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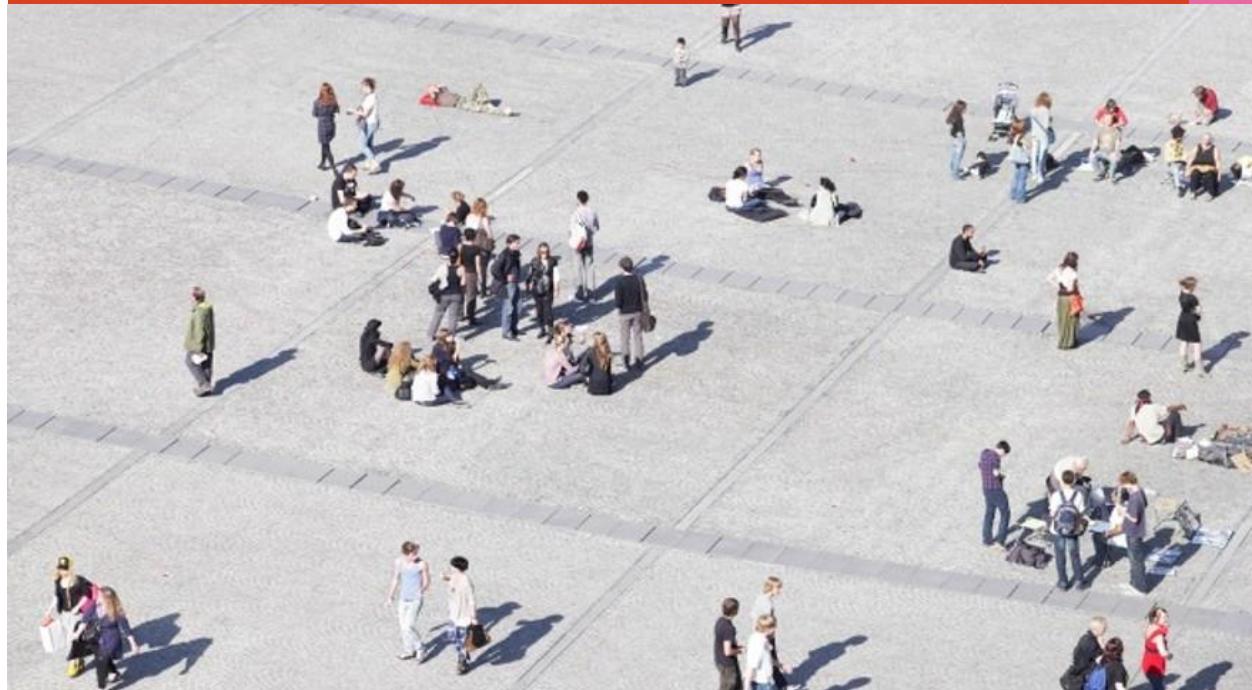
*Directorate-General
Internal Market,
Industry,
Entrepreneurship and
SMEs (DG GROW)*

