



Budapest University of Technology and Economics

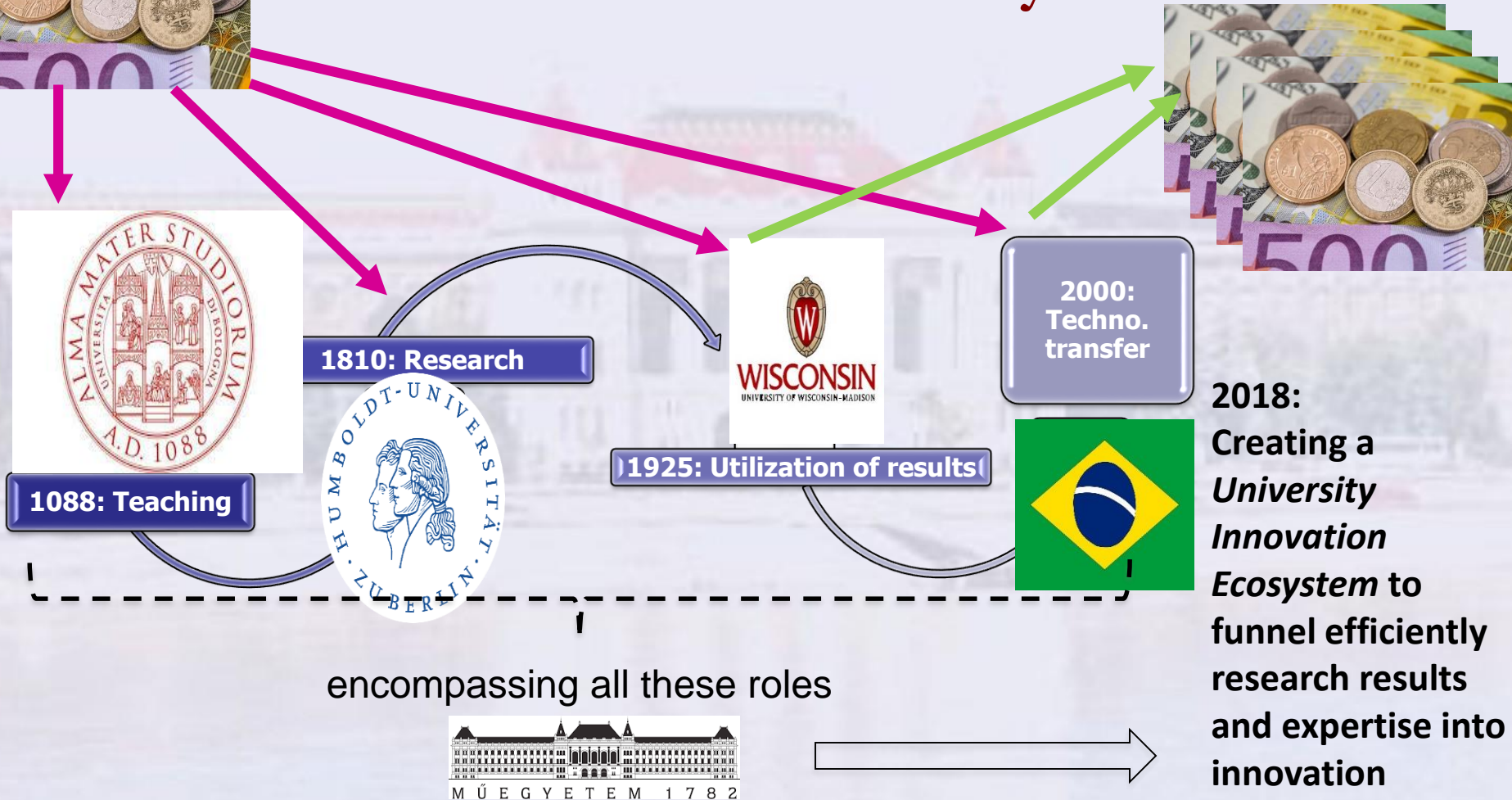
“Basic science and industrial innovation” – BME Model

