



MTA SZTAKI

Hungarian Academy of Sciences
Institute for Computer Science and Control

Hungarian Industry 4.0 National Technological Platform – I4.0 NTP

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**CENTRAL EUROPEAN COOPERATION FOR INDUSTRY 4.0 workshop,
20.09.2017, Budapest, Hungary**

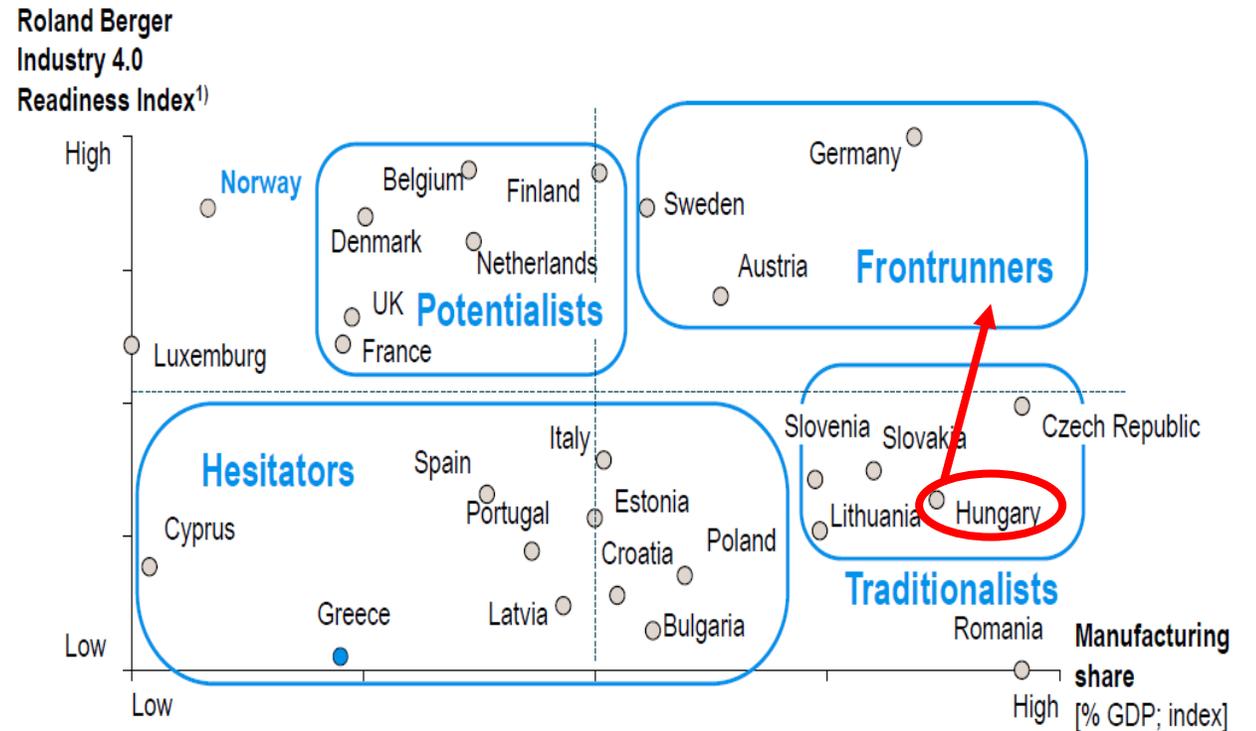


IPAR 4.0
NEMZETI TECHNOLÓGIAI PLATFORM

 **CENTRE OF EXCELLENCE EPIC**
Production Informatics and Control

Motivation and background

- **Irinyi Plan** -- Recent strategy of the Ministry of National Economy
 - Main directions of the re-industrialisation of the country
 - Target: by 2020 the share of industrial production in the GDP should increase from the current 24% to 30%
 - Increase the level of R&D expenditures to 1.8 % of the GDP by 2020
 - Specifically mentioning the Industry 4.0 related R&D&I activity in the manufacturing
 - Launching new complex programs
 - Reinforcing the growth, export and innovation potential of the domestic companies
 - Employment: „low skill” → „high skill”



