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ET DE DÉVELOPPEMENT ÉCONOMIQUES

TUAC Discussion Paper on the Digital Economy

Inclusive Innovation Pathways, Regulatory Challenges, and the Role of Policies and Unions

June 2016

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SUMMARY OF KEY POINTS

This TUAC Discussion Paper on the Digital Economy, prepared for the OECD Ministerial Meeting (22-23 June 2016, Cancun, Mexico), aims to provide an overview of the distinct features of the digital economy and its impacts on economies, jobs and public policies. The following 'take-aways' provide the basis for the **key policy recommendations and TUAC's proposed Action Plan for Quality Jobs in the Digital Economy** (pp. 35-38).

Defining the digital economy

- There is no comprehensive definition or measurement framework for the digital economy.
- There are at least two dimensions to the digital economy: (1) the creation and distribution of digital products and services, and (2) the adaptation of digital technology across economic sectors, changing employment structures, consumption and societies.
- These two dimensions mean that the understanding of the digital economy should not be limited to ICT production and distribution, or the "ICT Sector" at large.
- The digital economy is based on cross-border, networked eco-systems spanning diverse sectors and activities enabled by ICT, the broadband and mobile internet, and Internet of Things (IoT), which support business and social interactions and exchanges across networks.
- Activities in the digital economy are taking place at a greater scale, speed and reach due to: increased mobility of intangibles, users and business operations; enhanced network effects; large data flows; and multi-channel business models.

Regulatory challenges and business models

- Multi-channel business models are operating across different market segments at different points in time and reach due to the cross-border nature of the internet and the ability to separate spatially different business segments.
- This causes difficulties concerning the jurisdictional attribution of rights and duties.

Competition

- The digital economy is based on concentrated markets resulting from pronounced network effects. Successful companies can reach a global scale quickly without significant investment in infrastructure, equipment, or human resources.
- Their market power relies on their extensive control of the internet infrastructure, networks and data, which provides them with an edge over competitors.
- Digital platforms get more entrenched in their core market with "record-high market caps", expanding to other regulated sectors and becoming increasingly shielded against new, smaller competitors.

Investment

- Fostering investment in ICTs, complementary changes and innovation drivers is essential for productivity and employment growth.
- Digital economy companies would not have scaled up without decades of public investment in ICT and biotech.

- Several of today's most prominent companies in the digital economy are Unicorns (>1 billion dollar valuation before going public), the number of which has increased substantially since 2014 and which are mostly based either in the US and China.
- Digital economy companies rely heavily on venture capital (VC) – which rose by $50bn between 2012 and 2015 – and short-term financing with the resulting high pressure on profit margins.
- This pressure results in misguided business models characterised by low labour costs, precarious employment relationships, unpredictable and centralised pricing strategies, and outsourcing.

Taxation

- The impact of the digital economy has been profound, and the challenges it poses for the application of existing international tax rules are intensifying, especially due to increased digitalisation and de-materialisation.
- The digital economy cannot be "ring fenced" for the purpose of taxation. Companies tend to attribute profits to subsidiaries located in low tax jurisdictions, significantly reducing or even eliminating the amount of tax due.
- This suggests the need for a fundamental transformation of international tax rules.

Economic and employment effects of digital disruption

- The diffusion of ICT-enabled activities and technologies varies considerably across countries and their level of uptake by enterprises.
- The share of the digital economy in global GDP is projected to increase by up to 25% by 2020, because private investments in key technologies are rising exponentially.
- Short-term outcomes might entail service sector growth, more self-employed workers, smart automation, online training and the development of e-government services.
- In the medium-term, we are likely to see rising gaps in social protection coverage, the replacement of routine-intensive jobs, a middle-skilled jobs gap and growing income inequalities, health sector innovation and the automatic delivery of specific services.
- There is potential for job creation in the ICT sector and STEM (Science, technology, engineering, and mathematics) related fields, as well as through the transformation of industries to a low-carbon pathway in the health sector and services.
- Predictions of the level of job displacements vary. Industry systems, innovation capacities, and workers' skills levels need to be considered.
- It is essential to focus on tasks within occupations to be able to devise the right transition strategies towards avoiding job displacements and losses.
- It can be assumed that jobs involving complex tasks cannot be replaced, because they require critical thinking, tacit knowledge and socio-emotional competencies. Such tasks will rather be rendered more efficient by new technologies. Other tasks, however, can be fully automated, including routine-intensive occupations. They need fair transition strategies.
- Finally, any automation process can be used to make workers more efficient without replacing them.

Transformation of working conditions

- With the spread of ICT-based mobile work, consultations on work design become even more pertinent.
- ICT-enabled mobile work reduces costs, increases the flexibility and autonomy of workers.
- Different mobility and flexibility levels need to be assessed against their impact on workers – and their work-life-balance, as mobile work entails considerable risks.
- Policy dialogue with social partners, further research and workers' consultations at the company level on the introduction of new technologies will be essential to bring flexibility and technological advances, together with worker protection, rights and well-being.

Policy issues related to online platform work

- The online platform economy has created two sub-categories that deserve policy attention, given the absence of an appropriate legal framework: on-demand jobs and crowd work
- Several online platforms avoid employer responsibilities (including contributing to social security benefits) and prevent workers from organising collectively or realising their rights.
- Companies retain full control of setting fees, pricing and service standards – and are using rating systems, that can potentially affect future engagements of workers.
- On-demand, app-based platforms track every step of service delivery and hours worked for them and therefore have the information required to establish an employment relationship with their workers.
- It remains to be seen whether such platforms become a broader phenomenon: they are growing exponentially and expanding to new sectors, and "traditional" companies are acquiring shares or buying platform start-ups.
- There are positive examples of platform companies providing employee status to workers.
- It is crucial that there is a regulatory framework that provides for an employment relationship and its protections including workers' rights, a minimum wage (also proportionally for tasks and part-time work) and contributions by platforms to social security and benefit schemes.
- Job-search and matching platforms should be subject to the same regulations as other employment agencies.

Persisting labour market challenges in a new world of work

- The digital economy is contributing to inequality, job polarisation and non-standard work as the business models arising from it make use of legal and regulatory loopholes that exacerbate the above trends, even if they are not new phenomena.
- Economically dependent contractors, contingent, on-call, or temporary labour have seldom been so deeply enshrined in business models.
- Non-standard work may bring gains to the company in the short-term, but in the medium term there are adverse consequences for inequalities and skills levels (as training is not or only rarely provided), and severe long-term consequences for public budgets, social protection systems and ultimately, the potential for innovation within societies.
- Commitment to employees favours productivity growth by being able to build on tacit knowledge and increased motivation.
- Anticipation of technologically-driven polarisation and the digital relocation of tasks should be linked to assessing income distribution across quantiles.

- Routine and cognitive jobs in the middle of the income distribution are easier to offshore or to automate (or both).
- Labour market institutions, including social dialogue and collective bargaining, are largely absent from the new economy.

Bridging Digital Divides

- Ensuring global and affordable access to ICTs and the Internet worldwide should be a top policy priority.
- Digital divides concern the ability to access and use ICT tools, therefore policies need to focus on a) developing countries; and b) vulnerable groups in OECD countries and emerging economies including rural populations, low-skilled workers, youth not in education, employment and training (NEETs), migrants, etc.
- Only 15 % of the world population have internet access at broadband speed, 2-4 billion people remain largely untouched by ICTs and half a billion live outside areas with a mobile signal.
- There is a significant gap between the rural and urban population world-wide and a further gender divide in ICT access and use with the gap being twice as high within LDCs compared to developing countries.

Towards an Equitable Digital Economic Policy: The Role of Trade Unions

- Trade Unions are key actors in the digital economy and in addressing the future of work at the micro level (through new union services) and the system level (by representing workers) in ensuring good working conditions and fair wages.
- Unions do not only react to disruptive processes arising from digital innovation, but contribute to the development of future company strategies and support employee driven innovation and the development of workforce skills.
- They are involved in the introduction of new organisational models (including data protection and workers' health and safety) and technology, including advanced ICT and robotics through meaningful social dialogue.
- As members of Sectoral Skills Councils, active skills providers and career guidance counsellors, trade unions can help anticipate re-skilling needs. They are also leading actors in ensuring high-quality apprenticeships, VET and lifelong learning systems.

Opportunities and challenges in the digital economy

The opportunities and challenges arising from the digital economy and digital diffusion need to be addressed in comprehensive policy frameworks in consultation with all relevant stakeholders.

Opportunities	Challenges
• New jobs and tasks (ICT specialists, network experts, etc.) facilitated by learning machines and automation processes and the decline in repetitive tasks • Smart factories and integrated services improving energy, transport and administration • Flourishing knowledge economy through open exchanges, big data, and peer-to-peer networks • Less transaction costs and use of idle assets with an opportunity for additional income • Better working conditions through increased autonomy and cooperative structures, better ergonomics and less working time • Increase in well-being through ICT in health, broadband in rural areas, apps (etc.) • Empowering entrepreneurs • Overall productivity gains and outreach into remote areas	• Possible job losses, especially for routine intensive and medium-skilled occupations and rising gaps in skills • Weakening of collective bargaining and social dialogue • Rising inequality and job polarisation • Competition between workers for “tasks” and resulting income instability • Rise in non-standard, precarious work, through hiring of “independent contractors” and crowd-workers, which shifts all risks to the workers • Labour and regulatory bypassed • Erosion of private vs. work life distinction • Extensive monitoring at work and unprotected personal data • Concentration of market power, data as the new ‘gold’ • Erosion of tax bases and public funds (including social protection and pension systems)

DEFINING THE DIGITAL ECONOMY

The 'Digital Economy' is omnipresent. It spans all economic sectors and social activities, provided that there is broadband coverage. In order to understand its effects on the economy and employment, the digital economy needs to be defined, both as a concept and a policy issue.

There is currently no standard definition. It is commonly agreed that the digital economy builds on connectivity and networks resulting in integrated systems enabling rapid production and instant transmission and sharing of information. There are two dimensions that are inter-linked:

- The creation and distribution of digital products (e.g. software, connected devices) and services (data clouds, apps, online platforms).

- The adaptation of digital technology across economic sectors (e.g. 3D printing) and its diffusion, which changes employment structures (automation, mobile work, on-demand tasks), consumption (e-commerce) and societies (e.g. user-generated content).

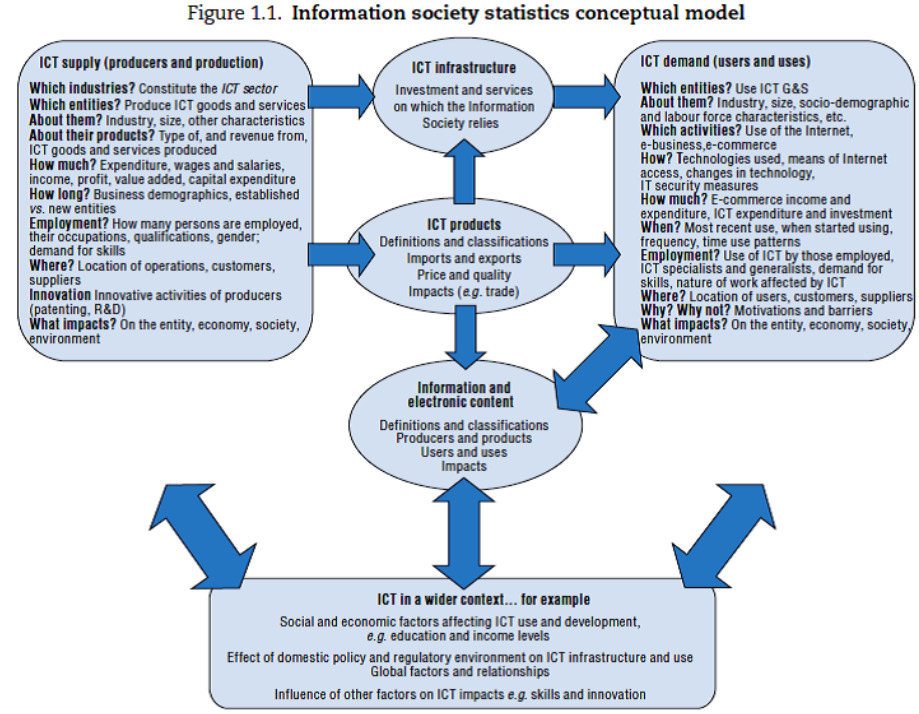
The OECD Guide to Measuring the Information Society[1] differentiates between the information and communication technology (ICT) sector and the media and content sector.[2] It is important to note that the media and content classification establishes that the value of the products included is not tangible. This also applies to much of the content produced in the Digital Economy by online and mobile users. For the ICT sector, the OECD's conceptual model on information society statistics[3] differentiates between ICT infrastructure, ICT products and information and electronic content. In addition, it includes contextual factors including the "Social and economic factors affecting ICT use and development, e.g. education and income levels"; the "Effect of domestic policy and regulatory environment on ICT infrastructure and use"; as well as "Global factors and relationships" (see Figure 1 below).

[1] OECD. (2011), OECD Guide to Measuring the Information Society 2011, OECD Publishing, Paris.
DOI: http://dx.doi.org/10.1787/9789264113541-en

[2] – Although some of the products featured in both indicators overlap, including "web search portal content".

[3] OECD. (2011), p. 13

Figure 1: The OECD Information society conceptual model (2011)



Source : OECD. Directorate for Science, Technology and Industry, Economic Analysis and Statistics Division (DSTI/EAS).

ICT producers are the driving force behind digital diffusion across different economic activities (manufacturing, services), whereby the ICT infrastructure is used, for example, for information sharing or the optimisation of production processes.

This is exactly why limiting the definition to ICT production and distribution, or the "ICT Sector" at large, does not capture the scope of the digital economy. As pointed out in Action 1 on the tax challenges of the Digital Economy of the OECD/ G20 Base Erosion and Profit Shifting (BEPS) Action Plan, "*attempting to isolate the digital economy as a separate sector would inevitably require arbitrary lines to be drawn between what is digital and what is not.*"[4] While ICT sector produces ICT goods and services, the Digital Economy builds on it and includes all sectors and activities using ICTs.

