

4th Industrial Revolution

Challenges and Opportunities for
social security globally

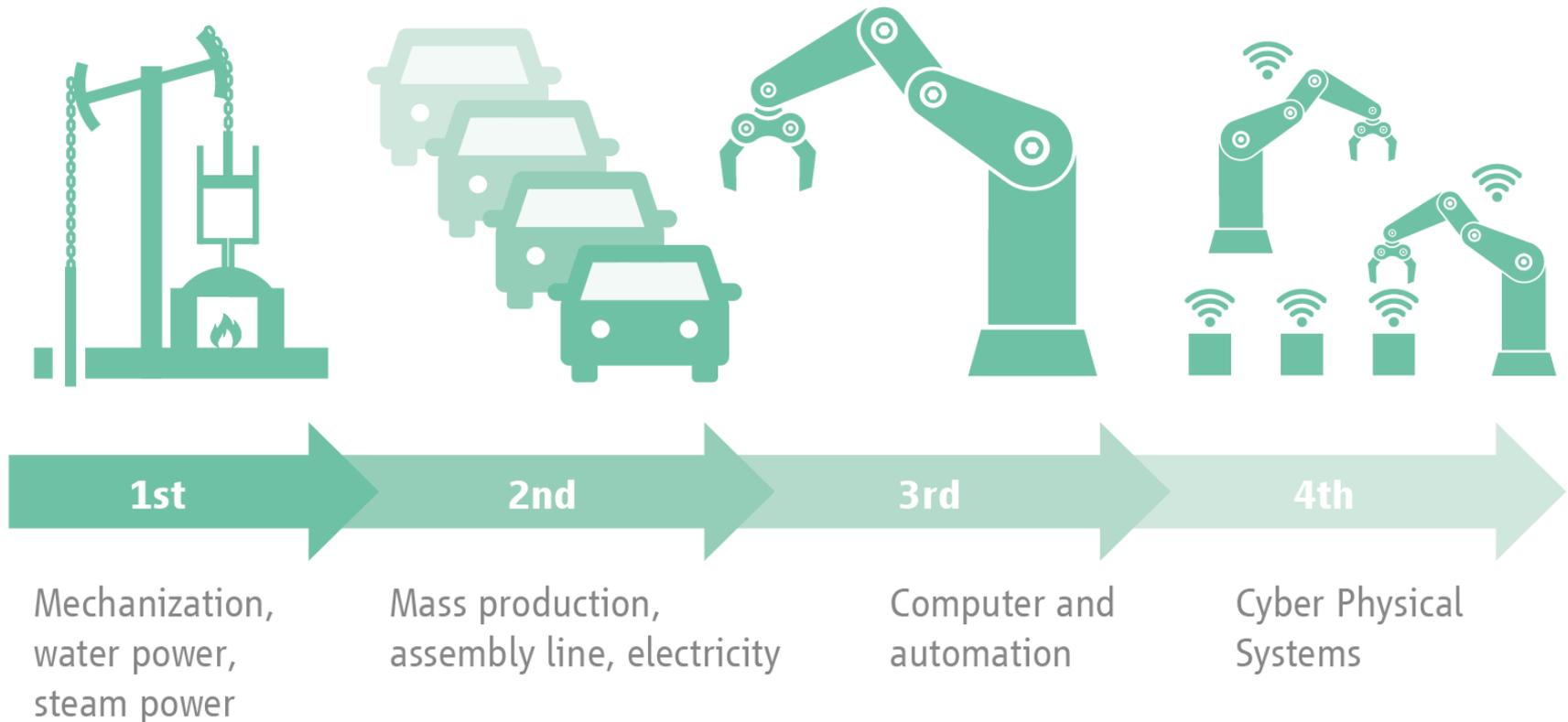
Jens Schremmer
International Social Security Association (ISSA)

Globally - a lot of questions...

