AI diffusion in firms – what do we know and what does it mean for policy?

OECD opening remarks

Alistair Nolan
Directorate for Science, Technology and Innovation
OECD

AI-WIPS, Germany
February 3rd 2021
Recent OECD work
Why does understanding diffusion matter?
Labour productivity growth in the OECD (GDP per hour worked, annual percentage rate)

<table>
<thead>
<tr>
<th>Period</th>
<th>Euro area</th>
<th>European Union</th>
<th>OECD</th>
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<tbody>
<tr>
<td>1995-2000</td>
<td>1.6</td>
<td>2.0</td>
<td>1.9</td>
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<td>2000-2005</td>
<td>1.0</td>
<td>1.6</td>
<td>1.0</td>
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<td>2005-2010</td>
<td>0.7</td>
<td>0.8</td>
<td>0.9</td>
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<td>2010-2014</td>
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<td>2014-2018</td>
<td>0.0</td>
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AI Can Now be Applied in Every Stage of Production

Product Design                      Fabrication

Process control                      Training
AI systems will also help and train workers
Untangling productivity, when AI is everywhere?
Diffusion effects on the labour market

THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?

Carl Benedikt Frey† and Michael A. Osborne‡
September 17, 2013

Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages
Diffusion effects on the labour market

- Management, Business, and Financial
- Computer, Engineering, and Science
- Education, Legal, Community Service, Arts, and Media
- Healthcare Practitioners and Technical
- Service
- Sales and Related
- Office and Administrative Support
- Farming, Fishing, and Forestry
- Construction and Extraction
- Installation, Maintenance, and Repair
- Production
- Transportation and Material Moving

- Korea
- Estonia
- Finland
- Belgium
- Japan
- Poland
- Sweden
- Ireland
- Denmark
- France
- United States
- All Countries
- Canada
- Italy
- Netherlands
- Czech Republic
- Norway
- United Kingdom
- Slovak Republic
- Spain
- Germany
- Austria

Graph showing the share of workers at high risk (>70%) in percent for different countries.
Understanding the Pace of Diffusion
A range of survey types

- NSOs, other national agencies, embedded in established surveys of ICT use, expenditure, R&D, etc.

- Management consultancies – BCG, McKinsey, PwC, etc.

- NGOs/academia/foundations
Measuring diffusion

Time-line of AI (ICT) and other surveys (*)


Japan+ | Korea | Results available
France+ | Denmark | EC-DG Connect
EC-Eurostat 2020 | Results available
Statistics Sweden | Results available
EC-Eurostat 2021 | Results available

(*): Not exhaustive.
### Measuring diffusion

#### Time-line of AI (ICT) and other surveys (*)

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<td>Japan+</td>
<td>Korea</td>
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<td>Machine learning used by</td>
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<td>2.2 – 5.4 % of firms</td>
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<td>EC- Eurostat</td>
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<tr>
<td>Statistics</td>
<td>Sweden</td>
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<tr>
<td>2021</td>
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<td>United States</td>
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<td>Large enterprises</td>
<td>(10.1%), medium-sized</td>
<td>(7.1%), small</td>
<td>(3.2%).</td>
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(*) Not exhaustive.
New survey work
A new policy-oriented survey of AI diffusion and use in firms
AI diffusion – a new survey

Starting development of a conceptual framework and analysis plan:

• How to add value relative to existing surveys?
• International comparability – or deeper and narrower?
• Business insight with statistical rigour.
• Relate firm data to policy settings?
Survey work complemented by case studies
## Institutions for technology diffusion

<table>
<thead>
<tr>
<th><strong>Diffusion mechanisms</strong></th>
<th><strong>Industrial Research Assistance Program (IRAP)</strong></th>
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<tbody>
<tr>
<td>Dedicated field Services</td>
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<tr>
<td>Technology-oriented business services</td>
<td><strong>Fraunhofer</strong></td>
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<tr>
<td>Applied technology centres</td>
<td>CREATE : Campus for Research Excellence and Technological Enterprise</td>
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<tr>
<td>Targeted R&amp;D centres</td>
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<td>Knowledge-exchange and demand-based instruments</td>
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<tr>
<td>Open technology mechanisms</td>
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</table>
56 national/supranational AI initiatives (2021) oecd.ai/dashboards
Access to fibre-based broadband

Percentage of Fibre Connections in Total Broadband Subscriptions (June 2017)
Data policies

Data Sharing Agreements and Expertise Bridging

The Alan Turing Institute

Data Study Group
Thank you

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