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OF TECHNOLOGY**



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# The importance of soft skills of engineers for effective work in modern industry - problems and resistance

Irena Dul

8th Conference Lean Learning Academy

„Lean Management effective not only in manufacturing areas –  
Lean in Office and Knowledge Work”

*„Innovative Learning Approaches for Implementation of Lean Thinking to Enhance Office and Knowledge Work Productivity”*

*25 May 2018, Rzeszow*



# United Technologies in Poland



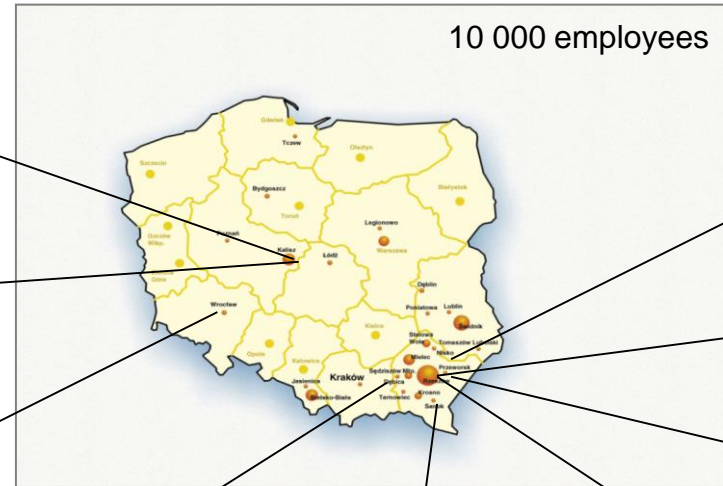
PW Kalisz



UTAS Kalisz



UTAS Wrocław



PWR Rzeszów



