



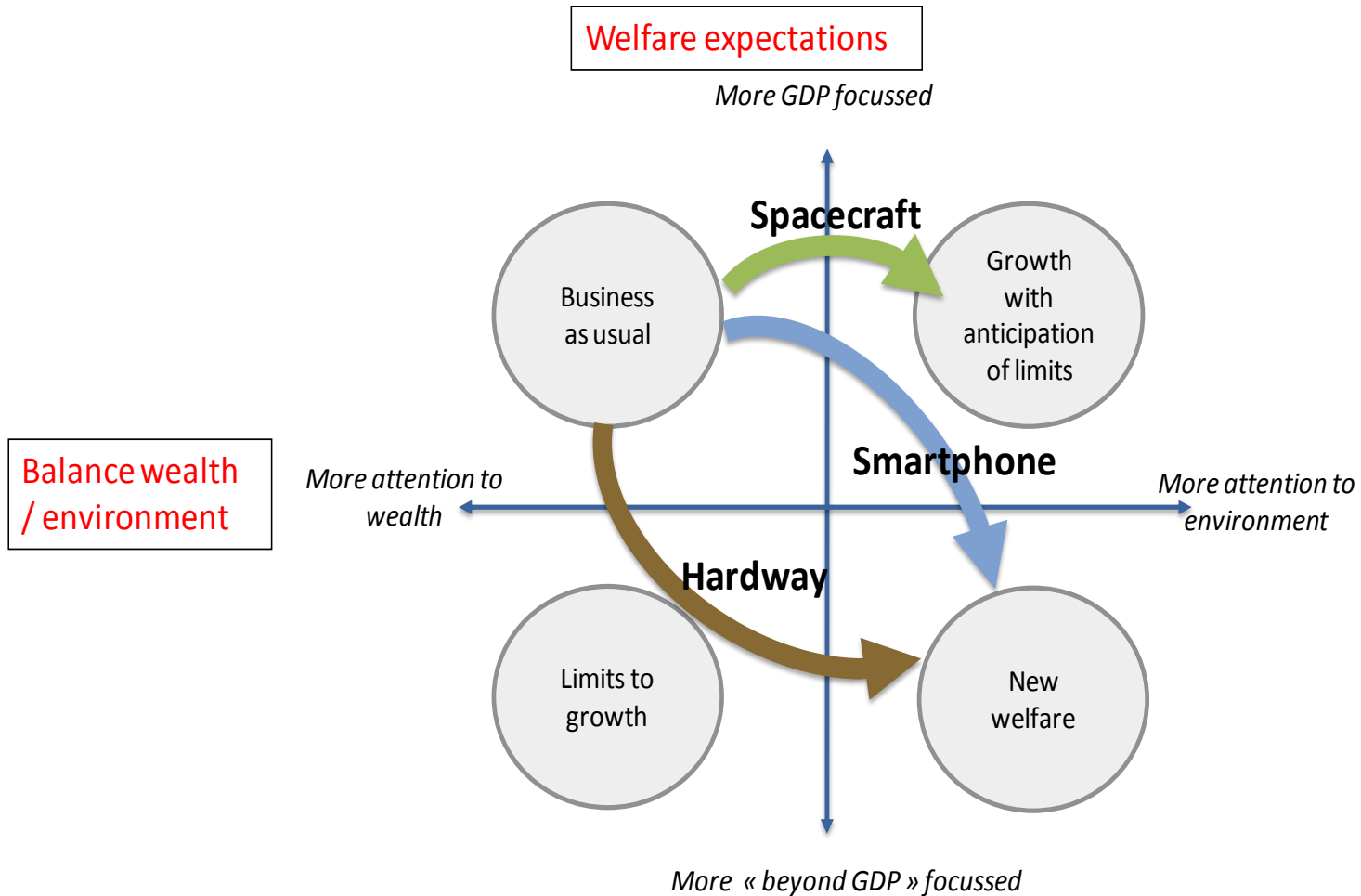
**U.S.–European Summit on Science, Technology,  
Innovation, and Sustainable Economic Growth  
Post Carbon Transitions, Visions and Challenges**

**Scenarios for post-carbon transitions**

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# 3 scenarios for post-carbon transition in the EU



## Scenario 1, "Spacecraft" : a highly centralized while cooperative project

- Led by governments and big stakeholders
- International commitments on carbon intensity of the GDP
- Centralized technologies and innovation mostly
- High World and EU economic growth
- EU consumption model and behaviours unchanged
- High demography and human capital in the EU-27
- Minor role of local actors in local transitions

## Scenario 1, "Spacecraft" : the wedding of speed and centralized technology in the EU

- Urban sprawl controlled, small/medium cities, in particular close to big cities, expand rapidly
- Spatial networking among cities
- Fast rail infrastructures, regional and long distance
- Hybrids, electric vehicles and biofuels: gCO<sub>2</sub>/car-km down by 85%
- Very energy efficient building concepts in new constructions generalized after 2015
- New retrofitting techniques for drastic energy savings in part of existing buildings

## Scenario 2, "Smartphone" : a bottom-up carbon transition process relying on social networking

- No global governance of oil/gas resources peaking and climate change
- Most cities in Europe, US, China , ... adopt and implement drastic energy and climate plans.
- Low demography and human capital in the EU
- Deep changes in behaviours toward thriftiness
- Low but better distributed GDP in the EU ("beyond GDP")
- Local transitions essential, driven by local authorities, citizens and NGOs

## Scenario 2, "Smartphone" : ICTs and decentralized energy technology clusters in the EU

- Urban sprawl regresses; 1st rings of core cities densified
- Spatial networking among big cities and with medium cities nearby
- Hybrids, electric vehicles and biofuels: gCO<sub>2</sub>/car-km down by 75%
- Very energy efficient building concepts mandatory after 2015, zero-energy and +energy generalized
- New technology clusters around photovoltaics and smart grids
- Thermal retrofitting of existing buildings mandatory

## Scenario 3, “Hard Way” : BAU scenario, that account for development/adjustment through violent/brutal crises

- Transition process imposed by crises
- No governance of climate change and oil/gas peak
- High tensions on oil/gas markets, possible shortages
- Economic recession, then low recovery in the EU
- Life-styles “forced” to turn closer to “Smartphone”
- Demographic decline, high unemployment, low human capital
- Local transitions mostly driven by the changes in attitudes in a growing part of the population

## Scenario 3, “Hard Way” : not favourable to large capital intensive investment in the EU

- Urban sprawl continues
- Spatial networking among big cities only
- innovation slow, few new capital intensive infrastructures
- Lack of reliability of centralized energy systems favouring supply/demand of local solutions
- Hybrids, electric vehicles and biofuels: gCO<sub>2</sub>/car-km down by 70%
- High energy prices drive energy efficiency and decentralized renewables



Merci pour votre attention!

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