The grand questions

What **strategic narrative** should Europe follow in the preparation of FP9?

⇒ The world is changing: Why invest in Science and Innovation (S&I)?

⇒ S&I is changing: What does it mean for policies?

⇒ Policies are changing: How should the EU adapt?
Five strategic issues

- Grand challenges
- Globalisation of S&I
- Digitalisation of science
- Digital innovation
- Government budgets for R&D
1. Grand Challenges

8 Megatrends for STI

- Health, inequality and well-being
- Demography
- Natural resources and energy
- Climate change and environment
- Globalisation
- Role of governments
- Economy, jobs and productivity
- Society

Science, Technology and Innovation Outlook 2016
The world is confronted with grand challenges

Grand challenges: the world needs more growth, better environment, health etc.

❖ Science and innovation are part of the answer
⇒ The world needs more science and innovation
⇒ Research and innovation policies need be stronger and more challenge oriented [see latest G20 Heads of States Communiqué]
What this means for Europe

Europe:
- needs invest more in science & innovation and be more efficient;
- challenge driven research requires 1) more interdisciplinarity and 2) more cooperation between universities, businesses and civil society
2. Globalisation

GERD as % of GDP (Source: OECD MSTI)
Globalisation

Globalisation =
- new players (China) and
- more international linkages

⇒ innovation-based competition will be more global (beyond Western world),
⇒ cross-country circulation of knowledge/people becomes a key issue
What this means for Europe

- Europe is a large player... among others = need more internal integration in order to better exploit synergies;

- Europe needs to develop links with all other large players (China)
3. Digitalisation of science

- Research Collaboration
- Open Data
- Open Science
- Openness to Society
Digitalisation of science

New opportunities
- To cooperate among scientists
- to share & reuse data;
- to increase the productivity of research (AI);
- to involve more citizens in agenda setting;
What this means for Europe

- Develop the European Science Cloud (an integrated digital platform for science)
- Encourage cross-country access to data (harmonise data regimes)
- Train scientists in all disciplines to master digital tools
4. Digital innovation

- Innovation is increasingly based on digital => Internet of Things, robots, autonomous vehicles, 3D printing, simulation etc.

- The economics of digital innovation = polarised markets: global superstar companies (most from US and China) and vibrant entrepreneurship
Europe is weak in innovation in ICT

Patents in the ICT sector (PCT, priority year; source: OECD MSTI)
What this means for Europe

- Facilitate access to data within and across countries (health etc.)
- Need more global superstars and allow startups to grow more => complete the internal market (services, capital including VC)
- Support the digitalisation of SMEs
5. Government financed R&D has been stagnating for 8 years

R&D financed by government, constant PPPs, index 2000=100, source: OECD

MSTI
The budgetary challenge

Budgetary pressures (government resources for S&I are plateauing or even declining in many countries) because

1. sovereign debt needs to be limited;
2. priority given to S&I is not high in many countries (there are exception, notably in Northern Europe)
What this means for Europe

- In most countries national government need to make a stronger effort for research
- Must mobilise funding from other sources: regions, charities, businesses etc.
- A higher EU budget for S&I is warranted (Lamy Commission’s report) – for the coming FP9
Thank You

Innovationpolicyplatform.org

Dominique.guellec@oecd.org