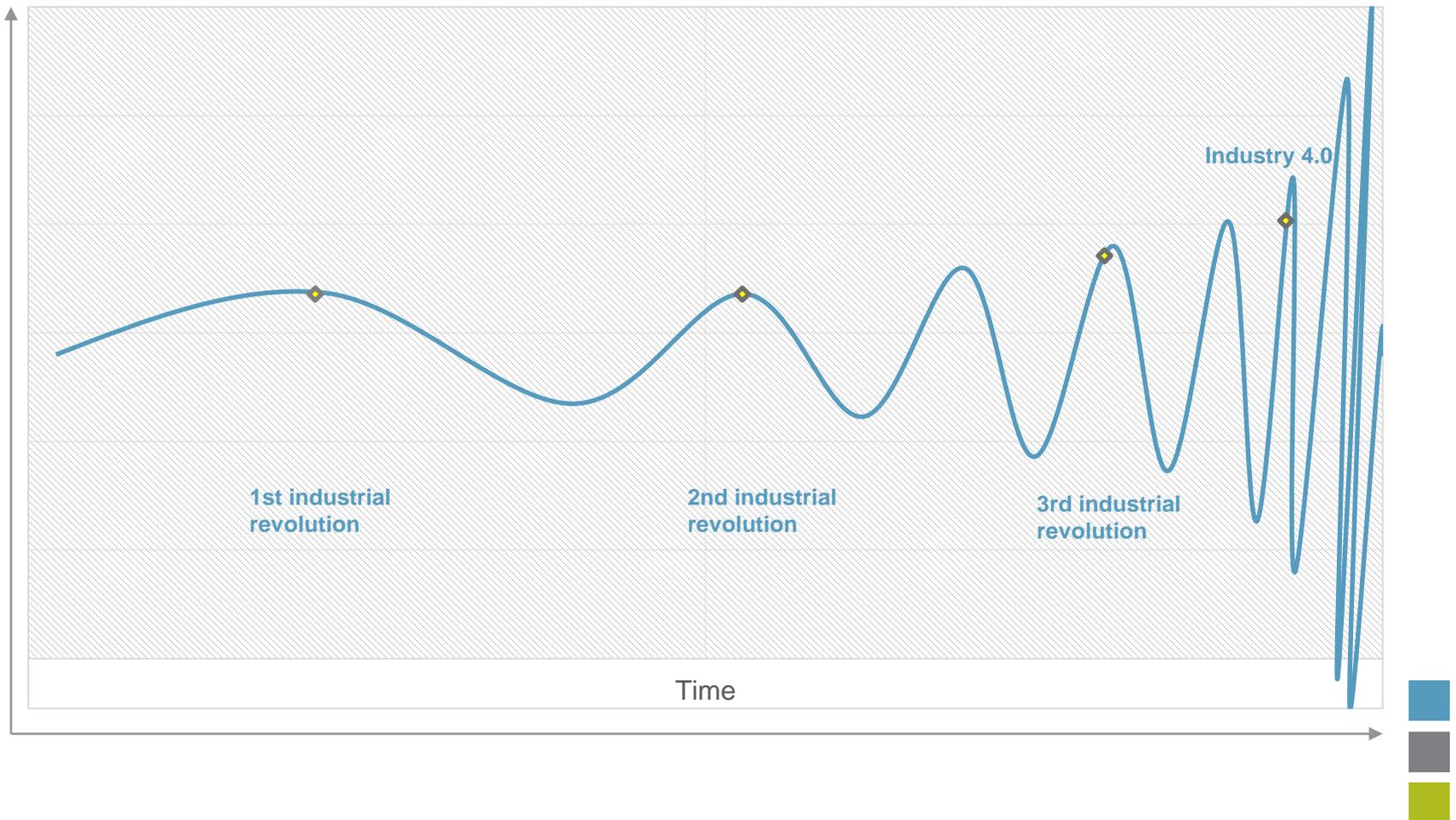
- Is the 4th industrial revolution different?
- A challenge or an opportunity for social security...or both?
- And what about social security institutions...the ones that determine social security outcomes?
- Does it increase the need for international exchange?



Yet another revolution?



