



## All Division 5 World Conference

Forest Products and Environment -  
A Productive Symbiosis

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# Current Changes in Higher Education for the European Wood Industry



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Taipei  
29.10. - 2.11.2007

Higher Education  
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Wood Industry

## Content

1. General Trends in Europe
2. Situation and needs in the wood sector
3. Summary and conclusions

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# Today's situation

- ⇒ Higher education in Europe currently undergoes the most dramatic changes since the emergence of modern universities.
- ⇒ Driving forces:
  - Increasing rate of technical development
  - Globalization (harmonization of educational systems)
  - Social changes
- ⇒ European politics react with two action plans:
  - Lisbon Agenda (2000)
  - Bologna Declaration (1999)



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## Lisbon Agenda (I)

- ⇒ Reaction on the fact that EU (like other regions of the world) has developed to a knowledge-based economy and society
  - ⇒ Within EU: 30% of existing jobs (50% of new jobs) are in the knowledge intensive sectors
- ⇒ Aim stated in Lisbon Agenda:  
*"Make Europe, by 2010, the most competitive and the most dynamic knowledge-based economy in the world".*





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## Lisbon Agenda (II)

- ⇒ Universities play a key role in Lisbon process:
  - Generate and transfer knowledge
  - Education / training
  - Regional and local development
- ⇒ 34% of European researchers are at Universities (Greece: 70%, Germany: 26%)
- ⇒ Fundamental research: 80% at Universities
- ⇒ 4000 universities/colleges in EU-25 (17 Mio. students)
- ⇒ Organization on national or regional level  
⇒ Heterogeneity of structures, conditions and degrees





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## Bologna declaration

- ≡ Aim (among others): Make degrees comparable / transferable between countries
- ≡ Expected effects:
  - Improve flexibility in designing individual qualifications (B.Sc. in *mechanical engineering*, M.Sc. in *wood technology*, or vice versa)
  - Improve mobility within EU
  - Shorten duration of studies for majority
  - Approximate universities and technical colleges
- ≡ Transitional problems: Uncertainty among employers
- ≡ Bologna declaration provides framework, with considerable flexibility on national and regional level.



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# Challenges (I) for tomorrow's colleges and universities



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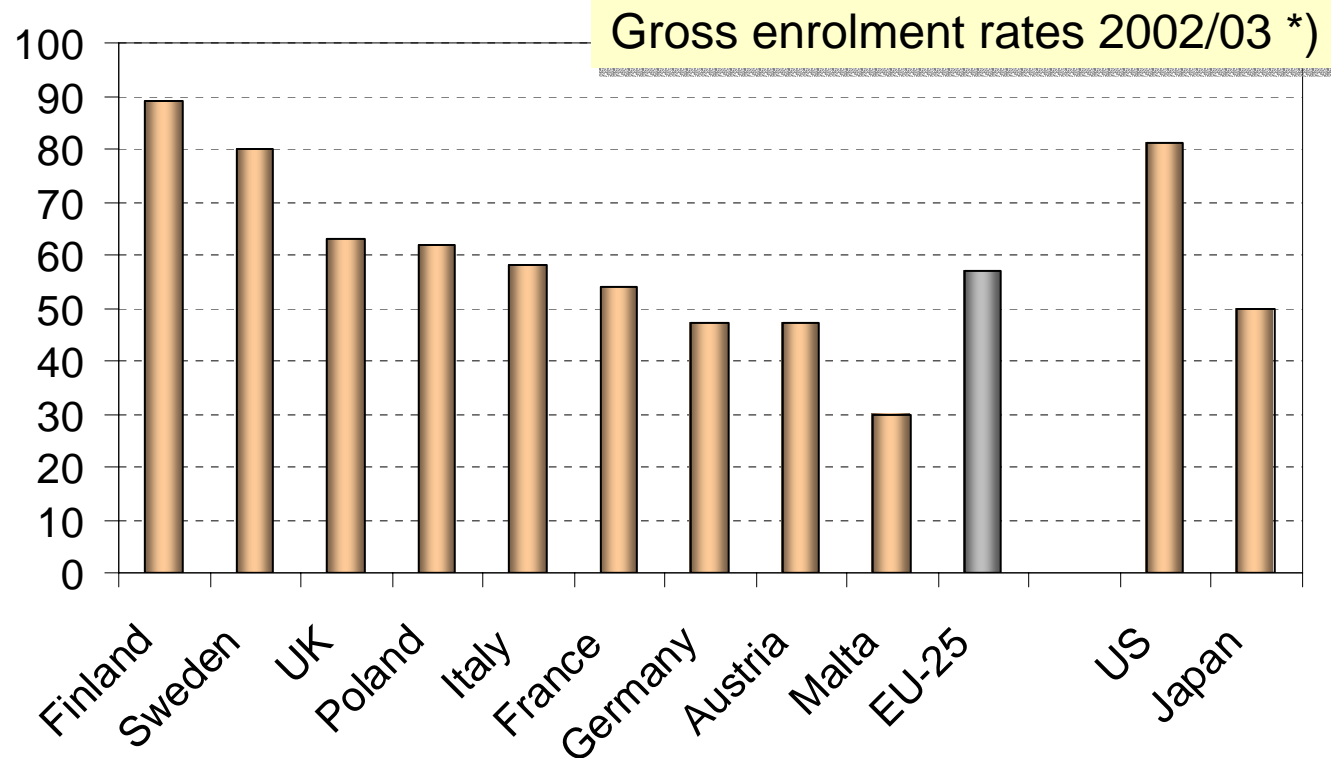
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# Challenges (I)