Prof. Hassan Charaf

Dean, Faculty of Electrical Engineering and Informatics



Evolution of university role



Challenge: it needs a change in the mode of operation

Facts about BME

- Leader Engineering Institute in Hungary
- Wide network of industrial partners
- Synergy between Engineering, Natural Sciences and Economics
- Open for changes and innovation
- Good impact in the National Economy
- The budget portfolio is healthy

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For Strong Digital Europe

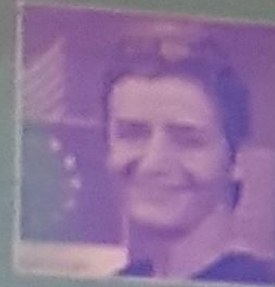
#EUstrive



Ursula von der Leyen
President

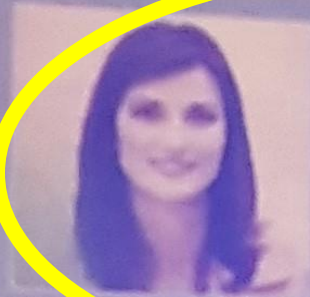


Frans Timmermans
Executive Vice-President
European Green Deal



Margrethe Vestager
Executive Vice-President
Europe fit for the Digital Age

Phil Hogan
Commissioner
Trade



Mariya Gabriel
Commissioner
Innovation and Youth



Johannes Hahn
Commissioner
Budget and Administrative Management



Mission Letter: President → M. Gabriel

- Sufficient investment to research and innovation, European Research Area.
- Research, policy and economic priorities go hand in hand.
- Tripling the Erasmus+ programme.
- Promote excellence and networking among European universities.
- Update of the Digital Education Action Plan.
- International cooperation in education, research and innovation.



Innovation

- There is no Innovation without good **Education**
- There is no Innovation without good **Research**
- There is no Innovation without a well defined and transparent **Ecosystem**
- There is no Innovation without a win-win **University-Industry Cooperation**
- There is no Innovation without healthy **Environment**
- There is no Innovation without real **Investment**



BME in the Digital Era

ENCOMPASSING THE WHOLE SPECTRUM OF INDUSTRIAL COLLABORATIONS

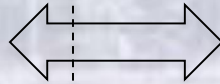


Meeting the structural and organizational demands

Industrial entities and needs

University role and tasks

Big national & multinational companies

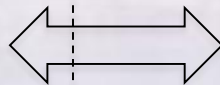


Order based RDI activities based on product portfolios and corporate objectives, introduction of new technologies



Integrated R&D&I activities with joint financing

Small- and Medium size Enterprises

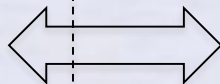


Support and optimization of corporate processes by new technologies (e.g. digitalization, industry 4.0, 5G, AI ...etc.), corporate oriented solutions and services



Technology Center

Start-ups, spin-offs



Innovation mining, business plan, patenting, IP rights, venture capital, introducing to market



RDI Office



Layer 1: BME Higher Education and Industrial Collaboration Center (FIEK)

Scope: Integrated intelligent technologies in *ICT, pharmaceutical industry, electric drives, and energy sector*



SIEMENS



Tasks:

- Industry-Driven topics
- Efficient coordination of university and industrial R&D
- Fast feedbacks from the industrial partners
- New “digital ecosystem” for industrial processes

Structure:

- Matched fund investment (state funds + corporate funds)
- Joint governing body (Board of Directors with 50% university vote)