This paper therefore applies a broader concept of the digital economy namely that of cross-border, networked eco-systems spanning diverse sectors and activities enabled by ICT, the broadband and mobile internet, and IoT (networked devices) allowing for business and social interactions and exchanges across networks. Activities in the digital economy are taking place at a greater scale, velocity and reach due to:

- Increased Mobility of intangibles, users and business operations
- Enhanced Network Effects
- Large Data Flows
- Multi-channel business models

Therefore, if digital uptake in economies continues, measuring the Digital Economy becomes challenging as it goes far beyond connectivity and data transfer enabled ICT infrastructure, products, and e-commerce.

As rightly stated in the Singapore Technology Roadmap: "*the widespread adoption of consumer infocomm technologies such as social media and mobile telephony, coupled with the increased*

[4] OECD. (2015), Addressing the Tax Challenges of the Digital Economy, Action 1 - 2015 Final Report, OECD/G20 Base Erosion and Profit Shifting Project, p. 54. OECD Publishing, Paris.
DOI: http://dx.doi.org/10.1787/9789264241046-en

acceptance of online activities like online shopping, e-banking and content sharing have led to the emergence of the New Digital Economy" [5].

Beyond defining and measuring the digital economy, it becomes increasingly important to consider ICT enabled economic and social activities and the impacts on jobs and growth. The policy focus on the digital economy is currently highly variable, but is gaining momentum, thus increasing the likelihood of a more streamlined approach in the near future. The OECD focuses on four distinct thematic areas during its Ministerial Meeting in June 2016[6]: internet openness and innovation, e-commerce and consumers' trust, improving networks and services through convergence including the Internet of Things, and jobs and skills.

A common definition and means to measure the digital economy are needed to better understand its cross-sectoral effects, as well as to enable the development of a whole-of-government approach.

BUSINESS MODELS AND REGULATORY CHALLENGES

Business models in the digital economy tend to break with traditional organisational structures. As outlined in the previous section, companies rely heavily on the free flow of information, cross-border transactions and the mobility of resources resulting in multi-channel business and commercialisation strategies across borders[7].

As illustrated in the OECD BEPS Final Report[8], these multi-channel business models are based on increased **flexibility** in terms of being able to serve different market segments at different points in time, helped by data collection and analytics allowing to optimize operations ("*Resources such as content, user data, or executable code can be stored to create value long after they have been produced*.") and **reach** due to the cross-border nature of the internet and the ability to spatially separate different business segments.

The locations involved in digital economic activities are becoming more widely geographically distributed (although innovation clusters also matter), which causes challenges as regards the jurisdictional attribution of rights and duties.

Value creation is built on diverse sources, including advertising and consumer generated content, as well as labour cost savings through non-standard employment relationships. This has a profound effect on both regulatory reach and taxation systems.

Furthermore, the digital economy is based on concentrated markets resulting from pronounced network effects. Successful companies can reach a global scale quickly without significant investment in infrastructure, equipment or human resources. There are a handful of players including Google (Alphabet), Facebook, Amazon, IBM, Microsoft and Apple dominating the market. As an example, Google has only around 50.000 employees with a 17% revenue growth year on year[9]. When Facebook

[5] Infocomm Development Authority of Singapore (2012). Technology Roadmap: New Digital Economy (chapter 10): https://www.ida.gov.sg/~/media/Files/Infocomm%20Landscape/Technology/TechnologyRoadmap/NewDigitalEconomy.pdf

[6] http://www.oecd.org/internet/ministerial/

[7] OECD Digital Economy Outlook (2015): http://www.oecd.org/internet/oecd-digital-economy-outlook-2015-9789264232440-en.htm

[8] OECD. (2015), *Addressing the Tax Challenges of the Digital Economy, Action 1 - 2015 Final Report*, p. 72, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris. DOI: http://dx.doi.org/10.1787/9789264241046-en

[9] https://abc.xyz/investor/news/earnings/2016/Q1_alphabet_earnings/

bought Instagram for 1 billion in 2012, it had 13 employees and 30 million users around the world.[10] Their market power relies on an extensive control of the internet infrastructure, networks and data that provides them with a competitive edge.

Ultimately, the digital economy is characterised by substantial network externalities and regulatory gaps. Public policies need to catch up in order to address issues related to competition, investment and taxation.

Competition

A small number of multinational firms dominate the digital economy. In addition there is a high number of fast growing micro-multinationals that operate differently from other tech-start-ups[11]: "*whereas incubated startups divest some business functions to their investors, micro-multinationals purchase these functions from subcontractors. Incubators allow startups to concentrate on what economists call a "comparative advantage". Alas, incubated startups were also at the mercy of their patrons' whims. Micro-multinationals, by contrast, control their own fortunes*."[12]

Those companies control both their core market, while competing (e.g. Apple and Google on the app market), cooperating (Google investing in Uber), and depending on each other (Google search engine revenues vs. direct access to Amazon, Ebay, etc.). In so-doing, they are absorbing innovations from the start-up sector (by controlling the essential cloud infrastructure and monetising web activities). This is most visible in the consumer technology industry, where they have a built-in audience. They thereby distort markets and control information flows as well as digital infrastructure.

A recent New York Times article coined the term 'tech's Frightful 5'[13] which are reigning over the consumer-tech economy, namely Apple, Google (or Alphabet), Amazon, Facebook and Microsoft. This is due to the fact that even other successful digital companies depend on their infrastructure or investments. As referenced before, Google holds capital shares in Uber, Netflix is operating via Amazon's cloud service (other popular cloud services are operated by Microsoft and Google), What's App is now owned by Facebook. Other aspects contributing to the network effects are the control over app stores and mobile operating systems (Apple, Google), desktop systems (Microsoft), search engines, advertising (Facebook, Google) and e-commerce (Amazon). Competition mostly only comes from China.

Digital platforms get more entrenched in their core markets with "record-high market caps"[14], expand to other regulated sectors and become more and more shielded against new, smaller competitors. Their financial strength allows them to dominate "the digital ecosystem" by investing in or buying up promising start-ups that could be potential competitors (Facebook acquiring WhatsApp and Instagram; Google buying YouTube and Waze, or Apple making Siri an integral part of its mobile offers).

In diversifying their portfolios and making their way into traditional sectors (automobiles, health care, finance, education, entertainment, etc.), the same regulatory standards need to be ensured when digital platforms enter critical sectors such as transport, health or investment.

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[10] http://www.bbc.com/news/technology-17658264

[11] including Amazon, eBay, Uber, AirBnB, or Alibaba

[12] Pontin, J. (2004). The Micro-Multinational. Wired: http://www.wired.com/2004/07/the-micro-multinational/

[13] Manjoo, F. (January 20, 2016). Tech's 'Frightful 5' Will Dominate Digital Life for Foreseeable Future. New York Times: http://www.nytimes.com/2016/01/21/technology/techs-frightful-5-will-dominate-digital-life-for-foreseeable-future.html?_r=0

[14] Accenture (2016). Predictable Disruption: Looking to digital ecosystems for the next waves of change, p. 4: https://www.accenture.com/fr-fr/_acnmedia/PDF-2/Accenture-Predictable-Disruption-Technology-Vision-2016-france.pdf

However, as discussed previously, the digital economy market is difficult to regulate as the location of companies becomes fragmented, driven by near/ offshore strategies[15] (head office close to VCs and competitors, developers in a lower-cost location and the jurisdictional base determined for legal, cost-saving purposes) – which in turn makes international acquisitions easier.

The next opportunities for these companies will likely arise with the automation of logistics[16] (Amazon, delivery and transport start-ups) and the spread of voice and AI operating systems.

Businesses depend on their resources and services to digitise and profit from operating systems. However, it needs to be underlined that "traditional" companies are progressively starting to develop their own digital infrastructure (e.g. General Electric investing in industrial internet[17]).

However, overall the market is distorted to their advantage and gives them enormous power over the diffusion of new technology (and its impact on jobs and markets) and the protection of data (e.g. on purchasing intents). Regulatory policy can shape how expansionary strategies affect economic processes, e.g. regarding the automation of logistics or e-commerce. Otherwise, the relative advantage of digital companies will lead to established oligopolies controlling markets and creating SME and industry dependency.

Investment

Fostering investment in ICTs, complementary changes and innovation drivers is essential for productivity and employment growth. This entails creating favourable conditions for entrepreneurship and supporting the development of new goods and services enabled by digital technologies. ICT investment was at 2.7 percent of GDP in OECD countries[18] with over two-thirds going into software development and databases. Indeed, the promotion of ICT diffusion in all economic sectors can result in higher competitiveness through an increased innovation potential and thus net jobs growth.

When it comes to investment in the digital economy itself, several of today's big players would not have scaled up without decades of public investment by the U.S. government in ICT and biotech: "*it is impossible to explain US dominance in computers, microelectronics, software, and data communications without recognizing the role of government in making seminal investments that developed new knowledge and infrastructural investments that facilitated the diffusion of that knowledge.*"[19]

Today, digital economy companies rely heavily on venture capital (VC) – that rose by $50bn in-between 2012 and 2015 – and short-term financing with high pressures on profit margins. Several of the companies concerned are Unicorns[20] (>1 billion dollar valuation before going public), the number of which increased substantially since 2014 and which are mostly based either in the US and China. The VC share "*devoted to investments in the ICT industries reached 67% in the last quarter of 2014*"[21]. The level of investments, however, is nowhere near that of the dot-com bubble (1997–2000, see Figure 2). It does not seem that there is a new tech bubble in the making despite high pre-IPO valuations – the gap between tech and non-tech companies is not as high (only 10% above market

[15] See for example : https://dailyfintech.com/2015/09/11/the-emergence-of-micro-multinational-startups-working-globally-from-day-one/comment-page-1/

[16] See for example: Dixon, C. (2016). The Internet Economy: https://medium.com/@cdixon/the-internet-economy-fc43f3eff58a#.92ja43w2z

[17] https://www.ge.com/digital/industrial-internet

[18] "ICT investment is defined as the acquisition of equipment and computer software that is used in production for more than one year." Source: OECD (2016), ICT investment (indicator). doi: 10.1787/b23ec1da-en (Accessed on 12 June 2016)

[19] Lazonick, W. (2011).The Innovative Enterprise and the Developmental State: Toward an Economics of "Organizational Success", p. 26

[20] Fortune Unicorn List 2016: http://fortune.com/unicorns/

[21] OECD Digital Economy Outlook (2015), p. 37

value) and companies tend to stay private longer and enter financial markets in a more mature state (see Figure 3[22]).

Figure 2: Venture capital invested in Internet-specific companies in the United States

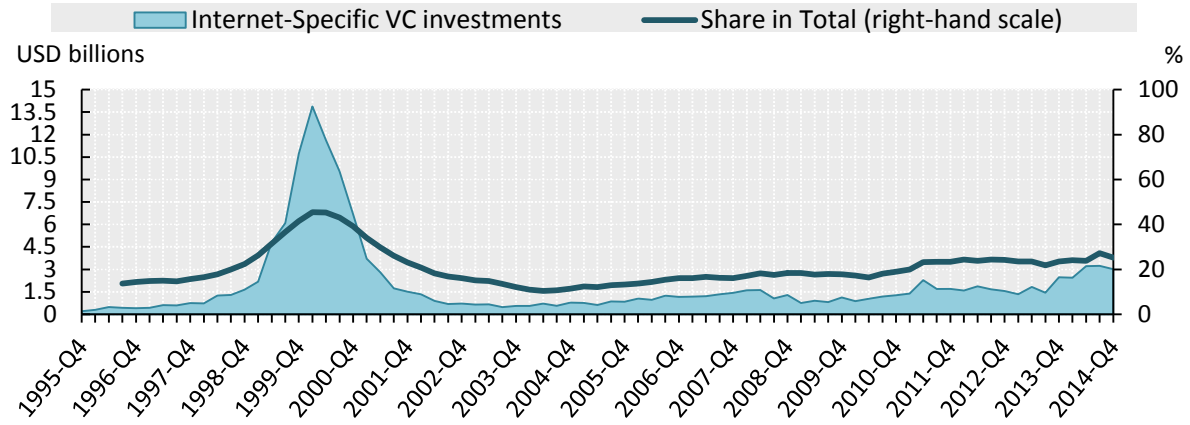
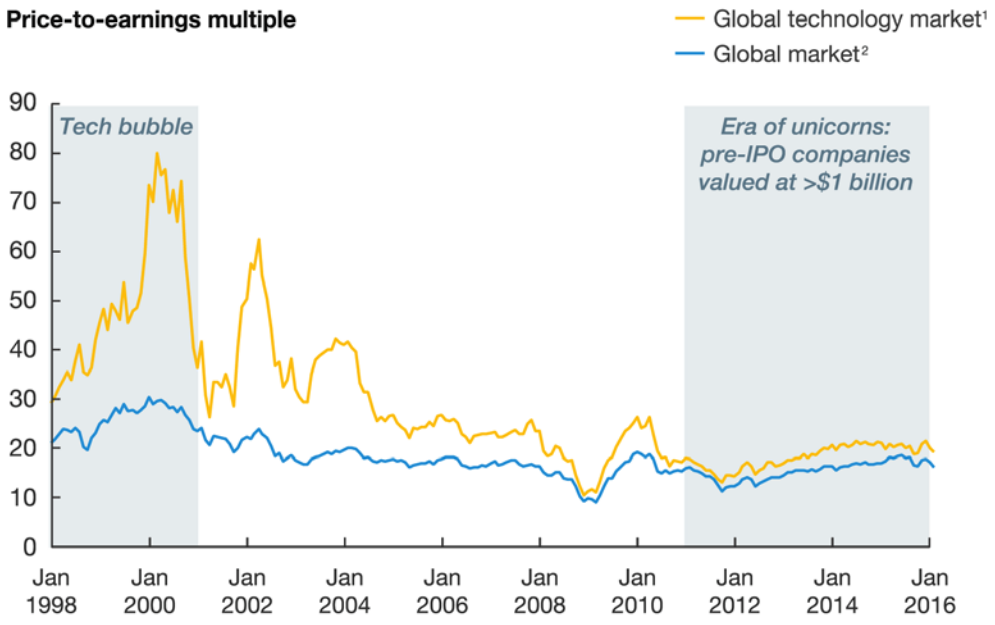


Figure 3: Public market value of technology companies



¹Index of 392 publicly listed technology companies.
²Index of 7,115 publicly listed companies.