## Increasing demand on tertiary education

- Traditional programs (full-time enrollment)



\*) All students on tertiary level in percent of 20 to 24 year olds.  
Source: Eurostat 2005

⇒ Increase in many countries expected





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# Challenges (I)

## Increasing demand on tertiary education

- Traditional programs (full-time enrollment)
- Life-long learning (continuing education)

### Enrolment rates

	EU 25	US
35-39 year olds	1.8 %	4.9 %

Source: Winckler 2007

But: Limited human and financial resources



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## Challenges (II)

### Competition (national level) on ...

- Students
- Excellent scientists
- Industry partners
- Public funding



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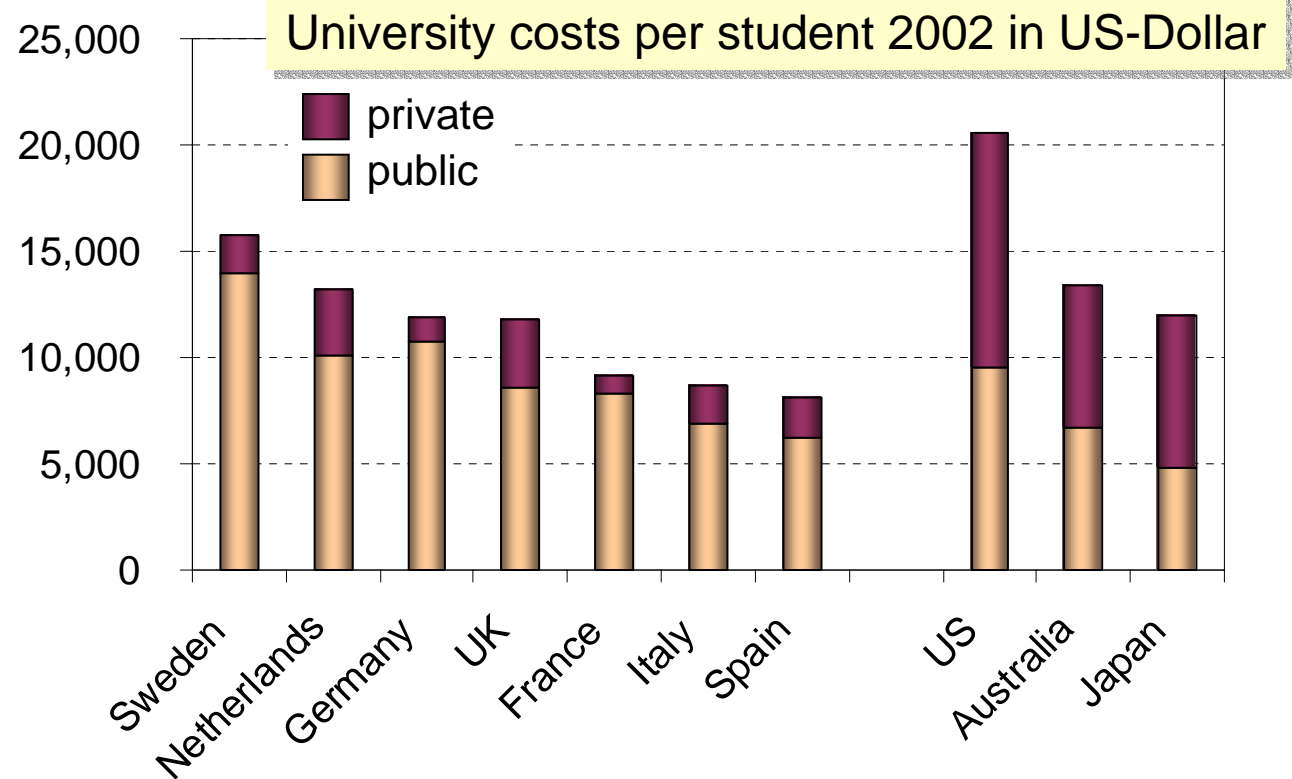
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## Challenges (III)

