Towards a Reference Process Model for Event Management

Oliver Thomas, Bettina Hermes, and Peter Loos

Institute for Information Systems (IWi)
at the German Research Center for Artificial Intelligence (DFKI), Saarland University,
Stuhlsatzenhausweg 3, Building D3 2, 66123 Saarbrücken (Germany)
{oliver.thomas,bettina.hermes,peter.loos}@iwi.dfki.de
http://www.iwi.dfki.de

Abstract. Events are becoming more and more important for companies as an instrument of marketing communication. Event management is an interdisciplinary task field, addressed in the most diverse fields in practice and in research establishments. Because careful preliminary planning and precise execution are extremely important for events, modeling languages can contribute greatly to the systematic design of event management systems. Accordingly, this article will make recommendations for application system and organization-design in the form of a reference process model for event management.

Keywords: Event marketing, Event management, Business process, Process model, Process modeling, Reference model, Reference modeling.

1 Events as a Trend

In the last years, events have been given more and more attention in research and practice. As a result, a separate, special branch of service geared to events has developed in which event agencies, trade fair constructors, talent agencies and sound and light engineers, etc. are involved in the organization and creation of events. Numerous studies attest a high potential to events as communication instruments and forecast not only quantitative, but also qualitative growth for the event market [1; 9; 12].

Due to the high significance of events in practice, it does not come as a surprise that the scientific world has begun to address the phenomenon of the "event". Noteworthy results have particularly been achieved in marketing and tourism-management [8; 10]. One of the most important insights gained by the research done since the end of the 1980ies is that the management of events must be seen as an interdisciplinary task field requiring effective and efficient cooperation between diverse partners. The strategic preparation, as well as the planning and coordination of the execution of an event require professional handling in order to guarantee the optimal interplay between all participants. Support from modern information and communication systems for this process, summarized here under the term "event management", is a good idea and offers many starting points [16].

Although for several years now, an established approach for the support of a systematic procedure for the analysis, improvement, implementation and control of

A. ter Hofstede, B. Benatallah, and H.-Y. Paik (Eds.): BPM 2007 Workshops, LNCS 4928, pp. 443–454, 2008.

business processes using information modeling [17; 19; 25] exists, up to now, the design of event management processes, as well as the systematic development of supportive information systems have not occurred. It therefore appears wise to make recommendations for application system and organization-design in the form of a reference process model. The construction of such a model is the topic of this article.

The article is structured in the following manner: Section 2 lays a terminological foundation by differentiating between the terms "event", "event marketing" and "event management". A study of the event management process, as well as the model-based development of supportive information systems is the topic of Sections 3 and 4. Following this, in Section 5, the fields "event management" and "reference modeling" are brought together, the requirements for a reference model for event management are defined and the procedure necessary for the creation of such a reference model is determined (construction process). The construction of this reference process model then takes place in Section 6 (construction results). The article closes with a conclusion in Section 7.

2 From Event to Event Management

The every-day and scientific uses of the term "event" do not coincide with each other. Different terms and definitions for "event" have developed in various areas of life and research. In research, this especially leads to communication and comprehension problems. In a first approach, one can understand events as "temporary occurrences, either planned or unplanned" [8, p. 4]. In order to emphasize the difference between planned and unplanned occurrences, the term "special" is added to "event". A special event is understood to be a "one-time or infrequently occurring event outside a normal program" [8, p. 4]. Often events are classified, in order to better deal with the term. Thus for example, a one-dimensional classification in "hallmark events" (traditional events that take place at a certain location, such as e.g. Mardi Gras in New Orleans) and "mega events" (e.g. the Olympic Games) is possible [8, pp. 3–4].

The activities connected with the planning and control of events are generally summarized under the terms "event marketing" or "event management". When differentiating between these terms literature on the field argues that event marketing deals with the marketing-theoretical foundations of the phenomenon "event" and in doing so, observes aspects such as visitor motivation and perception or effects on image. Event management on the other hand, emphasizes questions of planning, as well as the quality, personnel and risk management for the event [10, p. 311].

