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Specific Support on the Development of the Human Capital for Research and Innovation in Latvia

Draft findings and recommendations

Riga, 21st November 2019

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Agenda for the day

11:00-11:30	**Arrival & registration**
11:30- 11:40	Welcome by the Ministry and the EC
11:40 -12:30	Plenary - Presentation of the key findings and recommendations by the panel, Q&A
12:30—13:15	Lunch break
13:15-14:45	Interactive working session I - Policies for attracting and retaining talents in scientific and technological careers in Latvia and developing their skills and productivity
14:45-15:00	Coffee break
15:00-16:30	Interactive working session II - Policies for developing the employment of S&T human resources in the Latvian Business sector
16:30-17:30	Summary, reporting back, conclusions and next steps

Objectives of the day

- Summarising the key study findings - setting the scene for the discussion
- Discussing the recommendations and seeking your views and suggestions on:
  - *The validity of the recommendations, identification of the most important priority areas*
  - *The key enabling factors and barriers of implementing the recommendations*

Anything else to add?

Introduction: key finding of the study (1)

1. Policies for attracting and retaining talent (1)

Funding:

- Imbalance between competitive short-term funds and long-term base funding
- Different public funding strategy for HEIs and RIs
- In both cases, the instability and uncertainty of the positions do not allow for a tenure track system or a clear career path as a researcher in the RIs
- Some internationally competitive initiatives (for PhD students and postdoc careers) have been launched, but based on EU funds and unsustainable on their own

Introduction: key finding of the study (2)

1. **Policies for attracting and retaining talent (3)**

<u>Academic and research careers</u>

- Access to university positions is challenging:
  - Low salaries
  - Many positions are part-time→ many professors and researchers work in several institutions
  - Lack of transparency and open competition
- In the RIs, the ability to maintain a position depends on being successful in the application for funds
- PhD programmes and supervision of the students depend on the HEIs, although researchers from the RIs participate as well

Introduction: key finding of the study (3)

1. **Policies for attracting and retaining talent (4)**

PhD studies and postdoc careers. Mobility

- Too many PhD programmes → fragmented institutional framework, lack of critical mass
- Low stipend → most of the students do their PhD part-time → difficult to train high quality competitive researchers at the international level → low graduation rate
- Absence of a career path for postdocs
- Lack of international mobility, not only in the PhD students or postdocs, but among the professors. Absence of organized programmes to promote mobility

Introduction: key finding of the study (4)

2. Policies for developing the employment of S&T human resources in business sector (1)

- The Latvian government has already in place several initiatives to enhance collaboration between academia and business
- However, the majority of these instruments are not being effective
- Some reasons are structural to Latvia (size of firms, role of state companies, sectoral concentration)
- Other have to do with the social value of science or research and the type of training received by university graduates and PhD, that does to meet private companies expectations or needs

Introduction: key finding of the study (5)

2. Policies for developing the employment of S&T human resources in business sector (2)

- In general, the RDI effort of the Latvian private sector is well below the EU average
- Low performers in other indicators, such as joint publications or the implication of companies in the design /teaching of academic programmes
- The orientation of PhD students is mostly directed toward academia, they do not receive training in entrepreneurship or in other abilities that make easier their employment in the private sector

Policies for attracting and retaining talents

1) Improve graduation rates and quality of PhD studies
2) Improve attractiveness of research careers
3) Foster internationalisation

