

# A MULTI-PERSPECTIVE FRAMEWORK FOR EVALUATING CONCEPTUAL MODELS IN ORGANISATIONAL CHANGE

Authors:

Frank Wolff, University of Duisburg-Essen, Universitätsstrasse 9, 45141 Essen, Germany,  
frank-j.wolff@vr-web.de

Ulrich Frank, University of Duisburg-Essen, Universitätsstrasse 9, 45141 Essen, Germany,  
ulrich.frank@uni-duisburg-essen.de

## Abstract

*The success of organisational change processes depends on a number of factors. Traditional organisational change research has been predominantly concerned with social and human issues. Nevertheless, due to the ever increasing complexity of organisations and their IT-Systems, today good information on the internal structures are indispensable for the required swift changes. Corporate conceptual models have proven to be a suitable way to represent and work with this information in organisational change processes. However, a good and appropriate approach to conceptual modelling for an organisation cannot be established straightforwardly. This is due to a number of interrelated factors from different areas. To find the best way or improve on actual practice a thorough evaluation is necessary which encompasses three perspectives. The 'business process perspective' deals with the strategies and goals, and thereby serves to elicit the business requirements for conceptual modelling. The 'epistemological perspective' defines necessary qualities. The 'human resource perspective' explains key factors in the process of knowledge generation and usage on the basis of conceptual models. The specific advantages and considerations necessary for the usage of conceptual modelling in organisational change are discussed for the most influential factors and a generic framework for their evaluation presented.*

*Keywords: conceptual models, evaluation, perspectives, organisational change.*

# 1 INTRODUCTION

Technological and market developments force organisations to change their structures and IT-Systems for successfully coping with more and more frequently arising economic challenges. Amy Pagliarella (2001) identified a number of factors which help organisations to develop and unleash a capacity to change. Besides leadership issues and the awareness to external changes, she emphasises the necessary competencies for learning and mutual comprehension of the actual and potential organisational settings. On one hand the process of change should be fast and swift, on the other hand the procedures and supporting IT-Systems comprise increasingly complex interdependencies. Their implications on a desired change can often only be reliably managed by involving a number of different people. Hence, processes of organisational change require both analytical skills to cope with a high level of complexity, and managerial competence to focus the process. Both tasks require the integration of people who have different perspectives, e. g. senior management, business experts, IT-professionals. Therefore it is pivotal for the success of change management to promote communication across such professional cultures.

There are numerous approaches to study and foster processes of organisational change. Most of them are focussed on social and psychological aspects. Some dominant topics are:

- management of change - making people to participate in work organisation (French & Bell 1999)
- organisational learning - for enhancing the capacity of solving problems (Argyris 2004)
- enabling communication - across hierarchical and domain barriers (Weick 1979)
- organisational culture - motivating for change activities and establishing regular practice (Schein 1997, Alvesson & Berg 1992))
- images or metaphors of organisations - for creating an awareness of potential problems (Morgan 1997)

These approaches contribute to a better understanding of change processes, point at critical success factors and thereby support the design and management of change processes. However, they remain rather superficial with respect to systematically reducing complexity and fostering cross-cultural communication. This is different with methods for systems analysis and design that have been developed in Information Systems. They emphasize the use of conceptual models that serve to reduce complexity by abstracting on relevant aspects only (Robertson & Robertson 1994). The concepts provided by corresponding modelling languages support analysis, evaluation and transformation of models. In addition to that, methods for enterprise modelling support different perspectives on an organisation, such as a strategic perspective, a business process perspective or an IT-perspective (AMICE 1993, Frank 2002, Scheer 2000). It seems reasonable to deploy conceptual models not only for analysing, designing and introducing information systems, but for processes of organisational change in general. However, the use of conceptual models for organisational change has to overcome two obstacles. Firstly, many managers are reluctant to bother with conceptual models. Hence, there is need for convincing arguments that confirm the benefits of conceptual models. Secondly, there is need for an economic evaluation of models: Even if they are believed to create benefit, they also cause cost. In this paper, we will first outline, how enterprise models could be used within processes of organisational change and explain why they promise a benefit. The main part of the paper is dedicated to the economic evaluation of conceptual models for this purpose. Based on the assumption that there is no convincing procedure to calculate the overall cost and benefit, we will suggest a multi-perspective approach to evaluating models.

