The Next Production Revolution: Implications for Government and Business

Alistair Nolan, Senior Economist
Directorate for Science, Technology and Innovation

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The Next Production Revolution
IMPLICATIONS FOR GOVERNMENTS AND BUSINESS
The potential productivity benefits of new technologies are urgently needed.

Productivity growth has declined since the 1990s
Annualised growth of labour productivity (output per hour worked)

Source: OECD estimations using OECD National Accounts database; OECD Productivity database; International Labour Organisation database. Statlink: http://dx.doi.org/10.1787/888933367500
Digital technology and “servicification” of manufacturing

has transformed its business into a service with “Power by the Hour”, where customers pay only for the time they use an engine. RR engineers oversee management of customer’s fleet.

• The IoT is used to collect data on real-time engine usage
  > minimises RR’s operation costs (maintenance costs)
  > maximises engines’ operation time (service revenues)

Based upon FY 2014 revenues, RR’s savings could range from USD 400 million to USD 600 million and revenues increase could be USD 1 billion annually.
Using big data, cloud computing, and the IoT: the case of John Deere

is connecting farm machines to each other and to the cloud (MyJohnDeere) via the IoT to collect and process big data.

> autonomous vehicles enable a single farmer to plant and harvest up to 600 acres a day (compared to 150)

Global precision farming market now worth
~ USD 3 billion and expected to be worth
~ USD 5 billion by 2020 (CAGR: 12%)
Selected Themes - 3D printing
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Enable 3D printing of repair parts for products no longer in production - remove intellectual property barriers
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- Marketplace for 3D printable files (like Shutterstock or Fotalia, but 3D).
- Some such markets already exist, but with limitations (Thingiverse, Markerbot’s marketplace, does not allow makers to monetize their designs).
Business Entry and Exit rates

Cross-country average

Source: ‘Cross-country Evidence on Business Dynamics over the Last Decade’ – DSTI/IND(2016)18
New forms of business organisation: 2nd industrial revolution

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Introduction begins in mid-1890s

New forms of business organisation: 2^{nd} industrial revolution

Industrial productivity only rises in early 1920s

Thank you
3D printing – another aspect of strategy

Metals Additive Manufacturing (MAM)

Many applications
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- Technical and institutional infrastructure (e.g. materials databases)
- Promote standards
- Forge data sharing agreements across industry, government labs and academia

Government can help