It slowly becomes clear in the search for a definition of the term "event management", that there is no consensus about the term and the activities connected with it in literature. Often, only the organizational and controlling measures necessary for the ultimate/execution of an event are understood as event management [6; 11]. This however, neglects the strategic alignment of management with its integrative tasks and contradicts the established term "management", which grants extraordinary decision-making possibilities to those responsible.

In addition, it is important to mention that, as a rule, schemes for the planning and execution of events exhibit two typical characteristics. *First*, they begin with the definition of requirements for an event and end with its conclusion. They are thus

limited in time and have a clear start and finish point. And *second*, these ventures are often one-time initiatives in which various internal and external organizations participate. Due to these two characteristics, it is generally said that the processes for the planning and execution of events possess project character. This interpretation of events as projects is based on established definitions of the term "project". Most authors see the time limitation (clearly defined start and finish points), as well as the singularity of an event as distinct project characteristics. These project-characteristics of events are often neglected in the search for a definition in literature.

As a result of these considerations, the following working definition will be used here: *event management* comprises the coordination of all of the tasks and activities necessary for the execution of an event regarding its strategy, planning, implementation and control, based on the principles of event marketing and the methods of project management.

3 Event Management Systems

In addition to general planning activities, it is important to observe aspects regarding information transparency, documentation and controlling possibilities and the exchange and storage of information in order to guarantee comprehensive support for all of the activities and participants in the entire event management process. Proprietary software solutions for word processing, spreadsheets, project management or e-mail-communication do not provide an integrated approach for event management. In addition to the established standard applications, there are application systems geared to special domains, such as for example, gastronomy or ticket systems. These however only provide special functionalities, such as calendars, solutions for the scheduling of rooms, possibilities for storing additional information or solutions for visitor registration [16]. Up to now, no comprehensive IT-support exists for the entire event management process, from the initial idea to its integration in corporate strategy and the conclusion of the event supporting the workflow from strategic planning to event controlling.

The potential of such a software solution lies in the fact that it provides the highest possible information and cost transparency. The increase in efficiency and effectiveness, which would result from the use of such a tool for planning, carrying out and controlling an event can be seen analogue to the use of corresponding systems in supply chain management. Thus, in addition to improved coordination and communication among the participants involved in the process, for example, event agencies and service providers, the customer — respectively the sponsor of the event — also profits from improved transparency. Decisions regarding possible changes can be made more quickly and cost efficiently, because the channels of communication are much shorter which allows information to be exchanged more quickly.

In addition, topics such as controlling or risk management are becoming increasingly interesting for the planning of events. Existing approaches have concentrated on the economic evaluation of an event after its conclusion [4, pp. 2f.]. Often however, it is required that controlling measures can be carried out in all phases of the event management process, in order to guarantee the sustainability of an event. Thus, adequate

alternatives for the documentation and provision of appropriate controlling methods are needed and these can only be guaranteed with the appropriate tool-support.

Event management systems, understood here as information systems used for the support of managing events, must function as an intermediary between the business frameworks of event marketing, management and information technology. Because event management systems work on both a business and a technical level, they are — as are generally all information systems — very complex. With the help of a model, we will attempt to create manageable artifacts that make the complexity of these information systems controllable.

4 Modeling Event Management Systems

Information models have established themselves as a medium for bridging the gap between business problems and the realization of an application system. The application possibilities of information models range from software design and the introduction and configuration of standard software to business process reengineering.

Due to the possibility of their reutilization, in many cases the construction of models is connected to the demand to abstract from enterprise-specific characteristics. One must thus differentiate between enterprise-specific information models and reference models. The term "enterprise-specific" characterizes only the individual character of the corresponding model; there is no restriction to legally independent companies connected with it. Thus, due to reasons of linguistic clarity, one must speak of specific models in order to allow for the fact that the specificity of models does not only result from a enterprise-context alone, but rather, for example, also from a project-context. To emphasize this context one can also speak of project-specific models.