## 2 ENTERPRISE MODELLING AND ORGANISATIONAL CHANGE

Management of organisational change is based on a thorough analysis of the corporate strategy, future challenges, organisational settings and key resources. This includes, for instance, the analysis of changing and evolving markets, the analysis of key competitors, the evaluation of human and IT resources as well as the analysis of core business processes. Conceptual models of an enterprise

promise to support processes of organisational change in various aspects. By focussing on key abstractions, they help with the reduction of the overall complexity. The special purpose modelling languages should provide concepts that foster analysis and evaluation. For instance: A language for modelling business processes may include concepts such as ‘media clash’ or ‘consumption of resources’. By providing different types of diagrams, e.g. models of business processes, information models or strategy models, they support various groups of people involved in change processes with concepts and visualisations they are familiar with, thereby fostering professional analysis and design. At the same time, multi-perspective enterprise models contribute to cross-perspective communication, because they allow for visualizing relevant interrelationships in a comprehensive way. Hence, enterprise models can serve as a common reference for those who are involved in processes of organisational change. They serve to capture and disseminate relevant knowledge. By representing optional future states of the enterprise, they provide a common orientation for change. In other words: Enterprise models can be regarded as object and objectivation of change projects. They are object of a change process because they serve as a common reference for those who analyse the given situation as well as change alternatives. At the same time they are a reification of change projects because they represent relevant aspects of corresponding processes. Figure 1 illustrates this function of multi-perspective enterprise models.

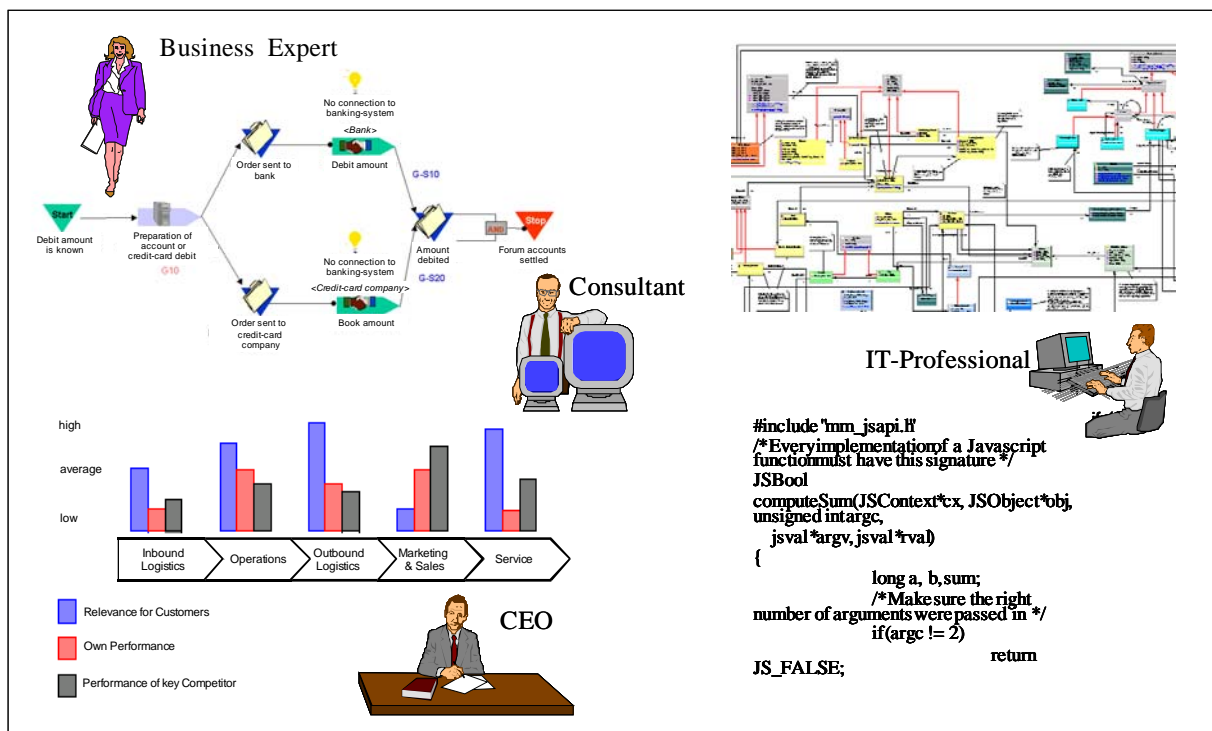


Figure 1. Different interests and user perspectives on conceptual models

Despite the obvious advantages, enterprise models offer for processes of organisational change, managers may still be reluctant to have them deployed: The development of enterprise models requires a substantial amount of resources. In order to justify this investment, the benefit that it can be expected to produce, has to be evaluated. At best, this would be a precise calculation of the return on investment. However, we assume that this is not possible: Conceptual models are generating and disseminating knowledge that may cause many effects, some of which are rather subtle (Maier 2004). Despite these obstacles, there is need for a convincing evaluation, since investments can hardly be decided for without some sort of convincing justification.

### **3 PERSPECTIVES ON THE EVALUATION OF KNOWLEDGE IN CONCEPTUAL MODELS**

Conceptual models are no ends in themselves. Instead, they are supposed to serve a purpose. Therefore, the evaluation of the benefit to be expected from deploying conceptual models within change processes has to take into account the objectives of change processes. From a managerial point of view, improving organisational performance or competitiveness will usually be of pivotal importance. This in turn may involve the creation and dissemination of knowledge, but also empowerment of employees and the development of an organisational culture where creation and sharing of knowledge is appreciated. Furthermore, the benefit offered by conceptual models will also depend on their quality, which suggests using adequate criteria to judge model quality.

