

Training the information systems professional of the future

Model Engineering Symposium 11 – 11 – 11
on the occasion of prof.dr. Kees van Hee's valediction

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www.reijers.com



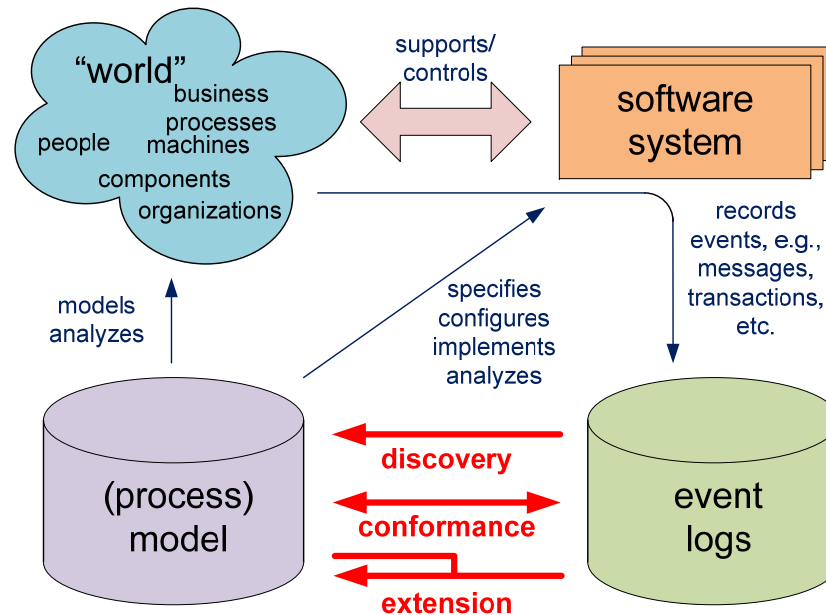
TU / **e**

Technische Universiteit
Eindhoven
University of Technology

Where innovation starts

Why are information systems professionals important?

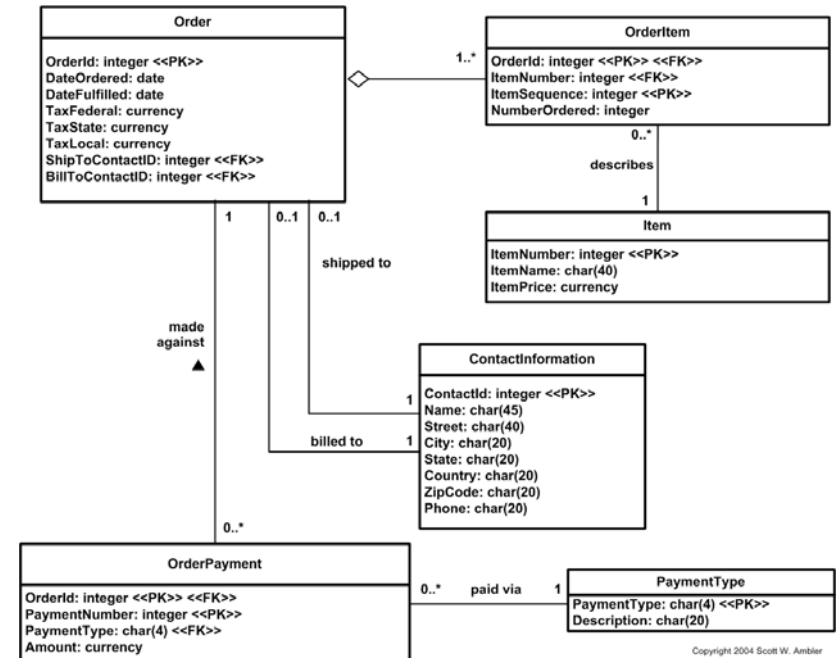
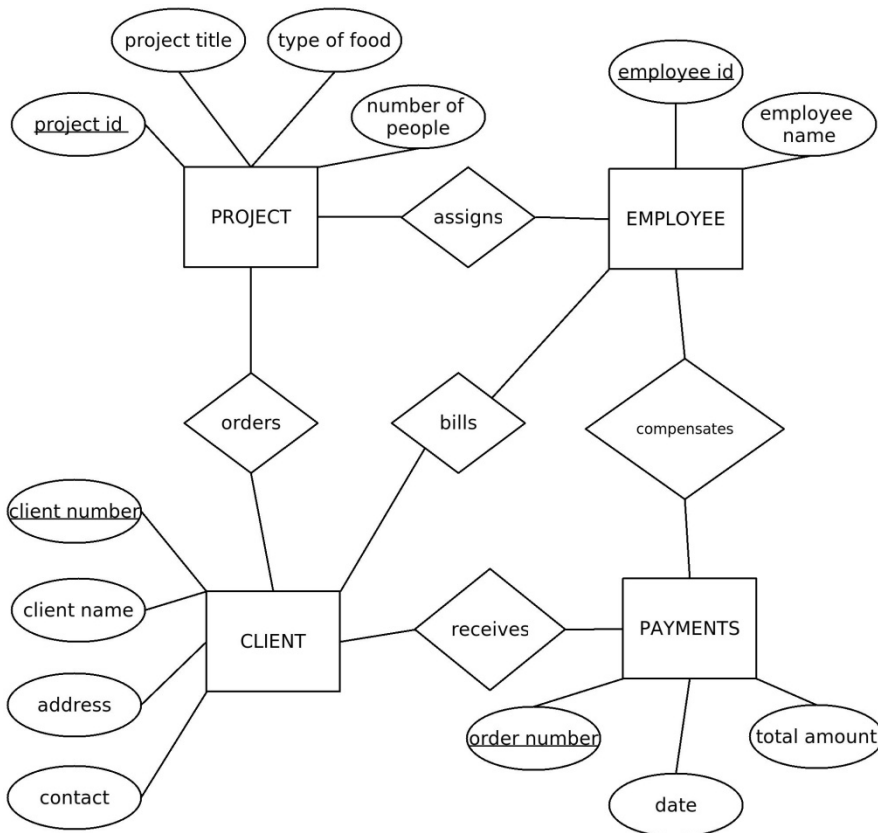
- Every business is an information business¹
- Every business is a *meta* information business



