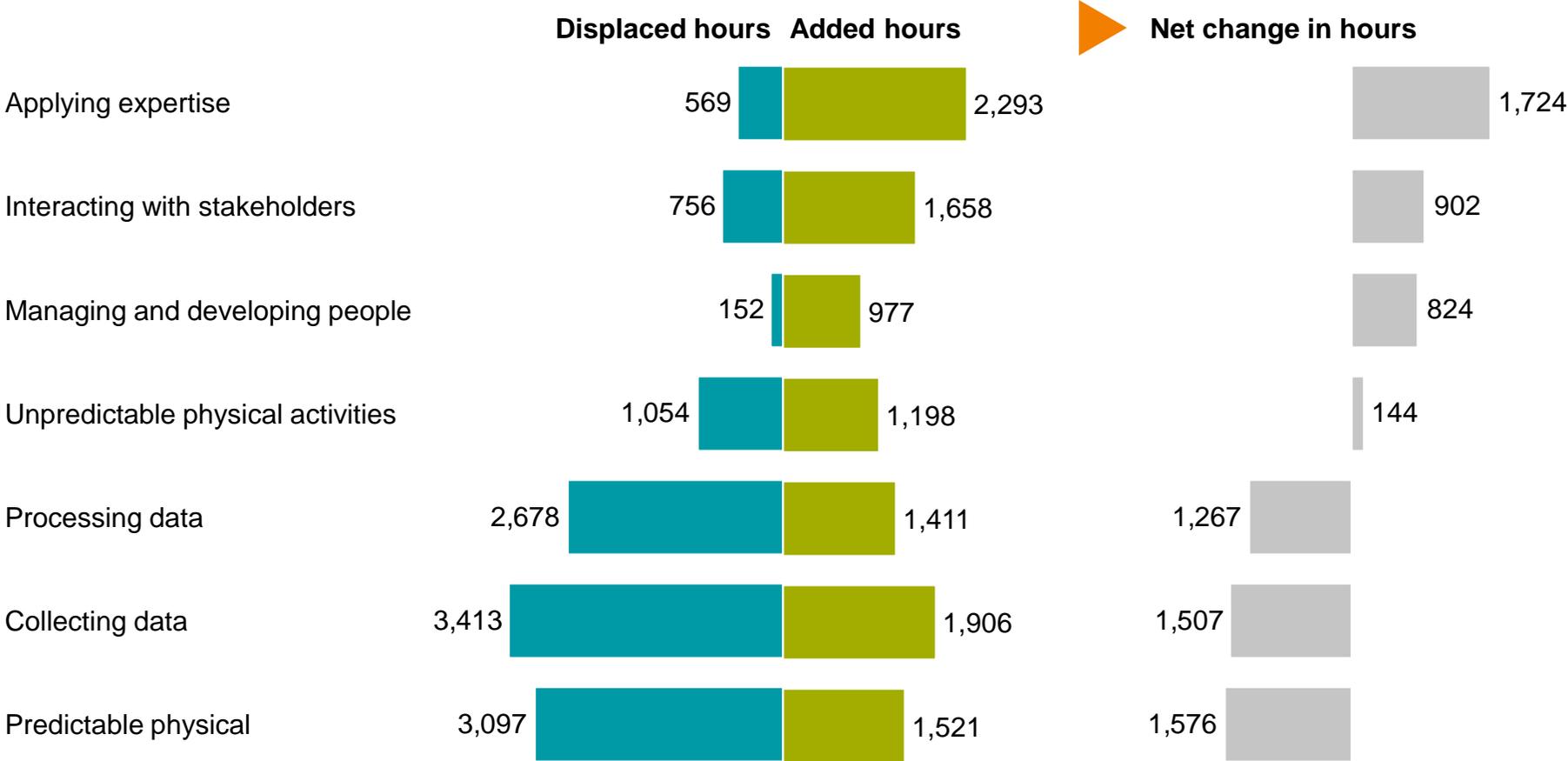
<sup>1</sup> Some occupational data projected into 2016 baseline from latest available 2014 data.