Against this background we suggest a framework for evaluation that takes into account three perspectives. Each of these perspectives emphasizes certain aspects that are relevant for judging the benefits resulting from deploying conceptual models in processes of organisational change. The 'Business Process Perspective' is focussing on the contribution of conceptual models for improving a company's operations or decisions. The 'Epistemological Perspective' relates to the quality of conceptual models. Finally, the 'Human Resource Perspective' is dedicated to the question, how conceptual models affect individual and collective learning processes as requisites to facilitate model-related processes and thereby advancing the organisation's capabilities for structural change.

Most of the aspects investigated in the different perspectives under the focus of organisational change apply to conceptual models in general. This is due to the fact that organisational change processes use most advantages of conceptual models, like their capacity to store knowledge without relying on the originating experts, or their ability to support complex design processes. Anyway change processes also comprise some special characteristics which will also be addressed in the following examination of the three perspectives on conceptual models.

#### **3.1 The Business Process Perspective**

The business process perspective defines the goals for conceptual modelling in an organisation. In regard to our intention to assess the required information of the business in conceptual models, we have to distinguish two levels of evaluation in the business process perspective, first, the general process of strategy formulation and second, the analysis of the resulting requirements on knowledge in conceptual models. The strategic view does not directly address organisational change, but as an outcome on wide variety of strategic developments and actions change will consequentially become necessary.

The assessment of the business process perspective starts off with a multidimensional analysis of customers, competition, markets, products and organisational capabilities (Bowman & Asch 1987). This helps to produce a common image of possible future environments and main strengths and weaknesses of the organisation. On this foundation a number of scenarios can be developed, and lead to necessary decisions on the strategic direction of the organisation. The strategy and its realisation often involve many areas where organisational change is or will become necessary. In addition to that the competitive comparison will make aware, which swiftness of change will be necessary to be successful on the market.

The second stage of the evaluation of the business process perspective investigates which information can or will be useful. This depends on the general characteristics of the business processes and the strategy chosen. The requirements on conceptual models will be different if the processes of the organisation are heavily IS-related or more rely on human interaction. In the area of IS, there are a wide range of strategies with different effects on necessary information in conceptual models, like developing new applications fast and reliably or supporting a growing processing base of hardware and software systems. Also common business strategies like cost leader or quality leader affect model requirements. A strategy based on standardisation demands strictly organised responsibilities, cost

control and information for optimisation (Porter 1987). The quality leader will put much more emphasis on process security and communication.

So a number of potential benefits and their relation to business strategies have been identified for the assessment. The individual evaluation of an organisation will have to decide what makes sense in its particular case. The deliverables of the evaluation of the business process perspective are the resulting requirements on conceptual models in the best case supplemented with the estimated benefits.

From these general requirements specific criteria for the evaluation of the models can be derived. Some of the guiding questions of the evaluation are e.g.:

- Do the models help to manage the complexities of my business processes?
- Do the models cover the areas of the organisation and IS which are most likely to be affected by the strategy and subsequent changes?
- Do the models contribute to value creation in vital processes or functions of the company?
- Do the models provide the information which will probably be required for swiftly implementing changes? ...

This emphasis of the business process perspective directs the evaluation of conceptual models to follow the requirements of the business, so that its goals can be effectively supported by the *usage of conceptual models*. Besides the contents and the general usage more detailed directions are necessary to assure good quality. This is the concern of the following epistemological perspective.

### 3.2 The Epistemological Perspective

The value provided by models will certainly depend on their quality. Quality, however, is hard to judge. With respect to designing information systems, there have been several attempts to guide the evaluation of a model's quality. They all stress the necessity to use a multi-criteria approach. Moody and Shanks (1994) suggest six criteria to evaluate Entity Relationship models: simplicity, understandability, flexibility, completeness, integration, implementability. Lindland et al. (1994) emphasize, among other things, the need for using a modelling language that is appropriate for the problem domain and for the expected audience. To validate a particular model, they differentiate syntactic, semantic and pragmatic quality. While syntax and also semantics are considered on a formal level, they suggest, among other things, "inspection" and "explanation" as instruments to foster pragmatic quality. In addition to syntax, semantics and pragmatics, Krogstie et al. (1995) propose explicitly "knowledge quality" as an evaluation criterion. It refers to the knowledge of people who participated in a modelling project. It is not, however, discussed how this aspect could be used for the overall evaluation of a conceptual model. In a recent article, Shanks et al. (2003) suggest to use ontologies for validating conceptual models. However, they mainly discuss how a philosophical ontology could contribute to the selection of an appropriate modelling language.