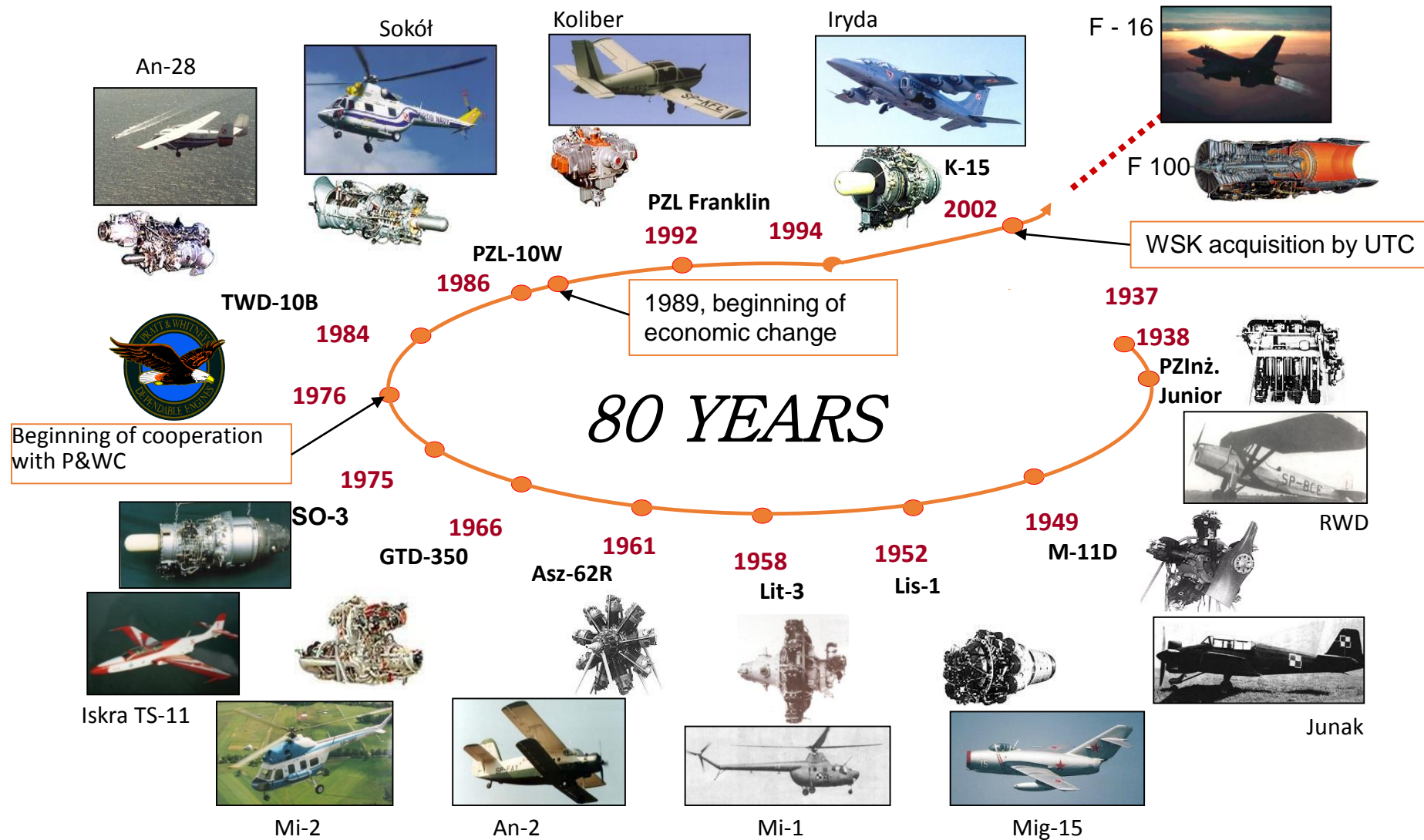
PW Aero Power



UTC F&S Ropczyce



# History of PW Rzeszów



# PWRzeszów Centers of Excellence



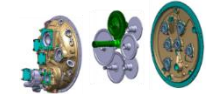
Static structure CoE



Gearbox CoE



APU CoE



R&D Center



PW 800



PW 1000



APS 5000



Test facility



Gulfstream 500



Airbus 320 Neo



Boeing 787 Dreamliner





# Expertise



## PWR manufacturing expertise

### Static Structure Center of Excellence

### Gearbox Center of Excellence



Laser drilling



High Performance Machining



Welding



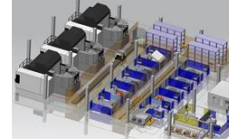
Coatings



Sheet metal assy



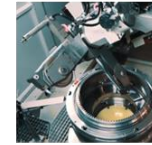
Forming



