

**DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INNOVATION
COMMITTEE ON DIGITAL ECONOMY POLICY**

Working Party on Measurement and Analysis of the Digital Economy

DRAFT DISCUSSION PAPER FOR MINISTERIAL PANEL 4.1

Delegates will find attached a revised draft of the 2-page Ministerial discussion paper for Panel 4.1 “New Markets and New Jobs of the 2016 Ministerial on the Digital Economy, following discussions during the CDEP week on 30 November-4 December 2015. It is accompanied by a revised update on panel members (Annex A) and a short summary of the draft background paper for the panel (Annex B – based on DSTI/ICCP/IIS(2015)9).

Delegates are invited to provide written comments on the discussion paper to the Secretariat by 15 January 2016.

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**DRAFT DISCUSSION PAPER FOR MINISTERIAL PANEL 4.1:
NEW MARKETS AND NEW JOBS**

This document presents a revised draft of the 2-page discussion paper for Panel 4.1 of the 2016 Ministerial on the Digital Economy, following initial discussion by the Working Party on Measurement and Analysis of the Digital Economy (30 November - 1 December), CDEP's Extended Bureau (2 December 2015) and CDEP (3-4 December 2015). The discussion paper sets out key issues followed by questions for discussion by Ministers and other high-level speakers. It will form part of Ministers' dossiers.

Annex A contains an update on Ministerial panel members , consistent with the information provided to delegates in Room Document B at the CDEP meeting on 3 December 2015. To aid delegates' consideration of the draft discussion paper, Annex B contains the executive summary of the draft background paper for Panel 4.1 [[DSTI/ICCP/IIS\(2015\)9](https://community.oecd.org/community/iccp-comm/iccp/overview)]. Note that the background paper is currently a working draft; the summary reflects its status at the present time.

You can find the changes made in REV mode to this document on <https://community.oecd.org/community/iccp-comm/iccp/overview>

Delegates are invited to discuss and provide comments on the draft discussion paper. Any additional written comments should be received by the Secretariat no later than **15 January 2016**. A final version will be submitted to delegates for declassification at the March 2016 CDEP meeting.



PANEL 4.1 - NEW MARKETS AND NEW JOBS

Objective

The digital economy offers huge potential to increase productivity, income and social well-being. It creates new job opportunities in new markets while increasing employment in some existing occupations. For the digital economy to produce its benefits, new markets have to be created, assets transferred across sectors, business know-how built up and new skills developed. Along this process of *creative destruction*, some workers may experience temporary unemployment or income loss.

While it is far easier to foresee the jobs displaced than envision new industries, jobs and occupations that current do not exist, policies have an essential role to play by removing obstacles and providing resources that can lead to a positive outcome. The discussion will focus on identifying effective policies to foster employment creation in new economic activities enabled by ICTs, to accompany workers along the transition to new jobs, and to ensure job quality in the digital economy.

