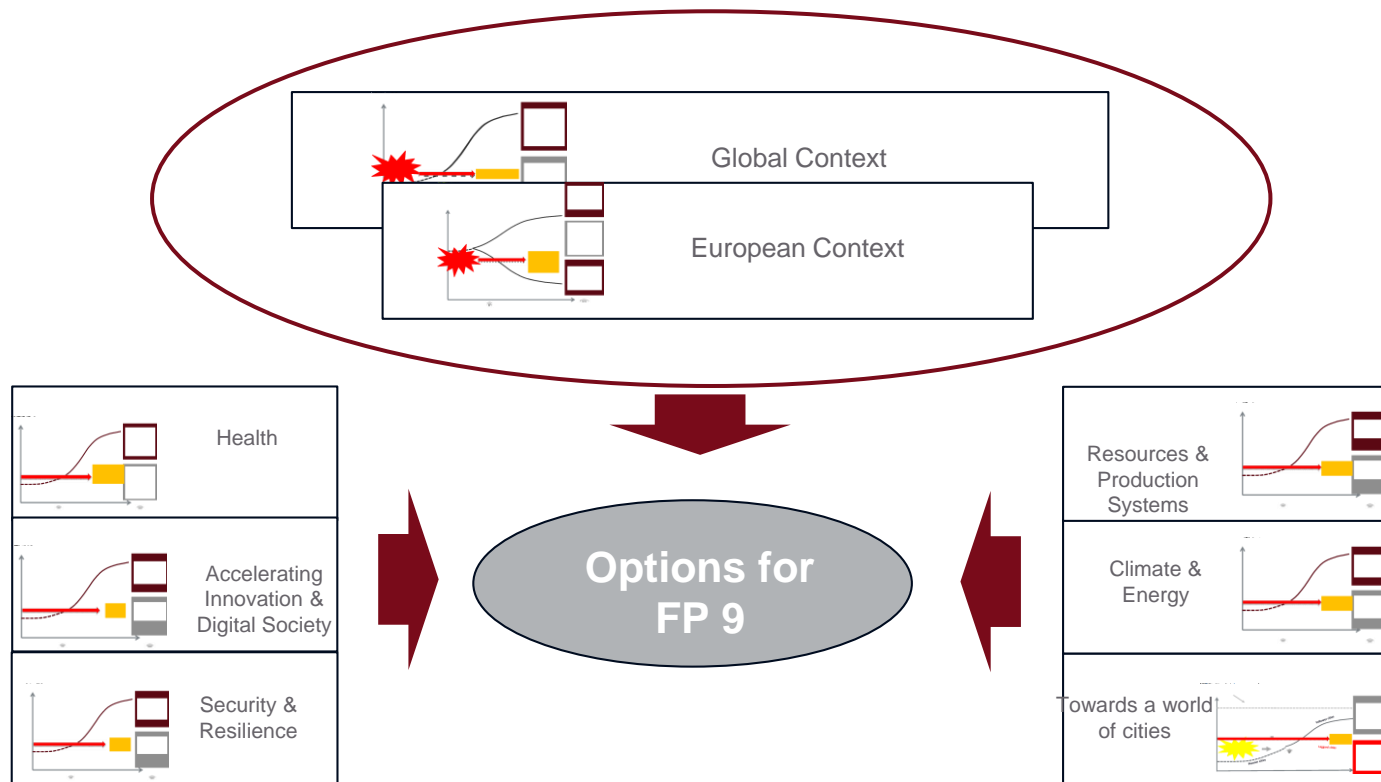# Beyond the Horizon –Scenarios

Foresight in Support of the Preparation of the EU's Future Policy in Research and Innovation (BOHEMIA)