# Potential shifts for activities, educational requirements, and wages

## Net growth in work will involve more application of expertise, interaction, and management: Germany example

Total work hours by activity type, 2016–30 (Midpoint automation, step-up demand)

Million

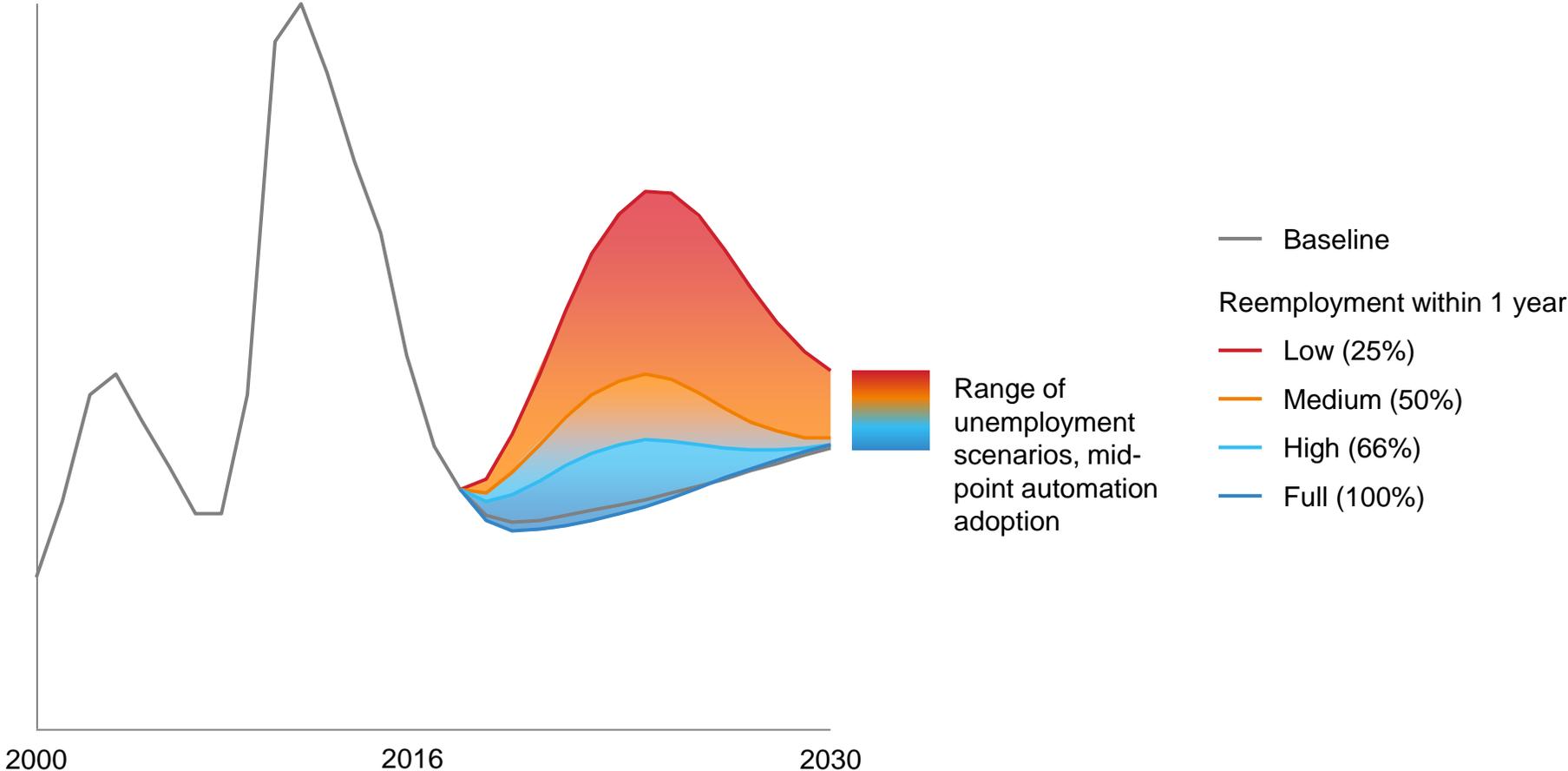


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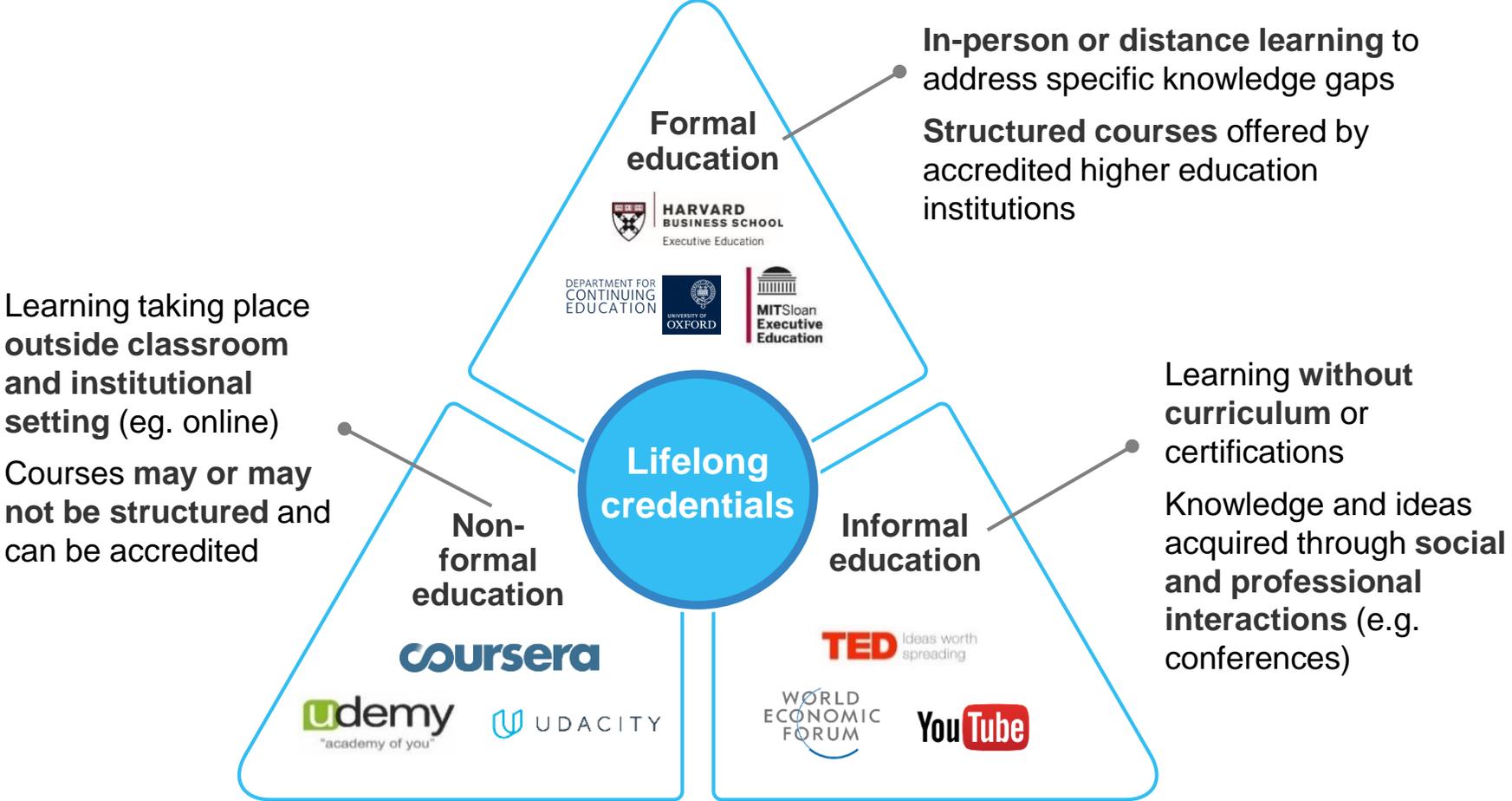
SOURCE: ONET skill classification, US Bureau of Labor Statistics; McKinsey Global Institute analysis

# Unless displaced workers are reemployed quickly, medium-term unemployment could rise

US unemployment rate



# A key element of a future skills framework is to create portable lifelong credentials that students can acquire from multiple different sources



- Lifelong credentials**
- Certificates and diplomas
  - Digital badges (eg. Mozilla Open Badges)
  - Digital CV (eg. LinkedIn profile)
  - Digital graph to create “skills profile” from different sources



# The UNESCO strategy formulates internationally applicable standards and delivers initial approaches for actions

## Objectives



- Promotion of ability to think critically among individuals
- Ability to deal with changes in the economy and working world
- Improved resilience, in particular among young and old sections of the population
- Additional international objectives, such as lifelong learning on education for peace and human rights

## Activity areas

(recommendations to member states)