McKinsey&Company | Source: Datastream

The key issue concerning the employment structure of some companies is the sustainability of the business model. Short-term financing often results in pressure on companies to keep their labour costs low, resulting in precarious employment relationships, unpredictable and centralised pricing strategies and outsourcing (thereby underestimating that quality working conditions lead to higher motivation, the completion of tasks and, thus, customer satisfaction).

[22] McKinsey Quarterly (May 2016). The 'tech bubble' puzzle: http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-tech-bubble-puzzle?cid=digistrat-eml-alt-mkq-mck-oth-1605

While in recent years, venture capital investments rose enormously, there was a sharp drop in 2016 (first quarter). The number of Unicorns, however, is still on the rise; those with a high level of dependency on VC flows are now under pressure to revise their business plans.

As the Morgan Stanley offering on Uber states: "*The Company has incurred significant net losses since inception and the Company expects its operating expenses to increase significantly in the foreseeable future. ... A significant portion of the Company's expenses and investments are fixed, and it may not be able to adjust its spending quickly enough if its revenue is less than expected*."[23] Another reason for VC and FinTech financing, however, also lies in the fact that traditional banks were investing less in the tech start-up sector at the beginning.

Overall, more diversified financing would avoid such risks and put less pressure on profit margins.

Taxation

Key features of the Digital Economy pose serious challenges to traditional tax systems and hence exacerbate the risks for aggressive tax planning practices and tax evasion. As reported by the OECD, when it comes to the direct taxation of MNEs, namely corporate income tax, there are broad challenges. These are: nexus, data, and characterisation:

- Nexus (or the absence thereof) relates to the considerably increased mobility of functions in the Digital Economy and, accordingly, the decreasing need for a physical (taxable) presence to conduct business. In other words, should the fact that Amazon operates a warehouse in a country be reason enough to constitute a permanent establishment and thus a taxable presence there?

- Data, or specifically the challenges in valuing data and data flows, relates to the increasing use of intangible products and services. How should data valuation and ownership be determined, when value and subsequent monetisation can be generated from personal data that are under the laws of numerous jurisdictions and the property of the individual, not part of the assets of the company? In other words, combined with the nexus problem above, should remote or location-specific data collection constitute a taxable presence even in the absence of a physical presence?

- Characterisation relates to increased uncertainty about how to categorise digital business transactions; uncertainty that in turn creates issues regarding their tax treatment. A given transaction will be taxed differently whether it is considered as a royalty, fee for technical services, or a business profit.

As part of the OECD BEPS Action Plan, several policy options were on the table and given serious consideration during the negotiation process, including:

- Strengthening the rules that would require a MNE's local subsidiary to be taxed as a "permanent establishment" and hence to be taxed on its profits.
- Adapting the rules on intra-MNE "transfer pricing", particularly with regard to intangible assets.
- A withholding tax on certain types of digital transactions. NOT VERY CLEAR TO ME
- The collection of VAT/GST on cross-border transactions.

Most of the above measures are to be addressed in the implementation of the BEPS Action Plan. But the policy debate on the taxation of the digital economy is on-going.

[23] http://www.bloomberg.com/news/articles/2016-01-14/here-s-what-morgan-stanley-is-telling-its-wealthiest-clients-about-uber

THE SCOPE OF DIGITAL CHANGE ON ECONOMIC SECTORS AND EMPLOYMENT

Disruptive innovation[24] refers to new goods and services replacing existing structures and competitors. It can have adverse impacts on employment numbers and conditions - if not well-managed and regulated. As discussed in the previous sections, the digital economy and the technological shifts it causes move at a fast pace and across all economic sectors. Mobile broadband is considered the fastest growing technology to date.

Several factors need to be considered in explaining digital diffusion: the dwindling costs of data collection, storage and processing; operations and mobile Internet penetration become faster; the amounts of data become larger (Big Data) and more efficient (Analytics), include effective geo-location, and are more decentralised (Cloud); networks are more sophisticated (from the internet to mobile to virtual reality); robotics are more developed (precision, manipulation, flexibility); algorithms are smarter (Artificial Intelligence Interfaces, pattern recognition) and the Internet is becoming more socially enshrined (social networks). These developments will speed up automation processes and more complex network systems, including through the application of IoT[25]. The majority of the value added from IoT comes from the data generation, processing and analysis.

For example, Big Data technology utilised in the service sector is expected to grow at a 26.4% compound annual growth rate to $41.5 billion through 2018 (International Data Corporation (IDC))[26]. Operational robots displayed a growth of over 70 % in the course of the last decade with the highest numbers recorded in Japan (310, 508), US (168, 623), Germany (161, 988) according to 2012 data[27].

When placing the development stages of ICT technologies on a Gartner hype cycle (see Figure 4 below), the following distribution emerges showing that while the anticipation of digital diffusion is high, full-scale implementation is still in the making[28].

[24] http://www.claytonchristensen.com/key-concepts/#sthash.idAl8v6M.dpuf

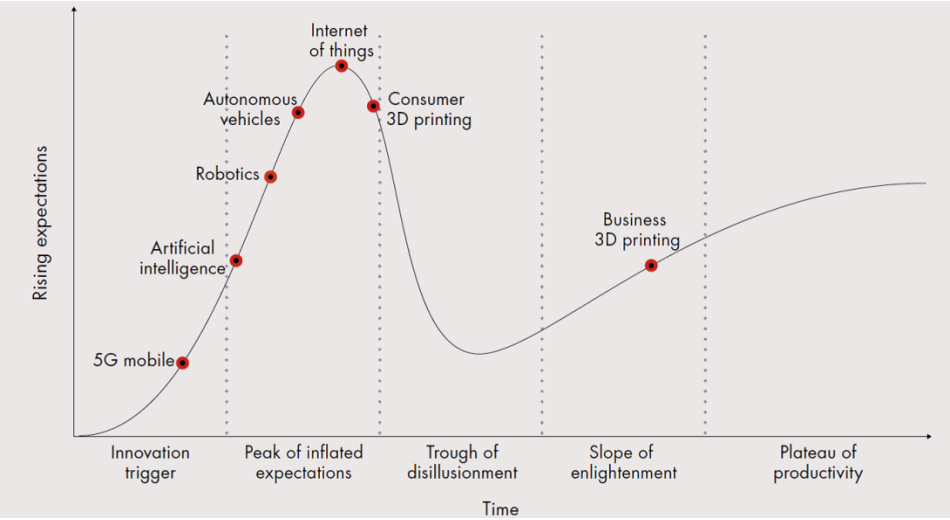
[25] The ITU Telecommunication Standardization Sector (ITU-T) has defined IoT as "a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies". (Recommendation ITU-T Y.2060, http://www.itu.int/ITU-T/recommendations/rec.aspx?rec=y.2060)

[26] ETUI, p. 11

[27] Bank of America Merrill Lynch (2016), Transforming World Atlas, http://www.bofaml.com/content/dam/boamlimages/documents/articles/ID16-305/bofaml_transforming_world_atlas_2nd_edition.pdf

[28] Graph from the World Banks' World Development Outlook (2016), p. 327: https://openknowledge.worldbank.org/handle/10986/23347

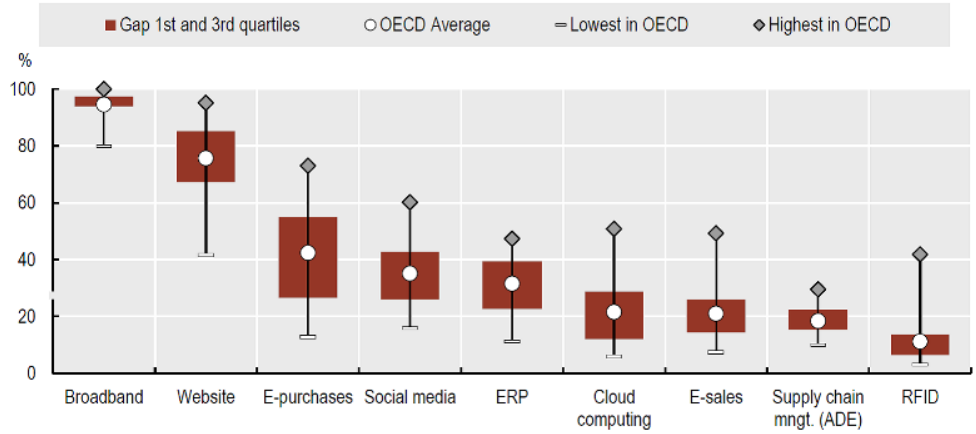
Figure 4: The Gartner Hype Cycle and Digital Diffusion



The processes underway bear both opportunities for productivity growth and well-being, but also risks for certain job profiles, specifically routine heavy tasks, and working conditions, as evidenced in the emerging platform economy.

The diffusion of ICT-enabled activities and technologies varies considerably across countries and their level of uptake by enterprises as displayed in the graph below[29].

Figure 5: Diffusion of selected ICT tools and activities across OECD countries



Given the wide but fragmented diffusion of digital economy activities and technologies, its contribution to productivity growth is hard to identify[30]. There are arguments that official statistics substantially under-record its contribution to GDP growth[31].

According to 2013 data[32], the accumulated value added of ICT sector technologies was below 6% of OECD average GDP, with the highest numbers recorded in Korea with a share of close to 11% of national GDP and the lowest in Mexico. It should be noted that the highest shares are for the most part accounted for by IT hardware and telecommunications and not so much by IT and information

[29] OECD (2015b), based on OECD, ICT Database; Eurostat, Information Society Statistics and national sources, July 2015. See original source for detailed footnotes and references, data available at: http://dx.doi.org/10.1787/888933274447

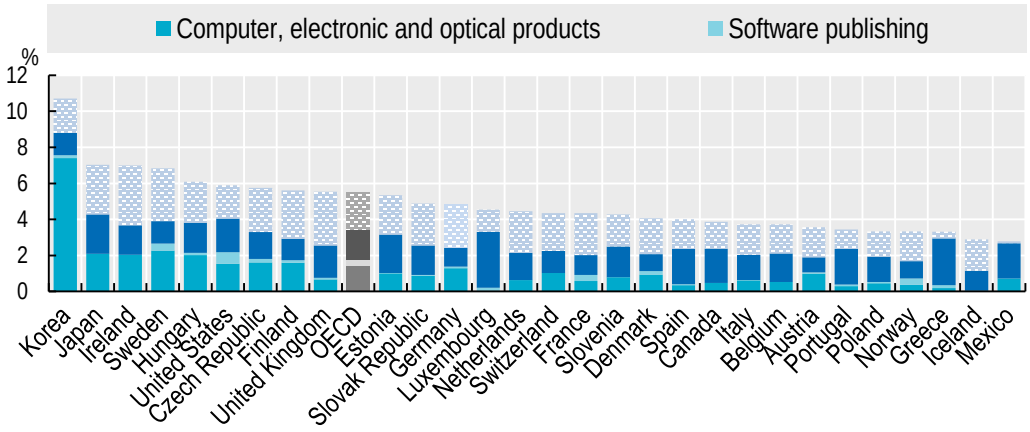
[30] http://www.wsj.com/articles/the-u-s-underestimates-growth-1431989720

[31] http://www.wsj.com/articles/the-u-s-underestimates-growth-1431989720

[32] OECD Digital Economy Outlook (2015): Chapter 2. The foundations of the digital economy, Table 2.4

services, which are also an integral part of the digital economy. That being said, it is likely that the distribution and the level of the share in value added have shifted since.

Figure 6: Value added of ICT sector and sub-sectors (2013):



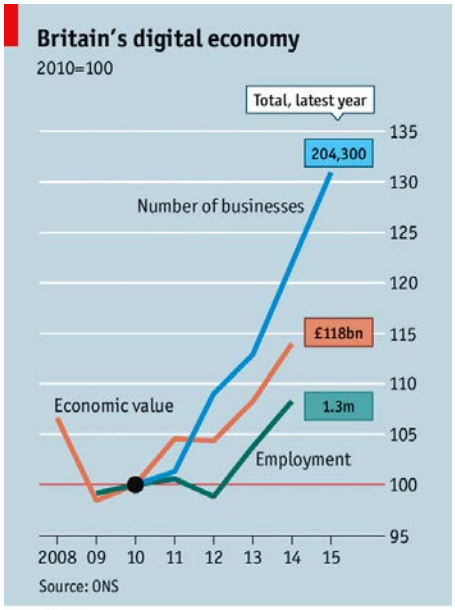
In the US, the "digital sector" accounts for 5% of US GDP and 3% of the employment share[33]. In the UK, "*employment in the Digital Sector reached a record high in 2013 with 1.3 million people working in its industries […] a growth of 4.5% from 2009.*"[34] 2016 data on the UK's digital economy show that "*businesses that are part of the digital economy have grown by 30% in the past five years and the digital sector has outperformed the economy overall*"[35]. However, the employment share of the digital sector lags behind with 5% of jobs (see Figure 7 below). The digital disruption of the manufacturing sector, however, poses the question as to whether to make such differentiation is still appropriate.

[33] McKinsey Global Institute (2015). Digital America: A tale of the haves and have-mores. Executive Summary, p. 1, http://www.mckinsey.com/industries/high-tech/our-insights/digital-america-a-tale-of-the-haves-and-have-mores

[34] Office for National Statistics, United Kingdom (2015). What defines the Digital Sector? http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/dcp171776_419158.pdf

[35] The Economist (June 11, 2016). The digital economy: http://www.economist.com/news/britain/21700468-digital-economy

Figure 7: The Digital Economy in the UK



Looking ahead, its share of global GDP is projected to increase by up to 25% by 2020[36] because private investments in key technologies are rising exponentially[37]. A survey of investment in the Internet of Things (IoT) showed that of 795 MNEs, 12% planned to invest $100 million and 3%, a minimum of $1billion[38].