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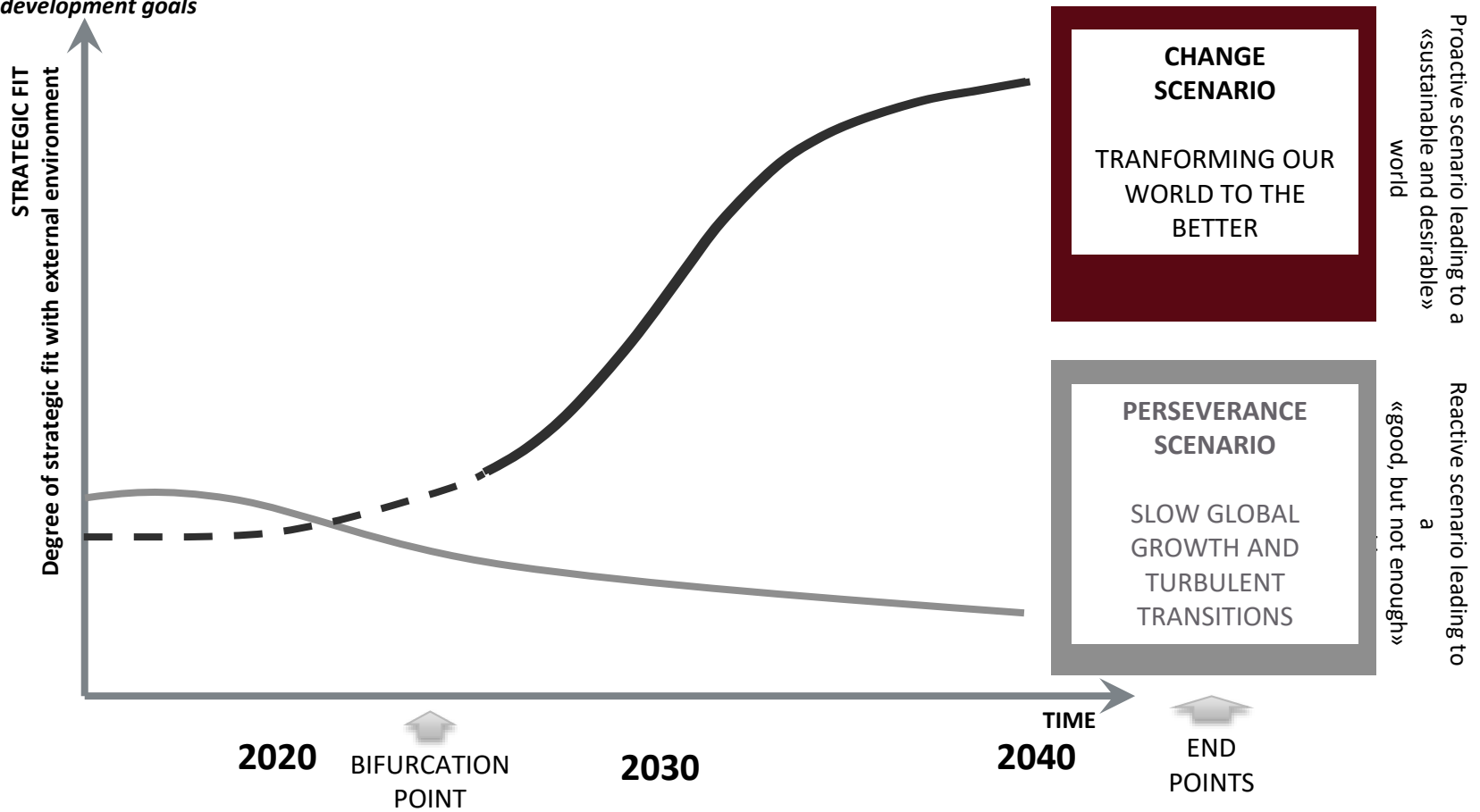
Brussels, 12 October 2016

Two levels of scenarios

- Scenarios as a means to explore the context for a future FP
  - Global and European scenarios
  - Topical scenarios

Global Context

European Context

Health

Accelerating Innovation & Digital Society

Security & Resilience

Resources & Production Systems

Climate & Energy

Towards a world of cities

Options for FP 9

Two types of scenarios – the global and European picture

Compatibility with sustainable development goals

STRATEGIC FIT

Degree of strategic fit with external environment

CHANGE SCENARIO

TRANFORMING OUR WORLD TO THE BETTER

Proactive scenario leading to a «sustainable and desirable» world

PERSEVERANCE SCENARIO

SLOW GLOBAL GROWTH AND TURBULENT TRANSITIONS

Reactive scenario leading to a «good, but not enough»

2020

BIFURCATION POINT

2030

TIME

2040

END POINTS

Global issues ahead

- Potential game changers, breaks to or superpositions of megatrends

  - *Legitimacy crisis of capitalism:* the limits to inequality in a globalised world

  - *Collapsing Global Trade System:* moving towards a world of blocks

  - *Massive conflicts and disasters:* war, violent revolutions, new forms of terrorism

  - *New political coalitions between West and East:* "Russian spring"

  - *Enhanced collaboration between North and South:* joint efforts to stabilize political institutions and inclusive economic development

  - *Reconfiguration of global actor constellations:* new players on a multipolar scene

  - *Non-linear dynamics of climate change impacts:* urgency of adaptation strategies

  - *Droughts and conflicts reinforce migration:* the second wave

  - *Deepening of global divides:* social – spatial - values

  - *Changing role of R&I in society:* innovation as a pervasive phenomenon

Global scenarios

Perseverance: Slow growth and turbulent transitions

- Socio-economic dynamics
  - Social disparities triggered by demographic developments are reinforced by limited resources, poor education and lack of employment opportunities / strong migration pressure
  - Global turbulences (overexploitation of resources, security, financial shocks, environmental degradation, climate change, pandemics) have negative social impacts