Time for diffusion of technology getting shorter

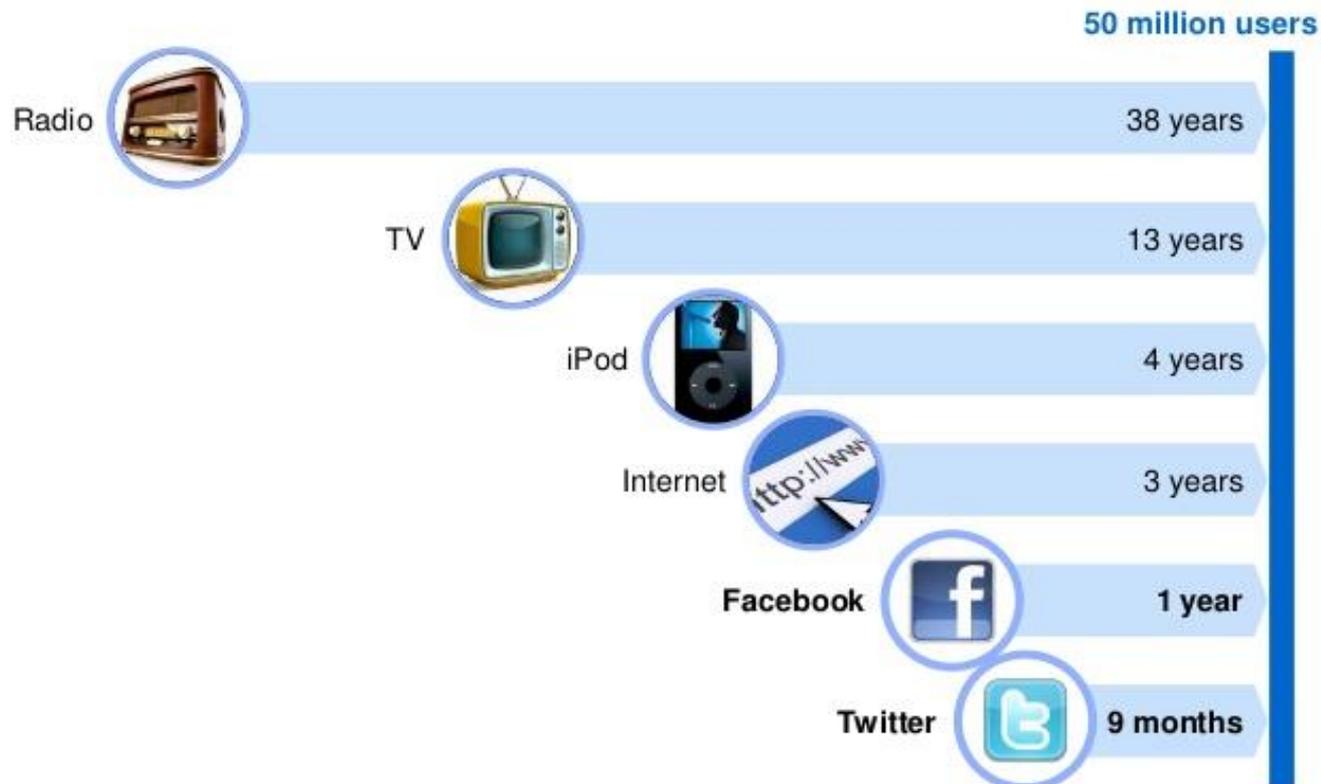


The speed of adaption of new technologies

Social technologies have been adopted at record speed

ILLUSTRATIVE

Time to reach 50 million users



SOURCE: Various press reports

McKinsey & Company | 3

What is the impact on social security?

Adapting to challenges **AND** Exploiting Opportunities





IMPACTS

Labour markets

- Large scale automation
- Changing skills requirements

Coverage

- Coverage of digital economy workers
- Reducing transaction costs / barriers to access

Benefits & Services

- Adequacy of benefits
- Tailored benefits and services

Funding

- Is the collection model adapted to digital world?
- Innovative financing sources – taxing robots?

Administration

- Rapidly changing public expectations
- Rapid technological innovation
- Service delivery models