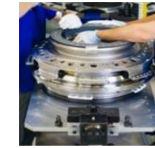
Advanced Manufacturing Cells



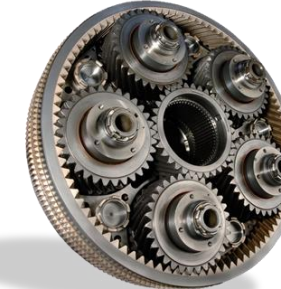
Robotization



High Precision Gears Manufacturing



Assembly



Copper coating



Superfinish methods

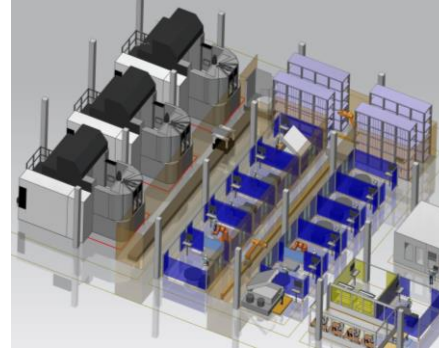


Vacuum carburizing

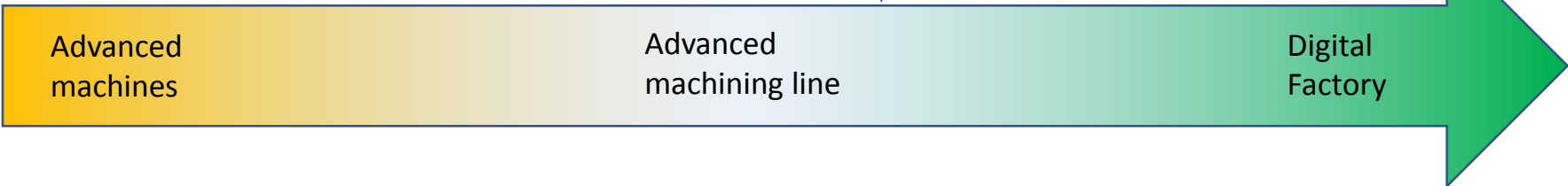




# Transformation of the production



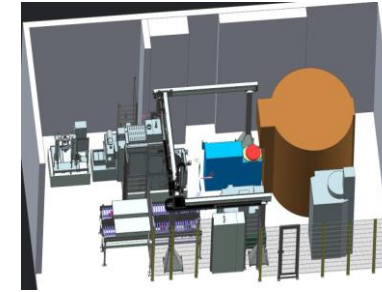
PWR



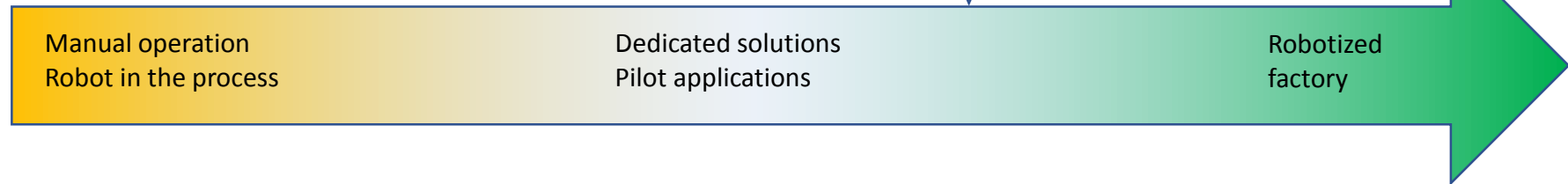
6



# Transformation of the production



PWR



7





# Transformation of the engineers



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BUREAUCRAT  
PAPER WORK  
WORKS REACTIVITY  
WORKS TEMPLATE  
MAKES DECISIONS INTUITIVE