The effects[39] of digital diffusion on employment are multi-layered and assessments vary. In the short-term, most studies point to service sector growth, more self-employed workers, including in crowd and on-demand jobs and a rise in mobile ICT work, smart automation (systems operated by humans and machines), online training and the development of e-government services. In the medium-term, we could see increasing gaps in social protection coverage (in particular for non-standard jobs), replacement of routine-intensive jobs, a middle-skilled jobs gap and growing income inequalities, health sector innovation and the automatic delivery of specific services (finance, legal).

There is not one single metric to assess the impact of the developments listed. **Policy makers and social partners need to look at different dimensions: how jobs will change in terms of both job design and new forms of employment, and which will be created and which might be displaced.** Therefore, a systematic approach is needed by looking at present employment dynamics across three dimensions:

1. **Employment effects from digital disruption**
2. **Transformation of working conditions**
3. **Jobs in the online platform economy**

[36] Accenture Strategy (2016). Digital disruption: The growth multiplier, https://www.accenture.com/_acnmedia/PDF-4/Accenture-Strategy-Digital-Disruption-Growth-Multiplier.pdf#zoom=50

[37] http://centricdigital.com/blog/digital-trends/manufacturing-banking-hospitality-leading-iot-investments/

[38] http://www.business-standard.com/article/companies/over-80-companies-increased-revenue-by-investing-in-iots-115072200928_1.html

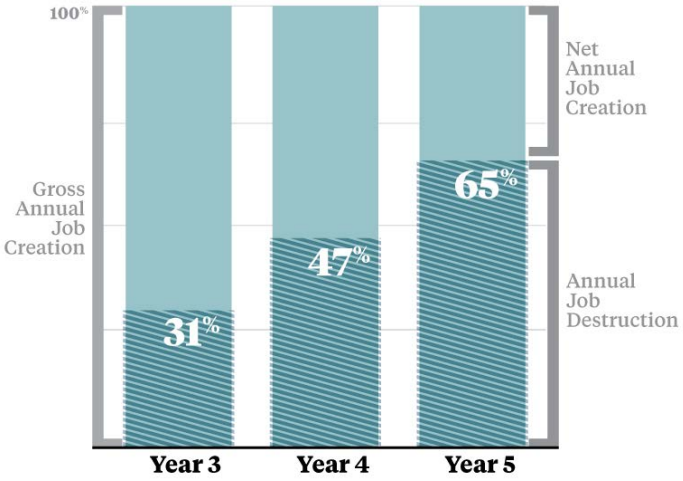
[39] See for example : Institut für Innovation und Technik, IIT, 2016 ; In Bundesministerium für Arbeit und Soziales, Forschungsbericht 463, Foresight Studie "Digitale Arbeitswelt", February 2016

Employment effects from digital disruption

To begin with, digital disruption can result in job creation. The digital economy has the potential to support the creation of substantial numbers of new jobs, notably in the health sector, services and in facilitating the transformation of industries to a low-carbon pathway. Jobs closely related to the digital economy are growing, starting with the Chief Digital Officer (CDO), network and Artificial Intelligence engineers - digitising business operations and optimising them – to coders, cloud service managers and data base analysts, over to digital brand or e-commerce managers, privacy coordinators and information security analysts. The commonality between these jobs is that they are requiring specialist ICT and/ or STEM (Science, technology, engineering, and mathematics) skills that not everybody can and will have. Furthermore, the scope of job creation here is limited.

Policy recommendations often suggest public investments and risk-burden sharing to spur start-up growth as an engine for job creation. This might be a credible measure for encouraging entrepreneurship, but not for supporting employment generation by young firms. Any set-backs in start-up business plans will affect employment decisions. Davila, Foster, He and Shimizu show that 65% of job destruction takes place in the fifth year since inception[40] (see Figure 8 below).

Figure 8: Job Creation and Destruction in the Start-up sector



The study further points to the fact that 80 % of new jobs are created in the top 10% best performing start-ups and only "*8% increased the number of employees in year three to five after their creation*". Therefore, the policy approach should not be focussed on promoting a high number of start-ups but on investing in the longevity of the more successful ones.

When looking at the effects of digital diffusion and technological change on existing jobs, it is important to map out how production and resource management, as well as service delivery will be affected. When reviewing recent reports, there is a consensus that the following sectors and thus "traditional" jobs will change to a varying degree:

Manufacturing; Clerical work; Services including retail, translations, hospitality and travel, but also legal and financial services; Education provision; Transport; Health; Agriculture; Energy and Logistics at large (tracking of delivery, infrastructure planning, etc.).

[40] Davila, A., Foster G., He, X. & C. Shimizu (2014).The rise and fall of startups: Creation and destruction of revenue and jobs by young companies, Australian Journal of Management: http://aum.sagepub.com/content/early/2014/05/21/0312896214525793

The World Economic Forum in its assessment of the employment outlook by job category until 2020 foresees great losses in office and administrative jobs, followed by manufacturing, and the highest net gains (which are considerably lower compared to the losses) in business and financial operations, management, and "computer and mathematical" tasks[41].

General production and maintenance tasks will be shaped by the introduction of sensors for real-time, remote monitoring of processes and equipment, and optimised logistics through Big Data. Engineering will be supported by digital simulations and cloud computing. Advanced manufacturing, where automation is already underway for a longer period of time, is seeing the emergence of man-machine collaboration and 3D printing. In addition, public sector digitalisation is underway with e-government platforms creating more interactive structures but also potentially affecting public sector employment.

There are sectors, where digital diffusion is already an integral part of business operations. For example, mobile banking (over 50 % of the population already uses it in the OECD) and new peer-to-peer lending, currency exchange, reward based or equity crowd-funding platforms are transforming the banking sector significantly. The latter often promise more value for money, but are not (or not sufficiently) regulated in Europe (the second largest market) despite evident risks. The digital content market is ever-growing with streaming services distributing globally licenced content, as well as user-generated platforms (e.g. YouTube).

These trends are stimulating a debate on job displacements across all industries. However, predictions on the number of jobs affected vary. Most reports do not take a comprehensive look at differences in industry systems, innovation capacities, or workers' skills levels. The results of such studies beg the question whether the effects of technology can be isolated from other economic factors? As David Autor pointed out, job creation depends on the state of the economy as a whole[42].

The most prominently cited study by the Oxford Martin School asserted that 47 per cent of jobs in the US are at risk of automation over the next 20 years, in two stages: (1) transport, manufacturing, industrial production, administration, and potentially services, retail, construction; followed by (2) management, logistics, engineering[43]. While the level of the estimates is arguable, one of the authors' conclusions is that "*wages and educational attainment exhibit a strong negative relationship with the probability of computerisation*" and thus low-wage and -skill jobs might be substantially more affected.

According to a recent report, however, we are not there yet as "*most sectors have barely closed the [digital] gap*" over the last 10 years and "*some of the lagging sectors are the largest in terms of GDP contribution and employment*" [44].

Rather than to anticipate change for entire sectors, one needs to focus on tasks within occupations to be able to devise the right transition strategies towards avoiding job displacements and losses.

A recent OECD study looked at the tasks (and not the jobs as such) at risk of automation. It concludes that "*9% of jobs [are] at high risk of being automated*" (70% of tasks), and for another 25% of jobs that half of the tasks performed will be transformed (using the OECD Survey of Adult Skills data (PIAAC))[45]. This allows nuancing the Doomsday predictions of a digital economy without jobs. The

[41] World Economic Forum (2016). The Future of Jobs Report, p. 16, https://www.weforum.org/reports/the-future-of-jobs

[42] David Rotman (2013). How Technology Is Destroying Jobs, https://www.technologyreview.com/s/515926/how-technology-is-destroying-jobs/

[43] Frey, C. B. & M. Osborne (2013). Oxford Martin School, http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

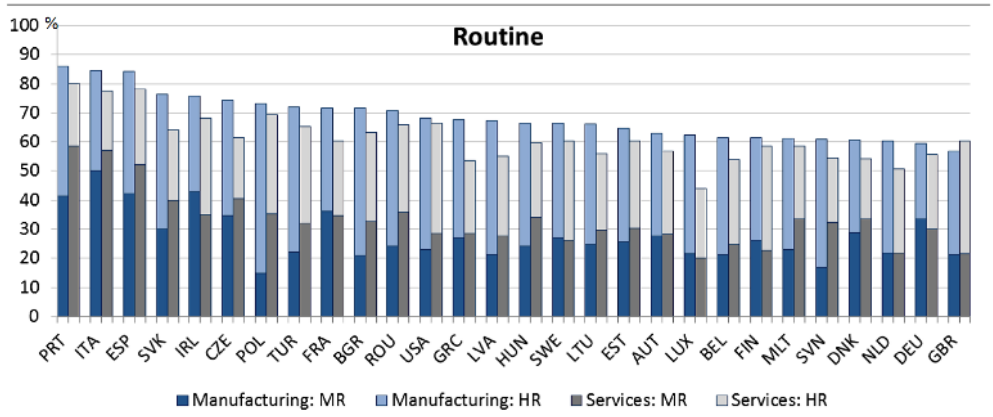
[44] The report regroups sectors into highly (ICT, Media, Finance and Insurance), medium (manufacturing, retail) and low digitalisation levels (health, construction, hospitality), and – more pertinently – distinguishes between knowledge-, capital- and labour intensive, B2B and public/ local sectors:

[45] OECD (2016), "Automation and Independent Work in a Digital Economy", Policy Brief on the Future of Work, OECD Publishing, Paris, http://www.oecd.org/employment/emp/Automation-and-independent-work-in-a-digital-economy-2016.pdf

paper also points to the fact that new jobs will likely emerge in other sectors, in addition to so-called 'complementary jobs' to new high-tech jobs ("local high-tech job multiplier"[46]). According to the OECD, the real emerging challenge might be that job creation will be polarising, with 'bottom of the scale' workers in basic data filtering or in semi-precarious platform jobs[47].

Several studies claim that the highest degree of disruption will be in routine intensive jobs compared to more complex tasks. The OECD subdivides routine intensity of jobs into four categories and finds that high-routine manufacturing jobs account for 41% on average across the OECD, while the distribution of low- and non-routine intensive occupations varies greatly with 22% in Italy to 56% in Luxembourg (see Figure 9 below[48]).

Figure 9: Routine-intensity across sectors



Note: Country-specific average values, ranked from lower to higher employment share in manufacturing.

Source: based on Marcolin, Miroudot and Squicciarini (2016).

The findings suggest that "*a relatively higher ICT intensity can substitute for part of the more routine jobs*" in manufacturing, and in services with low routine intensity[49]. As the report rightly points out, policy attention should be given to the degree of routine content and the potential for ICT intensity.

However, if Erik Brynjolfsson and Andrew McAfee are to be believed "the second machine age" will affect a wide range of cognitive, non-routine tasks[50] amidst a "great decoupling" between economic growth and low job creation.

A more nuanced assessment is provided by the World Bank predicting that amongst "*complex occupations, business activities, or public services, the internet usually can make only a portion of tasks cheaper, more efficient, or more convenient through automation. Another portion still requires capabilities that humans possess in abundance but computers do not. […] Others require complex reasoning or socio-emotional skills, such as designing tax strategies or advising clients. Likewise, many public services involving provision of information or routine permissions can be automated. But*

[46] Goos, M., J. Konings & M. Vandeweyer (2015), "Employment Growth in Europe: The roles of Innovation, Local Job Multipliers and Institutions", Utrecht School of Economics Discussion Paper Series, Vol. 15, No. 10, http://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2671765

[47] Degryse, C. (2016). Digitalisation of the economy and its impact on labour markets, Working Paper 2016.02, european trade union institute (ETUI)

[48] https://www.oecd.org/sti/ind/GVC-Jobs-Routine-Content-Occupations.pdf

[49] OECD (2016). GVCs, Jobs and Routine Content of Occupations, pp. 24-28, http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/WP%282015%2915/FINAL&docLanguage=En

[50] Brynjolfsson and McAfee (2011), Race Against the Machine

others, such as teaching or policing, need a high degree of human discretion, tacit knowledge, and judgment."[51]

It is more accurate to assume that complex tasks cannot be replaced, seen as they require critical thinking, tacit knowledge and socio-emotional competencies. Such tasks will rather be rendered more efficient by new technologies. Some other tasks can be fully automated. Anticipatory strategies need to be put in place in consultation with worker representatives to enable fair transition strategies and skills development for those affected by such disruption.

As Nouriel Roubini pointed out, "*unless the proper policies to nurture job growth are put in place, it remains uncertain whether demand for labor will continue to grow as technology marches forward*".[52]

Beside policy action, some scenarios set the role of organisational design and the possibility of positive effects aside that would paint a more realistic and policy-oriented picture since:

1. Any automation process can be used to make workers more efficient without replacing them;
2. Technology can enhance a firm's productivity (and service delivery), while maintaining or even increasing its workforce.

It is therefore becoming increasingly important to ensure that while making use of intelligent systems to achieve more effective, tailor-made production, the employee comes first by promoting training and ensuring health and safety at work.

Transformation of working conditions

Digitalisation changes the way we work. According to a recent by the Smith Institute[53] that looks at employees' views on productivity, most respondents indicated that they are "working harder not smarter"[54]. 82% saw technology as "inevitable and necessary", 87% are ready to "maximise its benefits" but only 24% said that their employers involve them in discussions on the impact of technology on their work.

With the spread of ICT-based mobile work – "*work, where workers can do their job from any place at any time, supported by modern technologies*"[55], consultations on work design become even more pertinent. It is enabled by network systems, mobile devices and cloud computing and enhanced by factors such as the growth of interconnectedness of intra-business operations and global value chains. On the positive side, ICT enabled mobile work reduces costs, increases the flexibility and autonomy of workers, in particular for those who would want to work from another location due to health or family reasons, or their place of residence (remote, rural).