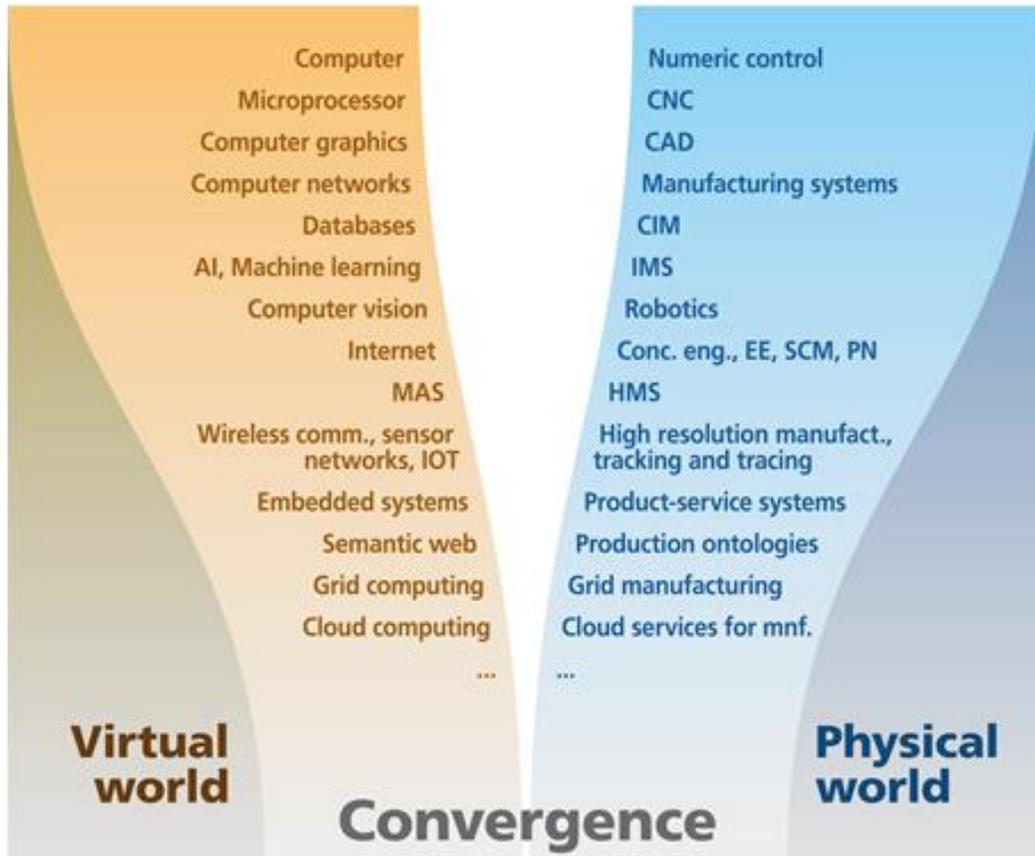
¹⁾ Based on industrial excellence (production process sophistication, degree of automation, readiness workforce and innovation intensity) and value network (focus on high value add, industry openness, innovation network, internet sophistication)

Source: Roland Berger

160607_KS_Industrie 4.0_Presentation_Siemens_Hellas_send.pptx

Motivation and background (2)

- Traditionally strong research in manufacturing **and** computer science → CPPS
- Active international scientific networking for decades



Cyber-physical systems in manufacturing

L. Monostori (1)^{a,b*}, B. Kádár (2)^a, T. Bauernhansl, (2)^{c,d}, S. Kondoh (2)^{d,e}, S. Kumara (1)^h, G. Reinhart (1)^g, O. Sauer (3)^h, G. Schuh (1)^{i,j}, W. Sihn (1)^k, K. Ueda[†] (1)^l