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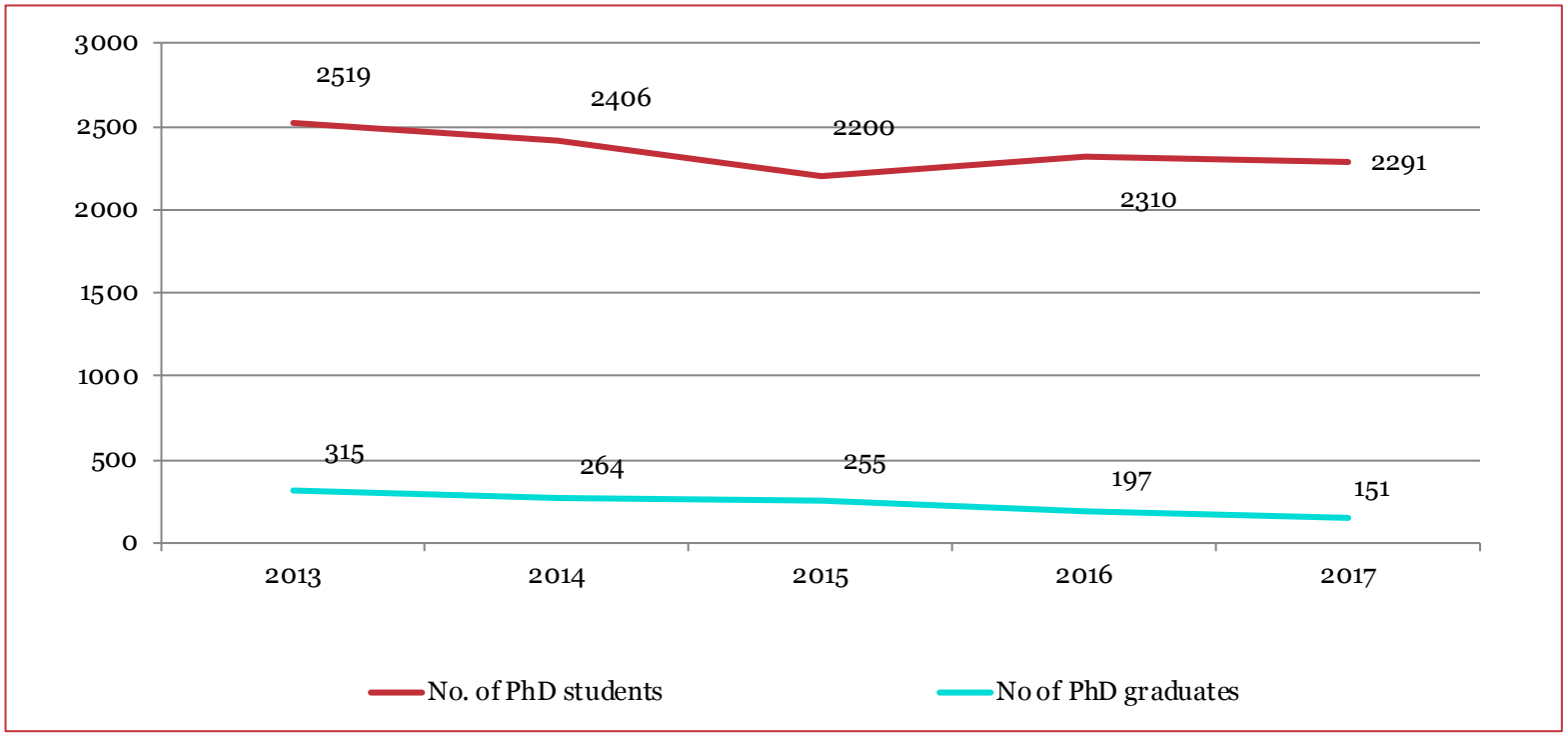
1) Improve graduation rates and quality of PhD studies (1)

Graduation rates are low



1) Improve graduation rates and quality of PhD studies (2)