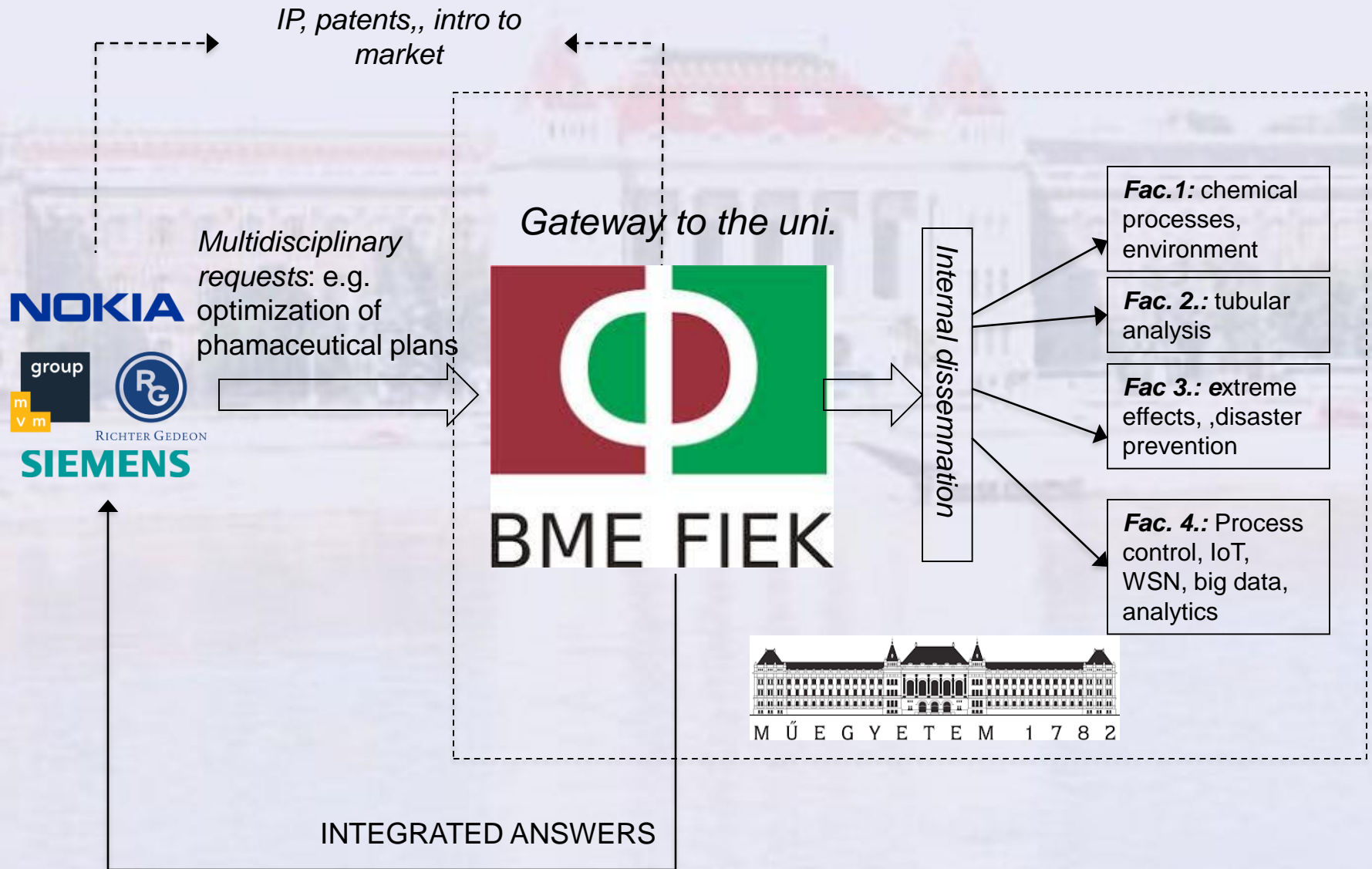
FIEK Labs:

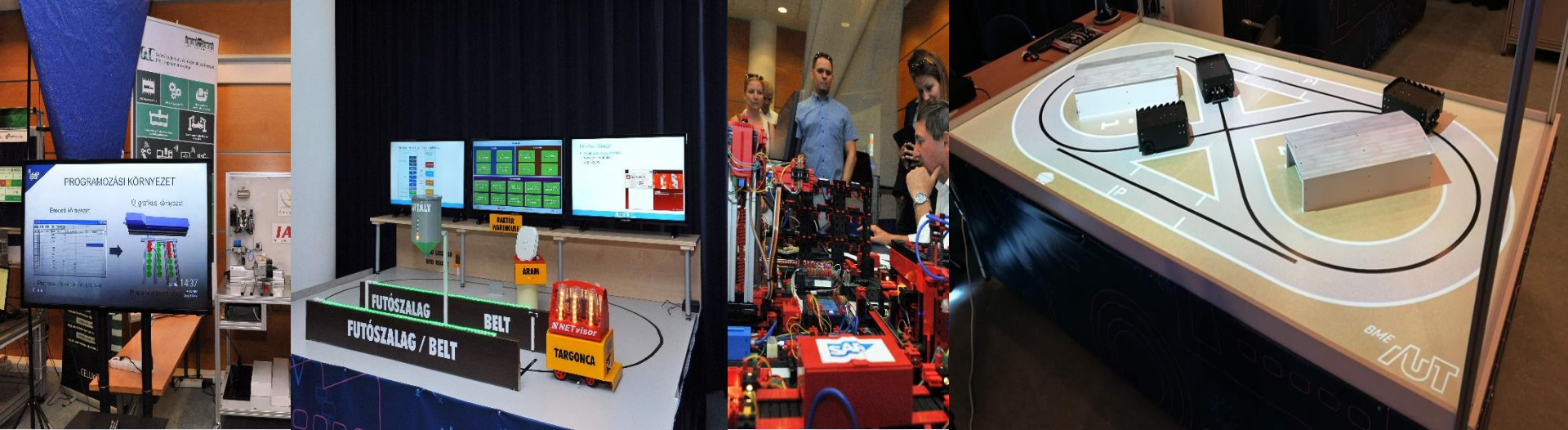
RDI in

- infocommunication technologies (AI, 5G with Nokia)
- pharmaceutical industry (manufacturing processes with Richter)
- electric drives (novel solutions with Siemens)
- energy sector (smart grids with MvM)



FIEK as a single “gateway” to the university





Layer 2 for SMEs: Industry 4.0 Technology Center

- Demonstration to 1000 SMEs
- Consultation to 350 SMEs
- Strategic plan for 50 SMEs

ipar4.bme.hu



Level 3 - STARTUP CAMPUS BME

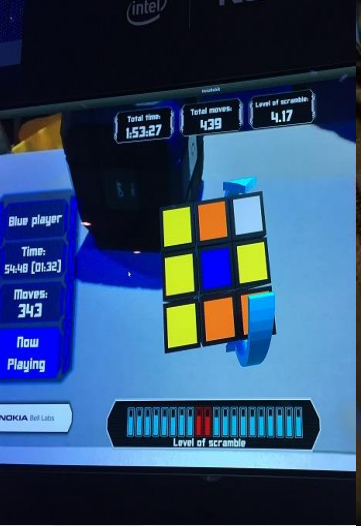
Startup Campus BME

powered by Hiventures

StartupCampus, Hiventures and BME have teamed up to create investable startups from innovative ideas of students and researchers.

- ❖ StartupCampus: provides the incubation program
- ❖ BME: facilities and technical consultation
- ❖ Hiventures: offers a HUF 9m seed investment package for each team that can articulate a viable business model and pitch it at the end of the program.
- ❖ Companies name industry challenges/topics that the teams can work on to test how their relevant problems can be addressed outside the corporate environment.
- ❖ Corporate partners can delegate mentors/experts who work with teams of their choice as well as delegate members to the jury panel to judge the pitches.



