Business Process Documentation in Creative Work Systems

A Design Science Study in Television Production

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To Nadine

Foreword

Conceptual modeling as a tool for effective business process management is a core subject in the IS community. The last fifteen years have seen considerable improvements on methods and implementations for model-based process analysis and design. However, the application area of these methods and tools has since been constricted the context of highly predictable and repeatable process structures that are readily accessible to formalization. In these areas, the major goals of modeling endeavors can be found in measurement and optimization of process efficiency, in process restructuring and automation. In businesses, however, where originality and innovation are predominant drivers of the competitive environment, traditional efficiency figures will take a back seat in the assessment of a company's success.

Accordingly, in such contexts where creativity and knowledge-intensive work are essential to the creation of value, traditional forms of process modeling reach their limits of applicability. Such business processes are characterized by high levels of uncertainty, rely heavily on individual abilities of their actors and demand for a sufficient degree of flexibility to bring creative potentials to their full effect. Traditional process modeling techniques fail to capture these variabilities. Process analysts that find themselves confronted with work structures that are determined by individual creativity and knowledge, will likely deal with the inherent problem in using one of two strategies. The first strategy is to regard creativity-intensive processes as black boxes, since further detailing on a modeling level seems unfeasible due to the inherent variability. The second strategy implies forcing the applied method's formalism on these processes. While the first way will lead to an undesirable lack of detail, the second will alienate the nature of the process and might result in severely risking its creative potential. Thus, a more adapting modeling method is required.

Milan Karow addresses this challenging topic by posing his research question on how creativity-intensive processes can be purposefully documented in conceptual models. The primary goal of his doctoral thesis is to provide for a modeling method that meets both the requirements of creative organizations on flexibility, as well as resulting in process documentations suitable for executives, clients and other stakeholders to identify and comprehend

the essential structures in these processes. The domain to which a certain method is to be applied is a crucial influence factor of such an application. Milan Karow adheres to this notion by applying his method to a comprising case study that has been conducted in television production in Germany. His findings are thus not only insightful from a process management and methodology perspective in general, but also display a great knowledge base for that particular domain.

Münster, 2011 *Jörg Becker*

Preface

This thesis is the result of my work in the research project "Management of Creativity-intensive Processes" (ManKIP) that has been funded by the German Federal Ministry of Education and Research. It was in late summer 2008 when my colleagues Stefan Seidel and Felix Müller-Wienbergen suggested that I should join the project which had already started at the beginning of said year. My research interests at the time had already been revolving around conceptual modeling and its application in organizational contexts for some time. Starting off from the question how real-world models could efficiently be transformed into information system structures, my interests shifted towards the question how such models can be put to use beyond merely technical considerations. The predominant idea of this notion was to investigate in models as means of knowledge sharing between human recipients and modeling as an endeavor to structuring rather than formalization. The ManKIP project then offered the opportunity to project my method knowledge to an area largely untouched by process modeling. The creative environment of television production that we investigated in our study proved to be an exciting domain for this kind of application. Especially the various informal conversations I had with different domain experts besides the recorded interviews gave a great sense for the importance of domain language and the value of a model as means of support. It was one of my objectives to incorporate that domain sense into this thesis.

For making this work possible, I am indebted to a great lot of people. First, I want to thank my supervisor Prof. Dr. Jörg Becker for creating the open-minded working atmosphere at the European Research Center for Information Systems (ERCIS) that provides such an inspiring setting for individual research interests. This environment enabled me to pursue different interesting strands of investigation that finally resulted in this thesis. My thanks also go to Prof. Dr. Ulrich Müller-Funk for his support as second supervisor.

Moreover, I want to thank all of my friends and colleagues for an excellent time at the ERCIS. The time I focused on method-related topics in modeling I collaborated with the "RefMod crew" and collected a great variety of insights and ideas on conceptual modeling.

For this, I owe many thanks especially to Patrick Delfman, Armin Stein, Lukasz Lis and Sebastian Herwig. Special thanks also go to my fellow Saxon Daniel Pfeiffer, without whom I never may have seized the opportunity to apply for the job as a research assistant and with whom I had fascinating discussions about the philosophy and the semiotic foundations of conceptual modeling. Of course a very special thank-you is due to the "creative bunch", first and foremost to Stefan and Felix for making this project possible, for encouraging me to dive into this new topic and for the invaluable input they provided with their work. Furthermore, I want to thank Katrin Bergener and Matthias Voigt for their dedication within the project and for being great sparring partners who never hesitated to give honest and constructive feedback.