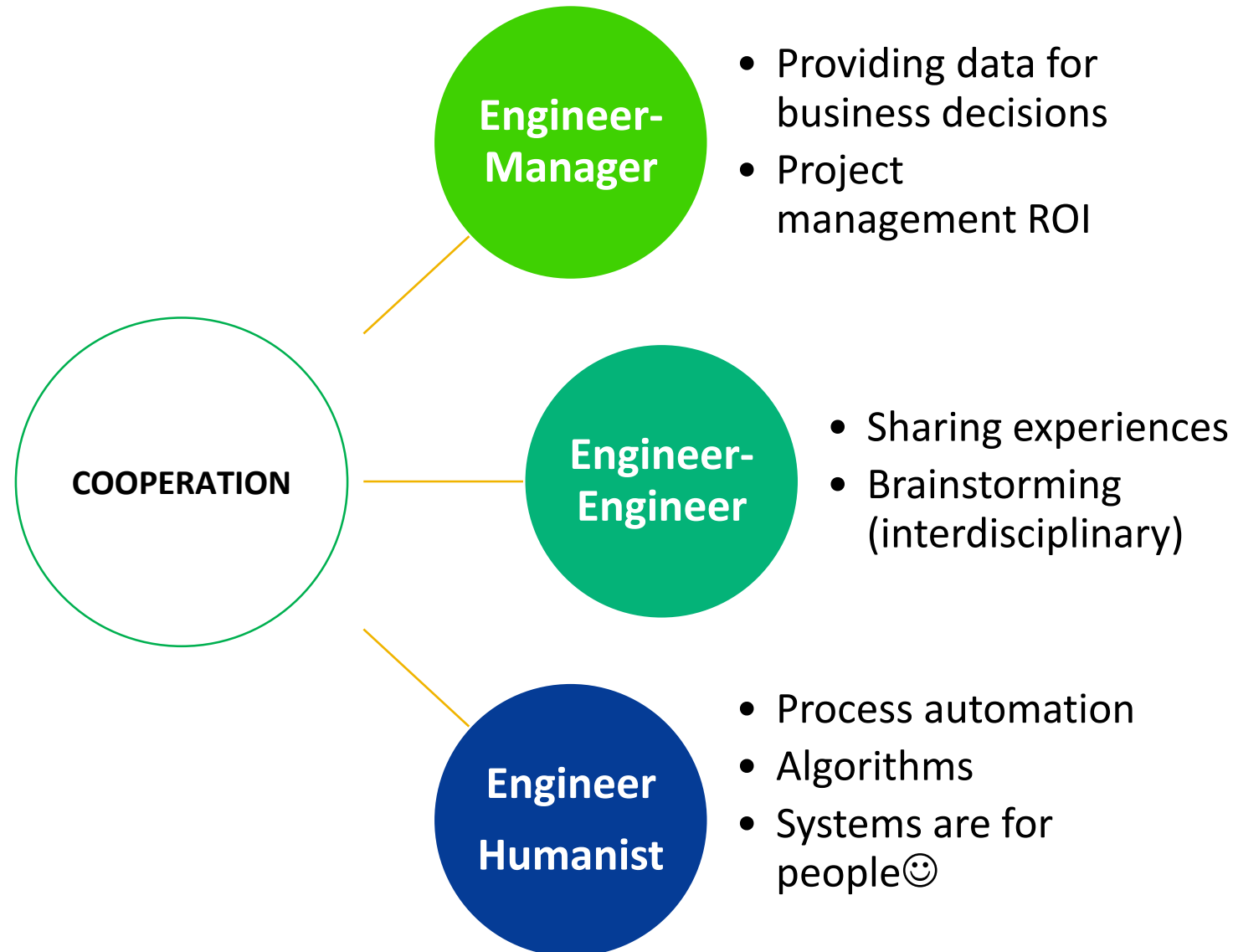


CREATOR  
CURRENT IN IT TOOLS  
WORKS PROACTIVE  
INNOVATOR  
MAKES DECISIONS ON THE BASIC





# Transformation of the engineers



# Transformation of the engineers



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- Technological revolution in Industry 4.0
- The essence and application of new technologies



- Way of implementing projects
- Troubleshooting
- Connections between stakeholders in processes



- The need to develop non-engineering skills, so-called "soft" skills

**„Analfabetami XXI wieku nie będą ci, którzy nie znają Excela lub nie potrafią programować, ale ci, którzy nie potrafią uczyć się nowych rzeczy i oduczać starych”.**