### 1 Policy

- Recommendation for holistic and inclusive state policies
- Institutionalization: Inter-ministerial forums, and stakeholder participation
- Political ecosystem: clarification and information, evident nature



### 2 Governance

- Multi-stakeholder approach and mechanisms at all state levels (e.g., federal, state, and municipal)
- Principles Effectiveness, transparency, accountabilities, as well as democratic and participatory nature
- Flexibility via decentralization
- Piloting via "learning cities, towns, and villages" (model locations for lifelong learning)



### 3 Financing

- Shared responsibility between the state, private sector, and individuals
- Priority given to base competencies, such as adult literacy
- Recommendation for instruments: Individual Learning Accounts (ILAs), support (e.g., coupons, vouchers), and educat. leave



### 4 Participation, inclusion, and equality

- Creation of discrimination-free access, particularly for marginalized groups
- Institutional structures, such as municipal centers for lifelong learning
- High-quality informational and advisory-services offers



### 5 Quality

- Regular monitoring and evaluation (M&E)
- Offer spectrum: practical offers that address the needs of the employer; review of effectiveness and efficiency
- Learning ecosystem: modern pedagogy and IT, secure learning facilities
- Accreditation and certification





# In Denmark, the entire educational system is oriented around lifelong learning

## The excellence of the Danish adult-education system

- **High overall levels of state funding for education** (3600 EUR per capita)
- High level of participation with regard to **offers for adult education** in EU comparison: a continuous **30% participation rate** in Denmark among people aged 25-64 years
- **High quality of the adult-education system according to OECD comparison**



## Factors for excellence

**Information and transparency**



- **Institutional offers for consultation:** consultation in centers around the country, e-guidance (telephone, SMS, e-mail, chat, Facebook) **for all citizens** as well as dedicated research centers for lifelong learning

**Learning ecosystem**



- National **political strategy: "Lifelong Learning Strategy"** since 2006
- Structure of **country-wide centers for lifelong learning** since 2007:
  - Coordination of lifelong learning based on **clear targets** and benchmarks on behalf of the ministry of education
  - **Advising** for companies and individual persons
  - Providers **must cooperate with the centers**, in order to receive **state funds**, which are increased when political aims are surpassed



**Access**



- **Cultural anchoring:** Grundtvig developed the concept of learning in Denmark in 1830
- **Broad-based access** (incl. catching up on education) and an extensive offers ("basic skills" and "beyond basic skills")
- **Flexibility:** Courses are offered online, in the evening, and in blocks

**Monitoring**



- **Quality of formal education (incl. university):** once well educated, one looks for further education
- **Country-wide centers** with a quality-assurance function



Furthermore, since 2015, Denmark has focused on on-the-job training – with success

## Challenge

### Low-skilled workers often drop out of the lifelong learning system

- Low-skilled workers participate in continuing education programs only half as often as highly skilled workers
- Since 2015, there has been a **focus on the integration** of low-skilled workers



## Continuing education programs specifically for low-skilled individuals – examples:

- 1 “**Upgrading skills through employment**”
  - Job center: **Subsidies** to employers for improving skills among employees
  - Employer must offer continuing education programs that extend beyond normal standards
  - Program for the unemployed and individuals at risk for joblessness
- 2 “**Adult apprenticeship scheme**”
  - At time of training, an adult aged at least 25 years: Subsidized salary payments

## Success factors in on- the-job training

**System governance** (all social partners, meaning employers, unions, and state)



**Evidence-based policy** (e.g., subsidies and consultation/advising have proven particularly effective)





# Skillsfuture provides a comprehensive plan of offerings across the lifelong learning cycle



## EDUCATION AND CAREER GUIDANCE (ECG)

Counsellors to help students make well-informed decisions on education, training and careers.

## ENHANCE INTERNSHIP

Structured programmes and enhanced internships will better support career exploration and workplace learning

## YOUNG TALENT PROGRAMME (YTP)

More market immersion opportunities for ITE, polytechnic and university students.

## INDIVIDUAL LEARNING PORTFOLIO

An online, one-stop education, training and career guidance portal for every Singaporean to plan their education, training and career path.

In school

In school



## SKILLSFUTURE EARN AND LEARN PROGRAMME

Placement with structured on-the-job and institution-based training to give fresh ITE and polytechnic graduates a career headstart in sectors.