The greatest thanks, however, I owe to my fiancée Nadine, who has been an indispensible source of encouragement and love throughout almost the entirety of my academic career. She valiantly weathered through times of petulance and disregard while never losing her patience and appreciation. This work is dedicated to her.

Münster, 2011 *Milan Karow*

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Index of Abbreviations

ANSI	American National Standards Institute
ARIS	Architecture of Integrated Information Systems
a/v	Audiovisual
BPM	Business Process Management
BPML	Business Process Modeling Language
BPMN	Business Process Modeling Notation
BPR	Business Process Reengineering
CEO	Chief Executive Officer
CIP	Creativity-intensive Process
DEMO	Design and Engineering Methodology for Organizations
EPC	Event-Driven Process Chain
ERM	Entity-Relationship Model
HoD	Head of Development
IDEF	Integration Definition
IS	Information Systems
ISO	International Organization for Standardization
IT	Information Technology
KBS	Knowledge-Based System
KBSI	Knowledge Based System, Inc.
KM	Knowledge Management
MOF	Meta-Objects Facility
OCL	Object Constraint Language
OMG	Object Management Group
PADM	Process Analysis and Design Methodology
PoC	Pocket of Creativity
SA	Structured Analysis
SSM	Soft Systems Methodology
TCM	Two-phase-cognitive Modeling
TV	Television
UML	Unified Modeling Language

1 Exposition and Introduction

1.1 Motivation and Research Context

For the last two decades the concept of the *business process* has been the center of organization's attention in their striving for profitability and competitiveness. Business processes bridge a company's activities from their suppliers to their customers. The research work of Hammer and Champy (1993) and Davenport (1993) has received tremendous resonance by researchers and practitioners alike by breaking the functional isolations that were the core of the classical principles of labor division (Smith, 1976). The new management wave, labeled as *business process reengineering*, aimed to change the view on how work was conducted and to radically streamline the complete chain of activities toward efficiency and customer satisfaction. With information technology as an enabler, it intended to redesign the overall work structure instead of optimizing single functions and divisions: "don't automate, obliterate!" (Hammer, 1990, p. 104).

This idea of a holistic process-orientation has been the foundation of many reorganization projects of the time. However, following the first enthusiastic reengineering wave, reports of major problems and project failures accumulated (Grover, Jeong, Kettinger, & Teng, 1995). Two factors were identified as the essential causes for these problems. Firstly, the social impact of reorganization projects had been underestimated. Managers were confronted with enormous resistance, making change management the most difficult project task. Secondly, the strong focus on process optimization resulted in a *mechanistic view* on the organization that ignored the complex interaction of human actors their work processes (Grant, 2002). Based on this critique, several strands of management approaches emerged that strove to moderate between measurable performance and social considerations (cf. Section 2.2).

This shift of BPM toward more socially-centered and knowledge work processes (Davenport, 2005) has resulted in an increased awareness of the knowledge and individual capabilities of workers in a variety of complex business contexts. *Creativity* has been recognized

as an important value for both businesses that base their competitiveness on innovation (Amabile, 1988; Cummings & O'Connel, 1978; Paolillo & Brown, 1978), as well as businesses whose products are regarded as being inherently creative by deriving their core value from intellectual property. The latter class of organizations has been referred to as the so-called *creative industries* (Cunningham, 2002; Hartley, 2005; Hesmondhalgh, 2007), a term that especially refers to media and electronic entertainment. While these organizations rely on the creativity of their employees, they nevertheless have to meet traditional business objectives. This dichotomy between creative freedom and productivity poses specific challenges to the management of work processes. In this setting Seidel (2009a, 2009b) develops a theory of managing creativity-intensive processes that provides for a comprehensive conceptualization along with fundamental management strategies for creative organizations. While giving essential insights into creativity-intensive business processes, the theory remains on an abstract level of description.