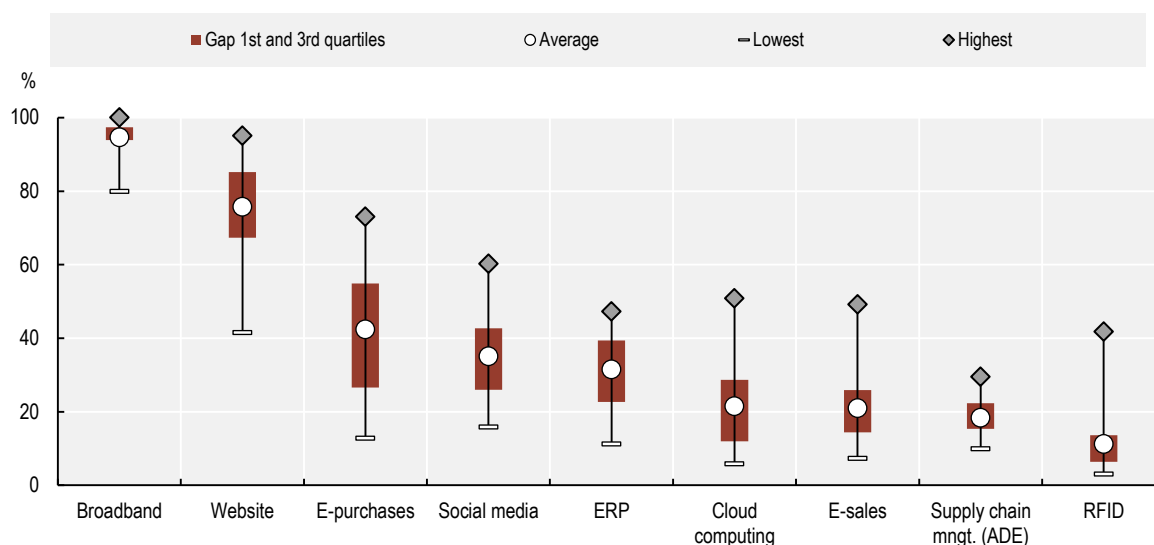
Key Issues

The digital economy is creating new job opportunities but adoption of ICTs by businesses remains short of its potential.

The digital economy is creating new occupations, e.g.: web managers, data analysts, and increasing the demand for some existing ones, e.g.: health personnel, accountants. In addition, by increasing productivity and income, ICTs raise consumption and employment in some low-tech activities, e.g.: restaurants, cleaning and other personal services. Despite significant opportunities, adoption of ICTs remains short of its potential. Advanced ICT applications are used in just a minority of businesses (Figure 1) while too few Internet users purchase digitised products. To seize the employment opportunities created by the digital economy, governments could broaden the range of their policies to include a set of general and sectoral measures, e.g.: direct support or tax credit for ICT expenditures, combined with both supply-side, e.g.: “new industrial policy”, and demand-side instruments, e.g.: public procurement.

1. Diffusion of selected ICT tools and activities in OECD enterprises, 2014

As a percentage of enterprises with ten or more persons employed



Source: OECD (2015c)

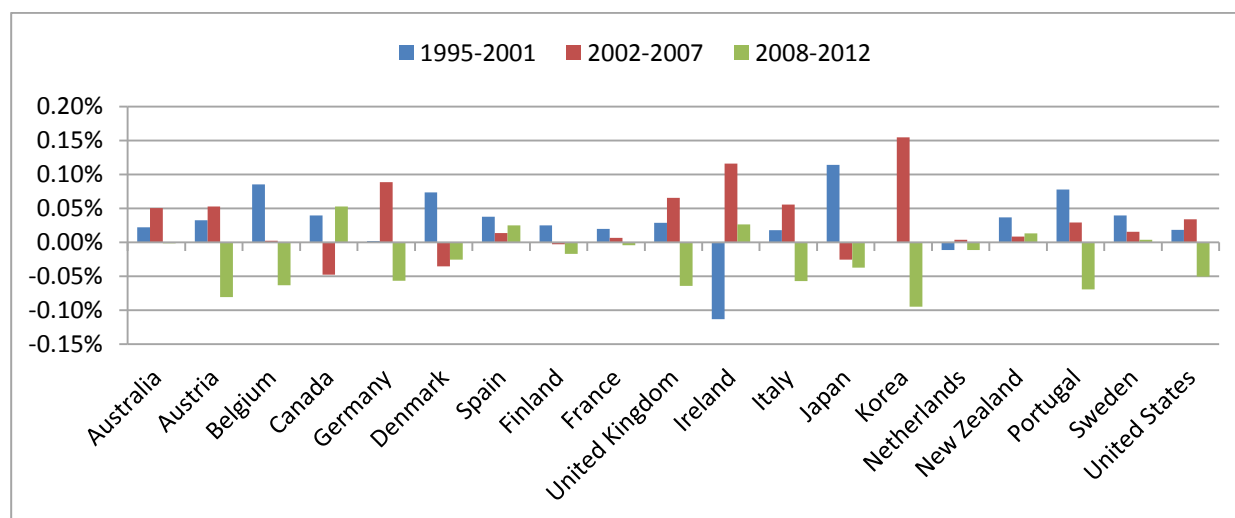
Q1 - In which sectors and occupations are ICTs creating most jobs? What set of policies could be implemented to foster ICT diffusion among firms? What should be the relative role of demand and supply-side policies?