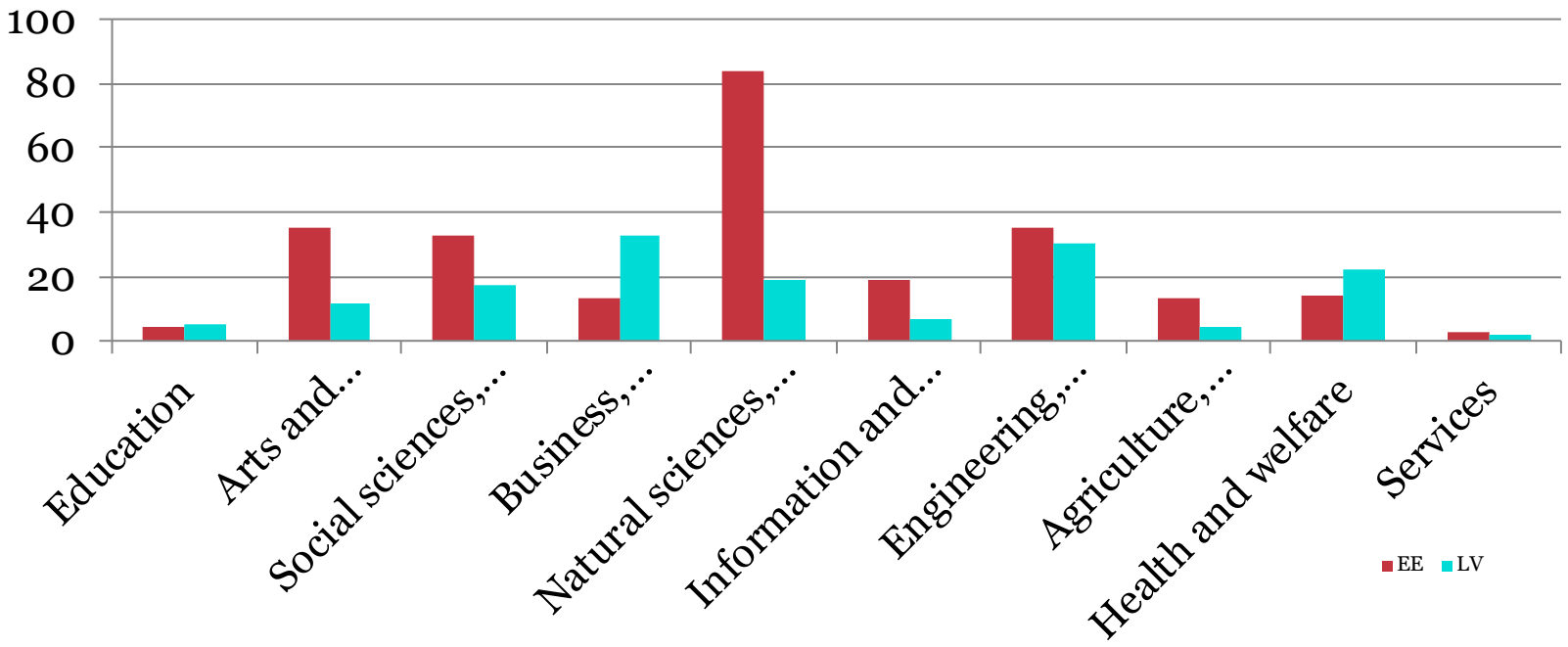
Improvement in graduation rates depends on securing adequate incomes for PhD students:

1. Wage for teaching undergraduate courses
2. Wages for contribution to research projects ← larger & longer projects & higher success rates← more resources for competitive research funding (if needed, at the expense of highly targeted intervention)
3. Monthly stipends: should be close to average national wage
   - Assuming 2,200 students this requires approx. €18 m per annum
   - Counterintuitively, smaller no. of students (with higher stipends) could result in larger no. of graduates

- Once the three above components are in place, PhD studies should be incompatible with full time work outside respective HEI

1) Improve graduation rates and quality of PhD studies (3)

No. of PhD graduates by field of education in 2017



1) Improve graduation rates and quality of PhD studies (4)

Increase the no. of STEM PhD graduates:

- Holistic efforts needed to secure intake at undergraduate level
- Boost prestige of STEM studies, e.g. by developing joint MA / PhD programmes with established universities
- Targeted scholarship scheme for the best PhD students in STEM

1) Improve graduation rates and quality of PhD studies (5)

Improve quality of PhD studies:

- Our panel endorses the recommendations provided by the World Bank
- Excellence in research and critical mass should be among preconditions for offering PhD programmes → possibly use results of RAE to assess, which units meet this criteria
- HEIs should ensure that funding for PhD studies is secured for this specific purpose
- Funding per student per field of education should be reviewed with the view of reducing huge differences between programmes

2) Improve attractiveness of research careers (1)

Key challenges:

- Low employment security (re-election every six years) and lack of career progression pathways
- Low income security / stability. Employment contracts do not necessarily set out tasks, workload and wage
- High fragmentation: multiple jobs across several HEIs, RI or other organisations
- Short term financial incentives

2) Improve attractiveness of research careers (2)

Recommendation: ensure competitive and stable wages from a single employment contract. This requires:

- Further growth in research funding
- Lower fragmentation of study programmes and research agendas (e.g. from Finland: competitive funding to strengthen university profiles)
- Lower fragmentation of institutional system