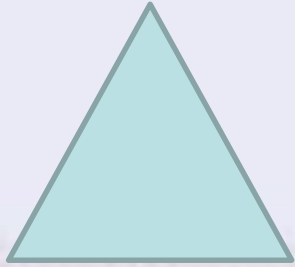


**Innovative
results in
start-ups**



Budapest University of Technology and Economics

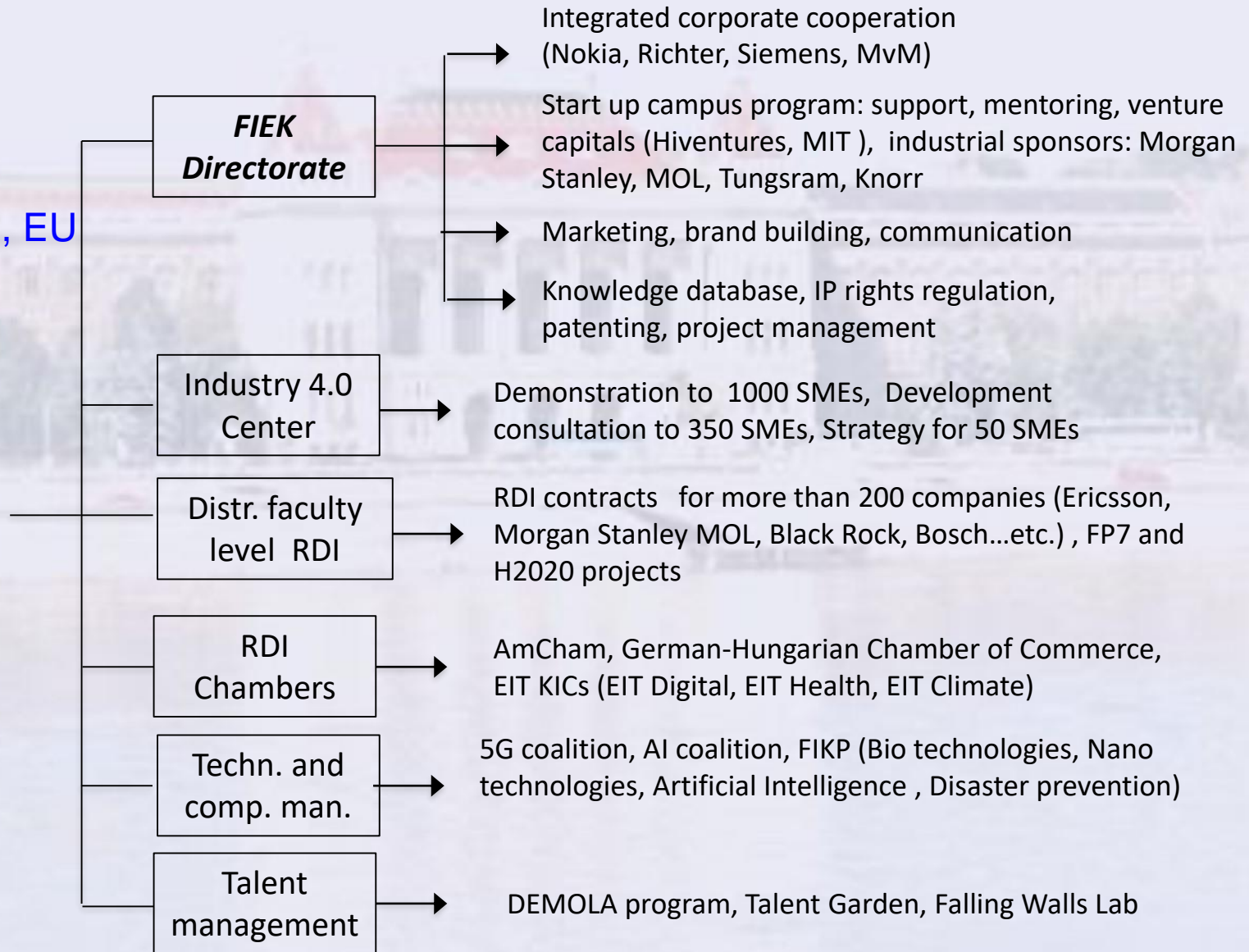
Universities



Industry

Gov., EU

BME Innovation Ecosystem



BME offers

- Competence as a Service
- Basic Research results
- Applied research results: Patents, Prototypes, Applications, Proof of Concepts
- Well-trained Talents, There is a big need
- Innovation Ecosystem, with one gateway model
- Good Environment for Innovation
- Fast reaction for industrial needs
- And a lot of other facilities.....

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Thank you for your attention