In contrast to this, a reference model for the development of specific models constitutes a point of reference, because it represents a class of applications [23]. On the one hand, the possibility of orienting oneself on the technical content of such reference models promises the model-users savings in time and costs, while on the other, the quality of the model to be constructed, and thus the quality of the software based on this model, can be increased by the use of a reference model. The fundamental idea in reference modeling to save process knowledge in models in order to use it at a later point in time, has currently been recognized by event management literature. Thus for example, SCHWANDNER states that "it is almost always better to adopt good ideas from others, follow their tips and then optimize them for your individual needs" [22, p. 27]. Nevertheless, at present there are no reference model-based design recommendations for event management systems. This shortcoming is the result of the following problems:

1. *Lack of process orientation:* Business research in the field of event marketing and event management continues to neglect process management aspects for events: "Less research has been focused on special events operational management" [10, p. 322]. Research has primarily dealt with questions regarding the cultural, social and economic effects of events. A perspective integrating all of the aspects of event management is lacking [18, p. 86].

2. *Lack of standardized forms of representation:* Marketing-oriented research concentrates on explaining interdependencies, which are compiled, as a rule, by way of market research studies. In addition, exemplary descriptions and suggestions for the management of events dominate in literature. The forms of representation used here are hardly standardized and limit the significance of the introduced concepts which makes an application-specific adaptation difficult [15, pp. 219f.]. There are only a few cases where generally accepted methods for example, from project management, were deductively transferred to the field of event management [18].
3. *Lack of models:* It is primarily practice-oriented analyses, dealing with the planning and organization of events, which focus on additional benefits in the form of check lists, tables, forms and road maps [6; 11]. Demonstrative, exemplary representations, customary in the field of information modeling, are quite rare.

The following analyses will attempt to solve these problems by way of reference model-based design recommendations for event management.

5 Requirements for Reference Models in Event Management

5.1 Existing Reference Models in Research and Practice

There are many reference models in literature for many different fields of application – for a current tabular overview cp. [7, p. 46f.]. While early approaches oriented themselves on the representation of aspects from all possible enterprises, the authors of current constructions often assign their reference models to concrete economic branches. Prominent examples of this are the reference model for industrial business processes from SCHEER [20] and the Retail Information Systems from BECKER, SCHÜTTE [3], which both come from the research field.

In practice, reference models can be found by providers of modeling tools and consulting firms. Thus, for example, the IDS SCHEER, Inc. [www.ids-scheer.com] offers diverse reference models. These are reference models for the service sector (financial services, commercial enterprises, local governments, hospitals, mail-order businesses, municipal utility companies and insurance companies), product-oriented manufacturing (plant construction, automobile suppliers, mechanical engineering, the consumer goods industry and the furniture industry) and process-oriented manufacturing (the chemical industry and the paper industry). On the other hand, comprehensive documentation on established ERP systems exists in the form of reference models, such as for example, the SAP R/3 reference model [5]. A reference model assigned to the field of event management is however, unknown to the authors.

5.2 The Necessity of Constructing a Framework

In order to satisfy the claim for reusability in the construction of models, reference models must describe a wide range of company conditions and their interdependencies. They are, in addition, seen from different perspectives, which makes a survey-like graphic representation of reference models very complicated. The data model for the SAP R/3-reference model, for example, contains more than 4000 types of entities and the corresponding reference process model more than 1,000 business processes

[5]. The use of a framework for comprehensive reference models has shown itself to be well proven in research and practice [3; 20]. Reference model frameworks provide a directory, whose domains refer to detailed models of the reference model. The following creation of an event management reference model will therefore be divided up into the design of the framework and the construction of the reference model itself.