Apparently, approaches to validate the quality of conceptual models as instruments for software development include aspects that relate to knowledge or knowledge quality respectively. However, they are not sufficient for our purpose. Instead, we suggest an approach that is inspired by epistemological considerations. In many ways, models are similar to scientific theories. Therefore, it seems reasonable to adapt criteria being used to evaluate theories to judge model quality. While there is an ongoing epistemological controversy on the notion of a theory as well as on the evaluation of theories, we believe that there are certain generic requirements knowledge has to satisfy in order to qualify for scientific knowledge: *abstraction*, *originality* and *reason*. Abstraction means that a proposition should not refer to single instances, but to classes or general phenomena. Originality emphasises the idea of progress through differentiation. To give reason for a proposition implies to reduce it to propositions that are accepted as true. This implies a concept of truth.

There are various concepts or theories of truth. Among the most important ones are the correspondence theory, the consensus theory and the coherence theory. The correspondence theory of truth suggests that a proposition is true, if it corresponds to reality. Applying it to a conceptual model would suggest thoroughly analysing the domain being represented. According to the coherence theory of

truth a proposition is true if it is compliant to an existing body of accepted knowledge. It would recommend comparing a model against reference models, text books, manuals etc. Finally, the consensus theory of truth proposes that a proposition is true, if all experts agree on it. While all these concepts of truth have specific shortcomings, they suggest that truth is relative and requires a thorough and critical evaluation.

Abstraction will usually imply to concentrate on general features and leave out specific instances. Furthermore, abstraction demands to identify those features of reality that are subject to technological, economic or political change. Successfully abstracting from this kind of variety, allows for concentrating on essential knowledge. However, it is not trivial at all to distinguish between those factors that are invariant and others that may change – and there is no method that would allow for proving such a distinction. Emphasizing abstraction as a key criterion for judging model quality is mainly used to foster awareness for this aspect.

The demand for *originality* is certainly not to be applied as rigorously as in science. On the one hand, it emphasizes the avoidance of redundant information: If information can be gathered from other sources, it should be carefully checked, whether it is required within a model. There are two levels to ensure that the models conform to *reason*, syntax and semantics. A model is syntactically correct if it conforms to the syntactic rules of the corresponding modelling language. Its formal semantics is defined by the modelling language, too. However, usually, the semantics that is created by human interpretation is more important. In this case, reason is provided by giving convincing explanations for modelling decisions that are not evident at first sight. In other words: the level of reason depends on how comments and annotations improve a comprehensive understanding of a model.

With respect to the complexity of enterprise models, the evaluation of model quality will usually not depend on a particular point of view only. Instead, there are numerous aspects to be taken into account and evaluated against various criteria which depend on the results of other evaluation topics. This recommends a discursive approach to the evaluation of model quality. Within the framework the evaluation of the 'epistemological perspective' is translated into questions that allow for more concrete guidance, e. g.:

- Are the facts described by the model accepted as correct by the domain experts?
- Are the described instances on the desired level of detail?
- Are the models conforming to necessary standards?
- Are there aspects included in the model that depend on a particular technology that may be replaced?
- Are there any services that customers may ask for in future times? ...

### **3.3 The Human Resource Perspective**

The importance of the human resource perspective in the evaluation is due to the fact that the desired process of knowledge capture, storage and exchange in conceptual models completely depends on subtle actions of individual participants. In figure 2 an overview on the main elements of this process is given. The two ellipses set the focus, in the centre on the individual process and in the surrounding area for the social environment. The processes of *individual interactions* concern the systematic relationships between model creation, usage and necessary skills. The modelling activities on intended or real systems create conceptual models which are stored in an IS-system. The conceptual models can then be used almost any time to reconstruct the knowledge about the system. Necessary for doing this are two kinds of knowledge or skills, skills to deal with models and general knowledge in the domain concerned. Depending on whether the models are created or used for information purposes, we distinguish the skills between 'proper' modelling skills and only model literacy. Conceptual models offer some obvious advantages for knowledge management. They systematise the contents by abstracting individual knowledge of organisational or technical facts using a common modelling language. This language helps all participants to reconstruct the knowledge easily in different circumstances, e.g. in discussions of projects, or in situations when information must be assessed quickly to resolve urgent problem situations.

