

# ICT and Innovation Key Challenges for Policy Makers

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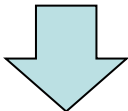
# “Innovation” an evolving concept

- Shifting
    - From an individual entrepreneurial action
    - To a more concerted, collective, combinatory, networked action
  - Innovation and Innovation
    - From a classical view: “Product innovation” versus “Process innovation”
    - To a more “softer” view: “Service innovation”, “Data-driven innovation”, “Inclusive innovation”, “Social innovation”
  - This, in an ever changing economic structure and nature
    - Rise of Global Value Chains (GVCs)
    - Rise of digital economy, Internet economy, on-demand economy, shared economy
- ➔ Moving centers of gravity!



**Critical role of  
ICT & Data!**

# Disruptive nature of ICT

- Open Science
    - Open access, Open data, Citizen science
  - Advance manufacturing
    - Connected, Networked, On-demand, ...
    - Backed by IoT, 3D printing, Cloud computing, ...
  - Societal transformation
    - New business models (e.g. microfinance, Uber, Airbnb)
    - New public services (e.g. **Remote Medical Diagnostics**)
- 
- Accelerating knowledge and value creation across society to unforeseen levels



# From the forthcoming Japan's 5<sup>th</sup> S&T Basic Plan

- Encouraging transformative initiatives & experimentations
  - Space for a large set of stakeholders, in particular next generation of leaders
  - Space for game changers
- Driving an “Ultra-Smart Society”
  - Based on system of systems & value chain approaches
  - Creating a “IoT service platform”
  - Exploratory fields (➡p5)
- Enabling technologies to realize an “Ultra-Smart Society”
  - Big data, AI, IoT, Edge computing
  - Robotics, Sensors, Actuators, Human-interface technologies
  - Biotechnology, Materials and Nano-technology

Sustained by ICT-driven innovation



# Exploratory Fields

- Backed by advancement in ICTs
- Improving innovation framework conditions

## Energy Value Chain

- power generation output data
- demand amount data
- ...

## Intelligent Transport Systems

- Location data
- Infrastructure data
- dynamic map
- ...

## Advanced Manufacturing System

- manufacturing method data
- Know-how data
- user's needs
- ...

....

## System

DATA

ICT-driven innovation



# Metrics

- Why “Metrics”?
  - “Value” for public investment (accountability)
  - Need for monitoring policy implementations and assessing their impact
  - Better understanding of the phenomena of innovation
  - ...
- References?
  - Frascati Manual (revised this year)
  - Oslo Manual (to be revised)
  - Measuring Innovation: A New Perspective (OECD, 2010)
  - Measuring the Digital Economy (OECD, 2014)
- Good practices
  - SciSIP, STAR METRICS
- Critical issues
  - Data availability (e.g. micro-data)
  - Analytics
  - Changing innovation models

