1. The Digital Transformation

2. OECD 2017 Digital Economy Outlook – main findings

3. OECD Going Digital Project – The project and some preliminary insights on productivity and jobs.
1. We are in a **new phase** of the digital transformation, ...
... with a wide range of new digital technologies emerging ...
..., that provide opportunities for all parts of the economy.
2. 2017 Digital Economy Outlook - looking at key building blocks for the digital transformation

Connectivity
Effective use
Skills
Review of Policies
Security and Privacy
Strategic coordination
Connectivity has grown, but access to fibre networks is lagging in many countries ...

Percentage of fibre connections in total broadband subscriptions, December 2016

... and some digital divides remain

Gap in Internet use by educational attainment, 2016
As a percentage of the population in each category

StatLink: http://dx.doi.org/10.1787/888933620056
Most firms are connected, but few make **effective use** of advanced ICT ...

**Diffusion of selected ICT tools and activities in enterprises, OECD countries, 2010 and 2016**

As a percentage of enterprises in each employment size class

Source: [OECD Science, Technology and Industry Scoreboard 2017](http://dx.doi.org/10.1787/888933619600)

StatLink: [http://dx.doi.org/10.1787/888933619600](http://dx.doi.org/10.1787/888933619600)
... and SMEs are lagging, even in technologies well suited to them

Enterprises using cloud computing services, by firm size, 2016

As a percentage of enterprises in each employment size class

Source: OECD Digital Economy Outlook 2017, StatLink: http://dx.doi.org/10.1787/888933585495
Skills: too few have the skills for a technology-rich environment

Workers using office productivity software at work every day

As a percentage of total population

Source: OECD Digital Economy Outlook 2017, StatLink: [http://dx.doi.org/10.1787/888933585951](http://dx.doi.org/10.1787/888933585951)
Policy Review: The Digital Transformation challenges many existing policies

Location no longer matters, e.g.
education at a distance

From ownership to services, e.g.
mobility, rental

Networks – from centralised to
decentralised

From employment to gigs
Security (and privacy) are a growing challenge

Digital security incidents experienced by individuals, 2015 or later

As a percentage of all individuals and by level of educational attainment

Source: OECD Digital Economy Outlook 2017, StatLink: http://dx.doi.org/10.1787/888933586445
More effective models for **strategic co-ordination** are needed

### National digital strategy governance

Number of countries that have allocated respective responsibilities

<table>
<thead>
<tr>
<th>Type of Governance</th>
<th>Lead the development</th>
<th>Contribute input</th>
<th>Co-ordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government, e.g. Prime Minister, Presidency, Chancellery, etc.</td>
<td>4</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Digital affairs ministry or body or ministerial position</td>
<td>8</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Ministry or body not dedicated to digital affairs</td>
<td>15</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Several ministries, bodies or institutions</td>
<td>6</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Multiple public and private stakeholders</td>
<td>1</td>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>
Key policy messages of the 2017 DEO

- Ensure that digital opportunities can be harnessed by all firms and individuals, and by governments themselves.
- Ensure connectivity for all, including to fibre networks.
- Foster more effective use of advanced digital technologies by individuals, firms and government.
- Strengthen skills for all workers and citizens.
- Review legacy frameworks
- Embrace the potential of digital innovation, but mitigate social cost.
- Address digital risks strategically.
- Develop whole-of-government digital strategies and foster effective cooperation across countries.
3. Digitalisation has been on the **OECD’s agenda** for some time – e.g. Ministerial Conference in Cancun, June 2016 ...
But we need a more strategic and pro-active approach to digitalisation.

- Critical thresholds have been crossed
- Shift from an economic focus to socio-economic; all sectors of the economy are now affected
- Huge potential for better services and better lives
- But realisation that digitally induced change will be disruptive for many people, firms and sectors.
- In many countries, a gap between Technology (4.0), and Policy (1.5 or 2.0)
Horizontal initiative across the OECD (involving all key policy areas), mandated by Ministers, to:

1. Understand the digital transformation and its impacts on the economy and society;

2. Provide policy makers with the tools needed to develop a pro-active, whole-of-government policy response;

3. Help overcome the gap between technology and policy development.
Going digital is based on an integrated policy framework ...