Other potential effects need to be assessed more critically: for example, employer responsibilities on health and safety provisions might not be enacted. Beyond that, payment might be "*based on results rather than working hours, or have technically advanced monitoring, such as systems that capture whether a worker is logged on to the company network and how long they work on each task.*"[56] Different mobility and flexibility levels (full, location changes, ad-hoc etc.) need to be assessed

[51] World Bank (2016). World Development Report, p. 18
[52] Where Will All the Workers Go? Nouriel Roubini, Dec 2014, https://www.project-syndicate.org/commentary/technology-labor-automation-robotics-by-nouriel-roubini-2014-12?barrier=true
[53] commissioned by Prospect, USDAW, BECTU, Community, Association of Teachers and Lecturers, FDA and the Society of Radiographers
[54] http://www.smith-institute.org.uk/wp-content/uploads/2016/03/240316-Productivty-at-work-presentation-final-1.pdf
[55] Eurofound (2015), New forms of employment, Publications Office of the European Union, Luxembourg.
[56] Eurofound (2015), p. 77

against their impact on workers – and their work-life-balance - but also on a company's productivity levels.

Risks from unregulated ICT-based mobile work

- Stress
- Less employment and wage security due to flexibility arrangements
- Blurring boundaries between working and private life
- Precarious forms of working
- Erosion of co-determination and workers participation
- Lacking OHS provisions
- Monitoring of performance

Policy dialogue with social partners, further research and workers' consultations at the company level will be essential to bring flexibility and technology advances together with worker protection, rights and well-being without compromising neither. Work design and workload need to be discussed with employees. Their inputs to the introduction of new technologies are essential. A company's motivation behind ICT mobile work should not be cost reductions but enhanced productivity and employee engagement. Training, agreements on working time and sophisticated mechanisms for remote interaction should thus be integral parts of mobile work.

Jobs in the online platform economy

When discussing jobs created in or through the digital economy, policy attention is currently heavily focused on the "platform economy". Online platforms bring individuals offering goods or services together with clients. Often this allows the platform companies to split up jobs in a series of consecutive and atomised tasks, hence the reference to a 'gig' economy. These 'gigs' or temporary services are then offered to workers following the pattern of existing non-standard work including outsourcing to individual, self-dependent contractors, agency/ temp work, etc. In so-doing, such platforms become convenient means to avoid regulatory obligations (e.g. on the employment relationship, social security obligations, consumer protection legislation or taxation).

Platforms are by no means all the same and range from non-profit (Wikipedia, streetbank) to peer-to-peer for profit (Airbnb, Kickstarter) to business-worker-user for profit (Uber, Lyft)[57], and within that "portfolio", crowd-work platforms (TaskRabbit, YoupiJob). Therefore, the platform economy – as discussed here – should be differentiated from a purely collaborative sharing economy between individuals, where no intermediary rules or fees are involved and where the focus is mostly on making the common use of existing assets and goods, not on delivering labour performance.

There are two important sub-categories that deserve policy attention: on-demand jobs and crowd work. The first encompasses traditional jobs (driving, cleaning, administrative work) offered via mobile or web applications and are subject to the standard settings, pricing and selection rules of the platform. The second refers to workers "*completing a series of tasks through online platforms […] beyond geographical boundaries.*"[58]

[57] See amongst other: Juliet Schor, "Debating the Sharing Economy," Great Transition Initiative (October 2014), http://www.greattransition.org/publication/debating-the-sharing-economy

[58] See De Stefano, V. (2016), The rise of the "just-in-time workforce": on-demand work, crowdwork and labour protection in the "gig-economy"; International Labour Office. Geneva: ILO, 2016 Conditions of work and employment series; No. 71)

Crowd employment "*uses an online platform to enable organisations or individuals to access an indefinite and unknown group of other organisations or individuals to solve specific problems or to provide specific services or products in exchange for payment*"[59]. The platform thereby assumes an intermediary role.

One of the reasons for the proliferation of on-demand and crowd-work is what Ursula Huws (2016) termed the parallel process of standardisation ("*processes and tasks can be counted and used to generate targets and performance indicators*") and modularisation (work divided into units "*separated from each other spatially and contractually*"). Workers are put in a position, where they are told to adapt to this new world of unsteady task supply[60]. The digital economy provides the techniques enabling the platform to shift market insecurity to the work force, not the cause of market insecurity itself.

The main issue with both crowd- and on-demand jobs is that there is no legal framework governing or monitoring this kind of employment (in Europe)[61].

Several online platforms avoid employer responsibilities (including contributing to social security benefits) and prevent workers from organising collectively or obtaining any rights, e.g. regarding sick, maternity and/ or paid leave. This results in no protection under fundamental labour standards and rights at work.

Observers and trade unions are raising the issue of on-demand platforms classifying their employees as 'independent contractors'[62]. According to the National Employment Law Project (NELP) "*calling workers independent contractors greatly reduces companies' costs, including the costs associated with being an employer that apply to more traditional companies in their sectors. Workers who use the platforms to get work are led to believe they have no entitlement to social protections and benefits tied to employment*[63]." As a consequence, they need to pay taxes like self-employed workers, while platform companies take commissions on fees.

Companies in this field are expending substantial resources in lobbying for relaxation or removal of regulations which hinder their business model but which have been put in place to provide important protections for workers and customers[64]. The same companies– besides setting fees, pricing and service standards – are using rating systems (that in the case of biased assessments affect workers negatively). In doing so, workers might "*feel particularly reluctant to exercise any collective right as it could adversely impact on their reputation*".[65]

In an offering to Morgan Stanley clients for Uber shares[66] (whose valuation is set around $62 billion with reference to a possible future IPO), one of the risk factors for investors listed is the employment relationship:

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http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_443267.pdf

[59] Eurofound (2015), New forms of employment, Publications Office of the European Union, Luxembourg, p. 107

[60] Ursula Huws (2016). Platform Labour: Sharing Economy or Virtual Wild West? In Progressive Economy Journal: http://www.progressiveeconomy.eu/content/platform-labour-sharing-economy-or-virtual-wild

[61] Eurofound (2015), p. 109

[62] Depriving workers of rights under th eFair Labor Standards Act (FLSA), the National Labor Relations Act, state workers' compensation laws, and unemployment insurance

[63] Smith, R. & S. Leberstein (2015). Rights on Demand: Ensuring Workplace Standards and Worker Security In the On-Demand Economy. National Employment Law Project: http://www.nelp.org/content/uploads/Rights-On-Demand-Report.pdf

[64] http://www.theverge.com/2014/12/14/7390395/uber-lobbying-steamroller

[65] De Stefano, V. (2016), p. 10

[66] "Here's What Morgan Stanley Is Telling Its Wealthiest Clients About Uber. No financials, but a number of risk factors.": http://www.bloomberg.com/news/articles/2016-01-14/here-s-what-morgan-stanley-is-telling-its-wealthiest-clients-about-uber

"*The Company is incurring significant costs, including legal fees, in defending the independent contractor status of drivers using its platform. Although the Company believes that it is not an employer of the drivers who use its platform, adverse determinations in these matters may subject it to additional compensation expenses or taxes in certain jurisdictions, which could have a material adverse effect on its ability to operate its business. Among other things, such a determination could entitle certain drivers using the Company's platform to the reimbursement of certain expenses,* ***lead to the potential unionization of drivers****, impose tax withholding and reporting obligations on the Company, entitle drivers using the Company's platform to the benefit of wage-and-hour laws, impose applicable leaves of absence requirements, medical insurance, workers compensation insurance, ERISA and similar pension fund obligations and restrictions on the Company*."

One of Uber's arguments for not granting employee status to its workers is the immeasurability of hours worked. However, on-demand, app-based platforms are a data mine, tracking every step of service delivery (and offline time). According to the Economic Policy Institute (EPI) has pointed out: "*Uber can and does measure the time drivers have their apps on, to the minute. Uber has a guaranteed wage program that demonstrates that hours tracking and minimum-wage obligations can be administered effectively. Uber takes disciplinary action for having a low acceptance rate, so drivers must respond quickly to ride requests or face serious consequences*"[67] according to the Uber Driver Handbook. Uber actually discloses numbers in official reports.

The ambivalent employment status makes it difficult to trace how many workers are actively engaged by online platform providers. According to NELP[68] estimations (see Figure 10 below), there is a sizeable difference between on-demand and crowd-work platforms, as the latter's numbers are more transparent.

Figure 10: Employment numbers in the platform economy

Major Companies in the On-Demand Economy			
Name	Field	Size of Workforce	Operating Areas
Uber	Transportation	160,000[i]	International
Lyft	Transportation	50,000[ii]	U.S.
Sidecar	Transportation	6000[iii]	Major U.S. Cities
Handy	Home Services	5000[iv]	U.S.
Taskrabbit	Home Services	30,000[v]	International
Care.com	Home Services	6,600,000[vi]	International
Postmates	Delivery	10,000[vii]	U.S.
Amazon Mechanical Turk	Crowdwork	500,000[viii]	International
Crowdflower	Crowdwork	5,000,000[ix]	International
Crowdsource	Crowdwork	8,000,000[x]	International
Clickworker	Crowdwork	700,000[xi]	International

The main question however is whether this model is replicable. It certainly bears the danger of having set a wrong precedent. Both types of working arrangements generated by online platforms might become a much broader phenomenon: platforms are growing exponentially and expanding to new sectors (UberHealth for registered nurses on demand, Amazon Flex for delivery on-demand, LinkedIn ProFinder – a professional services platform, etc.). Furthermore, "traditional" companies are acquiring shares or buying platform start-ups (General Motors buying Sidecar and investing in Lyft) leading to a

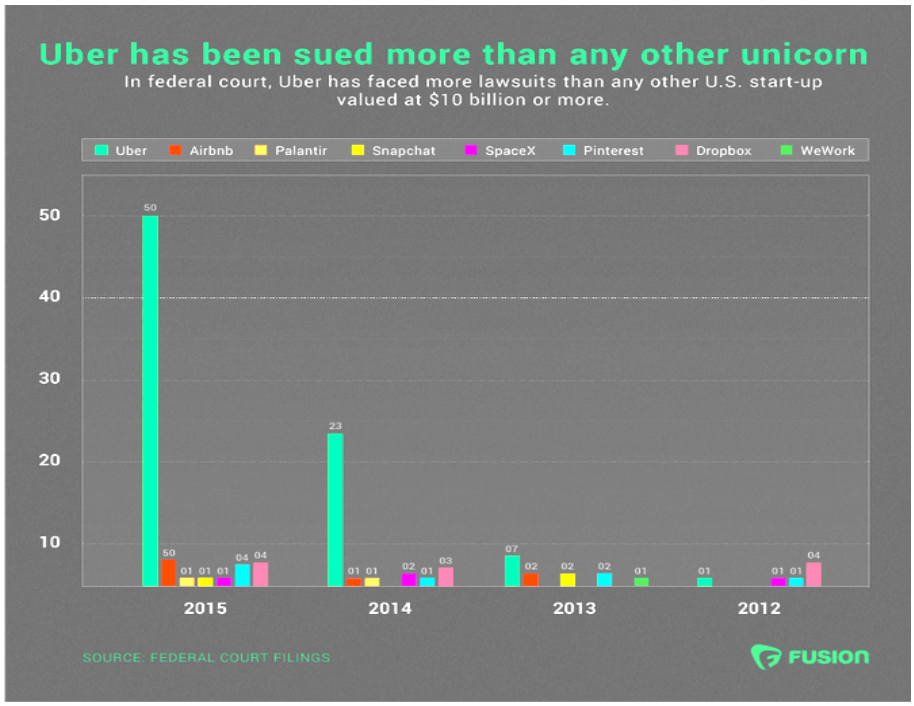
[67] R. Eisenbrey & L. Mishel (2016): Uber business model does not justify a new 'independent worker' category; Economic Policy Institute: http://www.epi.org/publication/uber-business-model-does-not-justify-a-new-independent-worker-category/

[68] Smith, R. & S. Leberstein (2015), p. 3

potential proliferation of the underlying business models. In the case of platforms like Amazon Mechanical Turks, the tasks would have been previously carried out by employees or independent freelancers on the basis of contractual arrangements. Price Water House Coopers (PwC) for example created its own platform to outsource projects, claiming to help micro-entrepreneurs succeed.[69]

There are other platform companies, who chose to refrain from the independent contractor approach and provided employees with certain benefits and rights, albeit to a varying degree.[70] Reasons for this decision are different, some indicated budgetary advantages in the long-term, others client satisfaction through training and retaining employees, and finally, some cannot finance costly lawsuits (e.g. Uber faced 50 lawsuits in 2015, 17 from its drivers, and more than any other unicorn – see Figure 11 below)[71]. In addition, some platform companies have been forced to abandon their business model of contingent work as workers increasingly refused to show up for the job at hand, given the net low remuneration that they received.

Figure 11: Lawsuits against digital start-ups in the US



The extent of the platform economy

To understand if the new employment arrangements and business models will have a greater impact on economies, and thus need comprehensive policy responses, it is worth considering their expansion and employment levels. According to a recent report, there was a substantial cumulative growth of income earned in online platforms since 2012[72] (see Figure 12 below). For most, platform work is not a principal source of income and slightly declined as of recently: 33 percent of total monthly income was earned in "labor platforms" (Uber, TaskRabbit, etc.) and 20 percent in "capital platforms" (eBay,

[69] http://fortune.com/2016/03/07/pwc-freelance-marketplace/

[70] Luxe, Hello Alfred, Kitchensurfing, Shyp, et. al. https://www.linkedin.com/pulse/why-startups-arent-betting-uberization-work-caroline-fairchild

[71] Uber is facing a staggering number of lawsuits (25 January 2016). In Fusion: http://fusion.net/story/257423/everyone-is-suing-uber/

[72] JP Morgan (2016), Paychecks, Paydays, and the Online Platform Economy: https://www.jpmorganchase.com/corporate/institute/institute-insights.htm#ope-most

Airbnb). However, the share rises for low- and medium income earners in "labor platforms" – pointing to the fact that recourse to platform work is a result of inequality.