ICT investments are crucial to ensure that productivity growth translates into more jobs.

While creating new job opportunities, the digital economy is also destroying jobs in sectors with larger scope for automation and slower growth in demand, e.g.: manufacturing, retail and finance. In most OECD countries, the net employment effect has been positive until the mid-2000s, but the slowdown in ICT investments following the onset of the crisis in 2007 has led to a decrease in labour demand (Figure 2). Only a few countries, where ICT investment has continued to grow, has demand for labour increased during the crisis. Policies to spur ICT investments, particularly on the demand side and in innovative sectors with high growth potential, will have long-lasting effects on job creation.

2. Estimated changes in labour demand due to ICT investments

Average yearly rates



Source: OECD (2015b)

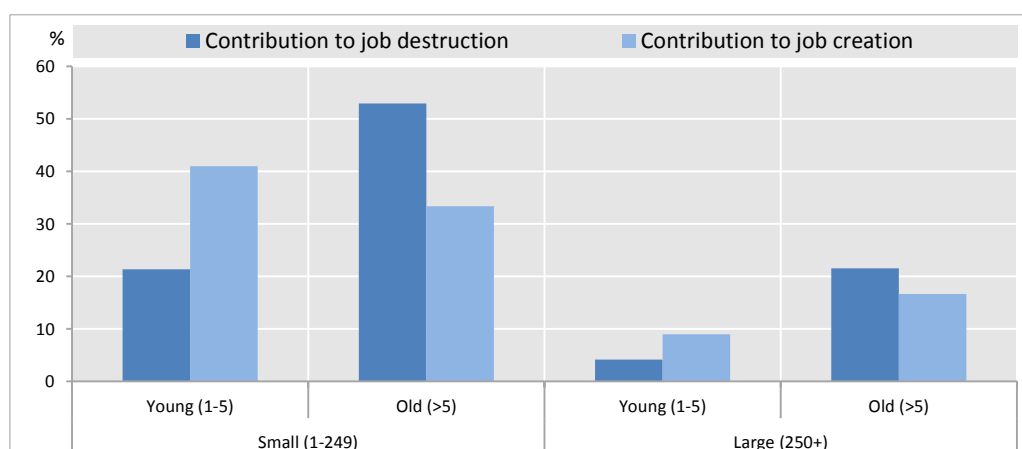
Q2 – In which sectors and occupations are ICTs destroying most jobs? What policies are most effective to support investment in ICTs? Should demand-side policies be targeted on activities where ICTs have a large growth potential, e.g.: health, energy or transportation?

Small, young firms are better placed to seize the job opportunities created by ICTs.

Most jobs are created by small, young firms (Figure 3) but a combination of finance and regulatory factors act as an obstacle to entrepreneurship. E-commerce, open source software or cloud computing may reduce entry barriers in some digital markets but network externalities from by ICTs pose risks of “winner take all” situations. Policies need to facilitate access to finance for digital start-ups, support scaling-up of innovative firms and build a regulatory environment where businesses can thrive and fail.

