

Report about the Dagstuhl seminar on the “evolution of conceptual modeling”

The seminar took place at Dagstuhl from 27 – 30 April 2008. It was organized by Roland Kaschek, Lois Delcambre and Heinrich C. Mayr. The seminar’s purpose was looking into conceptual modeling from different perspectives, and along different dimensions: we wanted to achieve a better understanding of conceptual modeling issues in various domains of discourse, from a historical perspective and from a view beyond individual (modeling) projects. Consequently we did not focus on a particular application area or development project.

In total 33 colleagues attended the seminar and 26 presentations were given. Many attendees expressed their satisfaction with the superior working and meeting conditions at Dagstuhl, as well as with its beautiful environment. It was understood that the attendees were interested in documenting in a Springer LNCS volume the common effort for better understanding conceptual modeling. Related editorial work as well as preparations is ongoing. Springer has in the meantime committed to making this book.

It turned out that surprisingly few presentations were taking a historical perspective for discussing conceptual modeling. A notable exception of that general trend was the presentation of Karen C. Davis that, aiming at data warehousing, in fact looked into the genesis of modeling languages. In a similar way, Susan Urban looked historically at semantic data models and compared them with current models. The second objective was achieved to a much higher degree: the variety of discourse domains was impressive within which conceptual modeling is used and which to some extent contribute to particular and thus different views of conceptual modeling. That variety ranged over Klaus Jantke’s presentation on conceptual modeling for computer games to Lois Delcambre’s presentation on using several different information sources in conventional information systems; Wolfgang Hesse’s discussion of the transition of software engineering from using models to using ontologies; Gottfried Vossen’s and Gunnar Thies’ discussion of issues of conceptual modeling for Web 2.0; Valeria de Antonellis’ discussion of conceptual modeling for service oriented collaborative systems; Roel Wieringa’s presentation on conceptual modeling of social domains as opposed to physical domains; and Oscar Pastor’s attempt to forecast

conceptual modeling problems and achievements in bio-informatics and in particular human genome engineering. Worth being singled out too were Nicola Guarino's presentation on the ontological foundations of conceptual modeling and David Embley's talk about turning the Web into a web of knowledge. Further presentations were given by¹:

- Sven Hartmann (conceptual modeling and natural language grammar)
- Brian Henderson-Sellers (meta modeling)
- Dietmar Jannach (error recovery in business processes)
- Roland Kaschek (sociological turn in conceptual modeling),
- Christian Kop (templates and glossaries in conceptual modeling),
- Günther Kreuzberger (entertainment engineering for digital games),
- Heinrich Mayr (pre-design based extreme non programming)
- Klaus-Dieter Schewe (specifying data centric services with abstract state machines)
- Michael Schrefl (ontological multi-level modeling),
- Vladimir Shekhovtsov (using simulation for quality requirements elicitation),
- Stefano Spaccapietra (modeling scientific hypothesis'),
- Markus Stumptner (modeling web services' composition),
- Yuzuru Tanaka (memetics view on web evolution),
- Bernhard Thalheim (a token model of process semantics),
- Tatyana Welzer (evaluation of conceptual modeling)

Many attendees explicitly mentioned to us that they highly valued the breadth of subjects discussed in the seminar. It would, however, not be a true description of the seminar to keep quiet about the critique of some of the attendees of exactly that breadth of the discussion. Certainly they have a valid point here: to some extent, of course, the breadth goes at expense of the depth. On the other hand, considering smaller and smaller areas of knowledge for being capable of going into more and more depth of these small areas also has its problems. Overall the attendees evaluated the seminar positively. The project was launched to organize a continuing seminar at Dagstuhl in April 2013. Maybe a repeated seminar will be more successful at discussing the evolution of conceptual modeling. Maybe more explicitly acknowledging that modern computing already

¹ Please note that some of these speakers were presenting cooperatively produced work. We were not able to invite all authors to attend the seminar.

has a history will help to focus on the succession of ways to do conceptual modeling, the concepts and notations used throughout, as well as the problems to be solved and the degree to which one actually can do so.

The discussion was colored by contributions of a number of colleagues from smaller companies who attended the seminar; unfortunately they did not give presentations.

About 25 abstracts have been provided by seminar attendees for the above mentioned LNCS volume. We are currently confident to publish that volume in late 2009. Please direct any correspondence regarding the seminars or the mentioned book to Roland.Kaschek@ieee.org.

Roland Kaschek, Lois Delcambre, Heinrich Mayr