

**Technology Industries
of Finland**

Technology industries is the largest and most important export sector in Finland

- **50%** of total Finnish exports
- **6 billion euros** annual investments in Finland
- **70%** of total private-sector R&D investments
- **317 000** employed directly, indirectly over **670 000**
- Technology Industries of Finland has **1 600** member companies



Technology industries' five sub-sectors



MECHANICAL ENGINEERING

Abloy, Cargotec, Kone, Metso Outotec, Meyer Turku, Normet, Patria, Ponsse, Valmet, Wärtsilä...



INFORMATION TECHNOLOGY

Basware, Bilot, Capgemini, CGI, Digia, Enfo, F-Secure, Fujitsu, Gofore, IBM, Innofactor, Microsoft, Nixu, TietoEVRY...



ELECTRONICS AND ELECTRO-TECHNICAL INDUSTRY

ABB, Ensto, Murata Electronics, Nokia, Planmeca, Polar Electro, Suunto, Vaisala...



CONSULTING ENGINEERING

AFRY, A-Insinöörit, Citec, Elomatic, Etteplan, FCG, Granlund, Neste Engineering, Ramboll, Sitowise, SWECO, WSP...



METALS INDUSTRY

Boliden, Componenta, Luvata, Outokumpu, Ovako, Sacotec, SSAB ...