(1) Labour markets and coverage



Non-standard work is fast emerging -

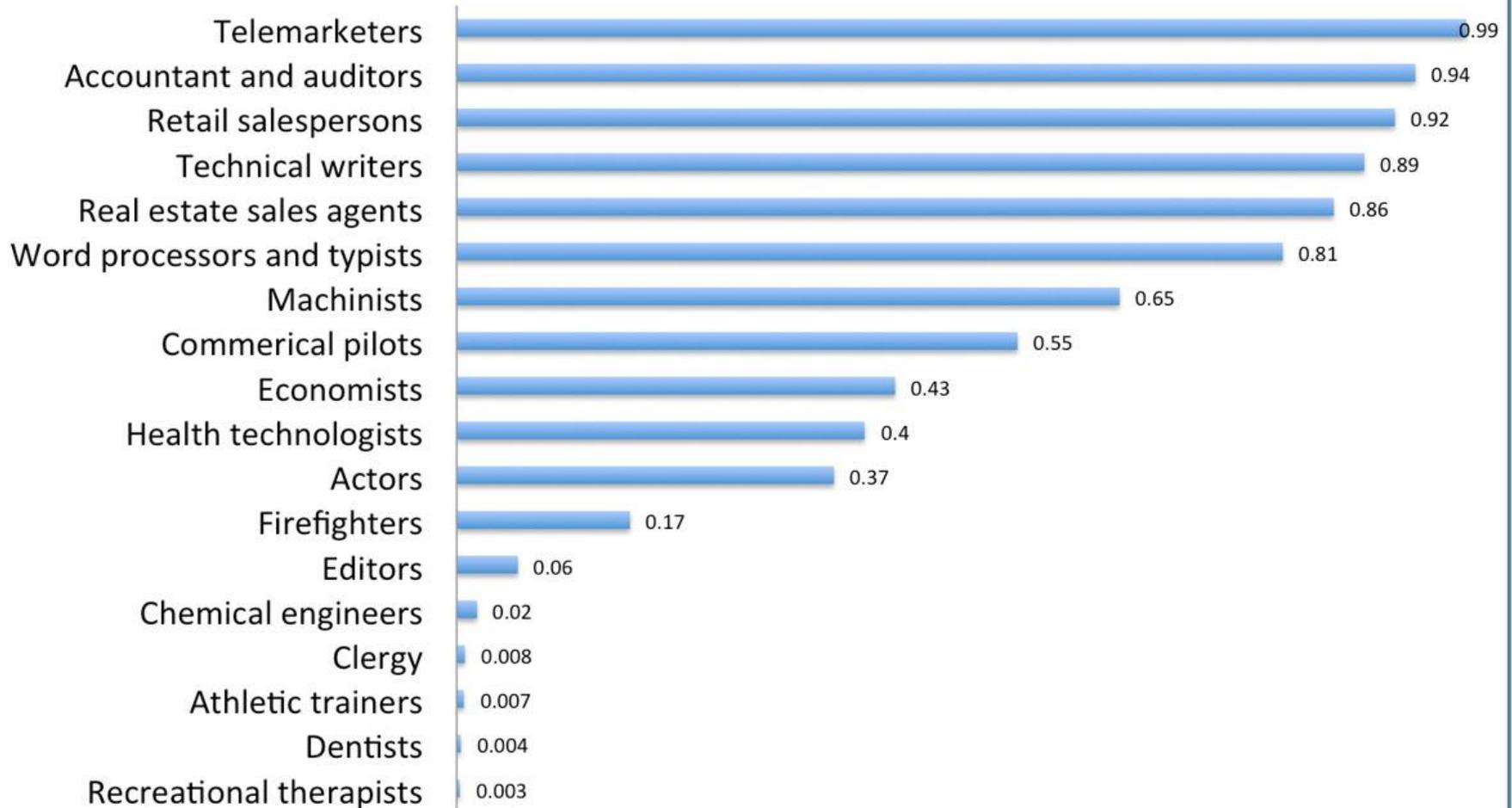


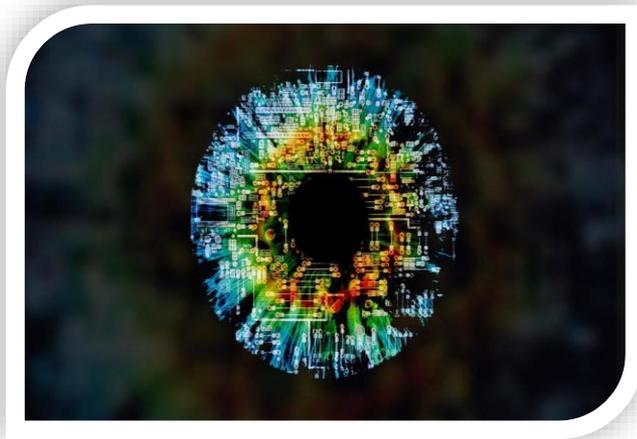
How much work will there be?