2) Improve attractiveness of research careers (3)

Recommendation: build predictable and transparent career progression pathways that are essential for long term commitment to research career and for incentivising performance. This requires:

- Higher predictability and stability of HEIs and RIs income to accommodate financial commitments linked to tenure track positions
- Setting minimum requirements for entry and progression along tenure track system + ensuring autonomy for HEIs and RIs to introduce additional requirements in line with institutional priorities

3) Foster internationalisation (1)

Recommendations:

- Support researchers' mobility (fellowships, research visits, etc.) to leading research institutions
- Attract talent from aboard:
  - Grow the existing islands of excellence: attract researchers who are exiting post-doc stage to existing islands of excellence
  - Create island of excellence: target established researchers and provide sufficient funds to hire internationally

Preconditions:

- Leverage ESIF and national funds with opportunities by Horizon Europe
- Global outreach and information dissemination campaign
- Ensure continuity and sustainability of impacts: commitment to offer access to permanent positions (institutions) + commitment to attract additional funding (researchers)

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Policies for developing the employment of S&T human resources in business sector

Government: Policies, regulation, instruments

Universities and RIs:
Strategies
Structures
Operations

Business-academia collaboration
Collaboration culture
Incentives and support
Boundary organisations

Companies:
Size of the companies
Low tech vs. high tech
Knowledge intensiveness

Developing the employment of S&T human resources - Companies (1)

Challenge: The innovation capacity and absorptive capacity of S&T human resources in Latvian business sector is rather limited. This mainly due to:

- Industrial sector is mainly characterised by low-tech firms
- Service sector plays a significant role in Latvian economy
- Latvian business sector has relatively small companies compared with the EU28 average
- The share of foreign owned companies in Latvia is higher (6%) than the EU average of 1%, the share of RDI related FDI is low.
- A large proportion of GDP (about 30%) is produced in state-owned enterprises (SOE) in Latvia, but the RDI efforts of these companies are only moderate compared with the potential they possess

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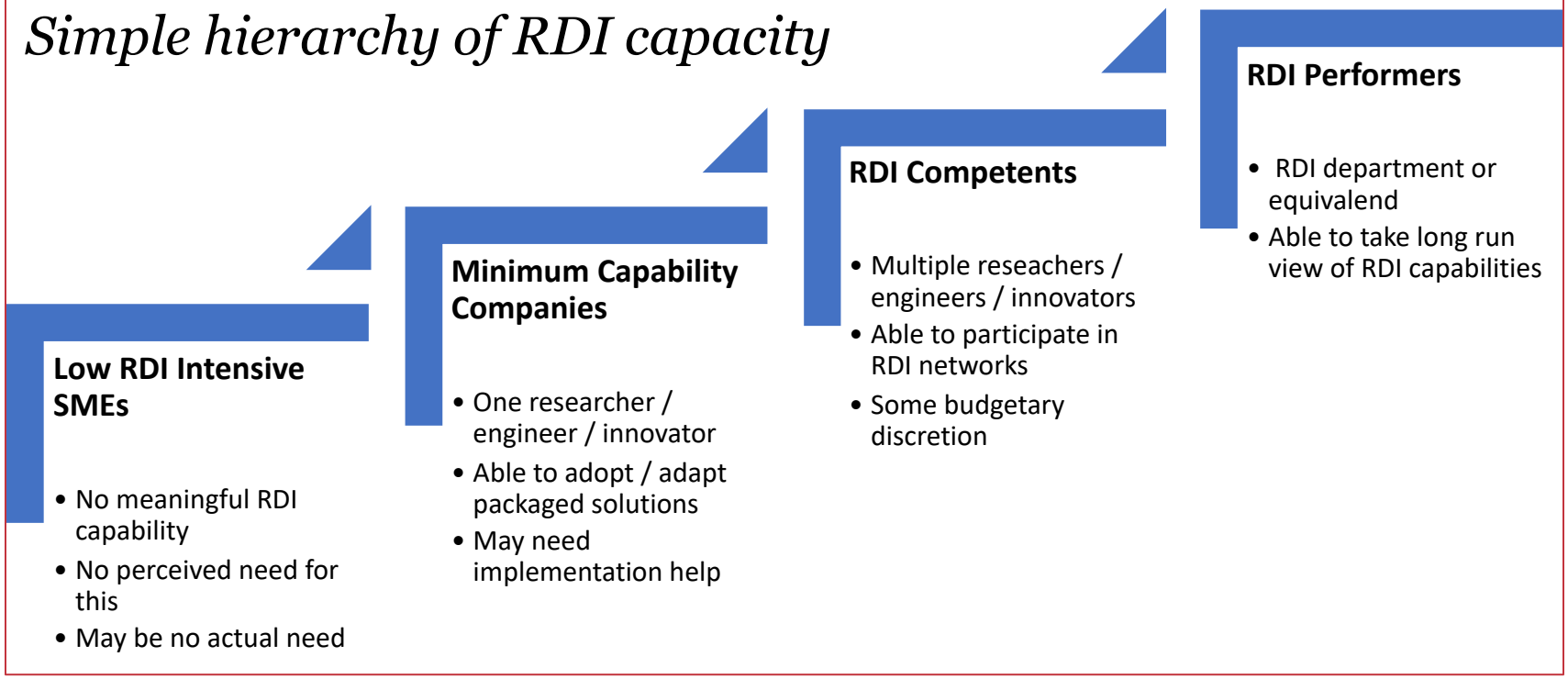
Developing the employment of S&T human resources - Companies (2)