In contrast to the creation of detail models, modeling languages are usually not used for the construction of frameworks. Using freely defined graphic symbols model developers can illustrate the wide variety of contextual aspects of a reference model. These can also help to emphasize the trademark character of a reference model framework. Nevertheless, in addition to "established" languages (e.g. ERM, EPC), there are "simple" modeling languages in the language portfolios of the modeling tools from a few providers and these are especially geared to the construction of a framework. In the *ARIS-Toolset* for example, a Y-diagram is used for the function-oriented entrance into complex reference models. The simplicity of these languages refers to the low number of language elements and the constructible relationships between these language elements, as well as the graphic representation of the language elements using elementary geometric structures, such as lines or polygons.

By assigning the parts of a reference model to an index of the framework, the respective elements of the model are grouped according to contextual criteria. The model object upon which the construction of the reference model framework is based is the reference model. Thus, framework and reference model have a macro-micro-relationship. In this spirit, a framework is always on a "higher" aggregation level than the reference model it represents. The disaggregation of macro models can also be pursued "within" a reference model over several aggregation levels. This is especially practical for comprehensive reference models. It, however, assumes that the possibility for disaggregation in the modeling language used is embedded as a supported construction technology.

5.3 Modeling Languages for the Representation of a Reference Process Model

Although the first ideas concerning the reusability of information models date back to more than three decades, up to now, very few modeling languages have been conceived for the creation and use of reference models alone. Two of the few exceptions are the reference process modules from LANG, TAUMANN, BODENDORF [14] and the reference model component diagram from VOM BROCKE [24, pp. 235ff.]. Most of the research in the field of reference modeling concentrates on an application or domain-specific selection of established languages for information modeling. The spectrum of reasons for the selection of these languages ranges from the basic orientation on paradigms (e.g. object-oriented or non-object-oriented) or modeling methods (e.g. ARIS or UML) to the completely uncritical und unreflected use of these languages. Occasionally, the selected modeling languages are extended.

Since the end of the 1970ies, a multitude of modeling languages has been developed to describe process models [2]. The event-driven process chain (EPC) [13; 21] has especially established itself for the construction of reference process models on a conceptual level [7]. It will be used in the following for the construction of the reference model for event management.

6 Construction of a Reference Model for Event Management

The models discussed in the following were developed at the Institute for Information Systems at DFKI, Saarland University, Saarbruecken (Germany), over a period of six months. They were created with the help of interviews and workshops in cooperation with three large German event agencies, a representative from the marketing department of an automobile company, as well as employees in an internationally active trade fair service provider. In addition to this inductive procedure for extracting knowledge, during which a multitude of actually observed process structures were described, ordered and compared, knowledge was gained from the generally accepted principles and models of the event management "theory" dealt with in business management literature — in compliance with a deductive course of action.

