

# Changes in Global Innovation

Peter F. Cowhey

Dean and Qualcomm Chair in  
Communications & Technology Policy

School of Global Policy & Strategy

University of California, San Diego



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## Information & Communication Technology (ICT) Disruptions

- Key: *The value added of Ideas, Information (Software) and Services growing fast in all products & services, including traditional manufactured and commodity (e.g., agriculture) products*
- Cheap & Everywhere: Moore's law greatly decreased ICT costs
  - Wireless data
- Modular: standardized interfaces allow cheaper & faster "mix and match" of IT building blocks

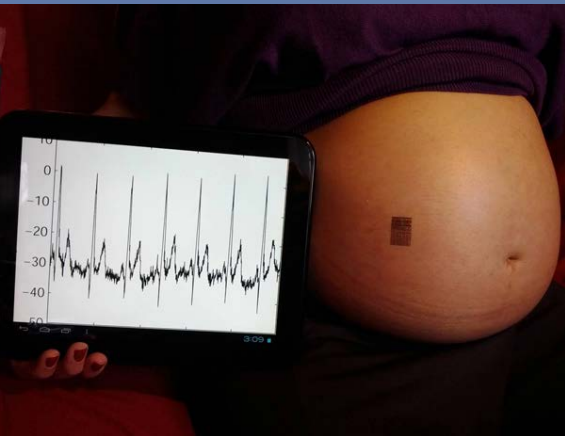
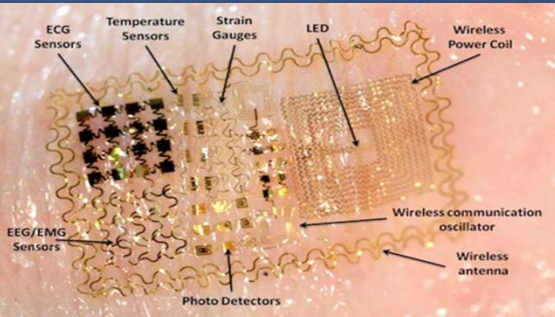


PHOTO: (C) DANIEL ACKER 2012 FROM THE HUMAN FACE OF BIG DATA

# IT Changing Agriculture: Tractor Cockpit “Imports” Information Services

(Source: Fortune Magazine)

## Production Revolution

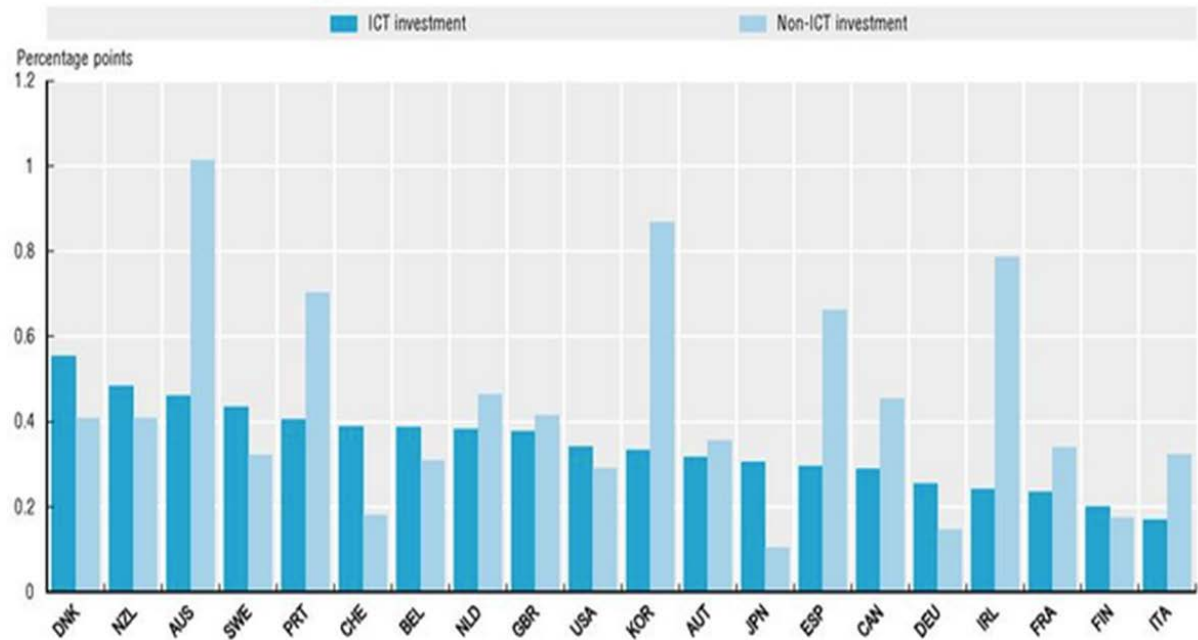


- 3D printers and robotics are the beginning of new production systems
  - Speed and cost of production improve with networked sensors
  - Where and how we manufacture in global supply chains will change
- Smart materials are next step
  - Smart fabrics
  - Embedded sensors allow continual feedback / data: Prof. Todd Coleman's wireless tattoos

# Growing Role of IT

- Fundamental Trend: Growing Role of IT in OECD Economies

Contribution of ICT and non-ICT investments to GDP growth, 2000-12  
 In percentage points, on yearly basis



Source: OECD, Productivity Database, July 2014. See chapter notes.

# Implications for Global Supply Chains

- Cloud computing and big data are two keys to innovation applications, e.g. the Internet of Things
- Modularity of IT means that it will be easier for countries to evolve specialized local innovations that can “plug into” global supply networks
- Global supply chains will need to move data freely *across borders* to manage transactions and applications—e.g., credit cards, airplane maintenance, or agriculture supply networks
  - TPP trade agreement establishes some rules