Chapter 4: Emerging ICT trends

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Three points ahead

- Exponential development of advanced ICTs: AI, big data, cloud and IoT will have massive consequences.

- Physical infrastructure, connectivity services, and skills are needed to harness power of advanced ICTs.

- The time for metrics is now.
The emerging ICT ecosystem
Exponential development
Cloud traffic in different regions

Data Source: Cisco (2016)
Publications in AI research, 2011 to 2015

- China: 37,500 publications
- United States: 25,000 publications
- Japan: 12,500 publications
- United Kingdom: 8,750 publications
- Germany: 7,500 publications
- India: 7,500 publications
- Spain: 7,500 publications
- France: 7,500 publications
- South Korea: 7,500 publications
- Italy: 5,000 publications

Source: Elsevier/Scopus/Times Higher Education
Physical infrastructure, connectivity services and skills are needed to unleash power of advanced ICTs
Role for public policy

• Supportive public policies
  – Facilitation of entrepreneurship and innovation
  – Sufficient availability of licensed and unlicensed spectrum
  – Information security and privacy
  – Education policy in general
Toward reliable metrics

- Current data collection largely left to entrepreneurial initiative
  - No agreed conventions on data definitions and measurement
  - Available data often behind paywalls and inaccessible to many users
- Future technological opportunities
  - Harvesting of data directly form the digital infrastructure and services
  - Networks or sensors and devices could generate trusted database
- What is the most effective role for the public sector?
  - Facilitator of data collection (e.g. open data)
  - Curator and archiver of data and transparent algorithms
- Need to develop internationally harmonized indicators on advanced ICTs