Leadership skills for KETs

Towards an agenda for 2020 and beyond

**HIGH-TECH AND LEADERSHIP SKILLS FOR EUROPE
CONFERENCE**

Brussels, 26 January 2017



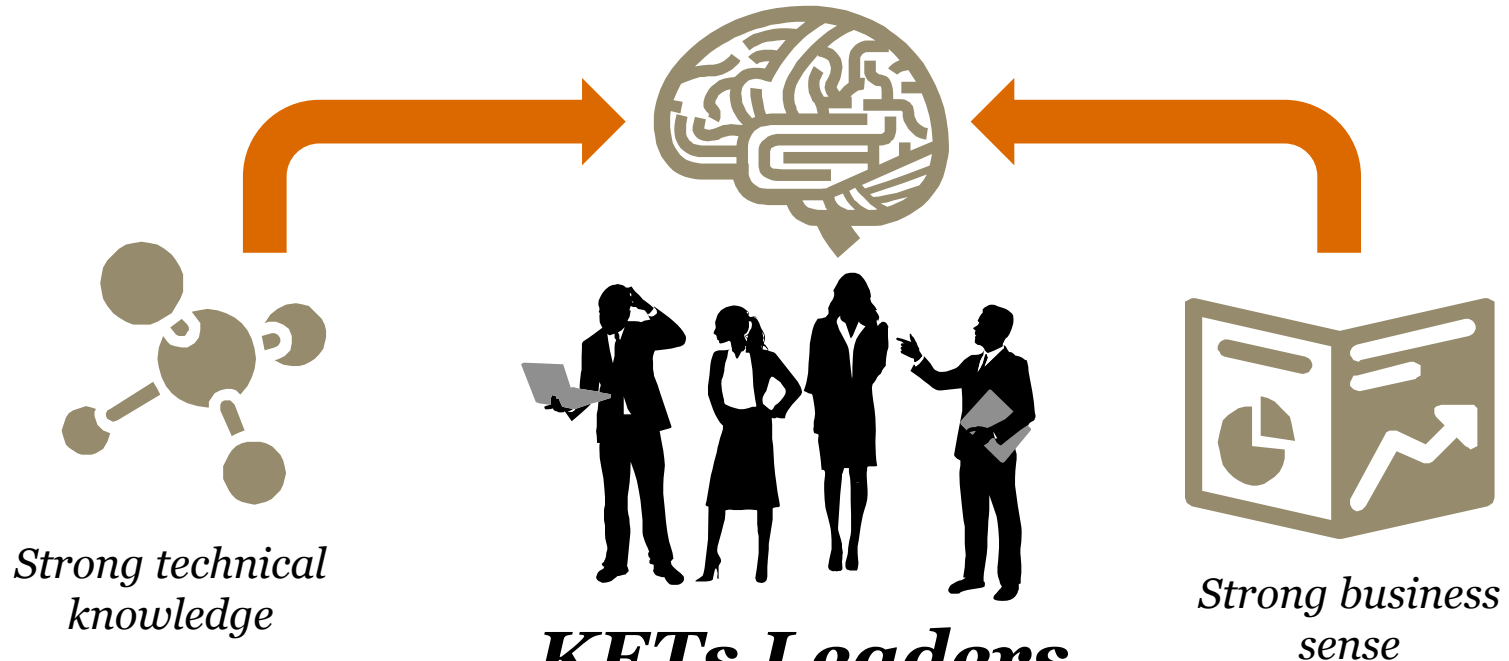
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*Dr. Kristina Dervojeda, Innovation &
Development Group, PwC NL*

1. Leadership skills for KETs: the essence

Key components

Strategic vision, ability to connect the unconnectable



KETs Leaders

Visionaries and innovators

Leaders of companies, business divisions, departments or even teams -> innovation drivers within KETs