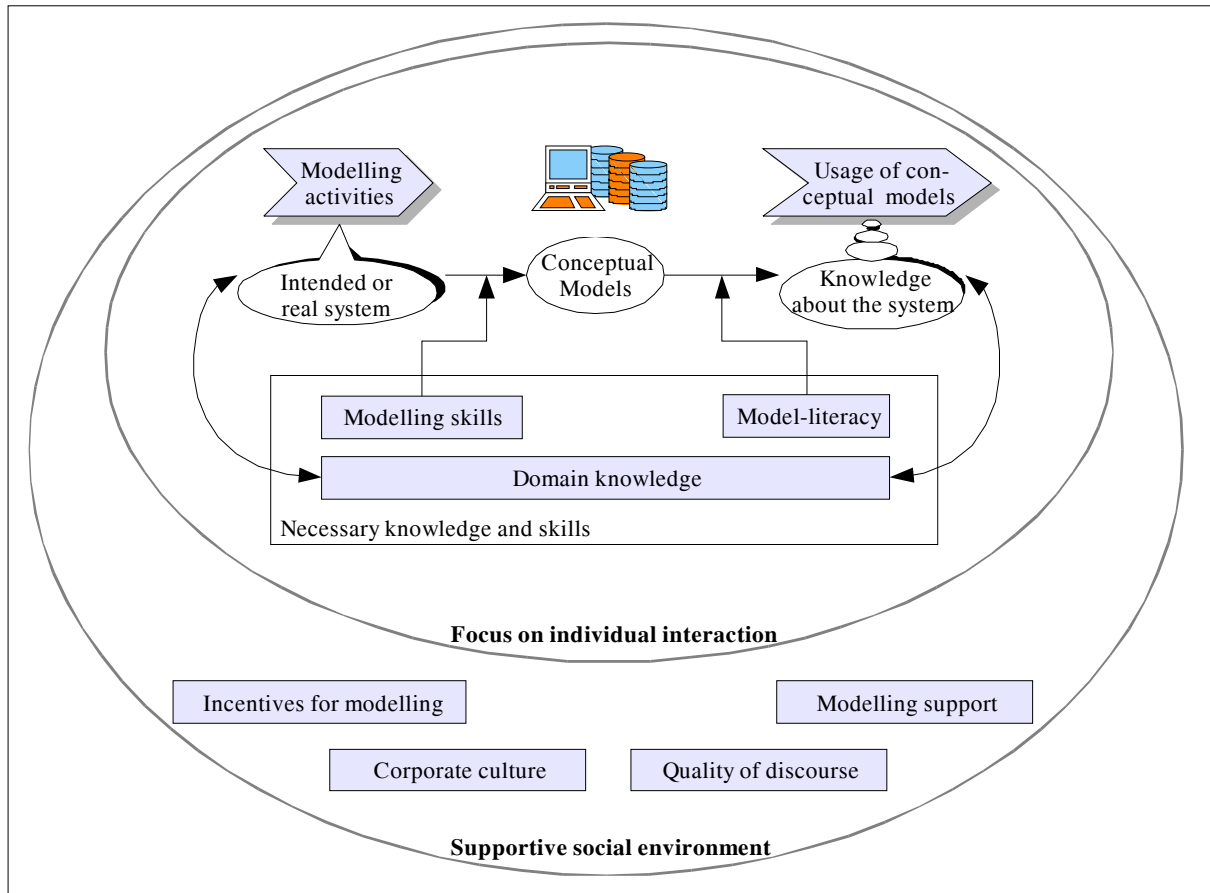


Figure. 2 Overview on systematic relationships of the human perspective

Another advantage of conceptual models is that rationality will be fostered by the use of models because organisational and IT-designs will be constructed more systematically. So it is much easier to check for their correctness. At the beginning the required scrutiny may lead to an additional effort in the creation of a model but this will be compensated by much more focussed discussions on the proposed design and after a short time accelerate the design and implementation activities. Anyway it must be noted that despite its more objective appearance the exchange of ideas and information through models has limits, if subtleties or novel ideas are concerned and cannot be directly represented in the models. Not only but especially in these cases, the discussion will benefit from a good *quality of discourse* in the organisation, which enables the participants to openly address and solve these situations and other kinds of vagueness (Wolff 1994).

The outer circle in figure 2 depicts the *supportive social environment* which backs the individual activities around conceptual modelling. One often ignored factor is the motivation for creating and using models. If the motivation for modelling is not sufficient different measures are available to improve motivation (Morello 2002). Regard to the *incentives for modelling* is advisable in many cases because of the distribution of the benefits of the use of conceptual models in time. Often the benefits of using information from models will be available only some time after modelling and to other people. So the motivation of modellers may not be sufficient and incentives or direct managerial control is necessary to ensure that the models are available for their required purposes in the business processes. One of the strongest motivations can be a *corporate culture* which enables the sharing of knowledge. This corporate culture does not evolve on its own, but grows as a tradition with roots on the organisational history and sometimes on the vision of the company's future.

Also *modelling support* will usually be necessary and in larger companies some kind of modelling organisation. The modelling support has a number of tasks to assist modellers. Special complicated questions on modelling may become obvious and require deeper modelling skills, or disputes e.g. due

to interests of departments on modelling questions must be settled. One of the mayor challenges is to integrate the knowledge of different parts and domains in a company. This is related to the fact that the occasion or the reason for modelling often is connected with a project having a particular scope. If the conceptual models are developed on the basis of projects the balance between the project interests and the necessities of a final integration of the projects results in the companies repositories must be established (Wolff 2002). Considering all these influential factors an evaluation of conceptual models has to investigate questions like e.g.:

- Can people in the company understand the conceptual models which concern their field of work?
- Are the models kept up-to-date?
- Are (only) the necessary persons involved in the modelling process?
- Is the communication between the involved persons adequate? ...