### Internationalization of research and education

- Competition on international level



Source: *Education at a glance - OECD Indicators 2005 (refined)*



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# Challenges (IV)

## Reorganization of knowledge

- Diversification and specialization (scientists, programs)
  - Interdisciplinary approaches
  - Softening boundaries between fundamental and applied research ("*anwendungsbezogene Grundlagenforschung*")
- } opposing developments



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## Profiling of programs (I)

- ≡ Programs have to orient on demand, not on historically grounded structures.
  - ⇒ Not all universities have taken this chance when restructuring their programs in recent years.



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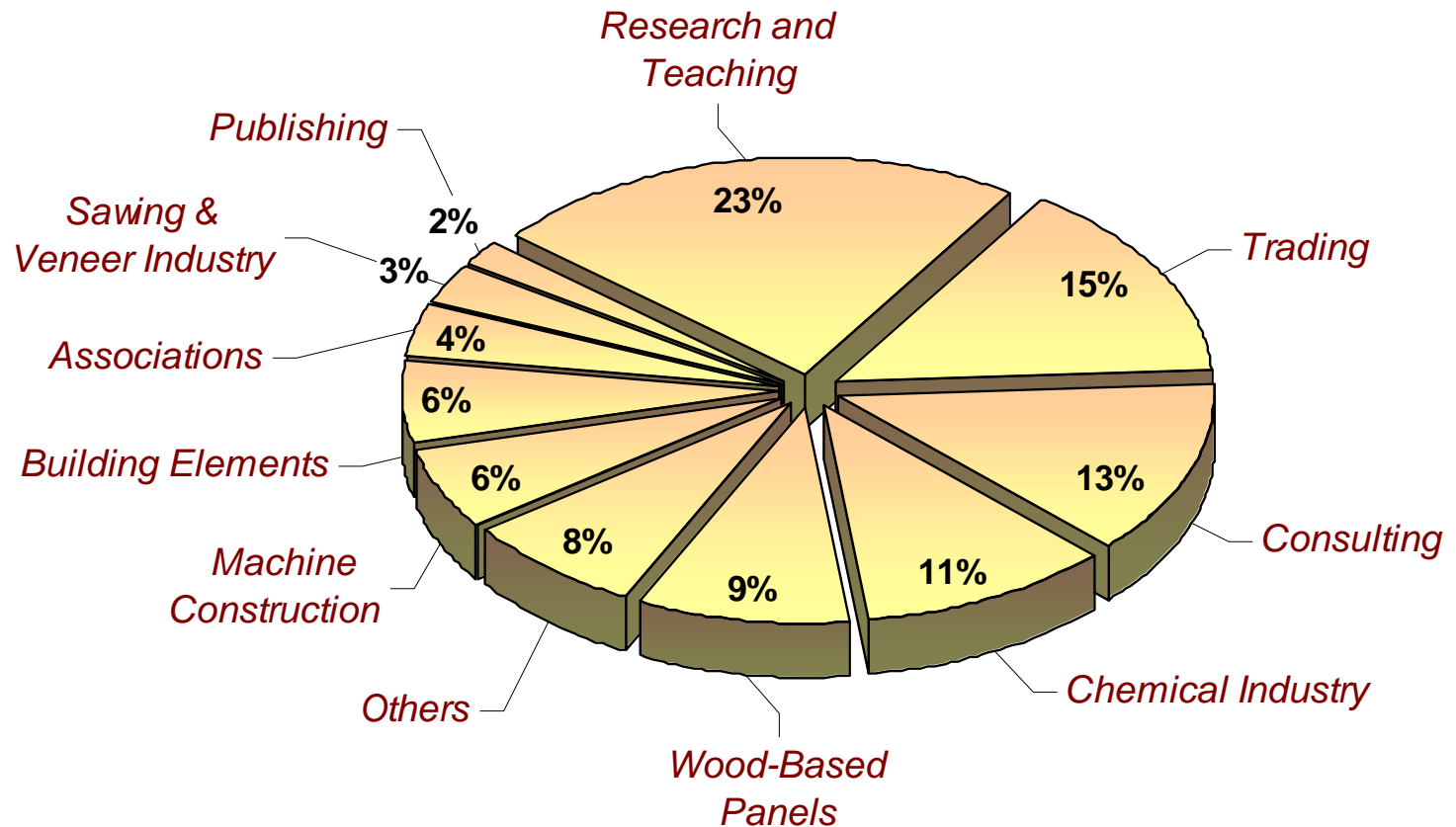
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## Profiling of programs (II)