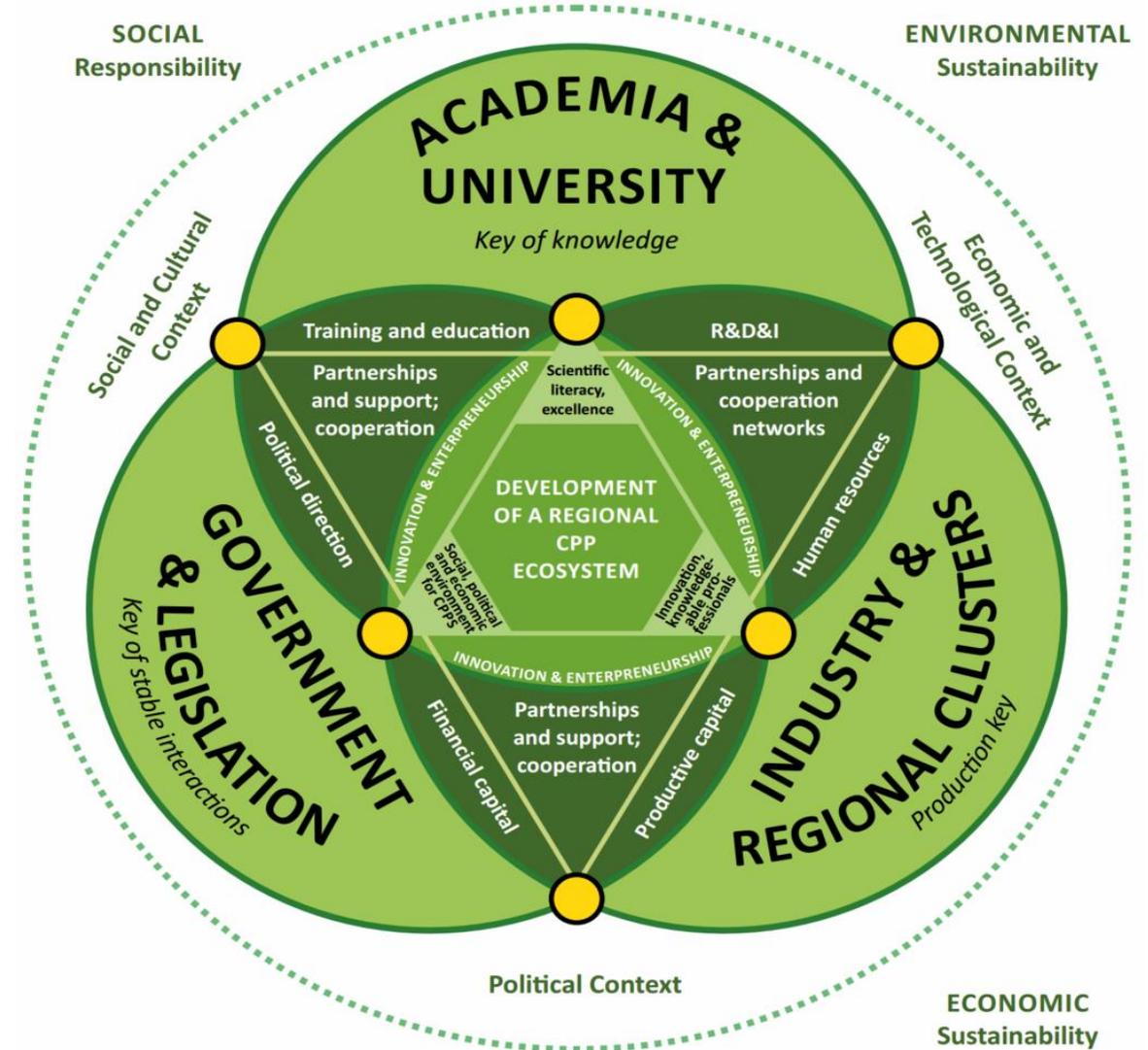
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- ^e National Institute of Advanced Industrial Science and Technology (AIST), Japan
- ^f Pennsylvania State University, US
- ^g Institute of Machine Tools and Industrial Engineering, Chair of Industrial Engineering and Assembly Technology, Technische Universität München, Germany
- ^h Fraunhofer Institute for Optronics, System Technology and Image Processing (IOSB), Karlsruhe, Germany
- ⁱ Fraunhofer Institute for Production Technology, (IPT), Germany
- ^j RWTH Aachen University, Germany
- ^k Institute for Management Science, Division Industrial and Systems Engineering, TU Vienna, Austria
- ^l The University of Tokyo, Japan



