

Bologna Process
Employability
Luxembourg 6-7.11.2008

Company Presentation

- Development and Production of Electronic Sensors
- 1990: Company startup with 5 employees in Luxembourg
- 2008: 1500 employees world-wide (EU, US, ASIA)
- More than 10% of turnover spent for R&D
- 300 engineers and scientists in R&D
- Most of them Master, 10% PhDs, FH ÷
- 23 different citizenships, multidisciplinary teams
- Electronics, Software, Physics, Chemistry, Mathematics, ÷
- Many Research Collaborations (not limited to EU)
- PhD candidates make thesis within IEE

Environment

- Globalization: Customers and competitors are multinational
- Fast changing state of the art, especially in Electronics
- Very short development cycles
- More functionality expected from components
- Complexity of systems is increasing
- Quality standards become more severe
- Product prices are decreasing
- Globalization means: Competing with the Best world-wide !

Major obstacles to doctoral thesis

- Not enough qualified and motivated candidates for PhD
- Number of research topics is much higher than number of candidates
- Qualified Engineers and Scientists are missing in EU
- Legal hurdles for non-EU candidates are too high
- No EU-wide systematic coordination to find good PhD candidates
- Delays make it difficult to catch up with fast changing topics
- Target oriented, structured thinking is missing
- Methodology to handle complexity is unknown

Wanted

- Scientists and Electronics or Software Engineers
- Master degree or higher
- Interested in their specific \pm Science \pm (no high-flyers)
- Solid theoretical background and understanding
- Sense for reality and ability to link theory to reality
- Ability to manage complexity with methodology
- Mathematical Model based thinking
- Systematic design of experiments (DoE)
- \pm Think first (but not for ever) then do it right \pm approach

Public Research

- Academic view: Research aims at creating new knowledge
- Economic view: Research aims at creating innovative products
- Benchmark to find best collaboration partners world-wide
- Existing IPR is important part of the evaluation
- Advance on company's own knowledge decides
- Not limited to local or regional universities, only excellence counts
- Public Research must be ahead of industry !
- Universities must protect IP for EU economies !
- More start-up companies expected out of Public Research !

Summary

- Globalization means competing with the best world-wide
- Economy needs high-level Masters and PhDs
- Future economic needs have to be evaluated and communicated
- Teaching must be adapted to future economic needs
- Public Research must be ahead of industry

Remark

- The real economy will suffer severe restrictions due to the crisis
- Public Research must increase efforts to become more competitive