Making the transformation work for growth and well-being
..., work across the OECD focused on the main policy questions ...

• Over **80 projects**, including more than 70 reports and 15 workshops

• Projects reflect the range of policy domains participating in the project, e.g.:

And many others...
... and in-depth work on some **key policy questions**

- **Jobs, skills and the nature of work**
- **Productivity, competition & market openness**
- **Well-being & inclusion**
- **Measurement**
For example, productivity growth has slowed down in much of the world.

**Annualised growth of labour productivity (output per person employed)**

The slowdown has ignited a spirited debate

T-Pessimists:
• Gordon
• Cowen
• Thiel
• ...

T-Optimists:
• Brynjolfsson
• McAfee
• Mokyr
• Jovanovic
• ...

America's lost oomph
Despite the slowdown, **frontier firms** still manage rapid productivity growth. The productivity gap between the globally most productive firms and other firms has widened.

Note: “Frontier firms” is the average labour productivity (value added per worker) of the 100 or 5% globally most productive firms in each two-digit industry. “Non-frontier firms” is the average of all firms, except the 5% globally most productive firms.

Some thoughts on the future of productivity

- The diffusion of advanced digital technologies (e.g. big data, robotics, AI) in OECD countries is only starting – it will take time, especially for SMEs.
- It’s never just about the technology – changes in organisations, business models, worker’s skills and processes will take even more time.
- The impacts of digital technologies will also require much change within industries, as digitally-intensive firms grow and less digitally-intensive firms decline.
- Policy can help, e.g. by fostering investment and technology diffusion, strengthening skills, and facilitating structural change.
Jobs: OECD estimates suggest the risk of automation is (likely) smaller than thought ...

SHARE OF JOBS AT **SIGNIFICANT RISK (50-70%)** AND OF **HIGH RISK (>70%)** OF AUTOMATION, BY COUNTRY, %

... and history suggests new jobs will emerge too, complementary to digital technologies.

But there is a polarisation in skill demands ...

Job polarisation in major OECD economies, 2002-14
Percentage points changes in employment shares by occupation

... and new skills that will be needed, ...

Individuals who judge their computer skills to be sufficient if they were to apply for a new job within a year, 2013 (as a percentage of all individuals)

... which is a challenge, especially for older workers

Share of 25-34 and 55-64 year-olds performing at Level 2 or 3 in Problem Solving in Technology-Rich Environments, 2012

Not all workers have the foundations to easily continue learning ...

The proportion of low performers in literacy and/or numeracy, workers

Percent of working population participating in job-related education and training during the last year by level of proficiency in literacy

... and those *most in need* often receive the least training

Some thoughts on the policy response

• **Investment in skills is key**, but not the only policy that matters
• **Life-long learning** will have to become a reality for all
• **New skills** will be needed
• Workers will need help to cope with change – labour market and social policies will be key
• **Social protection** will need to change – to adjust to the growing number of non-standard workers
Outcomes of the Going Digital Project

- Wide range of stand-alone policy reports, e.g. on jobs, productivity, wellbeing, ...
- Final synthesis report at the end of the project – high-level closing conference planned for 11-12 March 2019
- Range of flagship reports that will focus on digitalisation, e.g. 2019 OECD Employment Outlook and 2019 Skills Outlook
- Beyond the book:
  - Roundtables and national discussions – with policy makers and stakeholders – to help countries develop more pro-active national digital strategies
  - Work towards a Going Digital toolkit that will provide tools and good policy practices for the digital age
  - OECD national reviews of digital transformation to come
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OECD Going Digital website (including the DEO): http://oe.cd/goingdigital

Sign up to our newsletter: www.oecd.org/sti/news.htm