### **3.4 Importance of the perspectives for distinct businesses**

As there will be a wide variation of requirements from diverse organisations, a different depth of consideration or emphasis of factors will usually be reasonable for different companies and even organisational functions. For example the human perspective and in particular the culture of knowledge management is much more important for a consulting firm than for a food retailer who will be much more concerned about the operational factors in its business process perspective. Also the usage of conceptual models in organisational change processes will vary accordingly. Innovative developments are processes which rely on fast communication and exchange of non-standardised information, while repetitive tasks require easy access for many people on structured and standardised information.

### **3.5 Subsequent considerations on designing the modelling infrastructure**

The modelling infrastructure concerns the area of the modelling *languages, methods* and *tools* to do efficient modelling in an organisation. To ensure the easy and swift transferability of knowledge contained in models a common modelling language is necessary, and to guide good modelling practice an appropriate methodology. Based on the requirements of the three perspectives, i.e. its prospective uses, the desired quality and the skills of the involved staff of the organisation, modelling languages must be adjusted (Scheer 2000). On one hand the languages must be easily to understand for the intended audience. On the other hand they are designed to integrate and keep together different information systematically. For most modelling languages entail a high degree of freedom in their application they must be complemented by a *modelling method*. The method helps users with process models and necessary guidelines e.g. for good model layout (Becker & Rosemann & Uthmann 2000).

For conceptual modelling a combination of a good graphical presentation with the ability to store lots of data is required. A *modelling tool* helps and guides users to accomplish the different tasks from the design of models, to performing consistency checks, to queries in the *model repository* (Buresch & Kirmair & Cerny 1997). The resultant factor for the suitability of IT-Systems is often termed 'task technology fit' (TTF) (Beats 1998). In regard of the evaluation of the TTF for a modelling tool, it comprises the ease of modelling, representation of models and contained information, query functionality, interfaces for exchanging outputs or links, data consistency and repository, and depending on the specific requirements some more detailed factors.

## **4 BALANCING THE PERSPECTIVES**

The different perspectives emphasise separate aspects of the corporate use of conceptual models in knowledge management supporting organisational change processes. The indicated influential factors from the three perspectives provide a guidance to evaluate and to design the necessary infrastructure to make the processes of conceptual modelling and model usage efficient in an organisational context.



Anyway there is no straightforward relation between the identified factors but there are quite a number of relevant dependencies.

This results in two challenges, first the dependencies of the factors in the different perspectives must be balanced, and second the evaluation needs a common scheme of the relevant factors and dependencies. Cause and effect diagrams are a technique for depicting these dependencies similar to the balanced scorecard (Kaplan and Norton 1996). The authors found this analogy helpful in discussions because the cause and effect diagram is well established. Also it is seen the possibility to use this cause and effect diagram as basis for a balanced scorecard after having gained a deeper understanding by the qualitative analysis.