- Challenge: Programs have to suit a variety of different occupations

Example: Graduates in *Wood Science and Technology*  
from Hamburg University





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## Profiling of programs (III)

### ≡ Diversification:

- Wood technology & wood based materials
- Processes & manufacturing
- Products & product design
- Forest products economics & marketing

⇒ One university cannot cover everything





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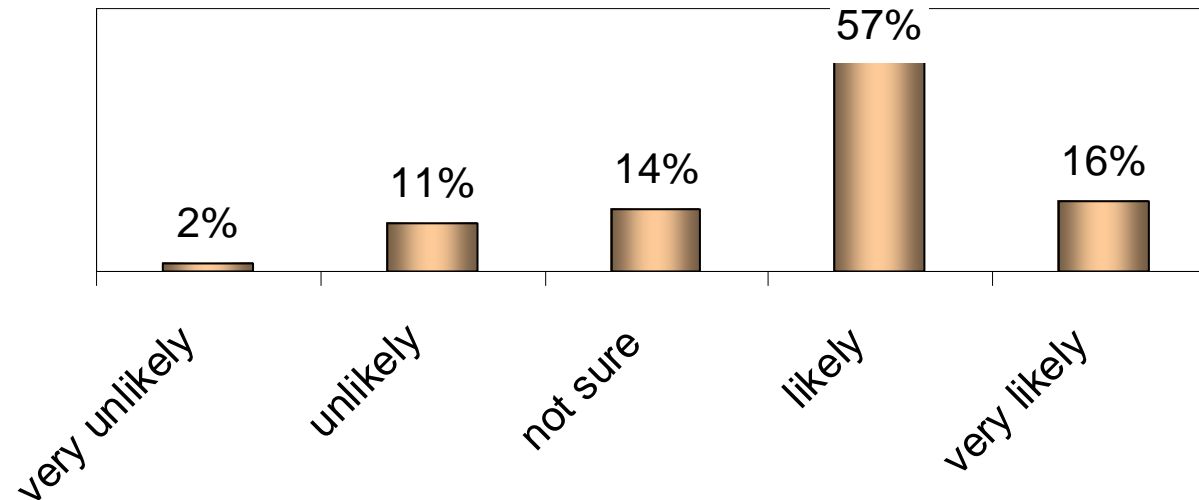
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## Life-long learning (I)

≡ Delphi Study on the German wood industry sector 2020

Question: Will life-long learning become an important task for the wood industry?