1 Technical

2 Quality, risk & safety

3 Management

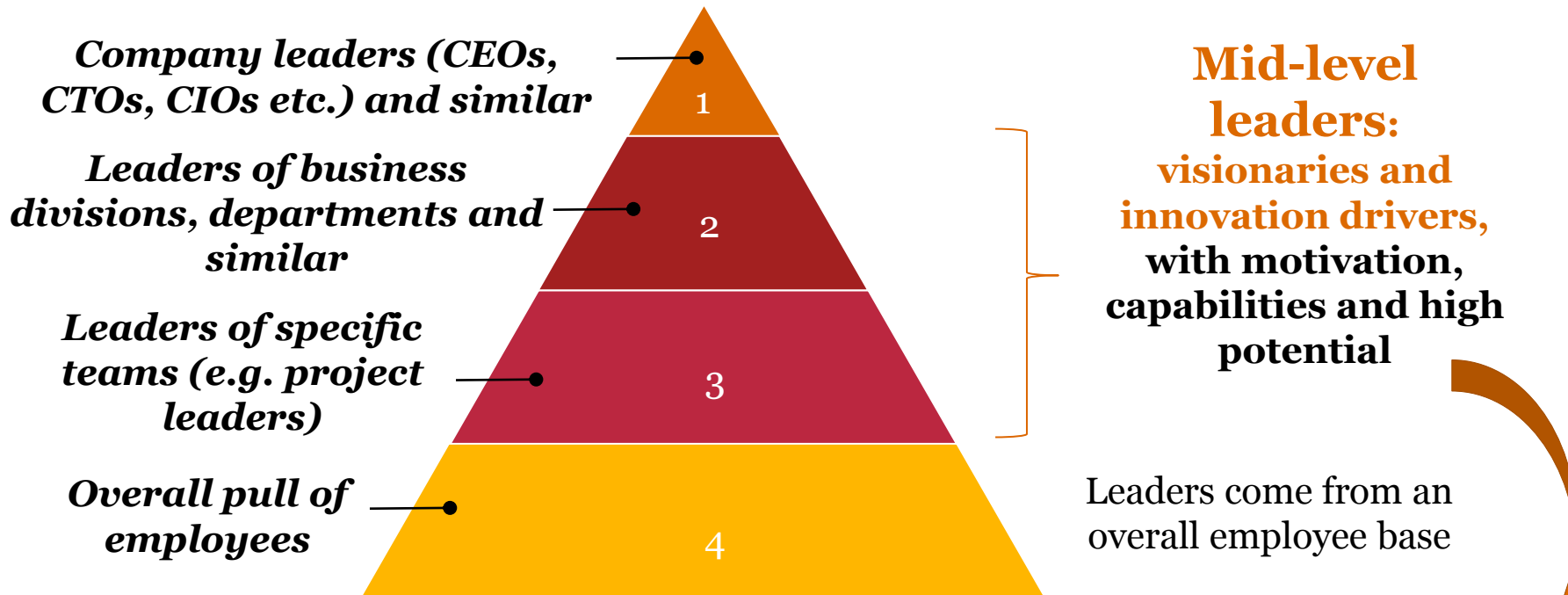
4 Communication

5 Innovation

6 Emotional intelligence

1. Leadership skills for KETs: key challenges

Leaders can be found at different levels:



Key missing element: **combination of technical, business and strategic skills of mid-level leaders**

- New generation of leaders is needed, able to **connect previously unconnected fields; creating and serving new markets**

3. Key directions for action

New approaches for education and on-the-job training

Measures related to the *educational processes* before entering the job market

Measures related to advancing the workforce '*on the job*'

Redesigning curricula to stimulate multidisciplinary orientation and entrepreneurial agility



Two distinctive but *interrelated* directions for action



Maximising the exposure of the workforce to relevant job experiences

What can be done to tackle the challenges?

4. Suggestions for future policies/initiatives

Stimulating technological and non-technological multidisciplinary in education



Future policy actions/joint stakeholder initiatives need to address:



Training **entrepreneurial alertness**



Training **entrepreneurial adaptability**



Applying **challenge-driven** university model



Training **continuous experimentation and the ability to thrive on failures**



Embedding **non-technical courses in technical curricula**



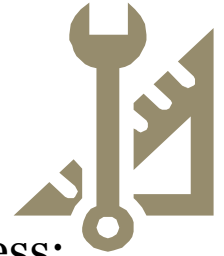
Training **integration skills and management of collective problem solving**



Cultivating **technical multidisciplinary in education** (T-shaped engineers)

4. *Suggestions for future policies/initiatives*

Stimulating technological and non-technological **multidisciplinary on the job**



Future policy actions/joint stakeholder initiatives need to address:



Mobility between KETs* ('smart' team composition)



Mobility between academia and industry (creating open eco-systems where industry and academia can work together on specific projects)



Mobility along the KETs value chain (e.g. by integrating research and production in one facility)



Mobility between KETs and application areas (e.g. partnering with companies from the application domain)



Redesign of internal company processes (e.g. (semi-)autonomous teams; dedicated time for 'free-style' innovation etc.)

...

5. *Good practice examples*

Stimulating technological and non-technological multidisciplinary **in education**

- ‘Challenge-driven’ university model

- replicates real-world situations in the classroom;
- Students get challenges for which there are no established answers (**focus on questions rather than answers**)

‘Engineering for People Design Challenge’ :

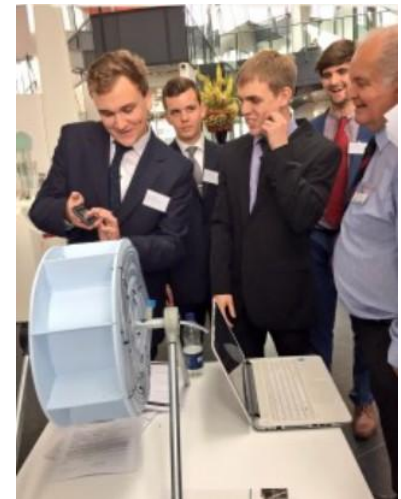
inter-university design competition encouraging students to work in multidisciplinary teams, to address a real life and complex engineering challenge

More than 15,000 students since 2011

94% report improved skills in engineering design cycle

91% report improved creativity and team work skills

88% report improved communication skills



5. *Good practice examples*

Stimulating technological and non-technological multidisciplinary **on the job**

FESTO

Short description:

Providing higher education institutes and companies with access to the technology and applications of Industry 4.0. Includes facility networking, PLC programming, drive technology, sensor technology, safety technology, robotics, assembly, as well as value stream analysis and optimisation.

Coordinator:

Festo Didactic (privately funded), facilities in Germany, USA, Italy, China

Target group:

Industry, educational institutions

Relevance to leadership skills for KETs:

Focusing on advancing digital savviness in manufacturing workers; not explicitly targeted at executive and management level.



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