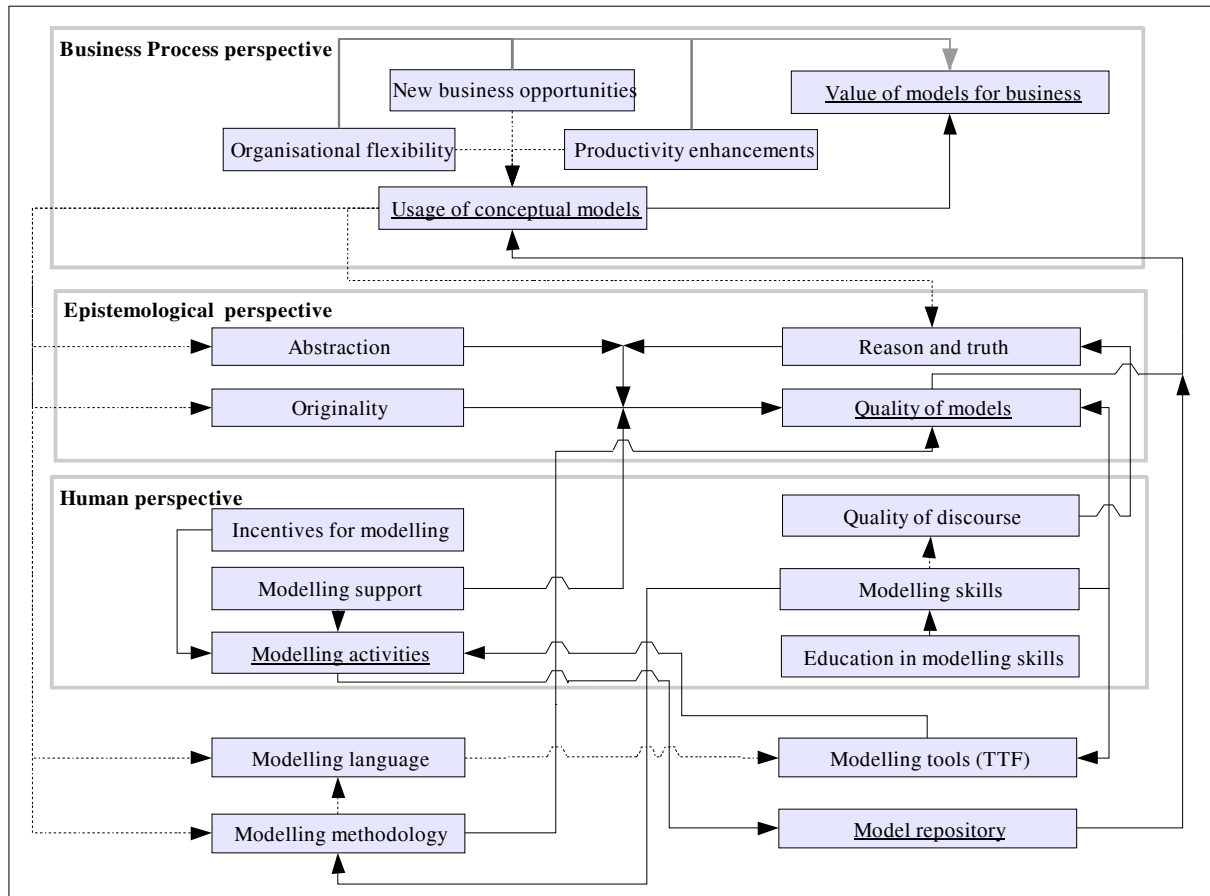


Figure 3. Cause and Effect Diagram of conceptual modelling.

The cause and effect diagram for conceptual modelling in Figure 3. represents the identified three perspectives. The perspectives of the diagram show the main factors influencing costs and benefits of conceptual modelling for an organisation, the *modelling activities*, the *usage of the models*, which are determined by the availability and the *quality of models* in the *repository*. As not only the controlling view of aggregating detailed effects on higher level results is relevant, but also the influence of strategies and goals on the design of the underlying causal factors, some dedicated (dotted) relationships have been introduced. The circular structure as consequence is quite natural for concepts of control (Senge 1990).

The *business process perspective* presents major benefits of conceptual modelling. As has been discussed in the business process perspective the general goals of *operational flexibility*, *new business opportunities* and *productivity enhancements* must be specified in more detail for a company. Although the context of organisational change is prominent in this paper, it should be noted that a number of different potential benefits can be achieved by conceptual modelling, ranking from smaller

productivity enhancements like generating compulsory documentation and facilitating the training of new personnel, to new ways of doing business by accelerating development processes or being able to easily integrate and transform other companies. Besides the relationships between the factors inside the respective perspectives, the cause and effect diagram shows impacts crossing the perspectives. Besides a number of factors from the human resource perspective, the *modelling activities* are influenced by the *modelling tools (TTF)*. The resulting modelling activities further supply the modelling repositories, which in turn will foster the usage of the conceptual models provided that the quality of the models is sufficient.

The factors of the human resource and epistemological perspective as well as the modelling infrastructure sometimes have different properties in the process of modelling and the use of model-knowledge. Depending on the goals of the business perspective and their efficient use they are positively or negatively influencing the realisable benefits directly or indirectly through other factors. Some of the factors must be specified in more detail, e.g. if modelling is done mostly by specialists and the language is more sophisticated a separate consideration on the education of the readers is required. As can be seen in Figure 3 the cause and effect relationships are not simple but contain many factors influenced by numerous others. So a number of influences determine the resulting level of *quality of models*. They range from the chosen methodology, to supporting or educating the modellers.

## 5 APPLYING AND REFINING THE FRAMEWORK

If an organisation tries to enhance its internal organisational and IS-capabilities for easy and swift changes by intensive use of conceptual models, it must manage the related benefits and costs. For this purpose a framework is suggested. It helps to break down the overall complexity of the subject to smaller aspects, by this allowing to evaluate conceptual models in a more comprehensible way – hence reducing the risk of corresponding managerial decisions. The framework comprises the evaluation of practices and results from the usage of models as a recurring continuous improvement activity.

