Review of Industrial Transition of Bulgaria:

Draft Final Report

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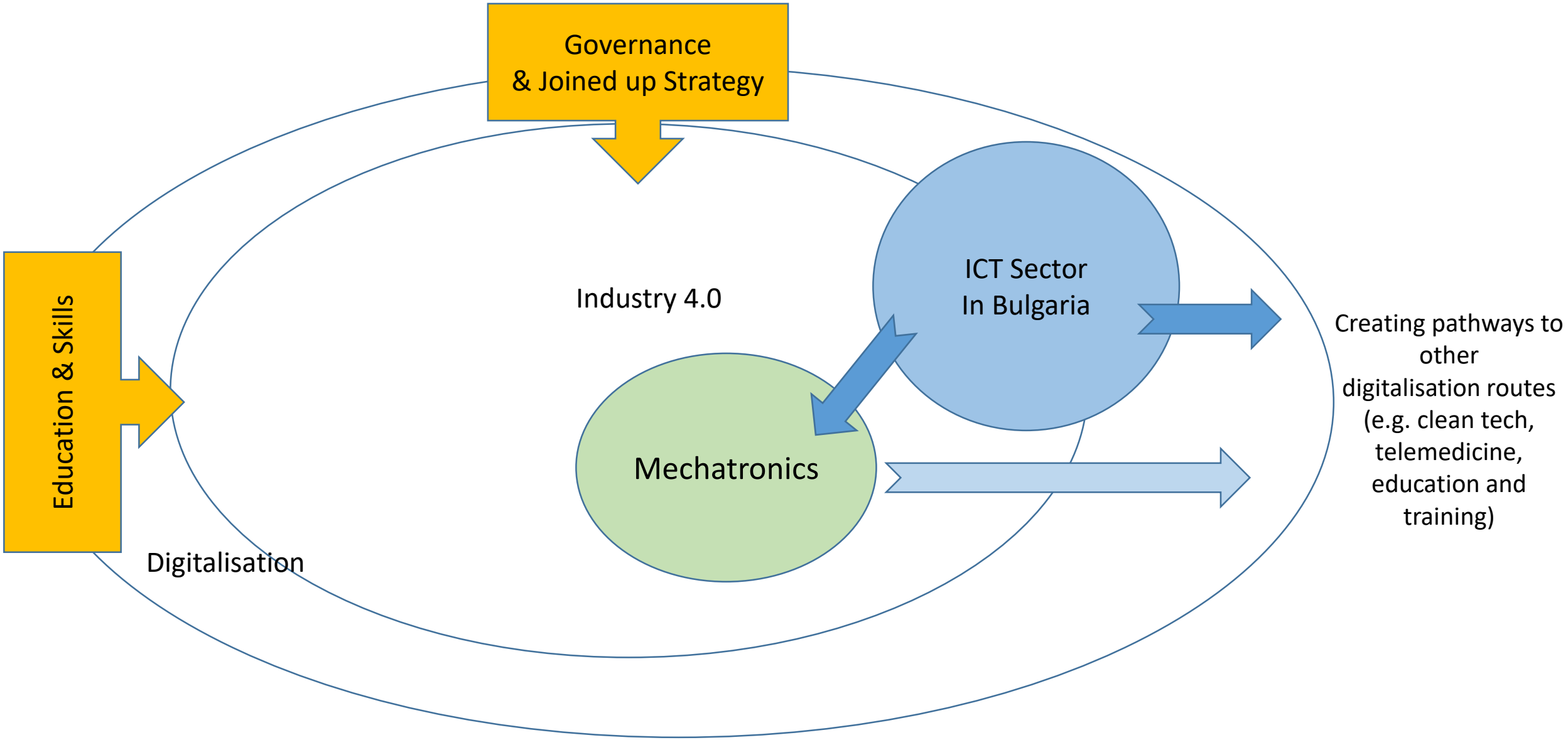
Key challenges of Bulgaria

- Low labour productivity and related low levels of income
- Shortage of labour due to migration (demographic crisis)
- Digitalisation at very low level across economy and society
- High concentration of economic and R&I activity in capital city
- Low level of (strategic) interactions in the system between public and private sector
- Despite overarching bodies such as Council of Ministers still fragmented policies
- Government strategies and decisions not consistently implemented

Focus of the thematic case Bulgaria



Current state-of-play

- Bulgaria strong history in both mechatronics and ICT
- ICT sector showed steady growth in last 20 years and export oriented
- Mechatronics has relatively high level of R&D and innovation activity
- Promising mix of multinational, indigenous and start-up companies
- Nevertheless:
  - Labour shortage important bottleneck for growth
  - Overall level of digitalisation low in business, education and society
  - In mechatronics: stuck in low-value segments of international value chains
  - Not a strong domestic market for both industries
  - Strong concentration in the Sofia region