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Objectives

- Catalyse to perform high added-value research and development
- Prepare the industrial sector for, and adapt it to the requirements of I4.0 innovation
- Assist in re-focussing the education system according to the new needs of industry
- Be a key factor in contributing to the success of the national I4.0 programme



Foundation and structure

Membership

- 2016 May: SZTAKI and the Ministry for National Economy, and 37 founding members
- 53 additional organisations have joined since

Organisation

- Presidium headed by SZTAKI
- President: Prof. László Monostori
- 7 Working Groups
 - Strategic Planning
 - Employment, Education and Training
 - Production and Logistics
 - ICT Technologies (reference architectures, standards)
 - Industry 4.0 Cyber-Physical Pilot Systems
 - Innovation and Business Model
 - Legal Framework



Members The Presidium Contact

English | magyar



The Industry 4.0 National Technology Platform was established under the leadership of the Institute for Computer Science and Control (SZTAKI), Hungarian Academy of Sciences, with the participation of research institutions, companies, universities and professional organizations having premises in Hungary, and with the full support and commitment of the Government of Hungary, and specifically that of the Ministry of National Economy.

The background of the initiative is that Hungary, too, is witnessing the advent of the era of a new technological change, when the internet based economy is transforming the very basics of the production and logistic systems. The theoretical and practical problems to be resolved are of such complexity that make the cooperation between the research and university spheres on the one hand and industrial companies on the other hand indispensable, both in the national and the international arena.

[Read more ►](#)

MEMBERSHIP REQUEST

Would you like to join the Platform?



Horizon 2020 Widening Programme Winners

Prof László Monostori, Director of MTA SZTAKI, Head of the Centre of Excellence in Production Informatics and Control (EPIC) participated at the international press conference held in Brussels the 23rd November, 2016, where the results of the "Teaming" research excellence programme which is the most prestigious call of the Horizon 2020 Widening Programme were announced.

[Read more ►](#)

WORKING GROUPS

The Hungarian Industry 4.0 National Technological Platform operates several Work Groups in order to fulfil its mission defined in its Organisational and Operational Regulations. Their activity focusses on specific issues related to I4.0 and they formulate answers and recommendations to the challenges presented by the practice.

The participants of the Work Groups are delegated by their own organisation, members of the Platform and they represent special expertise in the given area. They work closely together with the corresponding governmental forums and bodies thus contributing directly to the formation and implementation of the Government's strategic goals.

Currently the Platform has 7 Work Groups:

EVENTS

29 January

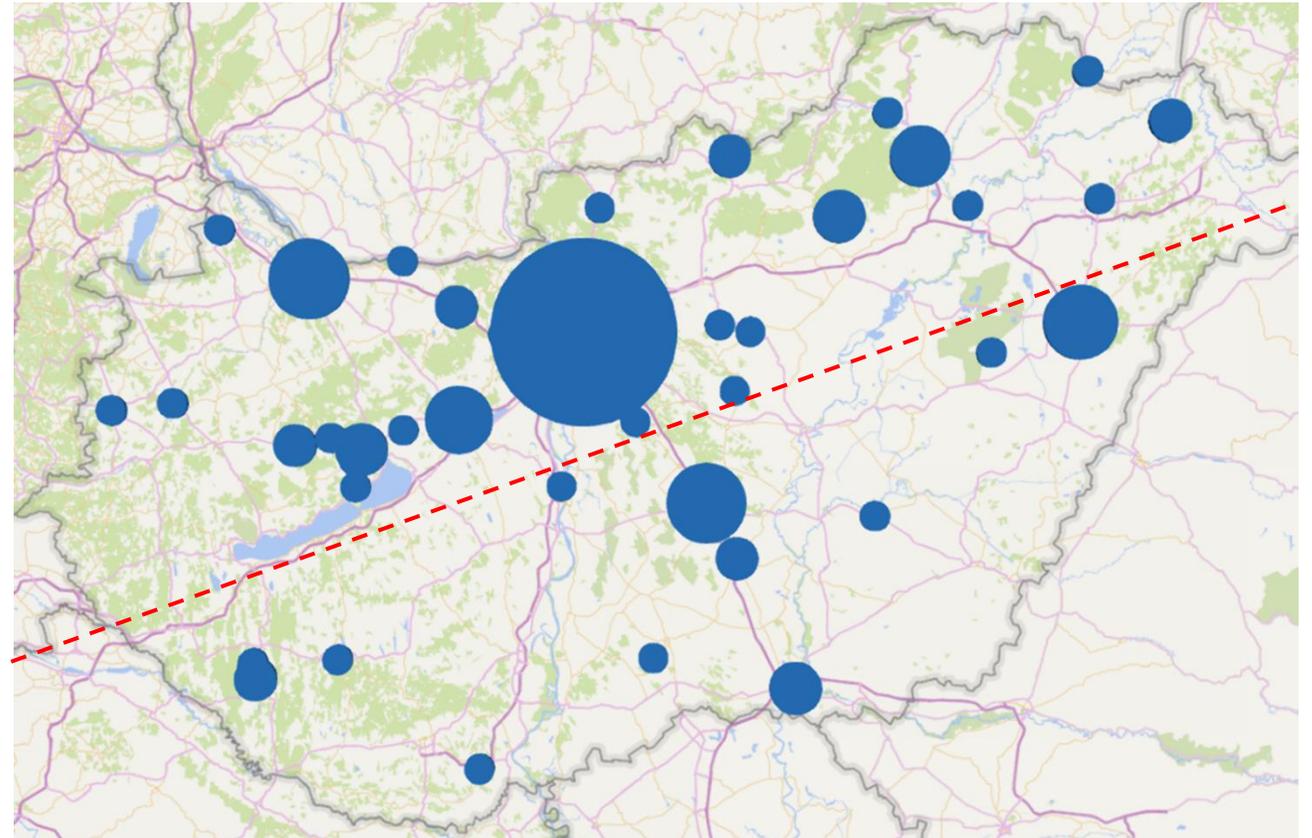
Visit to a Learning Factory in Germany - An offer of the FESTO company to the Platform's Members