Source: *Knauf and Fruehwald 2004*

Method: *More than 500 experts*

*3 stages (questionnaires and interviews)*



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## Life-long learning (II)

- ⇒ Backlog for universities in the wood sector
- ⇒ Types of courses
  - Short courses (days or weeks)
  - Part-time masters (avocational)
  - Full-time masters
- ⇒ New financing schemes required (employees, employer, scholarships, loans)



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# International co-operations

## Options

- ⇒ Exchange activities under the Life-Long Learning (ERASMUS) program of the European Commission
- ⇒ Joint programs (Dual master, ERASMUS Mundus)
  - ⇒ Motivation: Bundle key competences of several universities, learn from best experts in the field
- ⇒ Student mobility & teaching mobility



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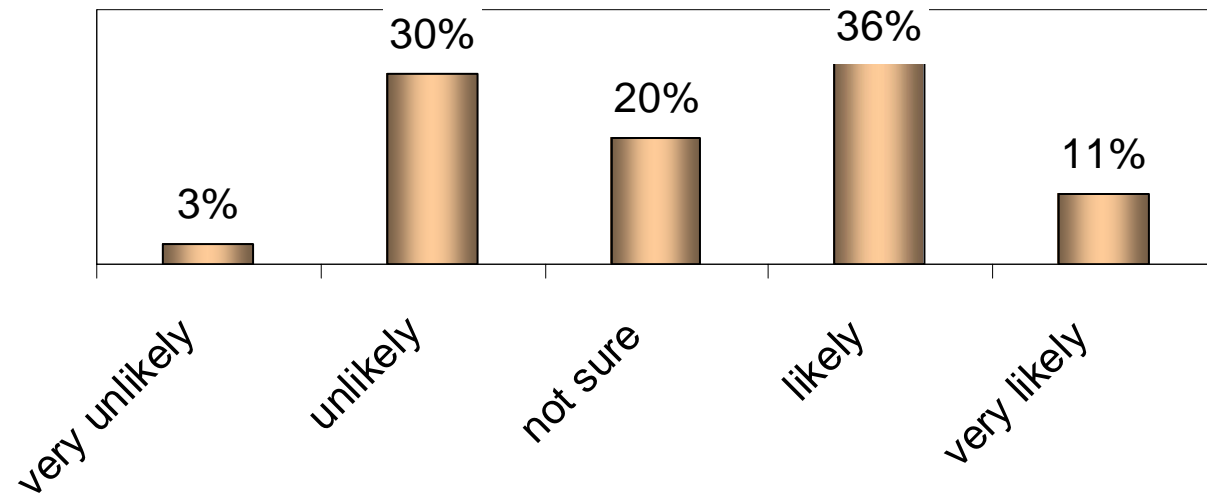


## Image of wood-related programs (I)

### ≡ War of talents

- EU survey of education, training and skills in and around the wood sector: *"European woodworking sector is not attractive for careers."*
- Delphi Study on the German wood industry sector 2020

Question: Do professionally trained people prefer other sectors than the wood industry?



Source: Knauf and Fruehwald 2004



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## Image of wood-related programs (II)

- ≡ Strategies to improve image
  - Adapt/improve content of programs
  - Provide state-of-the-art methods and facilities
  - Include mobility elements
  - Excellence programs
  - Professional PR (internet, brochures)
  
- ≡ It is much easier to improve the image of a program than of a sector.



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## Summary and conclusions

- ≡ Tertiary education in Europe currently undergoes dramatic changes.
- ≡ There is an increasing demand on college and university education, but limited resources.
- ≡ Existing and new programs have to be adapted to meet today's and tomorrow's needs.
- ≡ Life-long learning programs are needed. This requires new ways of thinking from ...
  - Universities and colleges
  - Workers
  - Employers
- ≡ Competitiveness has increased on ...
  - National level
  - International level
- ≡ Image of wood-related programs has to be actively improved.
- ≡ A better EU-wide coordination of programs and activities is required in the wood sector.