3. Small start-ups' contribution to job creation and destruction

2001-2011 or latest available year



Source: Dynemp Database. Figure 15. http://www.oecd.org/sti/DynEmp_DATA.xlsx

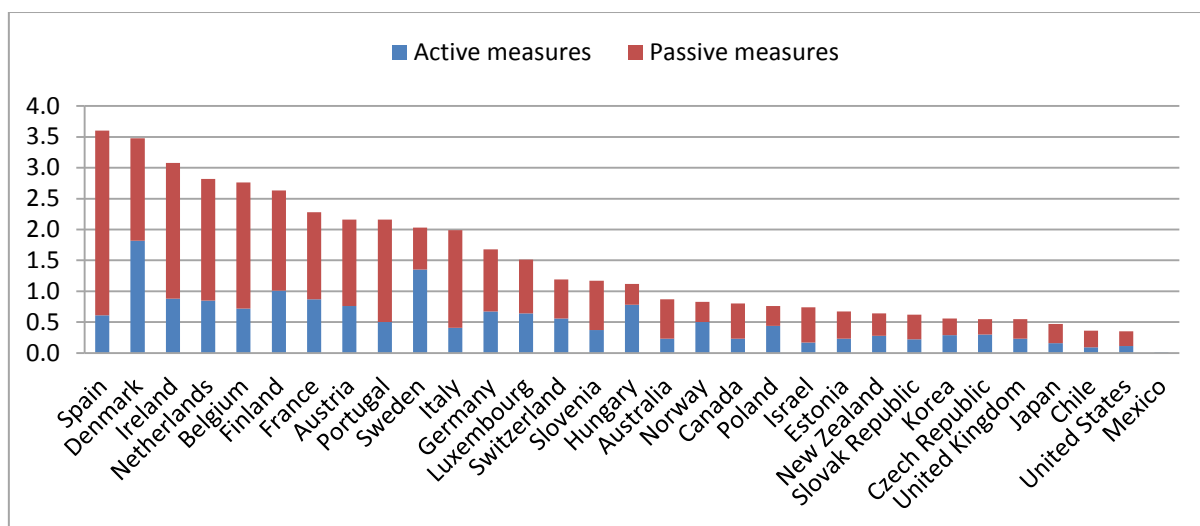
Q3 - Which policies can enhance digital entrepreneurship? How can ICTs help to reduce barriers for small, innovative firms? What regulations can create an agile environment where new business models enabled by ICTs can flourish?

The process of creative destruction fuelled by the digital economy will take several years to deploy its benefits on employment.

The negative distributional effects and the increase in unemployment for some workers, although temporary, may last for several years, particularly in low value-added, traditional industries. Labour market policies to accompany workers along the transition to new jobs are crucial to reduce the social costs of this process but their success depends on the design and implementation of employment and training programmes as well as of employment service arrangements.

4. Expenditure on active and passive labour market policies, 2013 or latest available year

Percentage of GDP



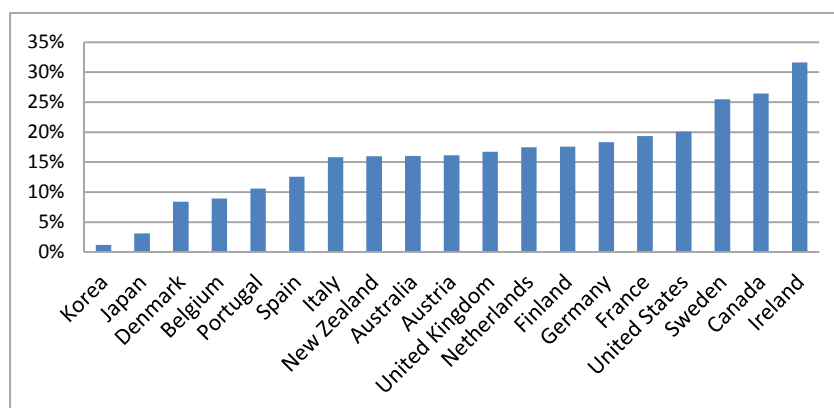
Source: OECD (2014)

Q4 –Which workers are most vulnerable to the process of structural transformation driven by the digital economy? Which policies could best help workers displaced by ICTs to move to a new job?

The benefits from ICTs will spread to all workers only if markets are competitive.

If competition in product markets is low or nominal wages are not flexible, some workers receive higher remunerations while others become unemployed. While real wages have decreased in most OECD countries since 2010, price mark-ups on production costs remain high in many of them (Figure 5). Entry barriers tend also discourage innovative start-ups and depress employment growth. Therefore, without appropriate market regulations and effective competition policies, ICTs may have large distributional effects and open a wide income gap among different groups of people.