2017. April
Mon Tue Wed Thu Fri Sat Sun

<https://www.i40platform.hu/en>

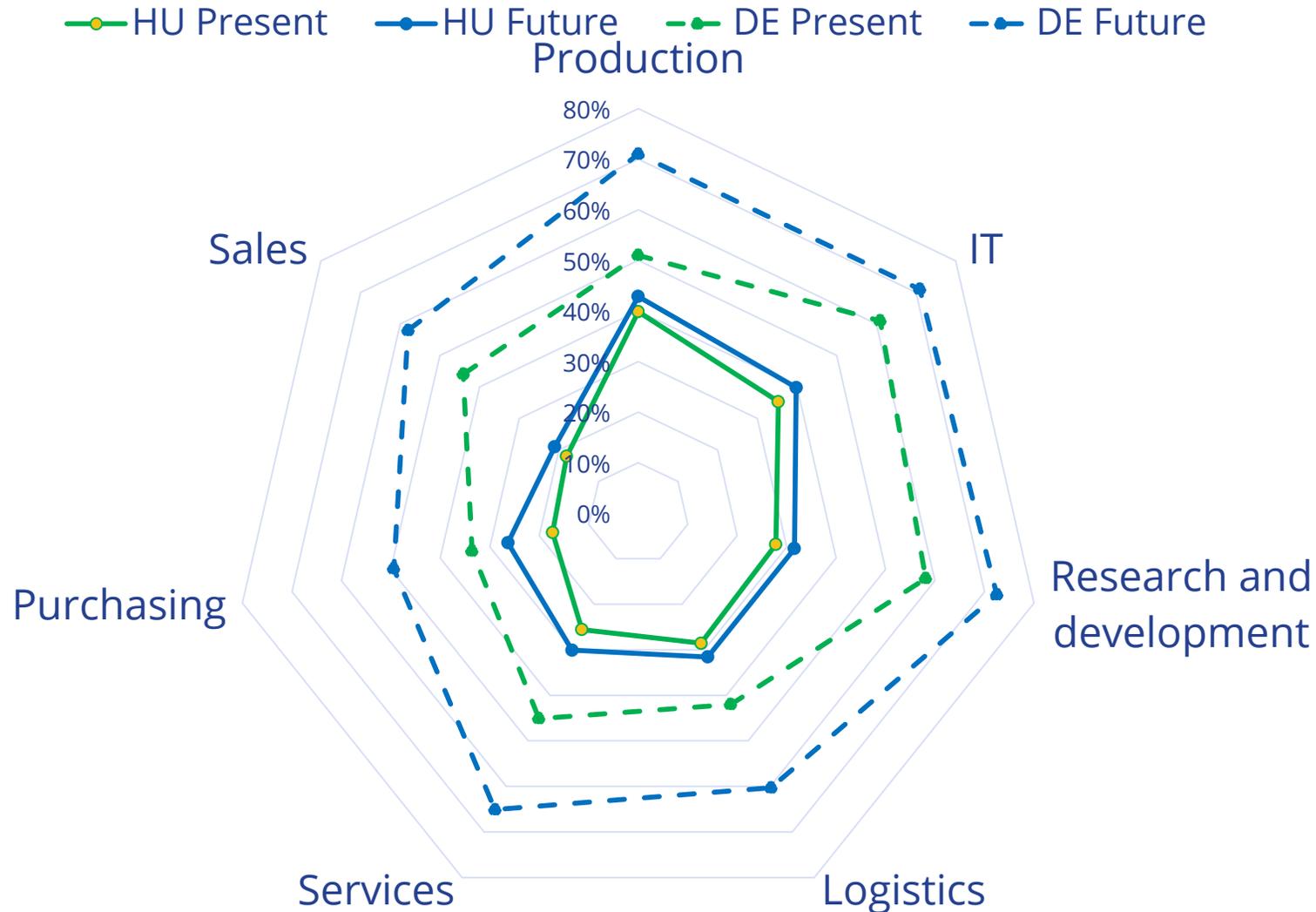
14.0 national questionnaire

- Structure of the survey
 - Basic business data and statistics (15 Q)
 - I4.0 capability – micro (46 Q)
 - National economy – macro (37 Q)
 - Contact (1 Q)
- Responses
 - 133 fully completed