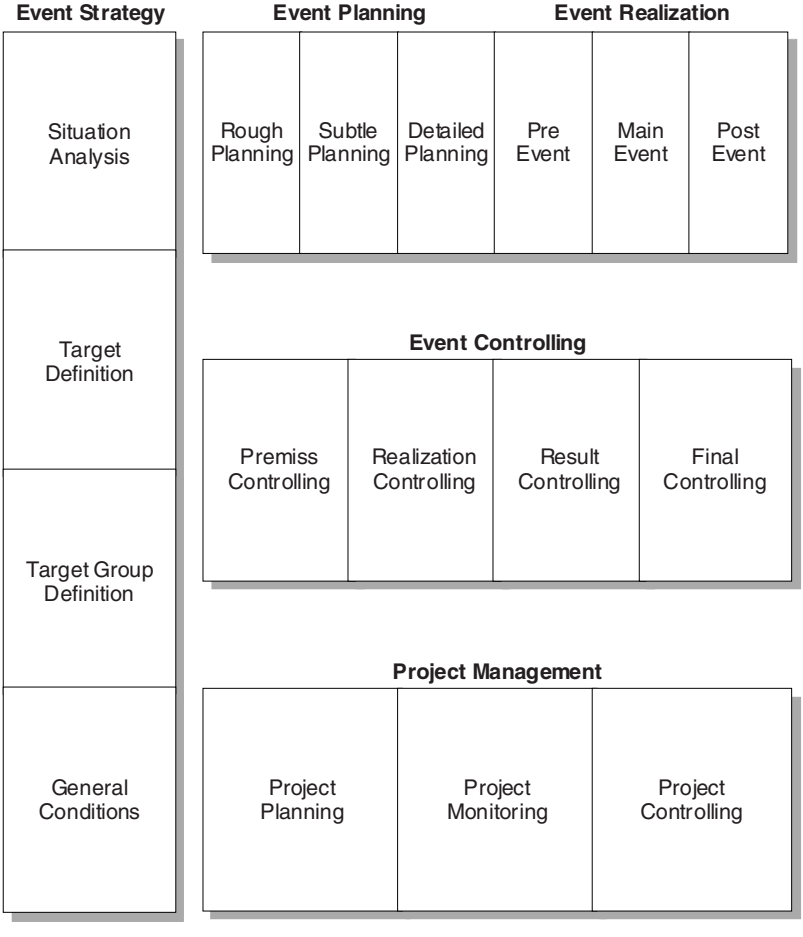

Fig. 1. Event-E – reference model framework for event management

6.1 The Construction of a Reference Model Framework

The framework for event management represented in Figure 1 and named *Event-E* due to its form, structures the activities necessary for the planning and execution of events in a coherent sequence. The framework is divided up into five domains: “Event Strategy”, “Event Planning”, “Event Realization”, “Event Controlling” and “Project Management”. It emphasizes the equality of the sub-processes for the management of events through its design. Each domain is assigned special functions (also called activities). The five levels should not be understood as independent processes. Relationships of interchange und interdependencies exist between all functions. According to the chronological sequence of the event management process, we will start with the domain “Event Strategy”. In this phase, all of the basic problems regarding the event are solved in coordination with the company and marketing strategy. In the planning phase, the chronological and spatial coordination of all of the activities and participants for the event is worked out. The “Event Realization” phase comprises the actual execution of the event at the venue. The “Event Controlling” phase provides the event management team with all of the controlling methods and measures at any possible time. It plays a special role because it takes ongoing functions into account, which support the planning and execution of the event and serve the evolution of the tasks to be achieved. This phase is therefore set in the middle of the framework. The “Project Management” phase forms the knowledge basis for the planning of the entire event management process and thus, forms the foundation for the execution of all types of events along all phases of the event management [18].

With the help of the areas and functions identified by it, the framework makes a recommendation for a procedure for projects where events are planned and/or carried out. Because this procedure can vary in practice, the framework must be adapted to the respective project. The event management framework could then be referred to as a reference model due to its reusability.

6.2 The Construction of Detail-Models

A strategy describes a precisely planned course of action for a project, i.e. it serves as a foundation for further planning. Complete, strategic preparatory work is highly important for the event manager. An EPC-reference model for the event strategy is represented in Figure 2. The two start-events represented in the model illustrate the fact that the event management process can begin within a company or be assigned by a customer to a service provider, e.g. an event agency.

Within the framework of a comprehensive situation analysis, the goals and target groups of the event are defined. In order to carry out an evaluation of the event at a later point in time, the measurability of the goals must be guaranteed. To do so, the goals can be divided up into in strategic and operative goals. Economic goals are also formulated to make financial success measurable. This can comprise increases in sales, increases in market shares or an increase in buying intensity, in addition to the revenues directly relevant for the event. Contact goals can, for example, be operationalized through the number of registrations or participants.

Event goals are connected to a company‘s communication politics via the event-marketing strategy and thus, directly connected with the superordinate corporate

strategy. The derivation of an event‘s target structure must be compared with the corporate strategy‘s guidelines. If discrepancies arise, they must be revised.