## SKILLSFUTURE CREDIT

Learning credits for all Singaporeans aged 25 years and above to pay for course fees for work-skills-related courses supported by public agencies

Starting work

Starting work



## SKILLS-FOCUSED MODULAR COURSES

Wider range and scale of short skills-focused modular courses relevant to industry needs.

## SKILLSFUTURE STUDY AWARDS

Monetary awards to help individuals develop and deepen their skills in growth clusters.

## INCREASED COURSE SUBSIDIES

All Singaporeans aged 40 years and above to receive a minimum of 90% course subsidy for MOE-funded and WDA-supported courses.

## SKILLSFUTURE FELLOWSHIPS

Cash sponsorship for individuals with deep skills expertise to achieve mastery in respective fields.

Growing your career

Growing your career



## SECTORAL MANPOWER PLANS

Developing pipeline of skilled workers. Progression and development framework to provide every worker with career pathways based on skills.

## SKILLSFUTURE LEADERSHIP DEVELOPMENT INITIATIVE

Funding to support increased collaboration with companies to develop and stretch high-potential talent.

## SKILLSFUTURE MENTORS

SMEs can access pool of mentors with deep industry skills and experience to provide guidance in their implementation of skills deepening initiatives.

## SKILLSFUTURE CREDIT

Regular top-ups in learning credits for all Singaporeans to support skills deepening.



Students, parents & teachers



Individuals



Employees



Employers



Government



Education & training institutions



Unions & Industry Associations



# Typical dos and don'ts can be derived from experiences in other countries (1/2 – "dos")

Successful aspects	Example	Learning effect from "dos" 
<b>Transparent and easy to access</b>	 Holistic CPA account system for all service types facilitates an overview and helps ensure service lapses	Central administration of service with good usability for citizens
<b>Independent of employment status</b>	 CPF continuing-education account accumulates education/training time independent of employment status; account is retained until end of employment	Equal inclusion of all citizens, independent of current life situation
<b>Plannable for employers</b>	 Improved financial planability for employee dismissals via "Abfertigung neu" (new severance pay scheme)  In cases where multiple months of educational leave are taken, employers can postpone up to 9months	Thinking about employers' needs, in order to win over employers as important partners
<b>Simple application process</b>	 ILA with very high usage figures via low levels of regulation and simple application process	Avoidance of complex application systems for easier accessibility
<b>Advertising</b>	 The MySkillsFuture Web site reaches 1.9 million visits in 2017 (among 3.4 million 25-64-year-olds); advertising campaign appeals directly to consumers with the slogan, "The most important update is you"	Strong advertising and consultation is at least as important as the program itself

SOURCE: "Personal employment account: Internationale Modelle und Erfahrungen (International Models and Experiences)," Institute of Labor Economics, (2017)

# Typical dos and don'ts can be derived from experiences in other countries (2/2 – "don'ts")

Points of criticism	Example	Learning effect from "don'ts" 
<b>Undersizing</b>	 150-400 hours across a lifespan are not adequate for balancing out critical capability deficits	Thinking through exactly what scope creates value
<b>High level of complexity</b>	 Many accounts that cannot be merged together	Avoidance of complex systems with a variety of components
<b>Little variety in offers</b>	 Offers for continuing education are heavily segmented, bureaucratic and inflexible	Broad positioning of the offer for a variety of needs
<b>Integration ecosystem</b>	 Initiative not carried by tariff partners or employers	Thinking about employers' needs, in order to win over employers as important partners
<b>Comparison of objective and effect</b>	 "Abfertigung neu" did not generate greater mobility among workers, although this was the declared aim	Meas. of effects and readjustment in the event that there is no impact
<b>Wrong motivation</b>	 "Career development" created the "wrong" motivation of saving for early retirement vs. a hiatus from work	Thinking about citizens' intrinsic fears and motivations
<b>Unwanted distribution effect</b>	 Optimized use via users with a high level of education, a lack of consultation for engaging weaker users	Strong promotion and consultation is at least as important as the program itself
<b>Abuse</b>	 ILA budget estimated at GBP 97 million (approx. 1/3) misused (by dummy corporations among, other things)	Safeguarding of system against abuse

SOURCE: "Persönliches Erwerbstätigenkonto: Internationale Modelle und Erfahrungen (Personal Employment Account: International Models and Experiences)," Institute of Labor Economics, (2017)

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