¹Evans, P.B. and Wurster, T.S. (1997), “Strategy and the new economics of information”, Harvard Business Review, September-October, pp. 70-82.

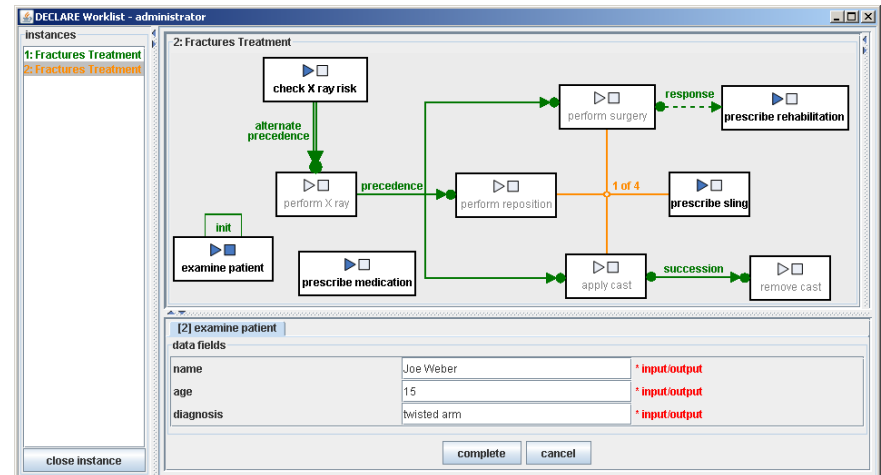
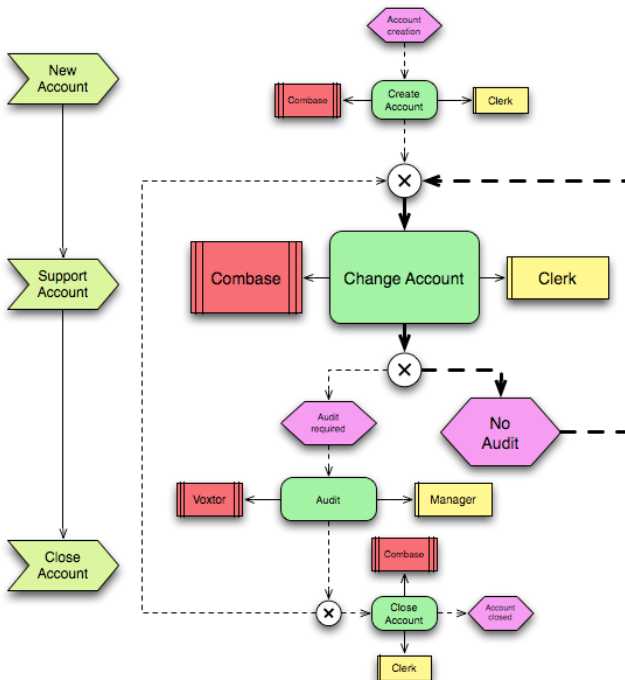
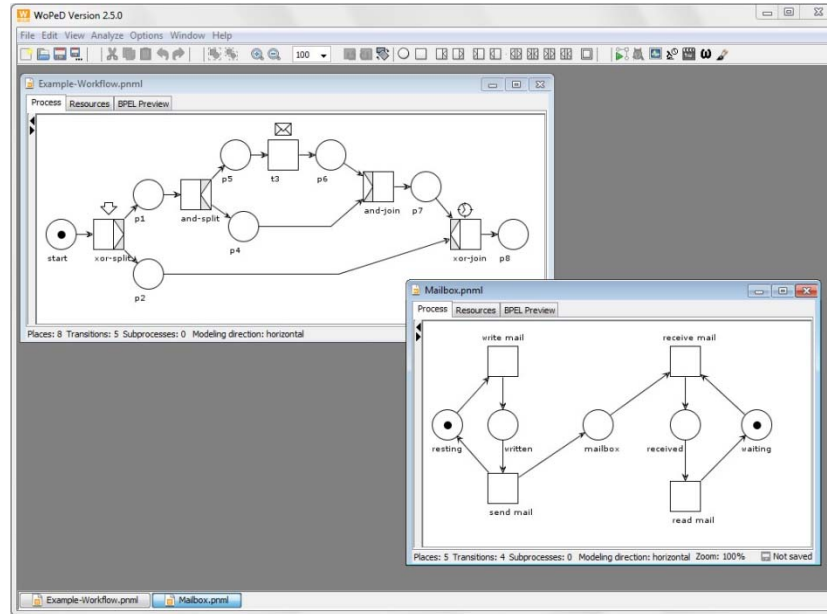
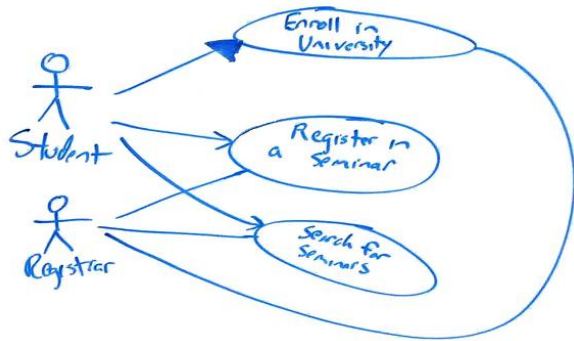
What is the essence of information systems education?