Tech  Chart of the Day

Probability Robots Will Take Your Job In Next 20 Years, 1=Certain





Innovation vs Automation



Automation causes
employment in old sectors
to decline

Innovation causes new
sectors & tasks to emerge

Large scale automation and labour demand

- Robotics & artificial intelligence
- New inequalities and coverage gaps
- New benefits – skills development?
- Innovative financing for social security



Digital Platforms enable new services...



...but the status of platform workers is often unclear



What are they?

Employees?
Self-employed?
or
New categories?

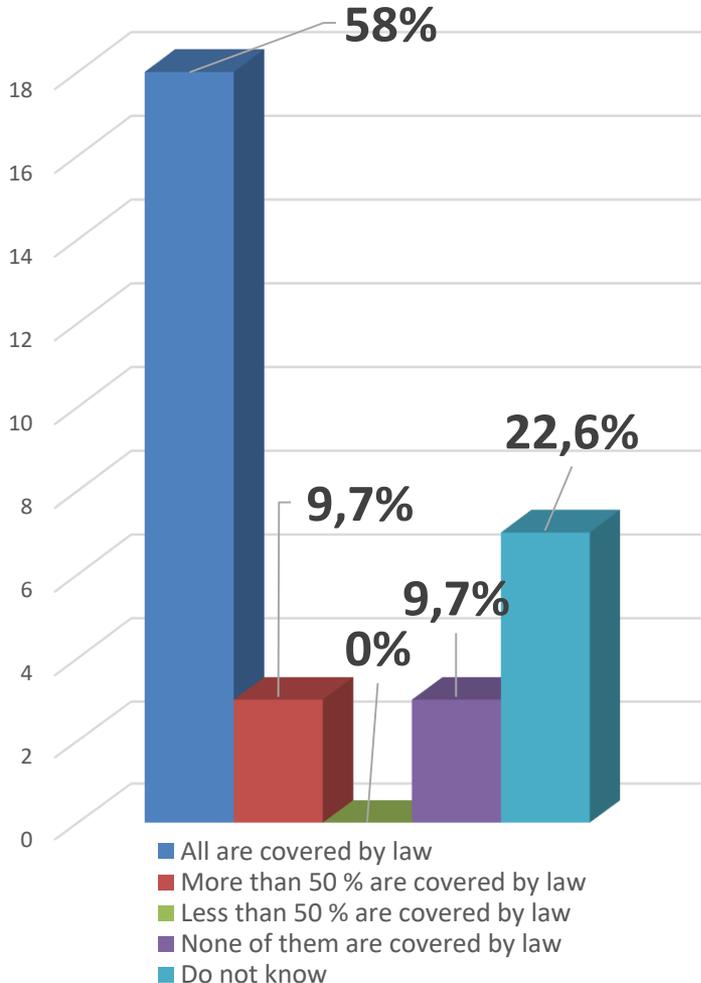
Why does it
matter?



