

# Educating the Engineer for the 21<sup>st</sup> Century

Developing Personal Skills to be a  
Successful Global Engineer

The Young Entrepreneurs Experience

*Bernold Richerzhagen*

# Personal Background

- *Maschinenbau* at RWTH Aachen (85-89)
- PhD at EPFL Lausanne in *Microtechnique*,  
Invention: the water jet guided laser (90-94)
- Transfer of invention/technology to private  
company, Engineering Office (95)
- Participation on Swiss federal development  
program “CTI start-up” (96)
- Foundation of 2<sup>nd</sup> company: Synova S.A. for  
commercialisation of the invention (97-)

# What is a Successful Global Engineer?

What is a successful global engineer-entrepreneur?

- An engineer who creates a viable commercial activity.

It's a long road to become a successful entrepreneur.

The creation of a company is one of the highest challenges.

# Motives to become an entrepreneur

- To CREATE
- To CHANGE

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- *Modesty*
- *Optimism*
- *Perseverance/Tenacity*
- *Patience*
- *Creativity*
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## *Technical Knowledge and Methods*

What should be improved?

- Study is sometimes too specific ⇔ General Study
- Teaching of definitions ⇔ more methods
- Curriculum not compatible with the Industry ⇔ redefinition
- Too long ⇔ more flexible exam rules
- Disorientation of Today's School Graduates ⇔ help in orientation
- Imparting of knowledge ⇔ Pedagogical Methods <sub>20</sub>

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# The role of young entrepreneurs in our society

Investment in new business and supporting start-up companies leads to the creation of employment

# Contribution by the University

- Modify the curriculum so that it is relevant to today's industry (general study, more methods)
- Improve the pedagogic capacities
- Shorten the study length, change the exam rules
- Require a short practice for manual skills
- Integrate company visits on regular basis
- Promote the health of the students by offering a better sport program
- Teach basic knowledge of economics by presenting real cases of the industry

# Conclusion

If we want to get more successful global engineers we have to modernize the University.