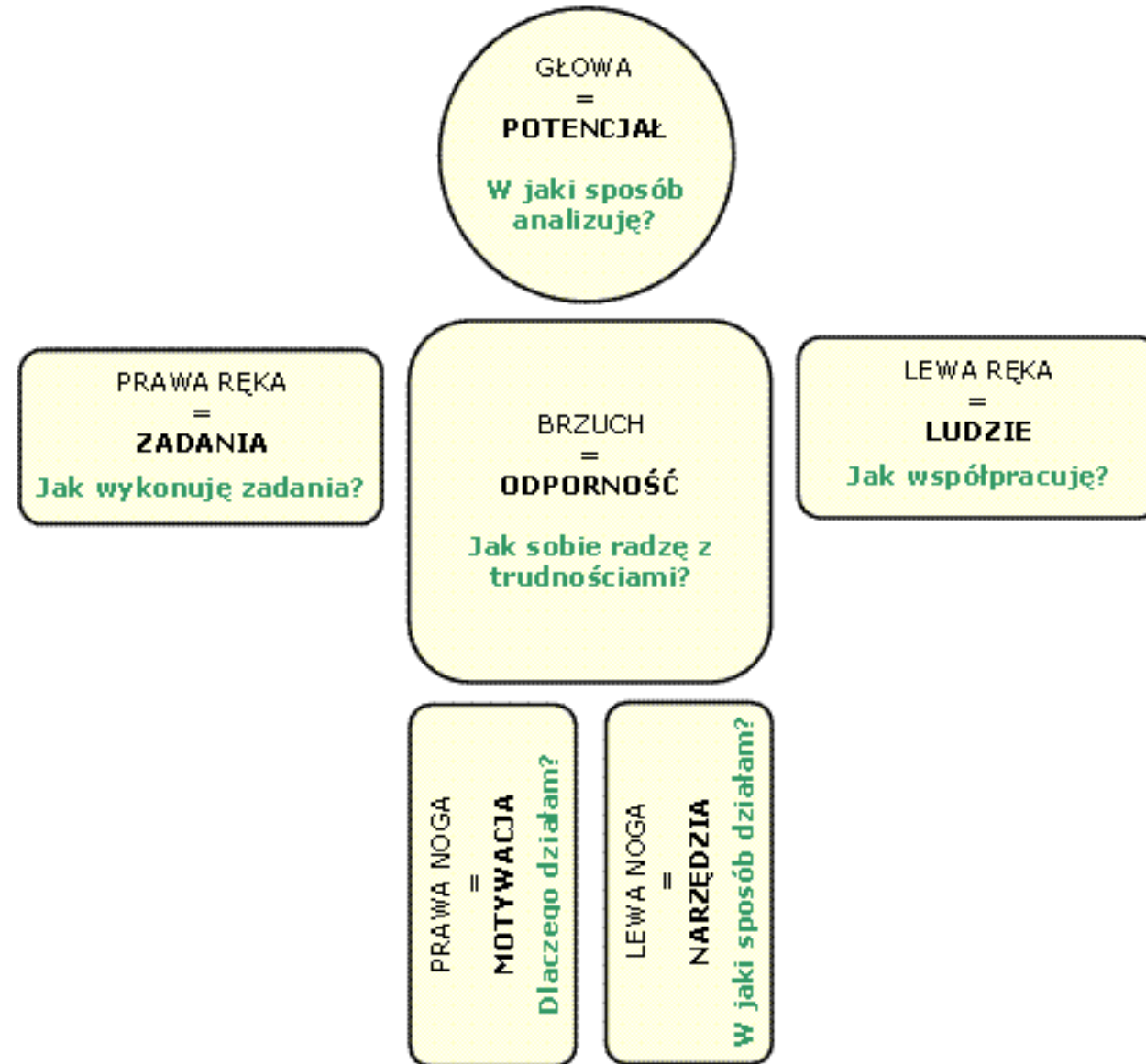
Alvin Toffler, *Trzecia fala*

Źródło: Kontekst HR

8th Conference Lean Learning Academy „Lean Management effective not only in manufacturing areas – Lean in Office and Knowledge Work”