5. Average price mark-ups on production costs – total economy (2012)



Source: OECD 2015, based on the OECD Productivity Database, <http://dotstat.oecd.org>.

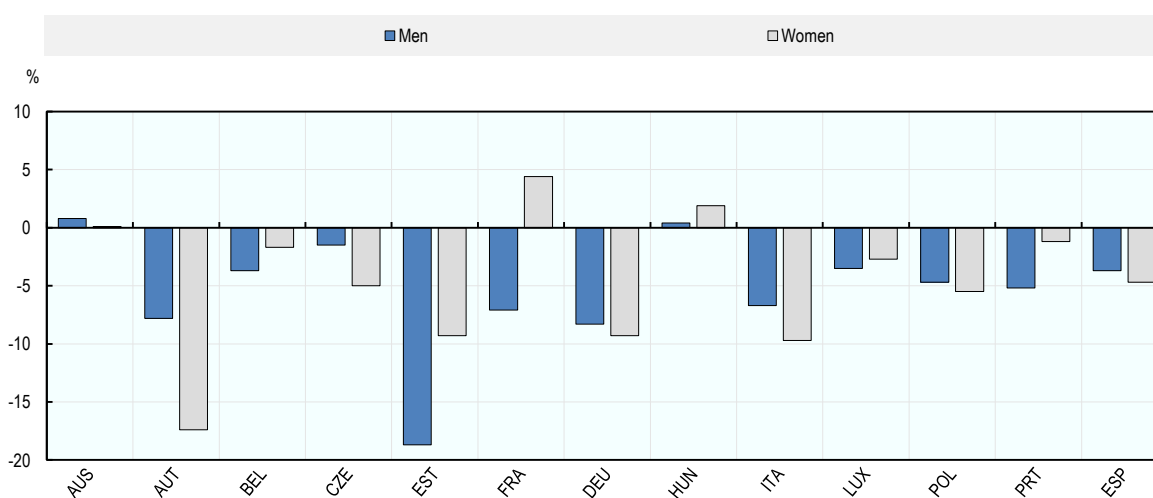
Q5 –Which policies are most effective to increase competition in product markets? Should specific measures be taken for markets where the benefits from digitisation are expected to be the largest, e.g.: business services, government or education?

Internet platforms may change the very organisation of work and its role in society.

Some full-time, long-term jobs are being turned into an uneven flow of “on-demand” tasks. For workers, higher flexibility in the choice of working hours may come at the cost of lower job quality, typically associated to non-regular work (Figure 6). Regulations have to evolve to favour innovation in business models and work organisations while ensuring fair competition among firms and fair working conditions for workers. More profoundly, as taxation, pension, health and social security systems are typically based on work, a weakening of traditional work relationships calls for a rethinking of these institutions in the digital economy.

6. Wage penalty for non-regular employees

Estimated wage difference between full-time non-regular and permanent employees



Source: OECD, 2014b.

Q6 - What are the main opportunities and challenges for workers and firms arising from Internet platforms? What policy options seem most promising to support the emergence of platform-based markets while ensuring job quality?

ANNEX A: UPDATE ON COMPOSITION OF PANEL 4.1 – NEW MARKETS AND NEW JOBS

Proposed panellists:

Chair:

EU - Andrus Ansip Vice President Digital Single Market

OECD Ministers:

- **Netherlands** - Lodewijk Asscher, Deputy Prime Minister
- **Mexico** - Alfonso Navarrete Prida, Minister of Labor and Social Welfare

Non-Member Minister:

- • **Lithuania** - Rimantas Sinkevičius, Minister of Transport and Communications

High Level Representatives + 1 expert/academic:

- **US** - Alan Davidson, Director of the Digital Economy
- **International Org** - Guy Ryder, Director General, ILO
- Damon Silvers, Director of Policy and Special Counsel, American Federation of Labour & Congress of Industrial Organizations
- David Audretsch, Director, Institute for Development Strategies, Indiana University
- **Business** – [nomination forthcoming]

Key interveners:

- Emilio Azcárraga Jean, President, Televisa or Ricardo Benjamin Salinas Pilego, Founder, TV Azteca

NOTE: The order in which panellists will intervene will be determined with the moderator at a later stage, based on indications provided by the panellists on their main message.