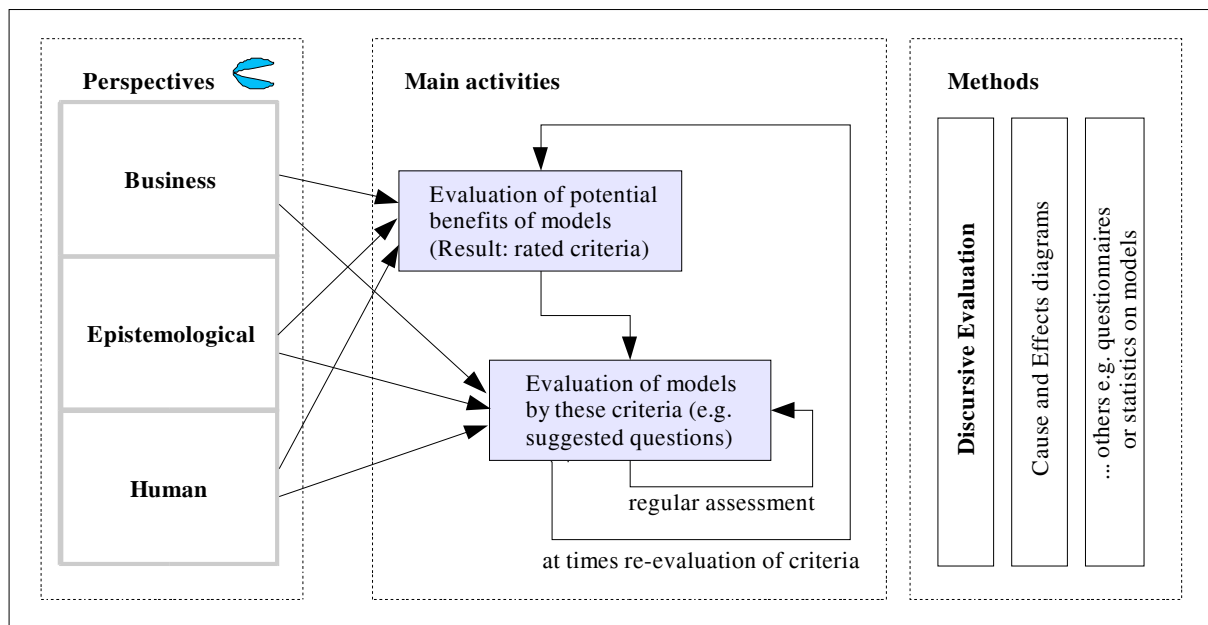


Figure 4. Framework for evaluation of models

Figure 4 depicts the main elements of a framework for the evaluation of models. Based on the guidance of the three perspectives two main activities are distinguished, first, the evaluation of potential benefits which has as result *rated assessment criteria* for the particular organisation. They are used in the second main activity for evaluating the actual application of models in change processes. The main method for evaluation is the *discursive evaluation*. It needs some rules for its

effective functioning which are described in the next chapter. As the relations between the factors are quite complex a dedicated model like a *cause and effect diagram* can well serve the evaluation activity as a guiding map. A repeated evaluation will boost the understanding of the process. Depending on the organisational requirements also other common assessment methods like *questionnaires* or *statistical analysis of metrics* on models should be applied. The analysis of actual and required benefits will often reveal a gap or problem which must be dealt with to ensure an effective use of conceptual models. An appropriate controlling practice gives the opportunity to initiate corrective action so that the value can be increased. By this earlier evaluations of value will be clarified and can be asserted with more confidence.

### 5.1 Rules for a discursive evaluation

Discursive evaluations bring together different persons with their subjective experiences. Thereby, a discursive evaluation depends on a sufficient cooperation and understanding between the participants. The goal is a critical dialogue to reach an enhanced and possibly more 'objective' view and valuation of some facts. An obvious precondition for such a discussion is a sufficient knowledge about the topic. As the interactions may be influenced by numerous hindering factors, like tastes, tactical considerations or differences in perception some rules are mandatory for a good discursive evaluation (Frank 1998, Wolff 1994).

- Participants must concentrate on the evaluated subject-matter.
- They must be interested in a commonly accepted result.
- They are investigating benefits and costs of models for business (and no responsibilities).
- They are seriously attentive and open-minded for contributions of other participants.
- They are openly answering questions on their domain and to clarify their statements.

## 6 CONCLUDING REMARKS

The presented framework is based on and synthesises practical experience and theoretic research of the authors with conceptual modelling in business organisations. The discussion of the *business process*, the *epistemological* and the *human perspectives* illustrates the issues necessary to initiate a constructive dialogue on the usage of conceptual models to support change processes. As models represent a kind of explicit knowledge very close to IS and organisational systems, their contribution to organisational flexibility can be substantial but depends on how the usage of models is rooted in working processes. An evaluation will entail learning because of the subtle influences. In some sense this represents a limit to the evaluation. For this reason and because the effort sometimes will only be compensated after a longer period, a long-term perspective is necessary to increase the capabilities of active and open trans-organisational cooperation (Senge 1990). The conceptual models as common language are a prerequisite. Nevertheless their contribution must be tailored to the needs of the organisation. To support this process the authors devised a comprehensive framework to evaluate the advantages of conceptual models. Based on this, conceptual models can support change management of complex organisational and IS-structures and help to achieve the flexibility required by the business of today.

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