Simple hierarchy of RDI capacity



Source: Modified from Arnold & Thuriaux, 1997

Developing the employment of S&T human resources - Companies (3)

Recommendations:

- Lower the threshold for SMEs to collaborate with scientific institutes by providing hands-on advice, activation, communication and easy-to-take first-step services
- Ensure the growth of the start-up ecosystem by securing the availability of early-stage venture capital funding and by strengthening the entrepreneurial culture among universities and RIs
- Strengthen the role of SOEs as RDI performers by eliminating the current obstacles in governance and by governance enhancing the importance of RDI investments

Developing the employment of S&T human resources - Government instruments (1)

- Government has a key role in supporting universities, RIs and companies with funding that enhances academia-business collaboration and subsequently has a potential to increase the absorptive capacity of companies.
- → It seems to be that almost all the relevant support instruments are in place, but absorptive capacity for these measures among companies is low. Reasons:
  - As a majority of the industrial companies are low-tech companies, most service companies are not very knowledge intensive and SMEs dominate the business sector, the innovation capacity of companies is low
  - Companies may perceive many of the support measures as being too burdensome and bureaucratic

Developing the employment of S&T human resources - Government instruments (2)

Recommendations:

- Decrease the bureaucracy and make the instruments easily available for the target groups
- Create mobility scheme(s) for researchers to be employed in business sector

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Developing the employment of S&T human resources - Universities, RIs (1)

Academia-Business collaboration areas	Academia-Business collaboration activities
Education	• Curriculum co-design (e.g. employers involved in curricula design with HEIs) • Curriculum co-delivery (e.g. guest lecturers) • Mobility of students (e.g. student internships/placements) • Dual education programmes (e.g. part academic, part practical) • LLL for business (e.g. executive education, industry training and professional courses)
Research	• Joint R&D (incl. joint funded research) • Consulting to business (e.g. contract research) • ***Mobility of staff (i.e. temporary mobility of academics to business and of businesspeople to HEIs/RIs)***
Valorisation	• Commercialisation of R&D results (e.g. licensing/patenting) • ***Academic entrepreneurship (e.g. spin offs)*** • ***Student entrepreneurship (e.g. start-ups)***
Management	• ***Governance (e.g. participation of academics on business boards and businesspeople participation in HEI/RI board)*** • Shared resources (e.g. infrastructure, personnel, equipment) • Industry support (e.g. endowments, sponsorship and scholarships)

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Developing the employment of S&T human resources - Universities, RIs (2)

Areas	Structural support mechanisms at universities and RIs	Structural support mechanisms at universities and RIs in Latvia
Bridging structures	Agencies dedicated to collaboration (e.g. technology transfer office, innovation office)	Medium
	Board member or vice rector positions for the third mission	Low
	Industry liaison office	Medium
Employability and career services	Alumni networks	High
	Career services	High
Infrastructure	Co-working spaces accessible by business	Low
	Joint research institutes with companies	Low
	Incubators	Medium
	Science / Technology Park zones	Medium
External integration structures	***Adjunct positions available within the university for businesspeople***	Low
	Lifelong learning programs involving businesspeople	Medium