The narrowing down of the target group is also closely connected with the definition of goals. As a rule, primary and secondary target groups are defined for events (cp. Figure 2). The primary target group is seen as all groups of persons taking part in an event directly. The secondary target group is integrated into the event through media or other forms of communication. Usually, the secondary target group consists of the public not directly taking part in the event. Additional information is collected

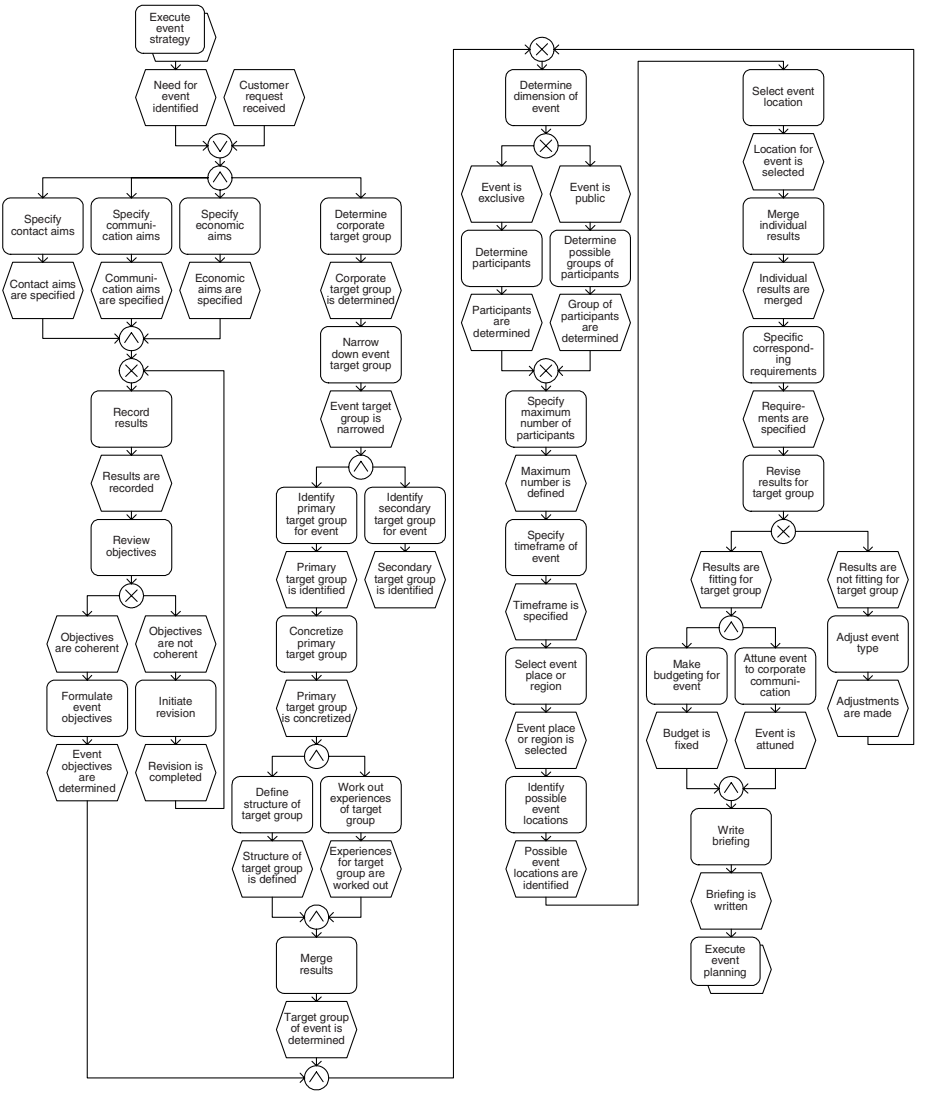

Fig. 2. Reference process model for the event strategy

within the function “concretize primary target group”. This information allows one to derive the structure of the target group, as well as experience values about the target group. The definition of the target group-structure extends beyond the registration of age, residence and purchasing power. In fact, more differentiated methods must be consulted, such as for example, lifestyle-groupings or scene marketing. Detailed knowledge about the target group-structure guarantees a high degree of individuality and thus, high contact intensity.