National strategic objectives

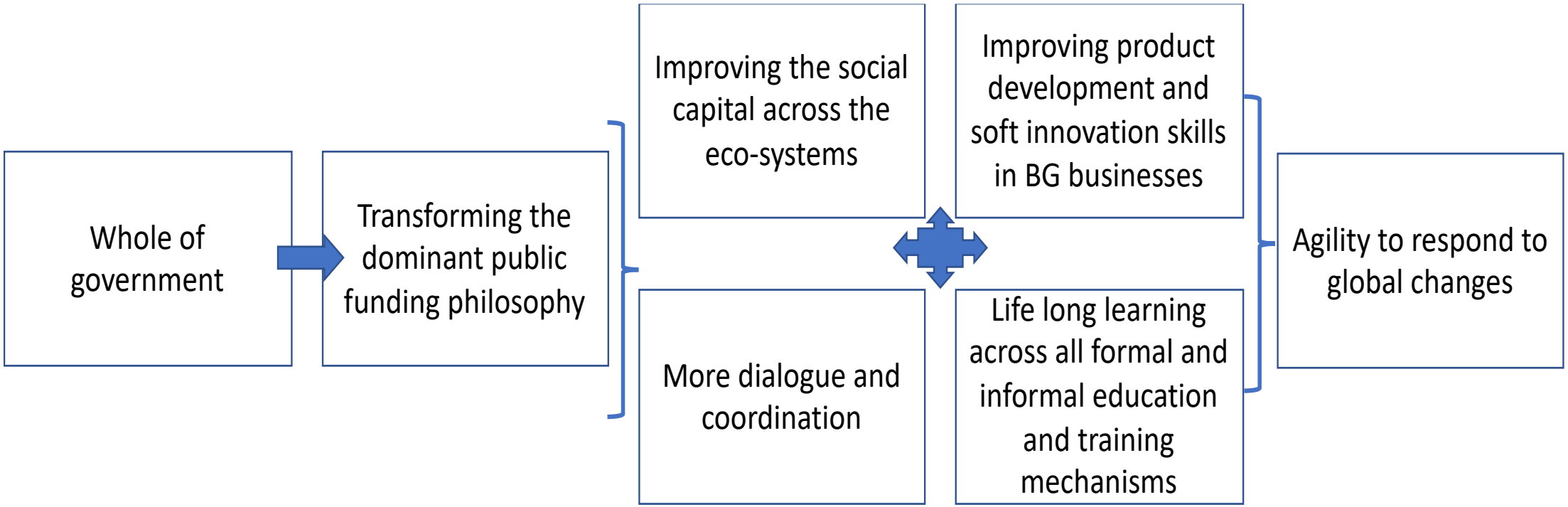
- Multiple documents, governed by separate line ministries: fragmentation

- Trend towards streamlining:
  - Innovation Strategy for Smart Specialisation 2014 - 2020
  - National Development Programme: Bulgaria 2030
  - Digital Tranformation of Bulgaria for the Period 2020 – 2030
  - Concept of Digital Tranformation of the Bulgarian Industry (Industry 4.0)

What could be some more general headline targets?

- GDP per capita in PPS relative to the EU average, % , baseline 51.2 -> target 75
- Digital Economy and Society Index (DESI), 36.2 -> 52.2
- Variation in GDP per capita (in PPS) by region, %, 37.5 -> 34
- Population (aged 25-64) participating in education and training, % , 2.5 -> 7
- Share of low performers in the Programme for International Student Assessment (PISA) (average for the three subjects of the study) 46 -> 25
- R&D expenditure, % of GDP 0.8 -> 2.5
- Integration of Digital Technology, DESI, %, 18.1 - > 50
- Share of high-tech exports in total export, %, 5.9 -> 15
- Ultra-fast broadband take-up, DESI, % , 9.7 -> 40
- 5G readiness, DESI, %, 0 -> 80

Vision demands from stakeholders



Recommended key actions

- Reinforce implementation capacities of (regional) government authorities and particularly the Council of Ministers
- Continue implementing planned activities RIS3 and ensure they are business oriented
  - Intermediary organisations (in particular Digital Innovation Hub, Cluster organisations, Competence Centres)
  - Regional Innovation Centres
  - Centres of Competence
- Set up National Skills Strategy Platform with representatives from government, business and educational sectors
  - Engage with new Skills Agenda for Europe
- Experiment with joint R&I actions between ICT Cluster (Digital Innovation Hub) and Mechatronics related clusters

Possible policy experiments

- Establish a **digital manufacturing research and innovation centre** that combines the development and dissemination of digital production technologies, education and training in ICT and production technology skills, applied research, pilot and demonstration facilities and business services
  - core ecosystem **hub** that initiates programmes, projects and services for the mechatronics domain;
  - set up smaller satellites within the different regional innovation centres that serve as a first entry point for companies;
  - partner with the existing ICT Academies that are set up by the business sector.
- Stimulation of **internationalisation** of key actors in the eco-system through the entry of national institutions in European networks, such as EEN, providing their alignment with national priorities