Figure 12: Income earned in labor and capital online platforms in the US

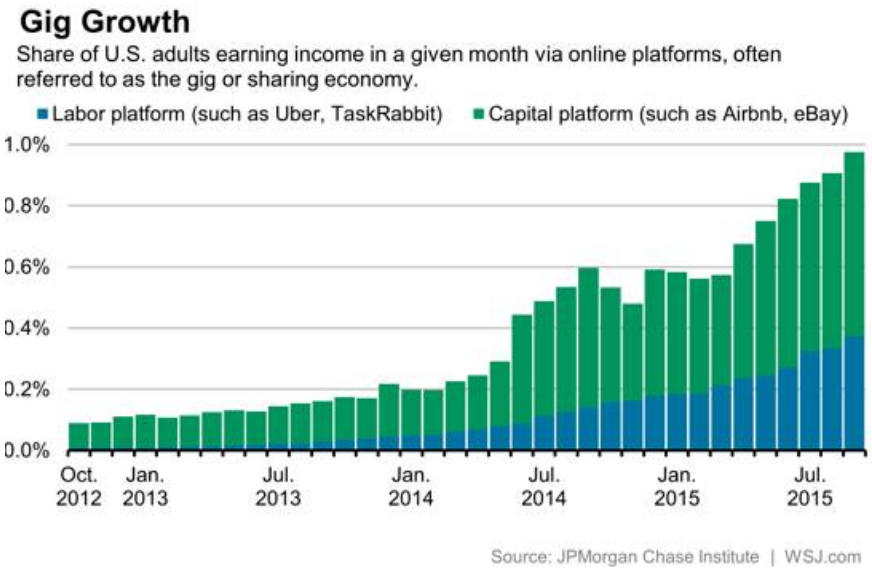
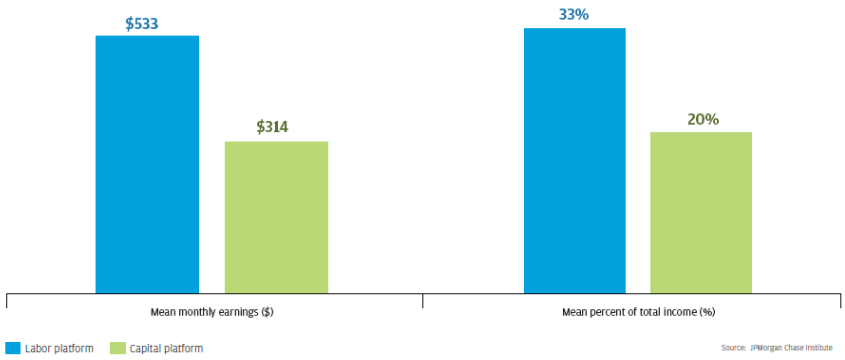


Figure 26: Monthly platform earnings in active months, in dollars and as a percent of total income



Joint studies on crowd-workers by the Foundation for European Progressive Studies (FEPS) and UNI Europa, carried out by University of Hertfordshire, show that in the UK[73], 21% of respondents say that they have tried to find platform enabled work via Upwork, Freelancer, Uber or Handy in 2015, which would be "*equivalent to around 9 million people – almost one fifth of the adult population*". The survey confirms higher participation rates of vulnerable groups: 25-34 year olds (33%) – of which only 10% were students (6% for those working on a weekly basis), women (24%). The UK survey outcome shows that for a substantial proportion of crowd workers (over 30%), it is the only or main source of income. In terms of earnings, 42% earn less than £20,000 a year before tax and 7% earn more than £55,000.

In Sweden[74], 12% are active in the platform economy and 24% are attempting to do so. However, the frequency is much lower compared with the UK (only 4%, at least once a month). The main similarity amongst crowd-workers is that the majority (53%) is coming from lower income households. This finding yet again confirms the assumption that platform work is prompted by rising income

[73] Crowdworking Survey UK (February 2016), U. Huws & S. Joyce, University of Hertfordshire: http://www.feps-europe.eu/assets/a82bcd12-fb97-43a6-9346-24242695a183/crowd-working-surveypdf.pdf
[74] Crowdworking Survey Sweden (March 2016), U. Huws & S. Joyce, University of Hertfordshire: http://www.uni-europa.org/wp-content/uploads/2016/03/crowd-working-survey-swedenpdf.pdf

inequality. Especially since, crowd-working is much less common in Northern Europe where inequality is lower and collective bargaining systems are well-established.

Several key questions are arising that need further research and policy action:

- Is the proliferation of platform work a product of inequality?
- Are platforms creating new forms of non-standard work?
- Are workers sufficiently protected?
- At which level should platforms be regulated?
- How to bring collective bargaining rights and social dialogue in?

Arising policy issues related to crowd- and on-demand work

Digital on-demand and crowd-work platforms do not operate in the same way or on the same scale. Therefore, the policy issues listed below do not or not fully apply to some of them. The companies that are concerned should either revise their business models and/ or be subject to regulation. The arising policy issues are as follows:

- Non-compliance with regulatory or legal standards regarding the employment relationship (including social protection, health and safety[75]), taxation, data protection and privacy of workers;

- Lack of an employment relationship and benefits: shift of the risk of entrepreneurship to the workers (no demand, no work) including social protection (including health care and pensions) and taxation implying a high level of self-regulation or non- or reduced coverage by social security (including the risk of non-coverage for damages while carrying out a service);

- Platforms become unregulated task-based employment agencies;

- No regulation on working time or paid leave (maternity, illness, etc.) resulting in blurred lines between working and private life resulting in financial and social pressures;

- Centralised pricing and payment decisions with the digital provider having de facto monopoly power over the actual remuneration of the work force;

- Rating dependent compensation and future engagement resulting in high job insecurity;

- Enhanced competition amongst workers for tasks, at times simultaneous or "countdown"[76] assignments with only one worker being paid;

- Reduced possibilities or prevention of association and collective bargaining;

- Lack of (access to) training and upskilling.

Given the current working arrangements in the platform economy, some essential steps need to be taken right away:

- A regulatory framework ensuring employment relationships and workers' rights including minimum wage standards (also proportionally for tasks or crowd-work) and contributions by platforms to social security and benefit schemes;

[75] Including inadequate background checks, drivers licence and insurance checks
[76] Task needs to be carried out within a time limit.

- Right to collective bargaining and unionisation;
- The application of social protection mechanisms, anti-discrimination and health and safety standards;
- A right to training and up-skilling for platform workers;
- Job-search and matching platforms should be subject to the same regulations as other employment agencies.

A NEW WORLD OF WORK OR PERSISTING LABOUR MARKET CHALLENGES

The digital economy and technological change can result job destruction, allowing for offshoring and outsourcing, and promoting flexibility paired with less to no employment security. However, these potential effects need to be seen in unison and not only attached to the digital economy. As argued before, the digital economy might be an enabling factor of such dynamics, and business models arising from it, are making use of legal and regulatory loopholes exacerbating the above trends but inequality, job polarisation and non-standard work are not new phenomena and are determined by broader economic and policy factors. Policies thus do not need to be adapted to technological change but refined and applied, while ensuring social dialogue, collective bargaining and workers participation to jobs in the digital economy. At the same time, targeted policy strategies are needed to address the underlying short-term issues in the digital economy.

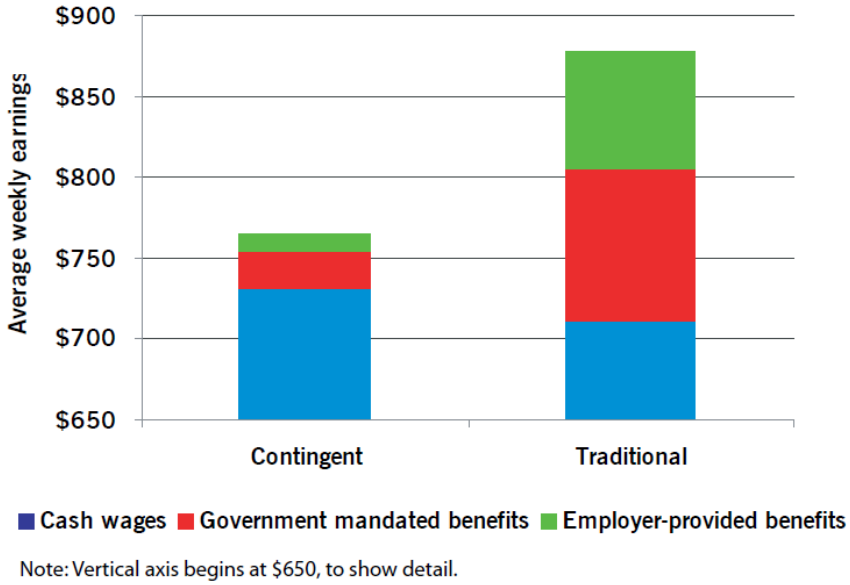
Growth in precarious work

The particularity of non-standard employment in the digital economy is that it is ICT enabled and controlled via data streams and that new business models increasingly rely on such work arrangements to enlarge their profit margins. However, it is part of the general trend towards more precarious work and casualisation including the rise in part-time work, independent contracting, subcontracting, outsourcing, and the prominence of temp agencies, on-call labour and zero-hour contracts. Across the OECD, more than half of all employment created since 1995 are non-standard jobs. The ILO adds contractual arrangements involving multiple parties and ambiguous employment[77] to its non-standard work definition – both common to jobs via the platform economy. The common feature: income insecurity (Contingent workers earn less on average due to the lack of or reduced employer and public benefits) and diminished control over working time coupled with the prevention of collective bargaining (see Figure 13 below[78]).

[77] Non-standard forms of employment. Report for discussion at the Meeting of Experts on Non-Standard Forms of Employment (Geneva, 16–19 February 2015)/ International Labour Office, Conditions of Work and Equality Department, Geneva, 2015. http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/meetingdocument/wcms_336934.pdf

[78] See Gerald Friedman (2014). "Dog Walking and College Teaching, The Rise of the American Gig Economy", Dollars & Sense, March/ April 2014: http://www.dollarsandsense.org/archives/2014/0314friedman.pdf

Figure 13: Comparison of income between standard and contingent workers



Economically dependent contractors, contingent, on-call or temp labour, or in other words precarious work are not new but have seldom been so deeply enshrined in business models.

Some business models in the digital economy build on minimum to no terms for the employment of workers to save costs, thereby circumventing labour standards, employer responsibilities and taxation rules: "*demutualisation can also occur through the use of "disguised employment relationships," or sham self-employment, in order to circumvent labour and social security regulation or fiscal obligations*"[79]. To mitigate negative social effects and prevent a further spread of such models, the issue needs to be linked to the broader phenomenon of non-standard work and the misuse of regulatory loopholes.

Non-standard work (in general and in the digital economy) might bring short-term company gains but will have medium term consequences on inequalities (hourly wages on average are 30% lower) and skills levels (as training is not or only rarely provided), and severe long-term consequences on public budgets, social protection systems and ultimately, the innovation potential within societies. It would in turn further contribute to the disruption of middle-income and middle skilled workers.

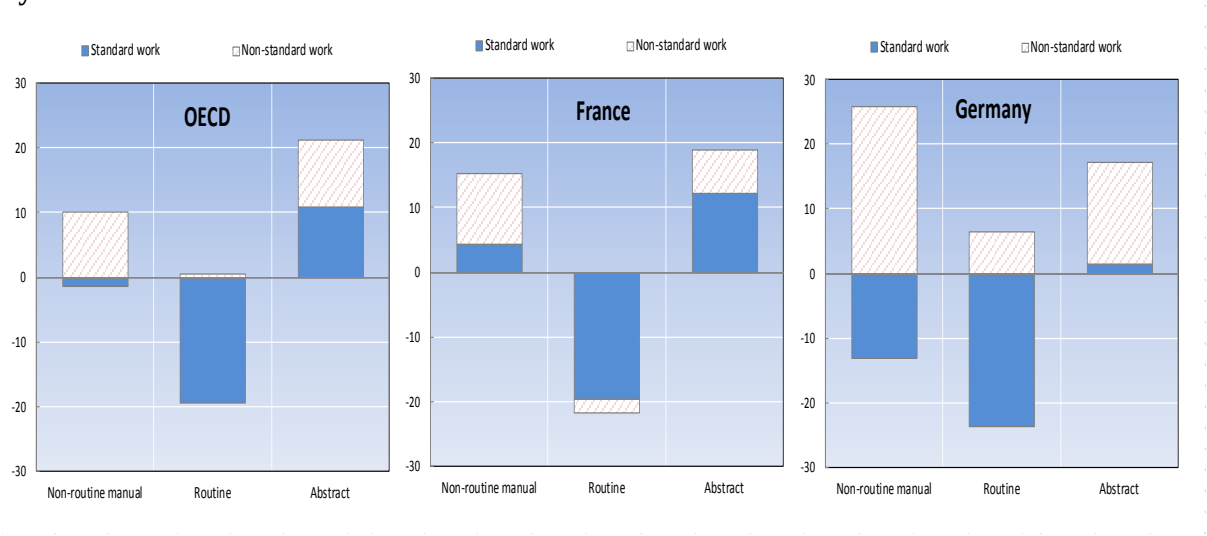
When looking at the shares of non-standard work in the change in, respectively, abstract, routine and non-routine jobs, OECD data[80] from 1995/8-2010 shows that they are high for non-routine and abstract tasks, but almost non-existent for routine tasks. Meanwhile, standard work contracts across the OECD were limited to abstract jobs only, while job destruction took place in routine jobs (see Figure 14 below). If we read this mechanically, the conclusion would be that if predictions of automation of routine tasks were correct, the future of work may lead to the continued erosion of standard employment. However, policy shaping outcomes of technological changes do matter, as can be seen from the comparison between France and Germany, with France creating standard contracts in

[79] De Stefano, V. (2016), p. 7

[80] OCDE (2015), « In It Together », chapter 4, "Contribution of non-standard work/standard work to changes in employment share by task, 1995/98-2010"

both abstract and non-routine manual jobs, whereas Germany's job creation over this period is entirely in non-standard contracts.

