

December 1999

Organizational Engineering based on the OER- paradigm - A Tutorial

Jan Dietz

Delft University of Technology

Follow this and additional works at: <http://aisel.aisnet.org/amcis1999>

Recommended Citation

Dietz, Jan, "Organizational Engineering based on the OER-paradigm - A Tutorial" (1999). *AMCIS 1999 Proceedings*. 290.
<http://aisel.aisnet.org/amcis1999/290>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 1999 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Organizational Engineering based on the OER-paradigm – A Tutorial

Prof. Dr. Jan L.G. Dietz, Delft University of Technology, j.l.g.dietz@its.tudelft.nl

Objective

To acquire an understanding of business processes in which one completely abstracts from the supporting information systems and technology as well as from organizational structures and staffing. The so-called essential model of an organization represents such an understanding. This model appears to be an ideal starting point for such activities as Business Process Re-engineering, Information Systems Strategy, Information System Development, and WorkFlow management, but also for addressing the essential issues of Virtual Organizations and Electronic Commerce.

Outline

The tutorial consists of three parts, each taking roughly one third of the time. In the first part the theoretical basis of Organizational Engineering based on the OER-paradigm will be explained. Then the high practical applicability is demonstrated, taking a recently conducted project as the leading example. In the third part, the experiences in the diverse application areas are presented and discussed.

Description

The traditional and dominant approach to improving the effectiveness (with respect to the external market) and the efficiency (with respect to the internal operation) of organizations is the one taught at Business and Management Schools. Although there has been a variety of different ‘schools’ within them (like e.g. Taylor, Fayol, Likart, Simon, Mintzberg, Rockart, Porter, and Senge), they all have a function/behavior-oriented way of thinking in common and a corresponding preference for black-box models. To draw a metaphor, an organization is basically viewed as a race car driver views a racecar: it is controlled by ‘turning the knobs’, and if you are sufficiently skilled, you can let the car do almost everything you want. However, this is only true as long as and insofar as the things ‘under the hood’ allow you to do what you want.

Under the name ‘Organizational Engineering’, a radical different approach towards the same problems is presented. Instead of being function/behavior oriented and applying black-box models, it is

construction/operation oriented and applies white-box models. To proceed the metaphor, the approach reflects the view of the car mechanic; it focuses on what is ‘under the hood’. Taking such an engineering position towards organizations was considered rather queer up to now, in the absence of a clear notion of the construction and operation of an organization. Such a notion has been developed in the past ten years at Delft University of Technology, and it is called the OER-paradigm¹. This paradigm draws on three scientific sources of inspiration: Habermas’ theory of Communicative Action², Stamper’s Semiotic Ladder³, and Bunge’s Ontology⁴. The core notion in the paradigm is the OER-transaction, which is a pattern of communication and action that consists of three phases: the order phase (O), the execution phase (E) and the result phase (R). This notion serves as the prototype for the business transaction in the very successful DEMO methodology (Dynamic Essential Modeling of Organizations) for a/o Business Process Re-engineering, Information Systems Development and WorkFlow Management.

Some fifty, small and large, projects have been conducted up to now, in production industry, service industry and government. The most important success factors are invariably the appropriateness and clear definition of the basic concepts, as well as their high practical relevance. Both managers and employees appear to be able, after a one-day course, to understand the DEMO models, to recognize the modeled processes, to identify in these models their problems, and even to suggest solutions as modifications to the models.

¹ The word “OER” is a Dutch word, meaning “primal”, “original”. It expresses that one seeks for the essence by abstracting from (current) realization. It is also the acronym for Organizational Engineering Roots.

² Habermas, J., *Theorie des Kommunikatives Handelns*, Erster Band, Suhrkamp Verlag, Frankfurt am Main, 1981

³ Stamper, R.K., Applied Semiotics, in: *Proc. of the ICL/University of New Castle Seminar ‘Information’*, New castle, 1993

⁴ Bunge, M.A., *Treatise on Basic Philosophy*, vol. 3 and 4, D. Reidel Publishing Company, Dordrecht, The Netherlands, 1979

About the lecturer

Jan Dietz started his scientific career in 1980 at the Faculty of Industrial Engineering of Eindhoven University of Technology, after having worked as practitioner since 1970. In 1987 he obtained his Doctoral Degree on the subject of modeling and specifying information systems. In January 1988 he was appointed Professor of Management Information Systems at the University of Maastricht in the Faculty of Economics and Business Administration. From September 1994 on he is Professor of Information Systems at Delft University of Technology.

