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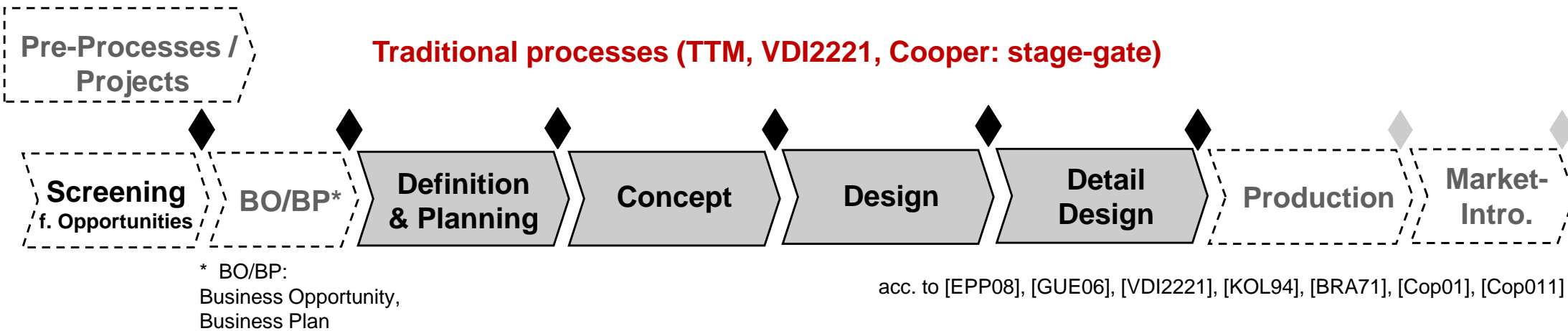
# New insights on industry processes through engineering design students' analysis



Marc NUTZMANN, Markus VOß, Thorsten SAUER and Hulusi BOZKURT

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# Integrative Processes and Models in Design and Development

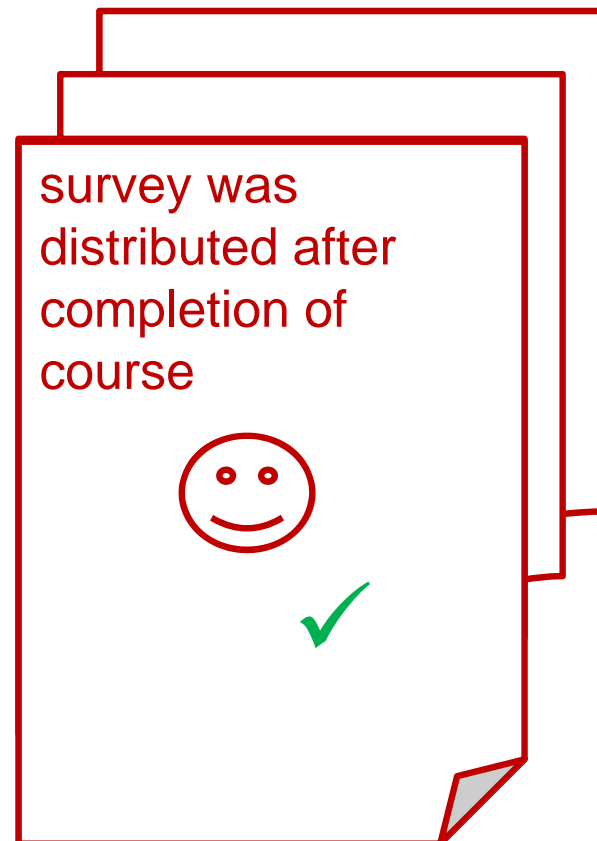


## Integrative and alternative processes and models:

- **Integrated PDD** (multidisciplinary teams, process orientation, customer integration)
- **Agile Project Management / Scrum**
- **Design Thinking**
- **Open Innovation / Crowd Sourcing**
- **Business Model Innovation**
- **Life cycle management and sustainable engineering**