Figure 14: Contribution of non-standard work/standard work to changes in employment share by task



While flexible work might be regarded as beneficial under the Schumpeter I model (where innovation results from an unprecedented, unforeseeable development in one particular moment in time, the so called garage model), overall labour productivity will be negatively affected. Policy recommendations against strong labour market institutions, and employment protection, and policy makers not interfering against the deregulation of the employment relationship in the platform economy, overlook the bigger picture and the fact that innovation can also be driven by steady incremental processes where firms invest in long term research and knowledge-based capital. As Kleinknecht, van Shaik and Zhou[81] pointed out *"high real-wage growth and labour market rigidities may enhance the Schumpeterian [model 2] process of creative destruction in which innovators compete away technological laggards (Kleinknecht, 1998). This makes innovation more rewarding."* Firms would provide financial incentives, stability and training for employees. Otherwise, they will encounter a loss in tacit knowledge at any skill level as workers will rather strive for general skills and will look for other employment, rather commit to the company.

Instead, commitment to employees "*favours productivity growth in four ways*"[82]:

1. Less need for monitoring
2. Greater loyalty, less likelihood of leakages
3. Use of tacit knowledge
4. Motivation.

Job polarisation and inequality

Job polarisation and income inequality are on the rise for a longer time. Digital disruption can potentially further amplify these phenomena, not because job polarisation is inevitable because of

[81] Kleinknecht, A., Van Schaik, F. N. & H. Zhou (2014). Is flexible labour good for innovation? Evidence from firm-level data. Cambridge Journal of Economics 2014, 1 of 13: doi:10.1093/cje/bet077

[82] Kleinknecht, A., Van Schaik, F. N. & H. Zhou (2014), p. 5

technological change, but because technology is used within management strategies to polarize job creation and wages. One argument put forward by some is that upgrading and downgrading dynamics in labour markets depend on skills needs. High-wage, stable jobs for those with specialist, creative and high problem-solving skills, and low-wage service jobs that are hard to automate but easily to be put under non-standard employment relationships would remain – with not much left in the middle (see D. Autor). As a result, routine and cognitive jobs in the middle of the income distribution are easier to offshore or to automate (or both).

While skill-biased and routine biased effects of technological change should not be neglected, as with non-standard work, a fair transition for workers whose occupational tasks are less in demand and active labour market policies will be essential. The fact that in the near future middle income earners need to either accept low-income jobs or non-standard work, or up-skill in the hopes of a high-paid career is a) a polarising vision in itself; b) presupposes that income inequality is here to stay; and c) ignores the role of labour market institutions, including collective bargaining, in ensuring decent wages, and of trade unions and social dialogue in devising strategies to narrow income divides and promote on-the-job training to keep workers in employment.

Labour market institutions including social dialogue and collective bargaining are mostly missing in the new economy. This can have detrimental effects on social cohesion as "*extension mechanisms and coordinated collective bargaining in a number of countries also contributed to more coherence along the income scale and less inequalities between the two extremes. […] More generally social partners in collective bargaining talks at both national and EU level can help to ensure a fair and efficient redistribution of productivity at national, sectoral or enterprise levels*."[83]

Industrial relations generally result in greater income stability and distribution and should be replicated in the digital economy and used extensively in digitalisation processes in traditional sectors. It will be crucial to ensuring fair distribution of productivity gains derived from digitalisation. In addition to social and employment strategies, policies need to prevent the erosion of tax bases and social protection systems resulting from jurisdictional ambiguities in the digital economy.

Anticipation of technologically driven polarisation and the digital relocation of tasks should be linked to assessing income distribution across quantiles. While the effects of the digital economy on inequality are hard to single out, non-standard employment especially for young people will make it more difficult for them to enter the middle class and develop their competencies.

Another and final aspect of inequality in the digital economy is well-documented with the rising income and wealth gap in Silicon Valley: "*Median income in Silicon Valley reached $94,000 in 2013, far above the national median of around $53,000. Yet an estimated 31 percent of jobs pay $16 per hour or less, below what is needed to support a family in an area with notoriously expensive housing*."[84] Higher income inequality and the concentration of wealth hurt economic growth in the long-term and skew policy processes. On OECD average, the top 10% hold 25% of income and 50% of wealth[85] – some of the digital economy business thinking could exacerbate this trend further with sky rocketing CEO and specialist salaries set against low paid on-demand employment.

[83] ILO in cooperation with the European Commission, February 2016, Trends in the world of work: What effects on inequalities and middle-income groups, http://www.ilo.org/brussels/press/press-releases/WCMS_455743/lang--en/index.htm

[84] David Rotman (2014). Technology and Inequality. MIT Technology Review: https://www.technologyreview.com/s/531726/technology-and-inequality/

[85] OECD (2015), "In It Together", http://www.oecd.org/social/in-it-together-why-less-inequality-benefits-all-9789264235120-en.htm

POLICY PATHWAYS TOWARDS PROACTIVE INNOVATION POLICIES AND AN EQUITABLE DIGITAL ECONOMY

The Joint Declaration by G7 ICT Ministers in 2016 committed to "*encouraging ICT R&D relating to emerging technologies such as the Internet of Things, big data analytics, 5G mobile telecommunications, Artificial Intelligence (AI), and robotics [while planning] to ensure that our policy frameworks take into account the broader societal and economic implications*" (§ 27).[86]

Some national digital and innovation strategies are taking a more comprehensive approach at different policy aspects, others still think in silos. As displayed in previous sections, technological change (and its diffusion), the characteristics of business models and hence the role of regulatory policy and taxation, affect employment and thus overall economic growth and well-being. There are already several national frameworks and reports aiming to understand and tackle some of the outlined issues (amongst other Germany's - Work 4.0 and Industry 4.0; France's Rapport Mettling; Netherlands' mastering the robot; Luxemburg's Digital Lux; or Sweden's and Denmark's digital agendas).The OECD outlined the 'key pillars' of digital strategies (see Box below)[87]. While this cannot be taken at face value, it shows that generally speaking many still only reflect "e-inclusion" for vulnerable groups and skills promotion. While both are legitimate objectives, they do not cover what is at stake.

Key pillars of national digital economy strategies
(according to the OECD Digital Economy Outlook 2015)

1. *Further develop telecommunications infrastructure (e.g. access to broadband and telecommunication services) and preserve the open internet.*
2. *Promote the ICT sector including its internationalisation.*
3. *Strengthen e-government services including enhanced access to public sector information and data (i.e. open government data).*
4. *Strengthen trust (digital identities, privacy and security).*
5. *Encourage the adoption of ICTS by businesses and SMEs in particular, with a focus on key sectors such as (i) healthcare, (ii) transportation and (iii) education.*
6. *Advance e-inclusion with a focus on the aging population and disadvantaged social groups.*
7. *Promote ICT-related skills and competences including basic ICT skills and ICT specialist skills.*
8. *Tackle global challenges such as internet governance, climate change and development co-operation.*

The opportunities and challenges arising from the digital economy and digital diffusion need to be addressed in comprehensive policy frameworks in consultation with all relevant stakeholders, including trade unions, to achieve an open, equitable and inclusive digital economy.

As far as policy solutions [recent court rulings set aside] go, there are no applicable regulatory frameworks for this type of employment, with some exceptions including in Hungary (outworkers subject to the Labour Code) and Denmark (mobile work under the Act on Working Conditions)[88]. The OECD's recent analysis of "independent work in the digital economy"[89] is a good example of policy

[86] G7 ICT Ministers' Meeting in Takamatsu, Kagawa - 29-30 April 2016: www.mise.gov.it/images/stories/documenti/02_The_Declaration.pdf
[87] OECD Digital Economy Outlook (2015), p. 21
[88] Eurofound (2015), p. 75
[89] OECD (2016), "Automation and Independent Work in a Digital Economy", Policy Brief on the Future of Work, OECD Publishing, Paris, http://www.oecd.org/employment/emp/Automation-and-independent-work-in-a-digital-economy-2016.pdf

recommendations built on the right identification of the underlying issues (non-standard work = insecurity and no career progression, overall rise in self-employment and rising inequalities) falling flat. As such the OECD note recommends "*labour market and skill policies as well as tax and benefit schemes […] to be adapted to promote skills adaptation as well as labour mobility*". Essentially, business models or the use of non-standard employment remain unchallenged, instead it is said that "*workers* [and existing labour market institutions] *will need to adapt*". Meanwhile, flexibility and additional income gains are valorised.

In the same vein, the Digital Economy Outlook[90], while underlining the need for workers' and consumer protection and for cooperation across government entities (ICT, transport, competition, economy), is downplaying the fact that "*business models are not always consistent with existing regulations and laws*" by implying that those frameworks might be outdated.

Bridging Digital Divides

Ensuring global (and affordable) access to ICTs and the Internet worldwide should be a top policy priority. According to 2015 International Telecommunication Union (ITU) data[91]:

- *Mobile-cellular subscriptions grew from 2.2 to 7.1 billion in the last 10 years*
- *3G population network coverage grew from 45% to 69% between 2011 and 2015*
- *Mobile-broadband subscriptions grew from 0.8 to 3.5 billion in the last 5 years*
- *Rapid growth of Internet usage, over 40% of the world's population online in 2015*
- *Steady but slow growth of fixed-broadband subscriptions, reaching 0.8 billion in 2015*

When expanding ICT infrastructure and services, this needs to be done in line with openness, security and privacy standards through responsible investments and in consultation with stakeholders, including trade unions.

Digital divides concern the ability to access and use ICT tools, therefore policies need to focus on a) developing countries; and b) vulnerable groups in OECD countries and emerging economies including rural populations, low-skilled workers, NEETs, migrants, etc.

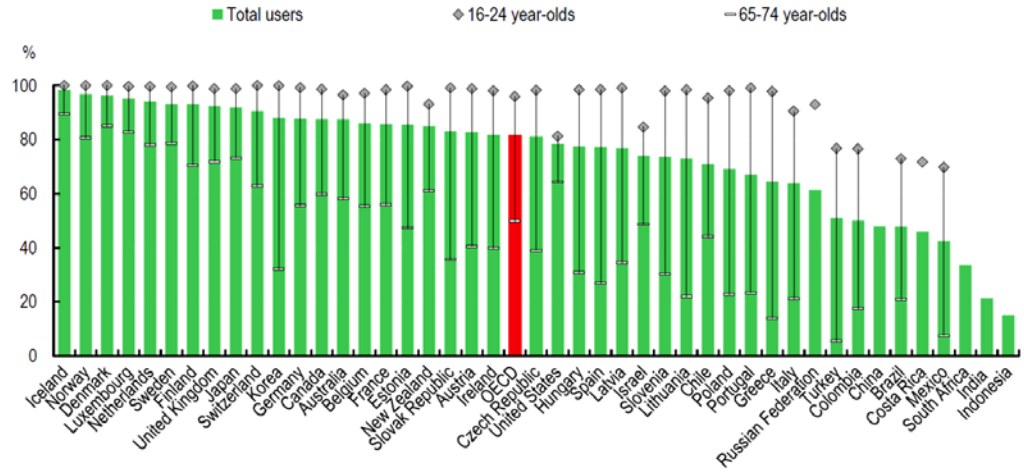
The ITU initiated the Connect 2020 Agenda, with connectivity goals and targets in line with global sustainable development goals, or SDGs[92]. The main goal is to bring 1.5 billion people online by 2020 as well as to use ICTs for the development of health and financial services. In industrialised countries, the financial services industry adjusted to client behaviour by customising offers, offering crowd-funding opportunities, mobile banking and web trading. A good example for socially valuable use of ICT are the electronic payment cards used for cash transfers under Brazil's Bolsa Familia scheme that reduced costs to 3 % of total payments (a 12% decrease)[93].

Indeed, only 15 % of the world population have internet access at broadband speed, 2-4 billion people remain largely untouched by ICTs and half a billion live outside areas with a mobile signal.[94] According to OECD and ITU data, there are significant gaps in-between OECD countries and in comparison to emerging economies: "*nearly all (95%) adults in Iceland, Norway, Denmark and*

[90] OECD Digital Economy Outlook (2015), p. 58
[91] https://www.itu.int/en/ITU-D/Statistics/Documents/events/wtis2015/MISR2015_Magpantay.pdf
[92] ITU (2015), Measuring the Information Society Report, http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf
[93] World Bank (2014)
[94] World Development Report 2016: Digital Dividends, http://www.worldbank.org/en/publication/wdr2016, p. 227

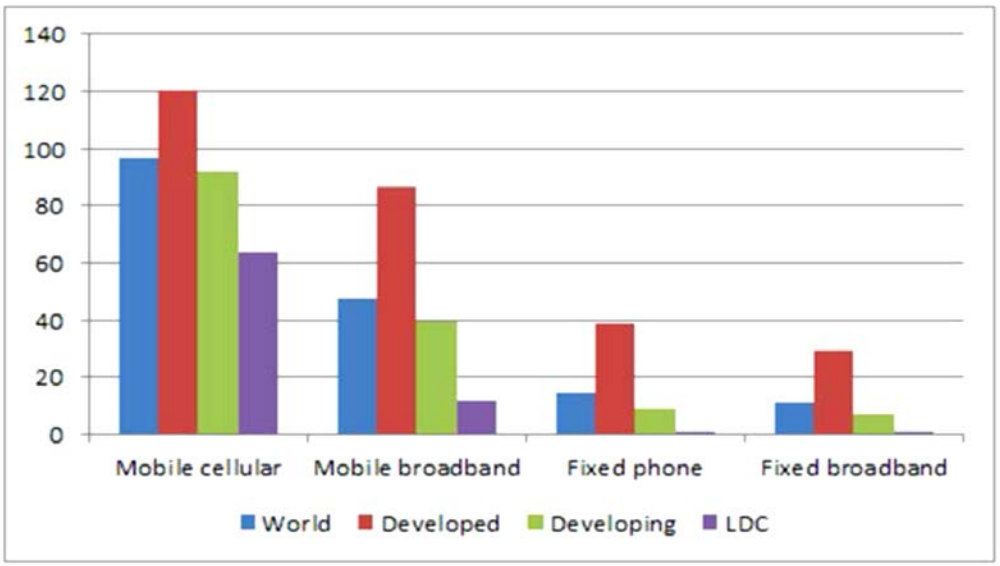
Luxembourg were accessing the Internet in 2014, only half of the adult population in Turkey and Mexico, and 20% or less in India and Indonesia" (see Figure 15 below) [95].