- Technological dynamics
  - Untamed digitalisation intensifies competition and triggers structural unemployment
  - Acceleration of technological change outpaces any policy strategy

- Political dynamics
  - Resource- and security-related prevent common strategies
  - Global power shifts marginalise Europe influence on rule-making

- Global priorities
  - Preventing the worst systemic risks (energy, urban, environment, etc.) and global tensions (risk of severe military conflicts)

Global scenarios
Change: Transforming the world for the better

- Socio-economic dynamics
  - Inclusive digitalisation with new insurance and welfare models combine in creative, cohesive and strongly performing innovation ecosystems

- Technological dynamics
  - Combination of digitalisation and low-carbon transition enable a transition to a sustainable production-consumption system („circular economy")
  - Acceleration and convergence of technological change are channelled towards achieving the SDGs

- Political dynamics
  - Shared (global) goals serve as soft coordination devices, with the EU as strong regional driving force and benchmark for cooperation
  - Multipolar system, with strengthened global governance to support cooperation and convergence

- Global priorities
  - Closing divides globally and in society / strengthen cohesion
  - „Prosperity for the majority" has a more prominent place as compared to traditional growth objectives

From the global to the European level

- In an inter-connected world, Europe cannot escape the developments in its global context
  - Global perseverance constrains the perspectives for Europe
  - Global change enables change in Europe

- The (limited) choice for Europe
  - To lead or not to lead?

- Critical at European level
  - Investment in R&I is necessary for Europe's ability to lead / but not sufficient to guarantee leadership
  - Systemic nature and coherence of policies matter (e.g. internal and external dimensions, R&I policy as key element of European integration)

European scenarios

Perseverance: Slow growth and turbulent transitions

- Political and economic perspectives of the EU
    - EU's sluggish economic performance leads to a loss of confidence of citizens / renationalisation of policies
    - Economic stagnation / difficulties to compete in the digital global markets; budgetary constraints affecting also EU budget

- Conditions and requirements with regard to R&I
    - Less priority is given to R&I in times of budgetary constraints, with only some countries being able to escape the downward spiral
    - R&I does not „deliver" on social and economic promises

- Structures and priorities of R&I policy
    - Erosion of scientific base due to funding constraints / growing divergence across countries in terms of scientific productivity and attractiveness for industry
    - R&I is concentrated on some leading universities in interaction with research-intensive private sector firms
    - Public research gets increasingly under pressure
    - Europe's participation in innovation-intensive fast growing global businesses remains low, and Europe misses out on a range of global opportunities

European scenarios
Change: Transforming the world for the better

- Political and economic perspectives of the EU
  - Coordinated EU policies are key for addressing important challenges in areas such as security, climate change, environment, etc.
  - EU is successful on global markets with its „circular" and „transition" approaches, enabled by a strong push for digitalisation *and* sustainability

- Conditions and requirements with regard to R&I
  - R&I is seen to play a crucial role for the transformation agendas
  - Central role of R&I as important investment in the future is fully recognised

- Structures and priorities of R&I policy
  - Rejuvenated common R&I policy, focusing on high social returns
  - Open ecosystems for research, innovation and education attract businesses, spinning out innovative enterprises and pushing the boundaries of technological convergence and change
  - Enhanced public funding for R&I, both at EU and national level, to leverage private money
  - Europe has its fair share of rapidly growing global enterprises in key global sectors, based on its innovation leadership in environment, health, smart cities and societal security

Topical scenarios

Global-European nexus is mirrored at topical level

- Climate and energy
  - Global warming: Growing climate and environmental stress
  - Global warning understood: Low carbon transition
- Resources and production system transformation
  - The age of over-exploitation
  - New wellbeing: A new model of consumption and production
- Towards a world of cities
  - Urban jam: Impaired mobility
  - Urban bloom: Accessibility for all
- Health
  - Better care: Improved disease prevention, control and patient care delivered
  - Better health: Planet and lifelong human health delivered
- Accelerating innovation / digital society
  - Race against the machine: Monopolies drive technology-centred transition
  - Race with the machine: The innovation revolution for everyone
- Security and resilience
  - Security games: Increasing societal vulnerability
  - Security building: An open, secure and resilient Europe

Next steps

- Refinement of scenarios: global, European and topical – *until end of 2016*
  - Close interaction with Commission Services
  - Available to inform debates in other circles

- Delphi process to elaborate on European transition paths, critical milestones, and more specific future R&I policy issues – *until Spring 2017*

- Interpretation of Delphi results and policy recommendations – *until Summer 2017*