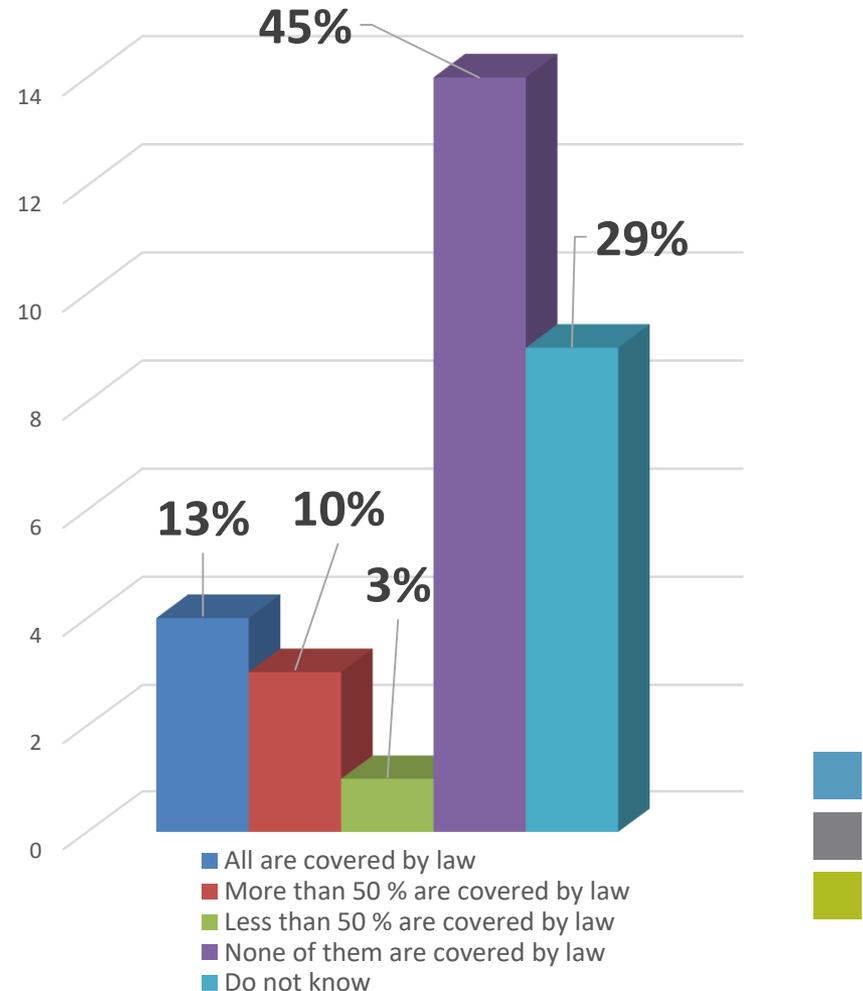


Global ISSA survey (TC Employment) Legal coverage of platform workers (in %)

Employed platform workers



Self-employed platform workers



Digital technologies and the digital economy – Opportunities for enhancing social security

- **Extending the coverage barriers – closing the coverage gap**
 - Reduce transaction costs for administrations and beneficiaries
 - Greater flexibility and better adaptation to the needs of different groups
 - Facilitate identification and registration (electronic/biometric technologies)
 - Integrated mobile data systems, mobile registration and payment applications

- **Digital economies help formalize digital workers**
 - Digital economy platform work allow tracking of activity
 - Collaboration with platform companies to access data

- **Protection of a mobile workforce**
 - International data exchange
 - Inter-institutional integration facilitating portability



Digital technologies – Enhancing social security protection

- **Strengthening pro-active and preventive social security**
 - Reduced disease and accident incidence through tailored prevention services and campaigns
 - Enhanced targeting of investment in training and rehabilitation
 - Improve health education in the context of an increasing prevalence of chronic conditions

- **Enhancing health care outcomes**
 - Remote access to diagnostic services
 - Reducing medical error and improving treatment decisions

- **Evidence-based policy**
 - Analytics and big data applications support assessment and better policies



The Future is already here – Good Practices (ISSA database)

Opportunities	Project	Country / Institution
Extending coverage	Mobile technologies for registration and contribution payment, 90% of informal sector members use mobile platform (M-Pesa)	National Hospital Insurance Fund, Kenya
	Electronic identification facilitating access to coverage, collaboration with leading internet providers	Social Insurance Administration, People's Republic of China
Formalizing digital economy workers	Specific regulations, inter-institutional regulation, flexible and non-bureaucratic registration, collaboration with platform companies (Uber etc.)	Social Insurance Bank, Uruguay (ISSA Good Practice Winner Americas)
Protection of a mobile workforce	Automatic data exchange in the implementation of social security agreements	Mercosur countries in the Americas
Strengthening preventive social security	Big data analytics for health alerts combining data from different institutions/sources	National Health Insurance Service, Korea
Enhancing health care outcomes	Remote medical diagnostics linking doctors and patients covering 50 million people	Employees' State Insurance Corp. and other government services, India
Evidence-based policy making	Priority investment approach based on various data analytics to strengthen efficiency and effectiveness of social security	Department of Human Services, Australia

Digital economy and social security

- Labour market transformations and social impact create challenges for social security
- Technological innovation enables more individualized services to non-standard workers, more inclusive social security systems and better benefits and services

 Social security institutions will make the difference



(2) Digitalisation and innovation – impact on social security institutions



Embracing emerging technologies



Member institutions that consider managing innovation and technological developments to be a high priority challenge (ISSA survey, 280 social security institutions responded):

World 76%
Africa **80%**
Americas **79%**
Europe **75%**
Asia and Pacific **68%**