Developing the employment of S&T human resources - Universities, RIs (3)

Recommendations:

- *Develop a strategic and systematic approach to business collaboration*
- *Leverage the good practices of academia-business collaboration already in place*
- *Strengthen the management of scientific institutions by having external members included in governing bodies*
- *Create and strengthen the entrepreneurial culture in higher education institutions so that entrepreneurship is seen as potential career both for students and researchers, and so that the whole university/RI community perceives collaboration with companies and society as an integral part of education and research*

Developing the employment of S&T human resources - Collaboration (1)

Collaboration culture:

- There is a need to change the perceptions of the role of S&T in advancing the welfare in society in society at large, but also related to academia-business relations, the role of research and innovation in business development, and the role applied research can play to help start a shift towards a more innovative and entrepreneurial attitude
- Changes can be fostered by awareness raising, celebrating success, and fostering the creation of a more innovation-friendly culture in society.

Developing the employment of S&T human resources - Collaboration (1)

Intermediary organisations:

- Strengthening the role of intermediary organisations by expanding the tasks of the Competence Centres and increasing their partner networks to include more SMEs and other partners, for example cities
- These new types of Competence Centres would have a wider portfolio of tasks regarding innovation ecosystem facilitation

Developing the employment of S&T human resources - Collaboration (2)

Recommendations:

- Promote the importance of science in society for various target groups (children, teenagers, companies etc)
- Make the benefits of academia-business collaboration visible to both researchers and companies
- Strengthen the boundary organisations e.g. by widening the tasks of Competence Centres

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16:30-17:30	Summary, reporting back, conclusions and next steps

Recap of the key recommendations - Policies for attracting and retaining talents

1) Improve graduation rates and quality of PhD studies:
    1) *Higher incomes of PhD students;*
    2) *Higher no. of STEM PhD graduates*
    3) *Review whether HEIs have the necessary capacities for PhD studies*
    4) *Funding for PhD studies should not be reallocated to meet of needs of HEI*
    5) *Reduce the differences in funding per student*

Recap of the key recommendations - Policies for attracting and retaining talents

1) Improve attractiveness of research careers:
    1) *competitive and stable wages from a single employment contract → higher funding + less fragmentation*
    2) *Build predictable and transparent career progression pathways → stability and predictability of HEI & RI incomes + criteria to enter tenure track*
2) Foster internationalisation:
    1) *Support researchers mobility*
    2) *Attract talents from abroad: grow islands of excellence and/or create islands of excellence*

Interactive working session

1. At each table – **nominate a chair and a rapporteur**
2. **Discuss all of the recommendations** - validity of the recommendations - What would not work? Why?
3. Then for the next step, focus only on those you found valid
   - ***Identify the most important*** *recommendations – rank them based on both importance and feasibility. Is there a consensus?*
   - *What are the* ***key enabling factors*** *and* ***barriers*** *of implementing the recommendations?*
   - *What* ***support is needed*** *to implement the recommendations –* ***by whom*** *and what is the* ***timeline needed****?*
   - *How can the* ***sustainability of the desired results*** *ensured?*

Reporting back

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Recap of the key recommendations - Policies for developing the employment of S&T human resources in the Latvian Business sector

- Lower the threshold for SMEs to collaborate with scientific institutes
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- Decrease the bureaucracy and make the instruments easily available for the target groups
- Create mobility scheme(s) for researchers to be employed in business sector
- Strengthen the boundary organisations e.g. by widening the tasks of Competence Centres

Recap of the key recommendations - Policies for developing the employment of S&T human resources in the Latvian Business sector

- Leverage the good practices of academia-business collaboration already in place
- Strengthen the management of scientific institutions by having external members included in governing bodies
- Create and strengthen the entrepreneurial culture in higher education institutions so that entrepreneurship is seen as potential career
- Promote the importance of science in society for various target groups (children, teenagers, companies etc)
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Reporting back

Summary and Q&A

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Thank you

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