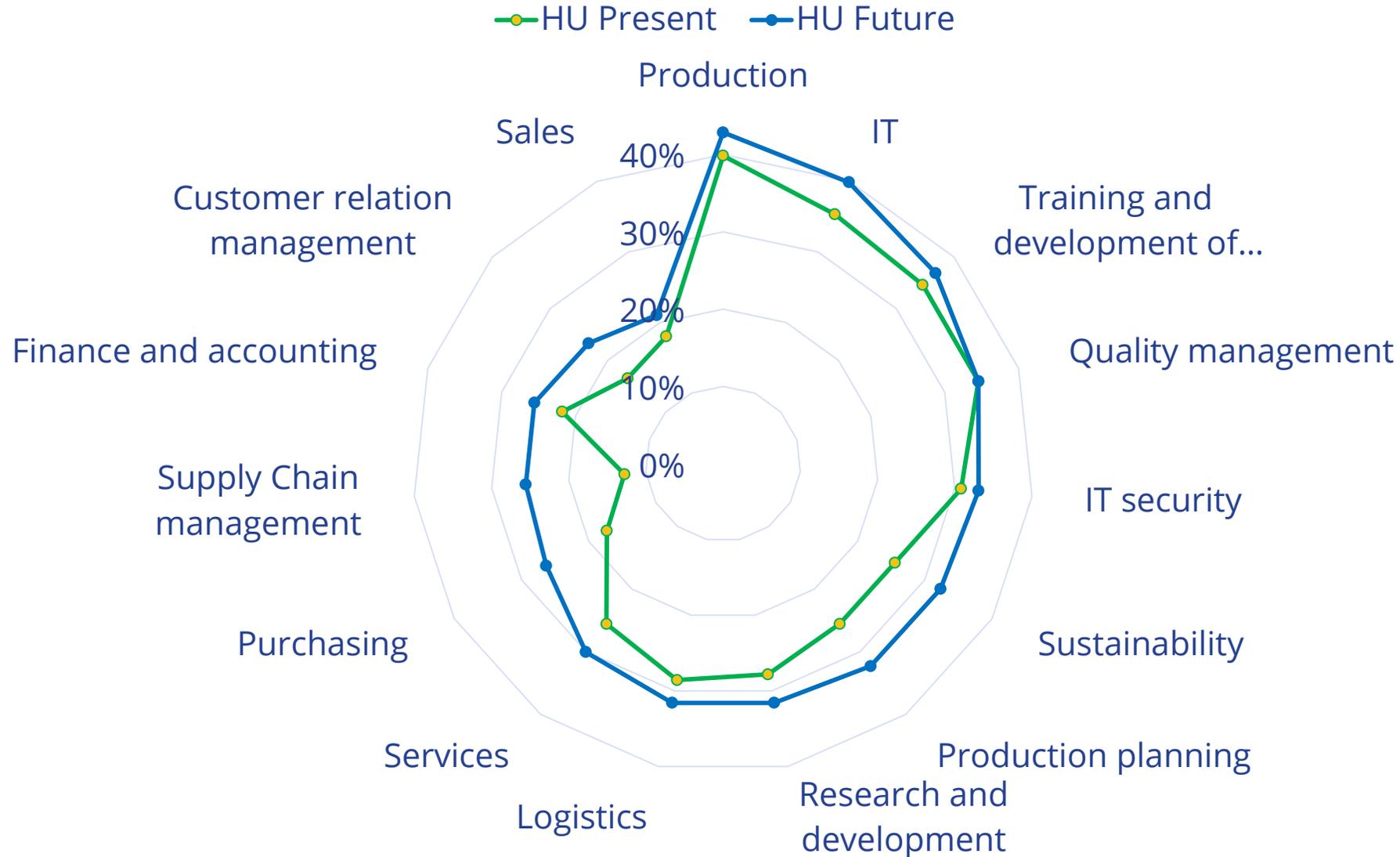


DE vs. HU

22. Past and Planned investments in Industry 4.0



23. Past and Planned investments in Industry 4.0

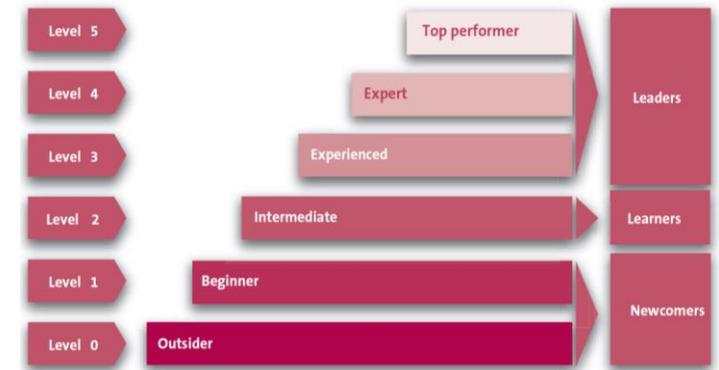


National I4.0 strategy – structure and **priorities**

Pillar ⇒		Digitalization and business development	Production and logistics	I4.0 labour market development	Research, development and innovation	I4.0 ecosystem
Dimension ↓						
Technology		Dedicated digitalization investment programs	Improved efficiency and increased capacities	Infrastructure for I4.0 training and education	Production related RDI services	Technology and infrastructure development
Society		Survey and attitude shaping	Concentrated strategy projects, supplier programs	From vocational I4.0 training up to graduate and postgraduate education	Reinforcing science, RDI programs	Legislation, standardisation, control
Business		Revival of SMS business models	Cluster formation	In-company training	New business models, RDI incubation	Digital I4.0 networks

Tasks ahead of I4.0 NTP

- Evaluate the national I4.0 survey in detail
- Elaborate the national I4.0 roadmap
 - Qualification system
 - Monitoring system for I4.0 strategy implementation
- Adopt best practice solutions
- Cover all educational aspects of I4.0 which determine the highest priority HR preconditions and implications for its implementation in practice
- Facilitate progress in culture and the change of existing paradigms of thinking
- Formulate recommendations as for developing and applying new business models
 - Especially for SMEs and start-ups
- Define the final legal and organisation form of the Platform
- Harmonise with the EU directive Digital Single Market Strategy for Europe
- **Formalize relationships with similar organizations in the CEE region**



Thanks for your attention!

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