## The survey

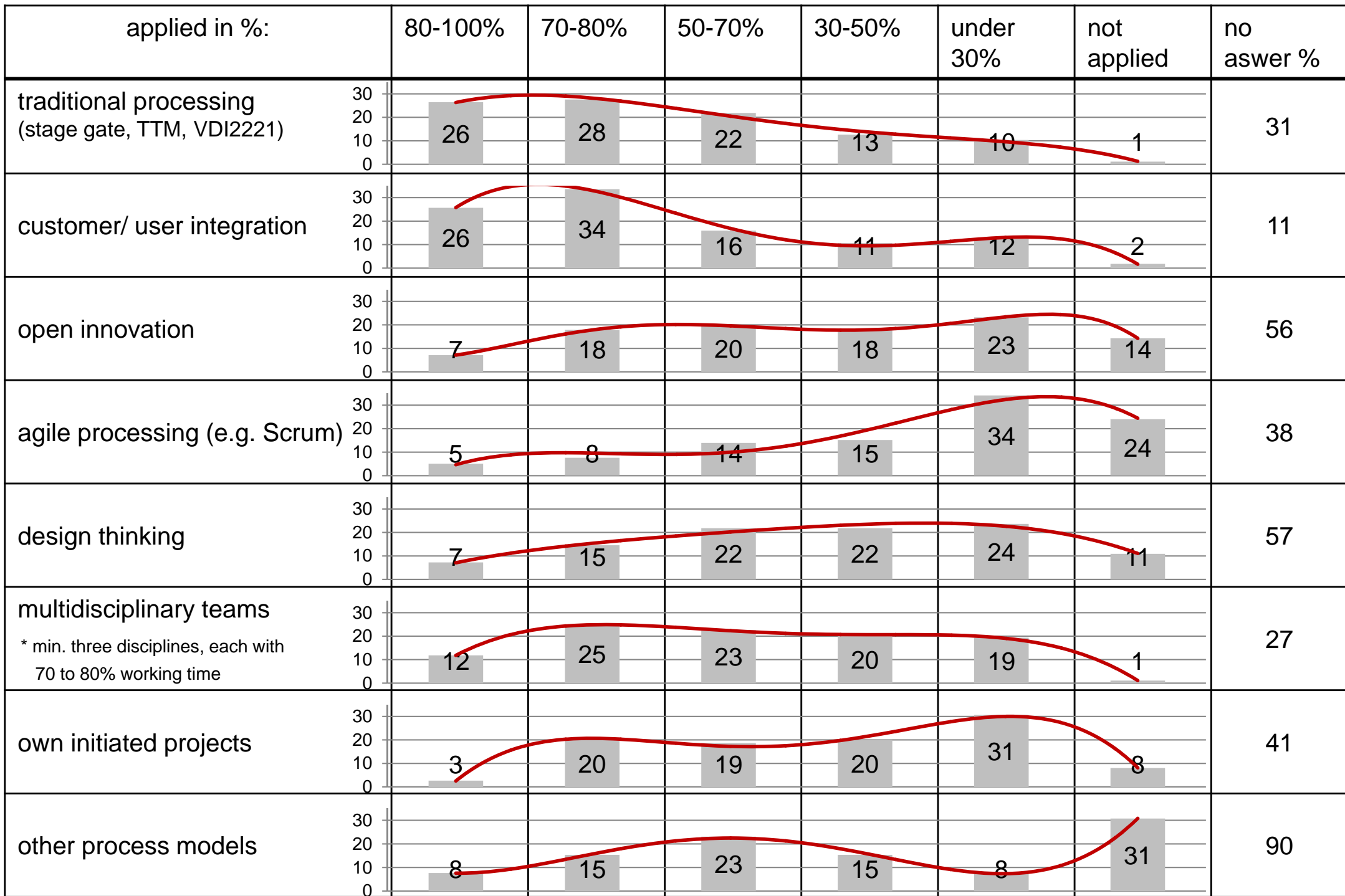
127 engineering students



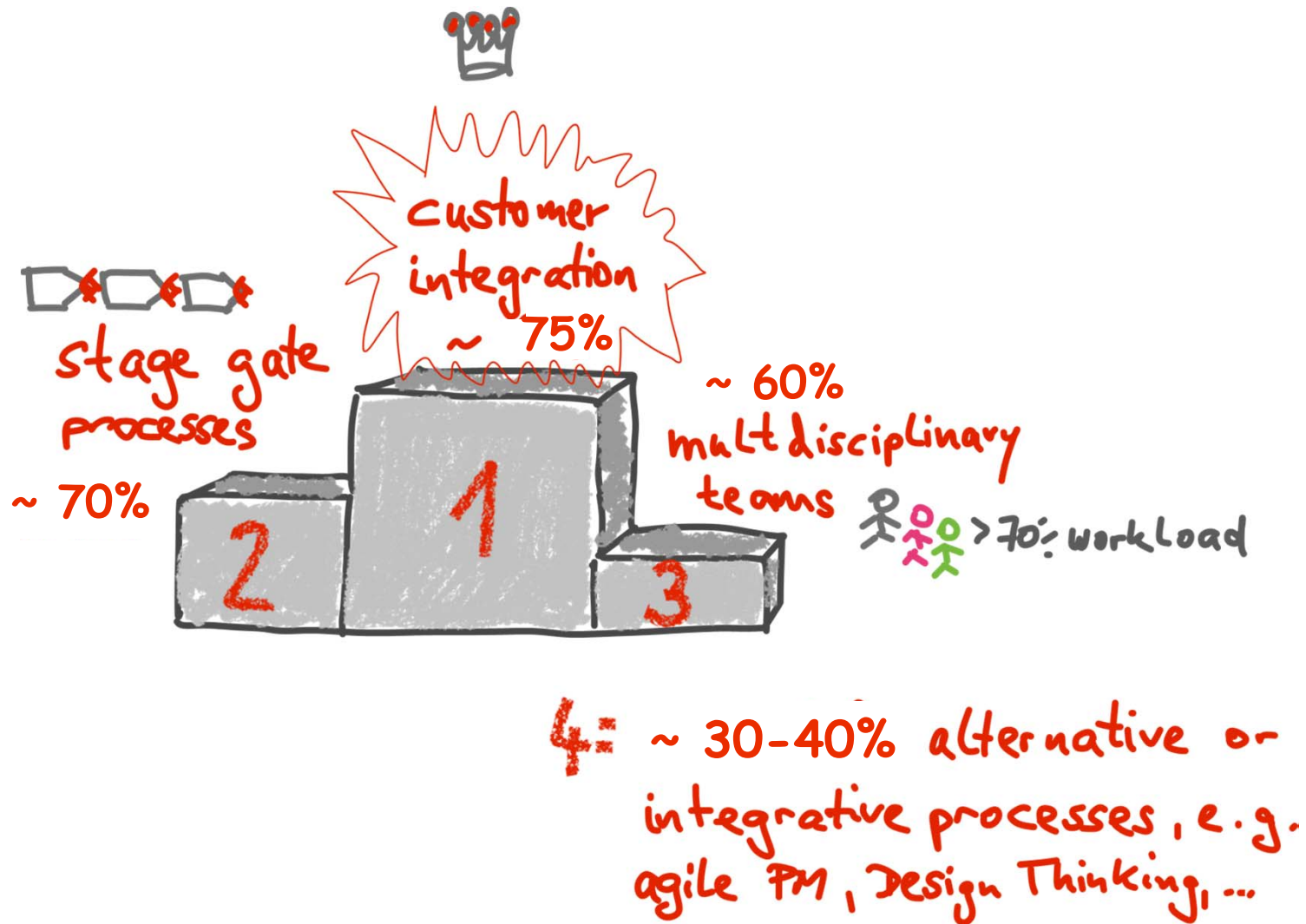
- six bachelor & one Master class
- two DHBW sites  
(Mannheim & Friedrichhafen)

## The objectives of the survey

- Reflection on processes and process models learned in lecture and their application in industry.
- Which processes are applied to which extent in the partner companies?



# Survey results on processes, evaluated by engineering students



## Reflections

- Some questions are open for interpretation, e.g. ‘customer integration’, ‘multidisciplinary teams’ etc.
- Defining percentages of application of processes, models in a company can never be precise and only an estimation.
- A comparative survey interviewing experts in industry may lead to a more comprehensive picture. Though the challenge will be that experts in industry may not be aware of the alternative and integrative process definitions. The students can support and act as interviewers.



draft based on design by Trish Papadakos in [VPD14]

## Conclusions

- **Lecture and fellow students/ peers profit of already existing process and project management knowledge** as many students have already experience through strong involvement in their partner companies (50% of study programme)
- **Due to students the companies still build in majority on traditional processes** (70%-100%). Alternative processes and process models are gaining on application (30% to 40%), but in majority on a pilot project basis (majority of companies to less than 30%).
- **Education should address and integrate alternative, agile and innovative processes / process models.** – Experience in systematics, methods and processes – also alternative processes - are essential.

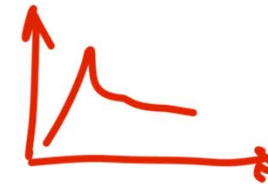


# Summary



- surveys as a tool for education of processes

- observe trends on alternative processes



- e-Learning & workshops deliver more process knowledge on alternative processes



- a comparative survey by students delivers more insights

## For more insights ...

- Read the paper (1153) to this presentation!
- Download presentation with references on: [www.nutzmann.biz](http://www.nutzmann.biz)
- Visit presentations by Markus Voß and Thorsten Sauer tomorrow:
  - ➔ Learning to Design in a serious Game (1125) → Session **5B** on Friday morning
  - ➔ Learning from own mistakes (1133) → Session **4A** on Friday afternoon



Last words ...

*Every activity is a process.*



*Thank you for attending ...*

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