2003

45 countries had a one-stop-platform,
and only **33** countries provided online
transactions



2016

90 countries offer one or more single
entry portal(s) on public information or
online services, or both, and 148
countries provide at least one type of
online transactional service



Innovation is an obligation

- **Value-added for protected populations - better social security outcomes**
- **Meeting public expectations**
 - User-centred services expected
 - Service for me...to me...at the right time...at the right place... – expectation for individualized services instead of one-size fits all approach
- **Meeting political expectations**
 - Extending coverage
 - Reducing fraud
 - Improving effectiveness
- **Meeting institutional objectives**
 - Enhancing efficiency
 - Achieving operational goals



The future is already here...business objectives

■ Improve interaction with citizens and customer services:

- Personalized systems and intelligent assistants
- New generation of web portals and mobile technologies
- Integration of multi-institutional services and inter-institutional coordination

■ Increase institutional capacities:

- Enhance system integrity - take correct decisions and reduce error and fraud
- Detect and understand new phenomena as well as to develop preventive measures
- Carry out strategic transformations to meet evolving objectives



The future is already here – ISSA innovation project

Technological areas	Project	Institution
Advanced Web/Mobile portals and multichannel customer services	Mobile-based systems for benefit application and for receiving the institution's response.	SSI Kazakhstan
	ASSIST Project to transform PERKESO's core ICT system to cater online registration, contribution, collection and claims transactions	PERKESO Malaysia
	Website with digital identity and mobile-oriented services for medical certificates. Evolving to include contributions payment.	ZUS Poland
	Web portal with online management of benefit application covering wide set of tasks and uploading required evidences. Voice-enabled services as a complement to the Web portal.	CMR Morocco
	Online and automated systems enabling old age pension calculation and application.	NAV Norway
	Highly secured online system enabling follow-up and reporting of sickness benefits by doctors and beneficiaries nationwide.	
	Using electronic SIM card-based personal ID for secured online transactions.	HVW/CAPAC Belgium

Technological areas	Project	Institution
Artificial Intelligence Deep Learning Intelligent assistants	Exploration on how AI & deep learning systems could assist decision making by caseworkers by analysing thousands of previous decisions - predict outcome for a certain new case	CAPAC Belgium
	Provide intelligent assistance in mobile services through conversational agents	GOSI Saudi Arabia
Blockchain	Re-engineering of the health insurance paper-based information flow patient–doctor –patient – pharmacy – patient –to a secure, simple, online blockchain application	Healthcare & Insurance Belgium
	Managing occupational diseases claims involving multiple actors	GOSI Saudi-Arabia
ICT institutional capacity	Strategic transformation of the ICT platform and operational models shifting towards providing proactive, comprehensive services by adopting cutting-edge technologies (e.g. artificial intelligence).	KELA Finland

The future is already here

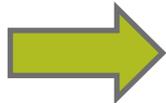
Technological areas	Innovation	Institution
Institutional integration and e-government	Interconnection between agencies to improve quality and efficiency and notify changes in the beneficiary's life situation	SSI Kazakhstan
	Application to social assistance as a single-window to multiple agencies.	MLSP Azerbaijan
	Fraud detection in registration, collection of contributions, Occupational diseases, and Unemployment.	GOSI Saudi Arabia
Advanced Analytics and Big Data	Fraud detection in Work Injury and accidents claims.	INAIL Italy
	National Big Data system covering Health and Social Security data, supporting preventive measures	NHIS Korea
	Analysing Big Data to support preventive Health measures.	IMSS Mexico
	Analysing beneficiaries' "itineraries" for service improvement Detection of complex fraud manoeuvres	CNAF France

Challenges are significant

- Data privacy versus Big Data applications
- Cybersecurity
- Ensuring required data quality levels for effective analysis and AI usage
- Complexity of new technologies and their integration into business processes
- Experimental nature of emerging technologies
- Management challenges - increasing complexity of ICT systems, short-term nature of technologies, filtering what is effective
- The importance of the human touch



- How will social security administration look tomorrow?
- Shaping social security for «tomorrow's society»

 A key role for international exchanges and learning



ISSA @ 91: Preparing the future of social security



91

1927-2018



ISSA Innovation Program and the Digital Economy Observatory



ISSA Observatory: Digital Economy and Social Security



INTERNATIONAL SOCIAL SECURITY ASSOCIATION

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DIGITAL ECONOMY

Digital Economy and Social Security Observatory

The Digital Economy will profoundly transform our daily life, how we work and how we live.