The concretion of the event type and the general conditions for the event follow the definition of the goals and target groups for the event (cp. Figure 2). First, the size of the event is defined. A decision is then made about whether the event is exclusive or open to the public. If a decision is made for an exclusive event, then the number of participants must be determined. This number may tend to vary more strongly for public events than for exclusive events. Therefore, all possible participant groups must be determined for public events. In addition, one must also narrow down the maximum number of participants. All of the following planning, such as the selection of the venue or catering, is oriented on this information. Following this, the exact timeframe for the event must be defined. Here the first dates are set. Events can be held for a day (e.g. a gala or anniversary), several days (e.g. Olympic Games or conferences) or in cycles (e.g. concerts or shows). The location is then selected based on this data. While for example, a concert hall is understood as a venue, the term “location” refers to the geographic area where the event takes place, for example, “the city of Berlin and its surrounding area”.

The individual results regarding the size, timeframe and location of the event are then combined (cp. Figure 2). Requirements for the event are then made based on this data. These requirements then serve, in turn, as a basis for further planning. A comparison of this data with the goals and target groups for the event should secure the consistency of the coming event. If a “non-fit” occurs (e.g. a gym was selected as the venue for an anniversary with senior managers of a company), then the process for the specification of the event-type and the general conditions must be run through again, in order to achieve a match (cp. the loop in Figure 2). In the case of a “fit”, the sub-process is concluded. The results from the event strategy phase are then recorded in a briefing after a final tuning with the superordinate strategic requirements and an initial budget for the event.

7 Conclusion

The topic of this article was the construction of a reference process model for event management. The reference model makes recommendations for the design of process-oriented information systems, which serve to support event management. The merging of the two separately developed fields of research intended here — on the one hand, event marketing resp. event management as a discipline of business economics and on the other, reference modeling as a discipline of information systems research — is new for two reasons: first, up to now, there have been no noteworthy research results on the modeling of event management systems. And second, the construction results in this article are a reaction to the often-criticized lack of reusable domain models in the field of reference modeling.

The construction of the reference model was — as is customary in reference modeling — divided up into the creation of a framework, the Event-E, and the modeling of detail models assigned to the domains of this framework. While the construction of the detail model with the EPC was based on an established domain-independent process modeling language, the motivations for the structure of Event-E showed that thoughts with symbolic character dominate in the construction of the reference model framework. This results in a symbolization of the relationships described by the model for the observer. The train of thought is geared towards the respective subject area and can therefore not be expressed using application domain-independent modeling languages. In addition to their purpose of structuring models, frameworks also serve as trademarks for the reference models assigned to them.