Figure 15: Internet Users across age groups



While OECD countries went from fixed-line networks to broad band internet access, developing countries lack investments in connectivity infrastructure (see Figure 16 below[96]).

Figure 16: ICT access by development status (ITU data, 2015)



Furthermore, there is a significant gap between rural and urban population, urban populations have 3G coverage of 89% against 29% in rural areas[97]. While digital uptake in regions that lag behind is

[95] OECD (2015b), based on OECD, ICT Database; Eurostat, Information Society Statistics Database; ITU, World Telecommunication/ICT indicators Database and national sources, July 2015: http://dx.doi.org/10.1787/888933274795

[96] International Telecommunications Union (ITU) (2015). Measuring the Information Society Report 2015, p. 3: http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf

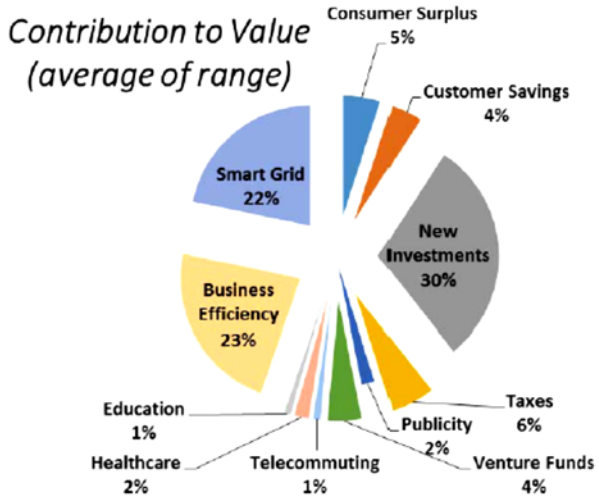
[97] International Telecommunications Union (ITU) (2015), p. 20

considerably faster than in previous years, there are studies indicating that "*it will take at least 60 years to close half of the current gap between Europe's lagging regions and its high-tech hubs*". [98]

There is a further gender divide in ICT access and use with the gap being twice as high in LDCs compared to developing countries[99].

A good example of proactive public policies to bridge digital divides on a local scale, and thereby create economic advantages, is the fiber infrastructure investment into a public network in Hamilton, Tennessee. The city's public power company (EPB) equipped households with fiber-optic cable at a price below the market price and by giving reduced rates to low-income households[100]. According to a report by the University of Tennessee[101] this resulted in 2,800 new jobs and $865.3 million investments over the past four years as not only power costs decreased, good data connection also attracted businesses (see Figure below).

Figure 17: Effects of public investment in fiber infrastructure



Key Policy Priorities

The digital economy is specific in its characteristics, the challenges it presents, however, are not new. The argument that policies and standards need to adapt to technological change is thus not valid. What is needed is a discussion – together with digital economy companies and providers – on how to best apply and reform existing frameworks focussing on the following areas:

Effective Regulatory Frameworks:

The digital economy is frequently relying on business models that transform the way value and profits are generated (such as the producer-consumer distinction, the importance of intangibles in value creation, etc.). This opens up new opportunities for regulatory arbitrage and, hence, serious complications for regulators in regard to competition (creation of oligopolies) and taxation (new

[98] Goos, M., J. Konings & M. Vandeweyer (2015), "Employment Growth in Europe: The roles of Innovation, Local Job Multipliers and Institutions", Utrecht School of Economics Discussion Paper Series, Vol. 15, No. 10, http://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2671765

[99] International Telecommunications Union (ITU) (2015), p.21

[100] http://www.thenation.com/article/chattanooga-was-a-typical-post-industrial-city-then-it-began-offering-municipal-broadband/

[101] University of Tennessee at Chattanooga Department of Finance (2015), "The Realized Value of Fiber Infrastructure in Hamilton County, Tennessee."

opportunities for tax avoidance schemes). They also pose serious challenges from a corporate governance and risk management perspective (overreliance on private corporate entities and on venture capital, short-term financing). Neutrality in competition between incumbents and new players and contributions by firms to public finances and employee benefits by paying their taxes, while fulfilling their responsibilities as employers, need to be ensured. Regulatory reforms to account for changing nature of the digital economy are in the early stage and need to be expanded. For taxation, the deliverables of the OECD BEPS Action Plan suggest that[102].

Diffusion, Uptake and bridging of Digital Divides:

Digital divides – within society and between countries – need to be met with public policies and investments promoting ICT diffusion and universal broadband access, support developing countries (and rural regions) and vulnerable groups in their ICT uptake to enable the widest possible diffusion of new innovation opportunities. With up to half the world's population still lacking internet access, and uneven access to high-quality internet within the half that does have access, the likelihood is that increasing digitalization will exacerbate existing global inequalities.

Up- and Re-skilling:

The rapid diffusion of ICTs and the potential of automation of certain tasks within jobs calls for increased funding of public education and training systems, including support and training for teaching staff, investment in VET and apprenticeship programmes (especially for NEETs), on-the-job training – including paid educational leave to create employee incentives – and the promotion of a life-long learning culture to enable people to acquire basic, advanced and/ or specialist digital skills. Unions need to play a role in the design of training programmes, their oversight and in career counselling.

Timely anticipation:

Given the disruptive nature of digitalisation and the Next Production Revolution, policy dialogue with all stakeholders, fair transition strategies for declining sectors or occupational tasks, early warning regarding investment risks spreading into the real economy are pivotal and need to be supported by data-driven foresight mechanisms.

Quality Jobs in the Digital Economy:

21st century technology and the digital economy cannot be built on 19th century working conditions - workers need to have a voice: Unions are key players to ensure quality work and wages. Too many business models in the digital sector embrace short-term gains over longevity and quality working conditions, workers are classified as self-employed, independent contractors with no rights but volatile remuneration - this has to change - workers need social protection and labour standards. There is also glaring income and wealth inequalities in the digital economy that needs to be addressed.

There needs to be support for those workers whose tasks will structurally change or whose jobs are in danger to be replaced due to technological change in the manufacturing and service sectors through fair transition and training strategies across age-groups and qualification levels. To this end, industrial policies need to adopt a social dimension and at the same time invest in Knowledge-based Capital (KBC).

[102] OECD (2013), Action Plan on Base Erosion and Profit Shifting, OECD Publishing. http://dx.doi.org/10.1787/9789264202719-en

ACTION PLAN FOR QUALITY JOBS IN THE DIGITAL ECONOMY

To develop principles and policies for decent work and the diffusion of competencies and gains in the digital economy, an **"Action Plan for Quality Jobs in the Digital Economy"** should be developed based on four pillars:

Ensuring good working conditions through:

- Working time regulation
- New rules for mobile work
- Innovative work practices that enhance labour productivity and employee satisfaction
- Data protection (personal and commercial data), also of machine-collected data at the workplace
- Lifelong learning: on-the-job training and strengthened VET systems

Promoting employment relationships and a rights-based approach

- Extend rights and protections of employees to all workers, regardless of the type of their (labour) contract
- Re-attach employer responsibilities
- Establish binding corporate accountability for lead firms including transparency criteria on budgets, labour practices and workers in supply chains
- Strengthen safety nets for online platform workers
- Enforce minimum wages legislation
- Strengthen collective bargaining coverage and effective social dialogue

Developing systemic policies based on:

- Union involvement in all national, sectoral and local digital transition processes
- Universal social protection systems that provide universal and portable cover
- Commitment to quality jobs (including fair wages), social protection coverage, upskilling and stronger labour market institutions
- Public investment in universal broadband access and education
- Smart automation processes that render production more efficient without displacing workers
- Job creation in the ICT sector and STEM related fields, in the health sector and services, as well as through the transformation of industries to a low-carbon pathway

Establishing actionable foresight mechanisms

- Fair transition strategies for workers in sectors prone to automation and digitalisation processes – including a whole-of-government approach featuring technology, industrial, employment, social and training policies
- Predicting the quantity and quality of jobs
- Anticipating future skills needs by occupational task
- Analysing the spread and effects of new technology on production, service delivery and working conditions

TOWARDS AN EQUITABLE DIGITAL ECONOMIC POLICY: THE ROLE OF TRADE UNIONS

Trade Unions are key actors in the digital economy and in addressing the future of work at the micro (through new union services) and the system level (by organizing the collective voice). Evidence shows that unions are essential for effective labour market institutions by ensuring fair wages and an equitable distribution of productivity gains, good working conditions and overseeing and managing the effects of outsourcing and displacements due to globalisation dynamics and technological change.

Therefore, it is crucial not to weaken but to expand union membership and collective bargaining coverage: in the first industrial revolution, it was the collective organisation of factory workers that led to decent pay through bargaining, and the spread of the benefits of innovation.

Unions do not only react to disruptive processes, they contribute to the development of future company strategies and support employee driven innovation, further development of workforce skills. They are also involved in discussing the introduction of new organisational models (including data protection and workers' health and safety) and technology, including advanced ICT and robotics through meaningful social dialogue.

As members of Sectoral Skills Councils, as active skills providers (in terms of training design, financing and programme implementation) and as career guidance counsellors, trade unions can help anticipate re-skilling needs. They are leading actors in ensuring high-quality apprenticeships, VET and lifelong learning systems.

Trade unions at the national and global level are developing principles, are engaging directly in the digital economy and are participating, where possible, in the development of policies. To name a few examples, industriAll Europe published a "Manifesto to put industry back to work"[103] as response to the "*gradual fading out of repetitive factory work [that] should provide motivation to invest in social and workplace innovation focusing on competences, creativity, autonomy, innovative work organisation and decent, high-quality jobs*."

As a response to the independent contractor issue proliferating in the on-demand platform economy in the US, the AFL-CIO has developed seven principles[104] including: 1. Use technology to empower, not weaken, workers. 2. Promote economic and social inclusion. 3. Establish rules to achieve binding corporate accountability, regardless of where or how people work. 4. Make portable benefits available to all workers. 5. Safeguard the employment relationship to ensure workers' job protections. 6. Increase opportunities to access good jobs. 7. Ensure a level playing field for business.

Meanwhile, Uber workers are supported by trade unions and the International Transport Union (ITF) in striving to obtain an employment relationship as well as to organise. Most prominently, this concerns the lead-up to the California Labour Commission ruling (17/06/2015) that an Uber driver is an employee not an independent contractor, and the Seattle law to give on-demand drivers the right to unionise.

Other examples show ongoing social partner dialogue, as seen with the joint statement of the European Social Partners (CEEP, the ETUC, BusinessEurope) at their Tripartite Social Summit 2016[105] calling on for

"*public authorities and social partners at various levels need to assess how best to adapt skills policies, labour market regulations and institutions, as well as work organisation and information, consultation and participation procedures, in order to derive maximum benefits for all from the digital transformation*".

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[103] http://www.industriall-europe.eu/Bodies/excmt/2014/FinalManifesto-EN.pdf

[104] http://www.aflcio.org/Issues/Jobs-and-Economy/Our-Principles-on-the-On-Demand-Economy

[105] European Social Partners (CEEP, the ETUC, BusinessEurope) at their Tripartite Social Summit, 16 March 2016, Statement OF THE EUROPEAN SOCIAL PARTNERS ON DIGITALISATION, https://www.etuc.org/sites/www.etuc.org/files/press-release/files/11.03.16_final_draft_eusp_message_digitalisation.pdf

In Germany, the DGB engages in consultations with the German Government on the White Book on Work 4.0 (building on the preceding Green Book[106]) and the Industry 4.0 initiatives. It also is part of the Hans Bökler Stiftung Expert Committee on the Future of Work[107]. At the same time, Ver.di (for the service sector)[108] and IG Metall (for the engineering and manufacturing sector) are active on developing strategies, also towards opening towards self-employed workers. IG Metall also created its own platform http://www.faircrowdwork.org/ that allows crowd workers to rank their wages and rate their working conditions (see the amazon mechanical turk ranking as an example: http://www.faircrowdwork.org/en/plattform/amazon-mechanical-turk) and provides information on their rights (minimum wage, service contracts, labour Law, liability, registered office, rectification right. etc.). In the same vein, http://turkernation.com/ organises Amazon crowd workers.

The Trade Union Advisory Committee (TUAC) is organising a Trade Union Forum ahead of the OECD Ministerial on the Digital Economy (June 2016)[109] and will continue to work on the digital economy and the next production revolution in the OECD context, and as part of the L20 in the G20 context (also in dialogue with the B20).

Altogether, union engagement is diverse and highlights why it should be strengthened and promoted to:

- Organise workers (in particular against new forms of non-standard employment)
- Provide new union services (including opening up to self-employed workers)
- Ensure fair wages, health insurance, overtime benefits
- Co-design and implement training schemes
- Involve in national innovation and industrial policy discussions
- Engage in co-design processes at the workplace (e.g. in robotics development and in regard to work organisation)
- Promote a set of best practices and counselling platforms
- Establish collective agreements for job security in the digital economy

Unions need to have access to make inputs to restructuring decisions at all levels.

We cannot yet foresee all the consequences from digital change. What is needed now is to assess the opportunities and challenges arising and apply legal instruments and regulatory frameworks accordingly to distribute the benefits of innovation, while at the same time working to ensure that workers' representation through trade unions becomes an integral part of the digital economy.

[106] http://www.bmas.de/EN/Services/Publications/arbeiten-4-0-greenpaper-work-4-0.html
[107] http://www.boeckler.de/61420.htm
[108] https://www.verdi.de/themen/recht-datenschutz/kongress/++co++aeaa506c-1115-11e5-b6d2-5254008a33df
[109] http://www.tuac.org/en/public/e-docs/00/00/12/30/document_doc.phtml