The Observatory will provide ISSA members with an understanding of the opportunities and the challenges it will present to social security administrations.

It will look at this transformation from two angles: the changing environment in which social security institutions evolve and how Social Security institutions themselves will be impacted and can respond to these challenges.

Overview Media wall



The ISSA has grouped the multitude of topics that are linked to the digital economy and its impact on social security.

This 'look into the future' is supported by the ISSA Technical Commissions, findings from ISSA conferences and events, member surveys, good practices, literature reviews, research and input by external experts.

How will the digital economy change the environment for social security?

Large scale automation	Digital platforms	Economic Impact
Labour market transformation	Social impact	

How will the digital economy impact social security administrations?

Business processes	Harnessing Big Data	New risks
New service delivery models		

Ten global challenges for social security



→ Report website

Media monitor

Europe: Innovation and tech can create social care services for the future [\[2\]](#)
The Guardian (14.06.2017) Europe's social services face a challenging time. Angela Merkel is fond of saying that Europe has 7% of the world's population, 25% of its wealth and 50% of its welfare spending. If the continent is to avoid a continued period of stagnation and austerity, it will need to explore more radical options.

Las 8 claves del nuevo Director de RRIH del siglo XXI | Prevención Integral & ORP Conference [\[2\]](#)

La transformación digital es una realidad para casi todas las organizaciones, independientemente de su sector. Dada esta situación, la figura de los líderes empresariales está teniendo una vital importancia a la hora de enfrentar este proceso que ha transformado todas las áreas de las compañías, incluido el departamento de Recursos Humanos.

Productivity, Employment, and Inequality | MIT Initiative on the Digital Economy [\[2\]](#)
What will the workforce of the future look like, and how can we accelerate the transformation of institutions, organizations, and human skills to keep up with the quickening pace of digital innovation? The IDE helps businesses understand how the digital economy will improve job creation and wage equality in the years to come. Our research also seeks to create a better method of measuring the health of an economy in the context of the digital age.

More EU Lunacy: Robots Should Pay Social Security Taxes For The Pensions They Won't Get [\[2\]](#)
forbes.com (23.06.2017) The European Union is trying to create a law concerning the rise of the robots as they come to steal all our jobs. One of the more ludicrous suggestions is that robots should pay social security taxes for all the social security benefits they won't get.

Research in search on social protection for



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Large scale automation

Large-scale automation of industrial production and services is based on applying a range of advanced technologies such as Artificial Intelligence, cognitive computing, big data, Blockchain, Internet of Things and robotics among others.

Although very diverse, the application of these technologies enables the automation - to varying extents - of a number of tasks usually done by people. Some examples are the usage of increasingly autonomous robots in industrial production lines, self-services managed by artificial intelligence systems, and autonomous vehicles. These all combine all the technologies mentioned.

While such large-scale automation will undoubtedly impact on employment, the implementation of such automated systems is highly complex and potentially costly. Furthermore, these "intelligent" systems have to be "trained" to specific application scenarios - which adds complexity and costs. Their potential usage cannot cover a large spectrum of activities such as creative and analytical ones (e.g. determining if software systems are correct).

Social security administrations could anticipate local impacts, particularly unemployment scenarios, and promote reversion through training. Also, the construction, installation and training of these systems constitute economic activities themselves which require business know-how.

→ Return to overview

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ISSA Regional Social Security Forum for Asia and the Pacific

- Hosted by a member of ASSA, Social Security Organisation of Malaysia
- Kuala Lumpur, 2-4 October
- More than 300 participants from 35 countries
- 50 speakers and panellists including from ILO, UNESCAP, ADB
- Challenges, innovation, good practices
- ISSA Good Practice Award competition – results and celebration

**Excellence in social security:
Enhancing protection for tomorrow's society**



Globally – some answers...

- The 4th industrial revolution is indeed different
- A challenge AND an opportunity for social security
- Social security institutions will make the difference
- International exchange is fundamental in a world of transformation



The ISSA is your partner and supports social security institutions in the region and globally





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