- Learning students to *model* information systems



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Business process models



Can anybody model processes?

- Place a parcel of the sticks in the middle of the oven to 220°C.
- Heat for 10 minutes.
- Turn the sticks on the other side and heat for 10 minutes.
- Turn the sticks until they are golden brown.



improper completion

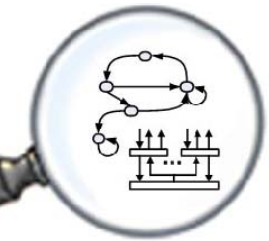
clumsy parallelism

- Heat 2 tablespoons of oil in a wok until the oil is hot.
- Place half of the pan-fry in the wok and fry for 2 minutes.
- Turn the pan-fry until the oil has evaporated.



non-terminating

How to teach process modeling (well)?



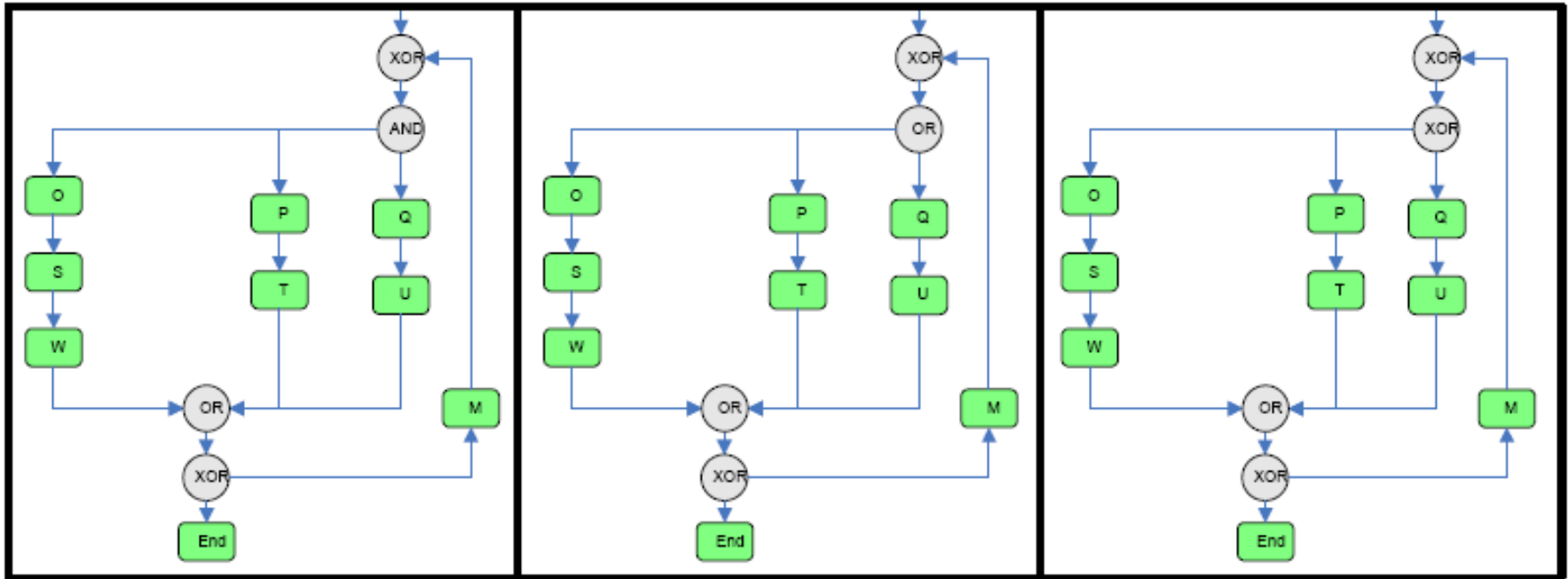
- **Formalisms:**
 - Graph theory
 - Petri nets
- **Formal notions:**
 - Connectedness
 - Reachability
 - Deadlocks
 - Soundness