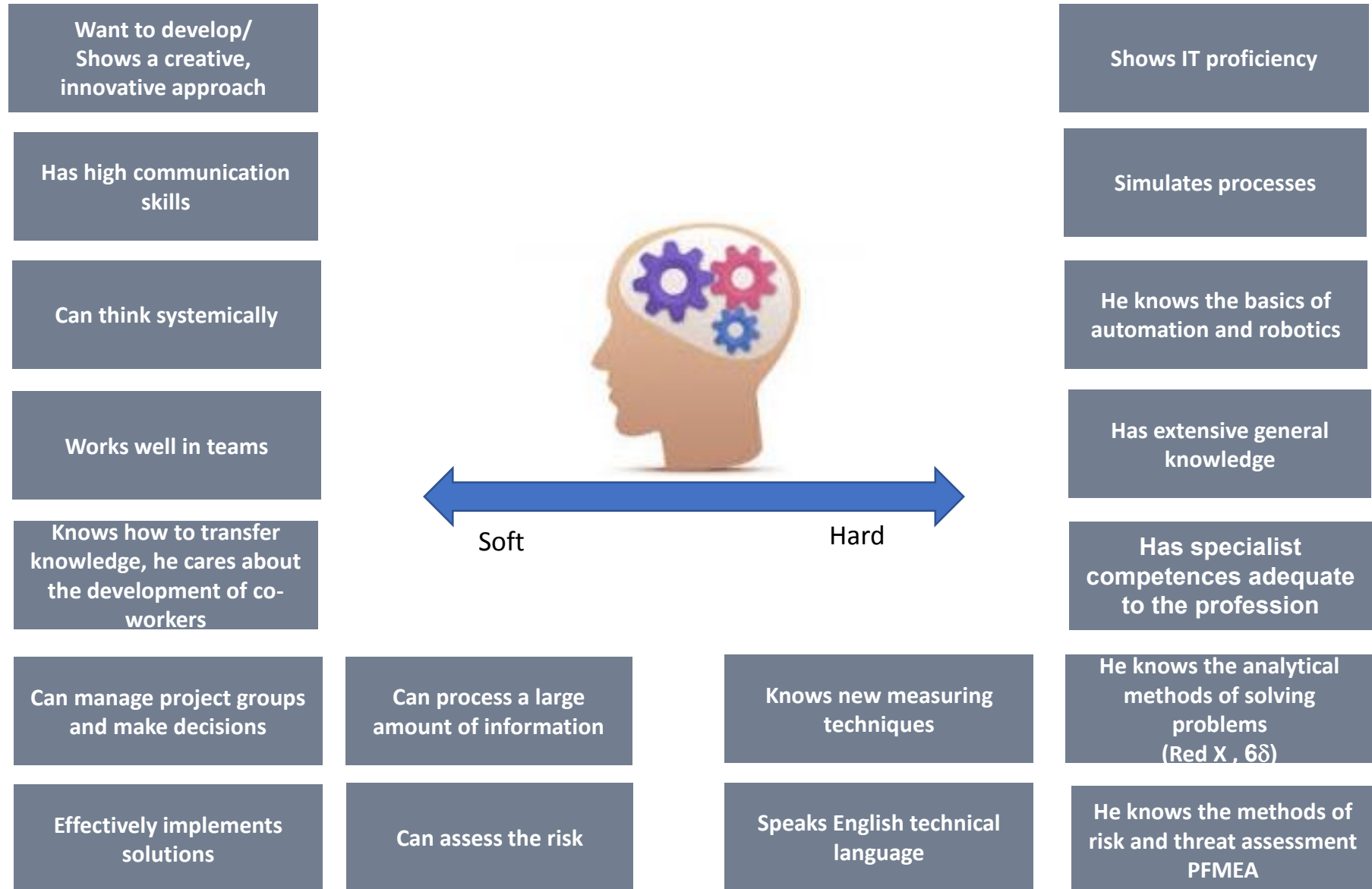


# Soft Competencies





# Competencies







# Problems



He knows the methods of risk and threat assessment

**Has high communication skills**

**Can think systemically**

Works well in teams

**Knows how to transfer knowledge, he cares about the development of co-workers**

**Can manage project groups and make decisions**

Effectively implements solutions

Can process a large amount of information

Can assess the risk



Knows new measuring techniques

Speaks English technical language

Shows IT proficiency

Simulates processes

**He knows the basics of automation and robotics**

Has extensive general knowledge

**Has specialist competences adequate to the profession**

**He knows the analytical methods of solving problems (Red X, 6σ)**

He knows the methods of risk and threat assessment PFMEA



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# Thank you for your attention!

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14