ANNEX B: SUMMARY OF BACKGROUND PAPER FOR PANEL 4.1 [[DSTI/ICCP/IIS\(2015\)9](#)]

1. There is growing concern that the current wave of automation driven by Information and Communication Technologies (ICTs) is contributing to large job losses, wage stagnation and growing inequality. The implicit argument is that computers and robots are replacing human labour and placing workers in a “race against the machine” (Brynjolfsson and McAfee, 2011). As ICTs tend to substitute for routine jobs, they are regarded as “hollowing out” the middle class who typically holds these jobs (Porter, 2013). Worse, developments in artificial intelligence and big data bring the threat that, in a near future, most jobs currently carried out by workers could be performed by machines (Frey and Osborne, 2013; Elliot, 2014).
2. As many economies are still struggling with a sluggish recovery and high unemployment, these concerns have gained an important foothold in the policy arena. Yet, they run against two important insights that have been gained from economics and history.
3. First, technical progress makes economies richer. Technical progress contributes to higher productivity: it enables economies to produce more with the same amount of resources and buy more at lower prices. ICTs are no exception: more efficient information processing has resulted in higher productivity, lower production costs and a larger variety of better goods and services for consumers.
4. Second, higher productivity delivered by ICTs can make all people richer. Even if computers and robots replace labour, real wages will increase because workers’ productivity increases. Depending on the technology, capital-owners and skilled workers may benefit more than unskilled labour. Yet, the economic theory predicts that real wages will increase for all workers, both with high and low skills¹.
5. While the diffusion of ICTs in businesses is expected to increase productivity and ultimately translate into higher wages, policies have a key role to play in ensuring that this process contributes to create more and better jobs.
6. First, the benefits from ICTs will spread to all only if markets work well. If competition in product markets is low, productivity gains may not translate into lower prices, and consumers will not fully benefit from the decrease in costs driven by ICTs. If nominal wages are not sufficiently flexible, some workers receive higher real wages while others become unemployed. Therefore, without appropriate market regulations and effective competition policies, ICTs may end up having large distributional effects and widen the income gap among different groups of people.
7. Second, for productivity growth to translate into more jobs, investments in physical and knowledge-based capital (e.g. skills, organisational capital) are needed. However, investments have been historically low worldwide since the mid-2000s. Policies to spur investments, particularly in innovative sectors with high growth potential, would have long-lasting effects on job creation.
8. Also, more jobs require more production but the scope for growth is limited by its negative effects on the environment. Innovation policies to leverage the use of ICTs to reduce energy consumption

¹ This is certainly true when productivity growth occurs through new capital goods, as it is the case for ICTs (so-called “embodied technical progress”).

and gas emissions are called to play a key role to overcome such environmental constraints and permit higher growth and employment.

9. More broadly, for ICTs to produce their benefits, new markets have to be created, assets transferred across sectors, business know-how built up and new skills developed. All of this takes time and involves trial and error. Therefore, the negative distributional effects and the job losses for some workers may become persistent. Policies to speed up the transformation towards a digital economy that accompany workers along the transition to new jobs would reduce the social costs of this process. Skills and know-how are of critical importance in this respect and the Digital Skills Strategy put forward in the companion Ministerial paper (OECD, 2015a) is a key policy measure to create jobs in the Digital Economy.

10. Finally, Internet job platforms, e.g.: Upwork, TaskRabbit or Mechanical Turks, are changing the very organisation of work and its role in society. Many full-time, long-term jobs are being turned into an uneven flow of “on-demand” tasks. Regulations will have to evolve so as to favour innovation in business models and in work organisations while ensuring fair competition among firms and fair working conditions for workers. More profoundly, as taxation, pensions, health and social security systems are all based on work, its changing organisation calls for a rethinking of the welfare state in the digital economy.

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