A CreditCards.com
READABILITY STUDY

- **Modeling guidelines:**
 - Modularity
 - Secondary notation

Why would that be a good approach?

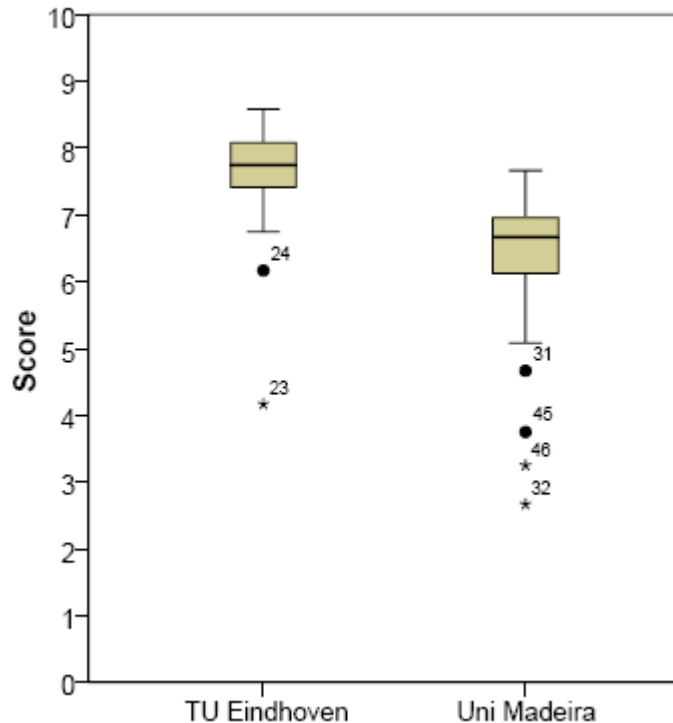


If T is executed for a case, can U be executed for the same case?²

² H.A. Reijers and J. Mendling. A Study into the Factors that Influence the Understandability of Business Process Models. IEEE Transactions on Systems, Man, and Cybernetic – Part A, 41(3): 449-461, 2011.

Why would that be a good approach?

- A student group @ Uni of Madeira
- A student group @ TU/e



- Enter 8 professional modelers from a large mobile phone company
- Professional modelers perform similarly as Madeira students ($p=0.684$)
- Professional modelers perform *less* than TU/e students ($p=0.000$)

But what about business education?

- **Every business is an information *business***
- **The MBA program: the ultimate business education...**
- **Boston Consulting Group³:**
 - **“non-MBAs are receiving better evaluations, on average, than their peers who had gone to business schools”**
- **McKinsey & Company⁴:**
 - **Performed internal study at one-, three-, and seven-year marks**
 - **“at all three points, the folks who don’t have a business degree are at least as succesful”**

³ D. Leonhardt. A Matter of Degree? Not for Consultants. *New York Times*, October 1, 2000.

⁴ M. Stewart. *The Management Myth: Why the Experts Keep Getting It Wrong*. Norton & Company, London, 2009.

But what about business education?

- **Prof. Henry Mintzberg, Desautels Faculty of Management, McGill University:**
 - “none of the four most widely celebrated CEOs has an MBA, whereas 40% of the CEOs cited in a *Fortune* article, ‘Why CEOs Fail’, do have MBAs”



But what about business education?

- **Prof. Richard Rumelt, Anderson School of Management, UCLA:**
 - “If you know how to design a great motorcycle engine, I can teach you all you need to know about strategy in a few days. If you have a PhD in strategy, years of labor are unlikely to give you the ability to design great new motorcycle engines.”



Message

- **We should teach our students how to design the *process engines* of businesses.**

Addendum



Ronald Plasterk



Kees van Hee



Herman Philipse