Bibliography

- Dietz, J.L.G., 1994a. Business Modeling for Business Redesign. *Proceedings of the 27th Hawaii International Conference on System Sciences*, IEEE Computer Society Press, Los Alamitos, pp. 723-732.
- Dietz, J.L.G., Modelling Business Processes for the Purpose of Redesign, in:
Proc. IFIP TC8 Open Conference on BPR, North-Holland, Amsterdam, 1994
- Dietz, J.L.G. 1996a. The What and the Why of Modelling Business Processes. In: R.M. van Es, A. Post (Eds.), *Dynamic Enterprise Modeling*. Kluwer Bedrijfsinformatie, Deventer.
- Dietz, J.L.G., DEMO: towards a discipline of Organizational Engineering, *European Journal of Operations Research*, 1999 (forthcoming)
- Dietz, J.L.G., G.Goldkuhl, M. Lind, V.E. van Reijswoud, 1988. The Communicative Action Paradigm for Business Modelling – A Research Agenda, In: G. Goldkuhl, M. Lind (Eds.), *Proceedings of the Third International Workshop on the Language/Action Perspective*, Jonkoping International Business School, Department of Informatics, pp 59-70
- Dietz J.L.G., H.B.F. Mulder, 1996. Realising Strategic Reengineering Objectives with DEMO. In: *Proceedings of the International Symposium on Business Process Modelling*, Springer-Verlag, New York.
- Dietz, J.L.G., J.B.F. Mulder, 1998. Transformation of organisations requires constructional knowledge of business systems, *Proceedings of the 31st Hawaii International Conference on Systems Sciences*. IEEE Computer Society Press, Los Alamitos CA.
- Dietz, J.L.G., G.A.M. Widdershoven, Speech Acts or Communicative Action?
Proc. 2nd European Conf. on CSCW, Kluwer Academic Publishers, Boston, 1991
- Dignum, F., J.L.G. Dietz, E. Verharen, H. Weigand, *Communication Modeling - the Language/Action Perspective*, Electronic Workshops in Computing, Springer, 1996,
<http://www.springer.co.uk/ewic/workshops/CM96/>
- Dignum, F., J.L.G. Dietz, E. Verharen, H. Weigand, *Proceedings of the Second International Workshop on Communication Modelling*, Computing Science Reports, Eindhoven University of Technology, 1997
- Reijswoud V.E. van, M. Lind, 1998. Comparing two Business Modelling Approaches in the Language Action Perspective. In: G. Goldkuhl, M. Lind (Eds.), *Proceedings of the third International Workshop on Communication Modelling: LAP'98*, Stockholm.
- Reijswoud, V.E. van, 1996. *The Structure of Business Communication: Theory, model and application*. PhD Thesis Delft University of Technology, Delft.
- Reijswoud, V.E. van, 1999. Model Based Business System Transformation. *Proceedings of the European Conference on Information Systems (ECIS'99)*, Copenhagen.
- Reijswoud, V.E. van, N.B.J. van der Rijst, 1995a. Modelling Business Communication as a Foundation for Business Process Redesign: A case of production logistics. In: *Proceedings of the 28th Hawaii International Conference on Systems Sciences*. IEEE Computer Society Press, Los Alamitos CA, pp. 841-850.
- Reijswoud, V.E. van, N.B.J. van der Rijst, 1995b. Modeling Business Communication for the Purpose of Business Process Reengineering. In: N. Jayaratna, R. Miles, Y. Merali, S. Probert (Eds.) *Information Systems Methodologies 1995: Third Conference on Information Systems Methodologies of the British Computer Society Information Systems Methodologies Specialist Group*, pp. 173-184.
- Reijswoud, V.E. van, J.B.F. Mulder, J.L.G. Dietz, Speech Act Based Business Process and Information Modelling with DEMO, *Information Systems Journal*, 1999 (forthcoming)
- Rijst, B.J. van der, V.E. van Reijswoud, 1995. Comparing Two Speech Act Based Modeling Approaches for the Purpose of Information Systems Development. In: G. Doukidis, R. Galliers, T. Jelassi, H. Krcmar, F. Land (Eds.), *Proceedings of the Third European Conference on Information Systems*, Athens, Greece, 1995
- Steuten, A.A.G., 1998. *A Contribution to the Linguistic Analysis of Business Conversations within the Language/Action Perspective*. PhD Thesis Delft University of Technology, Delft.
- Steuten, A.A.G., V.E. van Reijswoud (1996). The Interpretation of Business Communication. The application of functional grammar and the transaction process model. In: *Proceedings of the First International Workshop on Communication Modeling, The Language/Action Perspective*, Electronic Workshops in Computer Science, Springer-Verlag London Ltd.
- Steuten, A.A.G., J.L.G. Dietz, Guidelines for bridging the gap between literal sentence meaning and communicative action, in: G. Goldkuhl, M. Lind (Eds.), *Proceedings of the Third International Workshop on the Language/Action Perspective*, Jonkoping International Business School, Department of Informatics, 1998
- Winograd, T., F. Flores, *Understanding Computers and Cognition: a new foundation for design*, Ablex, Norwood, N.J., 1986.