References

1. The George P Johnson Company (ed.): Trends in U.S. Marketing 2001–2002. Detroit (2002)
2. Dumas, M., van der Aalst, W.M.P., ter Hofstede, A.H.M. (eds.): Process-aware Information Systems: Bridging People and Software through Process Technology. Wiley, Chichester (2005)
3. Becker, J., Schütte, R.: Handelsinformationssysteme: Domänenorientierte Einführung in die Wirtschaftsinformatik, 2nd edn. Moderne Industrie, Landsberg/Lech (2004)
4. Clarke, A.: Evaluating Mega-Events: A Critical Review. In: Proceedings of the 3rd DeHaan Tourism Management Conference The Impact and Management of Tourism-Related Events, University of Nottingham (December 14, 2004)
5. Curran, T.A., Keller, G., Ladd, A.: SAP R/3 business blueprint: Understanding the business process reference model. Prentice-Hall, Englewood Cliffs (1998)
6. Erber, S.: Eventmarketing: Erlebnisstrategien für Marken, 3rd edn. Moderne Industrie, Redline Wirtschaft bei Verl (2002)
7. Fettke, P., Loos, P.: Classification of Reference Models – A Methodology and its Application. Information Systems and e-Business Management 1, 35–53 (2003)
8. Getz, D.: Event Management & Event Tourism. In: Cogn. Comm. Corp., New York (1997)
9. Goldblatt, J.J.: A future for Event Management: The analysis of major trends impacting the emerging profession. In: Allen, J., Harris, R., Jago, L.K., Veal, A.J. (eds.) Events beyond 2000. Proceedings of Conference on Event Evaluation, Research and Education, Australian Centre for Event Management, Sydney, pp. 1–9 (2000)
10. Hede, A.-M., Jago, L.K., Deery, M.: Special Event Research 1990–2001: Key Trends and Issues. In: Australian Center for Event Management (ed.) Events & Place Making: Event Research Conference, Sydney. UTS, July 15–16, 2002, pp. 305–338 (2002)
11. Holzbaur, U., et al.: Eventmanagement: Veranstaltungen professionell zum Erfolg führen, 2nd edn. Springer, Heidelberg (2003)
12. Jago, L.K., Shaw, R.N.: Special events: A conceptual and differential framework. Festival Management and Event Tourism 5(1/2), 21–32 (1998)
13. Keller, G., Nüttgens, M., Scheer, A.-W.: Semantische Prozeßmodellierung auf der Grundlage Ereignisgesteuerter Prozeßketten (EPK). In: Scheer, A.-W. (ed.) Veröffentlichungen des Instituts für Wirtschaftsinformatik, Saarbrücken, vol. 89 (1992)
14. Lang, K., Taumann, W., Bodendorf, F.: Business Process Reengineering with reusable Reference Process Building Blocks. In: Scholz-Reiter, B., Stickel, E. (eds.) Business process modelling, pp. 265–290. Springer, Berlin (1996)

15. Larson, M.: Evenemangsmarknadsföringens organisering: Interaktion mellan aktörer på ett politiskt torg. Göteborg: Handelshögskolan, Universitet (2003)
16. Luppold, S.: EDV in der Veranstaltung. In: Haase, F., Mäcken, W. (eds.) Handbuch Event-Management, München: kopaed, pp. 129–143 (2004)
17. Mylopoulos, J.: Information Modeling in the Time of the Revolution. Information Systems 23(3/4), 127–155 (1998)
18. O'Toole, W.: Towards the integration of Event Management Best Practice by the Project Management Process. In: Allen, J., et al. (eds.) Events beyond 2000: Proceedings of Conference on Event Evaluation, Research and Education, July 2000, pp. 86–92. Australian Centre for Event Management, Sydney (2000)
19. Rossi, M., Siau, K.: Information Modeling in the new Millennium. Hershey (2001)
20. Scheer, A.-W.: Business Process Engineering: Reference Models for Industrial Enterprises, 2nd edn. Springer, Berlin (1994)
21. Scheer, A.-W., Thomas, O., Adam, O.: Process Modeling Using Event-driven Process Chains. In: Dumas, M., van der Aalst, W.M.P., ter Hofstede, A.H.M. (eds.) Process-aware Information Systems: Bridging People and Software through Process Technology, pp. 119–145. Wiley, Hoboken (2005)
22. Schwandner, G.: Grundlagen – Projektmanagement und Organisation. In: Haase, F., Mäcken, W. (eds.) Handbuch Event-Management, München, kopaed, pp. 27–45 (2004)
23. Thomas, O.: Understanding the Term Reference Model in Information Systems Research: History, Literature Analysis and Explanation. In: van der Aalst, W.M.P., et al. (eds.) BPM 2005. LNCS, vol. 3649, pp. 484–496. Springer, Berlin (2006)
24. vom Brocke, J.: Referenzmodellierung: Gestaltung und Verteilung von Konstruktionsprozessen. Berlin: Logos (2003)
25. Wand, Y., Weber, R.: Research Commentary: Information Systems and Conceptual Modeling – A Research Agenda. Information Systems Research 13(4), 363–376 (2002)