Technology industries in Finland need

130 000 new employees
within ten years

13 300

annually

50 % growth

50 % retirement

60 %

higher education

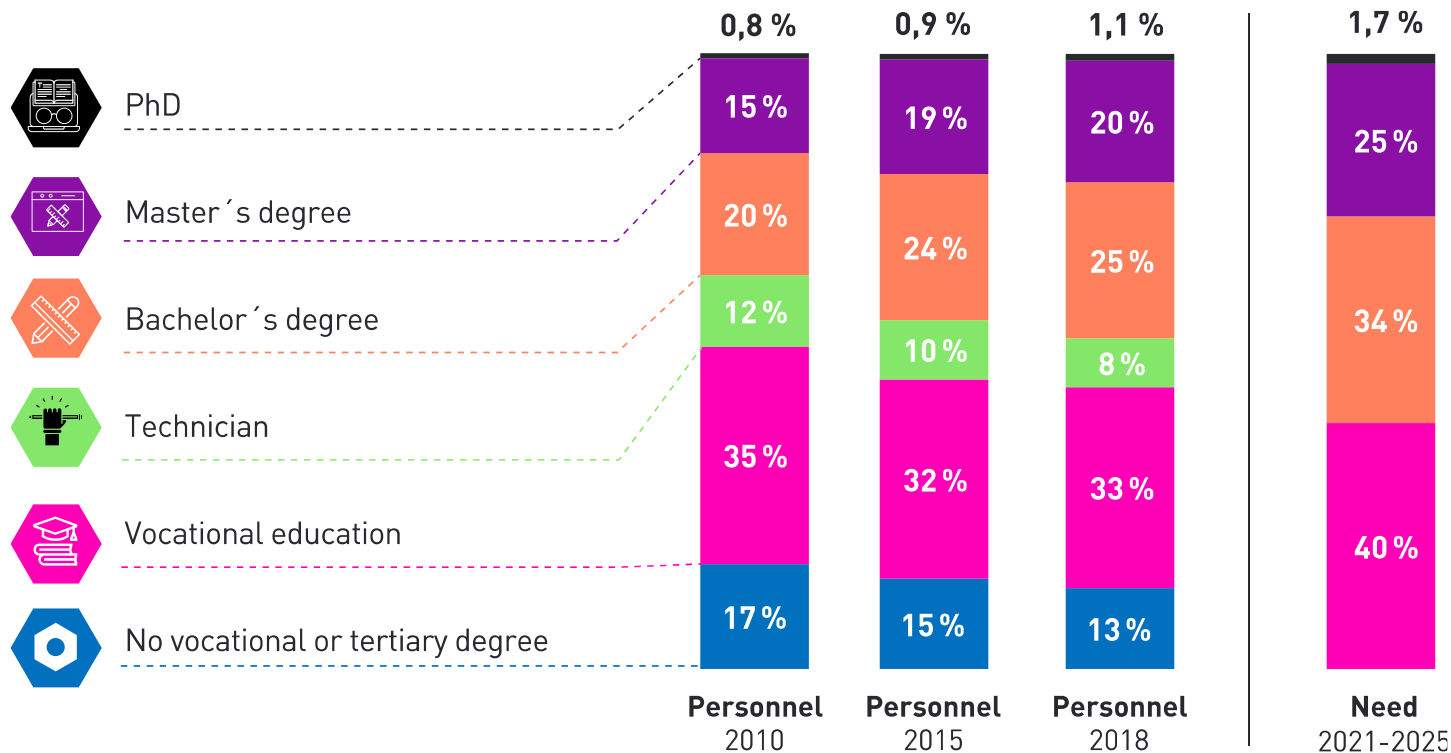
40 %

vocational
training

340 000

personnel
March 2023

Structural change in personnel increases the demand for higher education



3/4 of new employees should have studied technology or ICT



Need: **9700**

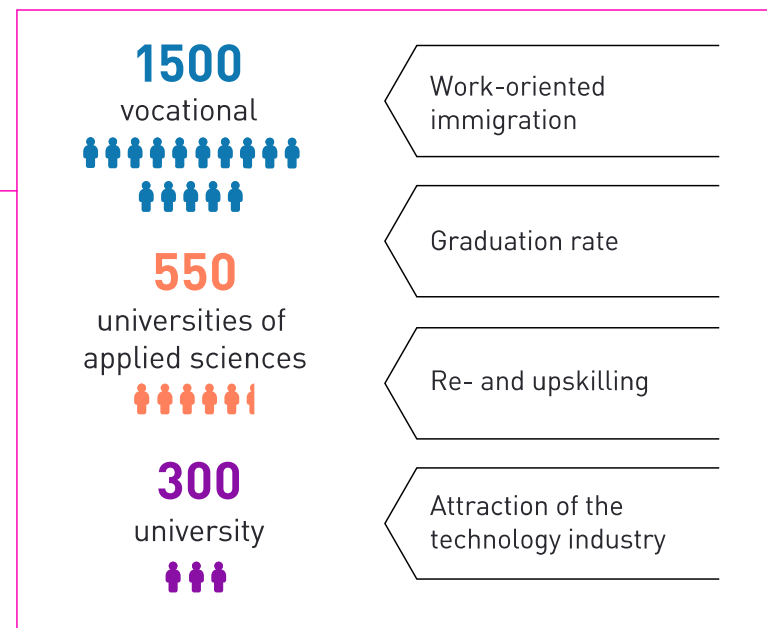


7350

Annual graduates
employed to
technology industries

Gap: **2350**

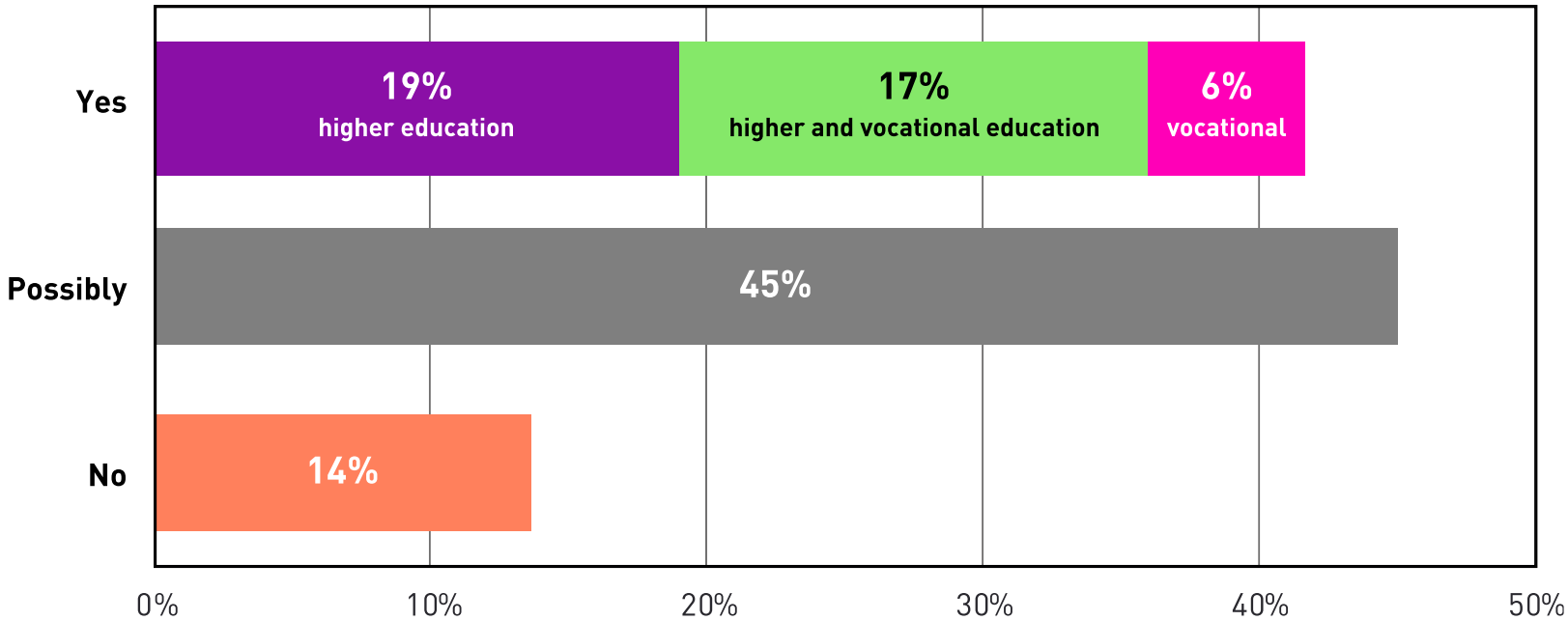
GAP CONSISTS OF:



87 % of companies are interested in hiring international employees during the next four years



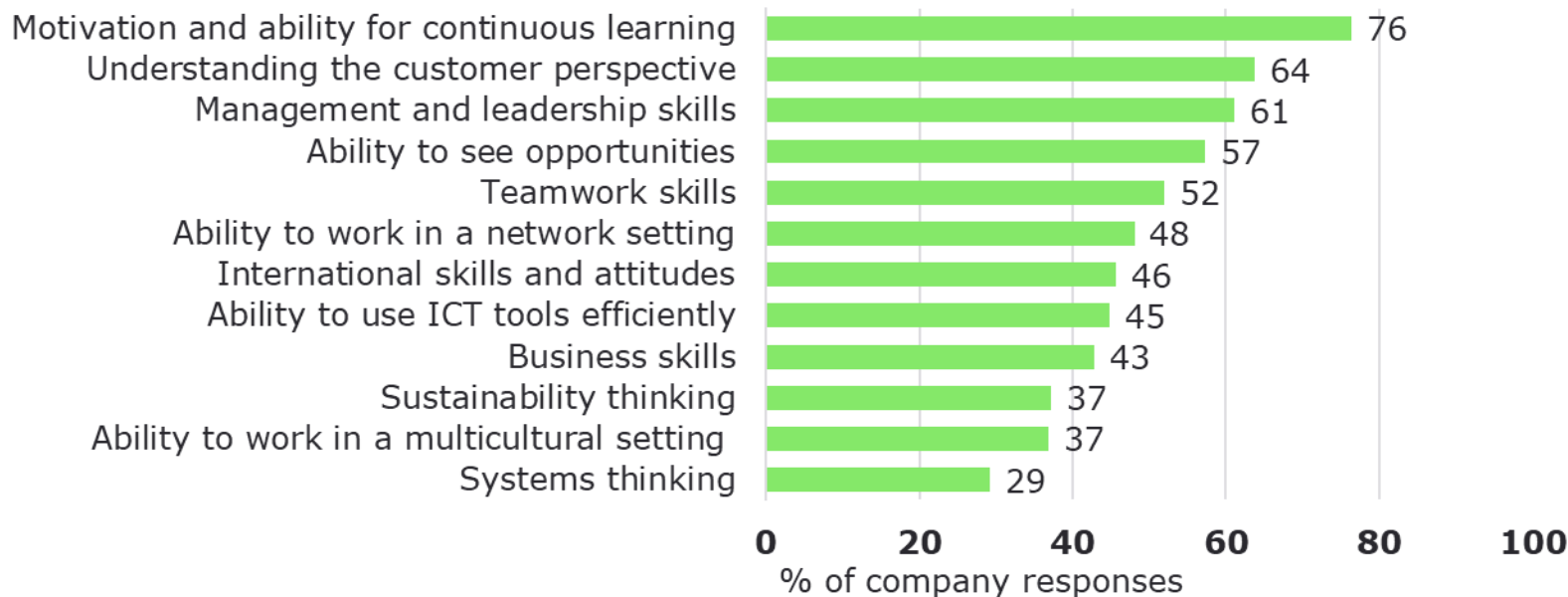
Are you considering to hire international employees within the next four years?



Ability for continuous learning is a key generic competence



Which generic competences will become more important for your business in the coming years?



Digitalisation encompasses a wide range of skills and competences



Business development	Strategic renewal, digital business models, process development, digital enabling green, robotic process automation
Software	Software design, software development, software engineering, programming
Data	Data production and collection, data storage, data warehouses, data analysis and reporting, data management and data architectures
AI	Machine learning, data skills, natural language processing, robotics, supercomputers
Cybersecurity	Processes and technology

Green transition requires both business development competences and technical skills



Business development	Strategic development, change projects, process development, new business models, resource and production management, environmental standards
Low-carbon	Life-cycle thinking, impact assessment, footprint and handprint assesment, electrification, battery technology, energy storage, hydrogen
Circular economy	Business models, life-cycle thinking, engineering design, material and production technology, material flows
Hydrogen technologies	Production processes, hydrogen logistics, fuel cells,, power-to-X, research & consultation

How Skills Pulse was made?



1. An AI tool was used to identify individual skills and competences from job ads of our member companies, and how the skills and competences link to each other to form "skills clusters".
2. Over 300 member companies participated to the crowdsourcing phase. In the crowdsourcing the companies assessed how important these skills and competences are for their business in the coming years. The participants could also add skills and competences that were missing from the AI analysis.
3. The AI was used again to gain insight into what kind of competences are linked to the top competences from the crowdsourcing in open access journals and in thesis work.
4. Companies were also asked to provide an estimate of the net gain or loss in their employees in the coming years. This was added to a statistical estimate of retirees to form an overall estimate of the need for new employees.

Contact us for further information!



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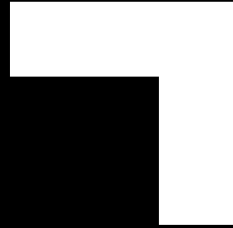
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