Business process models are an established means of documentation and analysis for organizational processes (Dalal, Kamath, Kolarik, & Sivaraman, 2004; Pfeiffer, 2008) and a multitude of methods and accompanying software tools has been developed over the last 20 years (Indulska, Recker, Rosemann, & Green, 2008; Ko, Lee, & Lee, 2009; Recker, Rosemann, Indulska, & Green, 2009; Yu & Wright, 1997; Davies, Green, Rosemann, & Gallo, 2004). However, although much diversity has been introduced to the field of business process management (cf. Section 2.2), the fundamental view on processes in conceptual modeling has not perceptibly changed in the course of this development. Processes are represented as sequences of actions that are connected via control flows. Melão and Pidd (2000) argue that modeling techniques and tools have not been developed to address the specific demands of BPM, but were rather adapted from fields like manufacturing or information systems development. The formal sequencing of activities with precisely defined pre- and post-conditions still prevails even in more recent standards like the Business Process Modeling Notation (BPMN, Object Management Group, 2008, also see Section 4.2.3.4). On the one hand this is due to those languages strongly being attached to information system development tasks (e. g. BPMN is rather intended as a workflow system description language than being a tool for the documentation of manual work and interaction processes). On the other hand, process modeling itself has been infamously associated with the stark mechanistic view on organizations, which has been recognized as a major cause for the failures of many BPR projects. Thus, many of the now more socially oriented methods object from using formal documentation means altogether.

This thesis aims to bridge the gap between the ill-structured business processes, which occur in work systems that are largely driven by and dependent on creativity, and conceptual modeling. The research is based on the assumption that conceptual models are a valuable means for *understanding* work processes and organizational structures. Thus, it refrains from both the *formal analysis* of work processes through models (e. g. performance measurement, monitoring, comparison and benchmarking etc.) as well as from the *synthesis* of organizational structures ("business blueprints"). The documentation method developed aims to provide for a means to construct process documentations that can be interpreted by process actors and external recipients alike.

To verify the feasibility of this method, a modeling study has been conducted in the context of television production in Germany. The thesis will present the results of this study in detail and discuss the challenges encountered in a domain that has rarely been subject to BPM research and projects as yet.

1.2 Research Questions

The integration of business process modeling with the aspect of creativity in organizations is a challenging objective. On the surface the concepts of model-based formalization of work in a model and the freedom and flexibility necessary for creativity to unfold seem diametrically opposed. However, this contradiction is subject to the every day work of people in creative businesses or departments, since although their results are measured concerning creative quality, business objectives like time and budget constraints are still to be met. Furthermore, with increasing size of projects, administrative and coordination tasks pervade the creation processes. To structure these influences, a documentation method is necessary to comprehensibly describe tasks and responsibilities as well as dependencies and patterns of interaction. The fist central research question for this thesis is thus phrased as follows:

Research Question 1 *How can creativity-intensive processes be documented?*

The design objective of this thesis is to provide for a conceptual modeling technique that allows for documenting business processes that are characterized and influenced by creativity. The research question induces some detailed investigation questions:

- How can creative tasks be identified and distinguished?
- What concepts are necessary to describe these tasks?
- How can the varying structuring of creativity-intensive processes be captured?
- How can the concepts be presented comprehensibly?

RQ1 is a reference to the *design artifact* that is to be developed in the context of this research. It implies the investigation for adequate existing modeling methods as well as the design of a novel method should available means fail to meet the requirements of creativity-intensive processes. The resulting process is an instance of design science research (March & Smith, 1995; Hevner, March, Park, & Ram, 2004).

The design is based on substantive theory on managing creativity-intensive processes. By applying the artifact to a domain other than the substantial domain of the utilized theory, the artifact evolution will feed back to the theory in terms of validation and possible enhancements. This methodological contribution is phrased in the second research question of this thesis.

Research Question 2 *How can conceptual modeling contribute to the validation and enhancement of substantive theory?*

To cover this research goal, the design artifact is applied to the domain of television production that is deemed highly creative (Collie, 2007). Furthermore, the resulting model of the german television production gives a comprising view of this business sector and thus represents an additional contribution for practice besides the documentation method.

1.3 Thesis Structure

This thesis is structured as follows. In the next chapter the relevant literature is introduced and the research is associated to its scientific context. Chapter 3 describes the research design that is the foundation of this work and provides the justification for its structuring. Chapter 4 comprises the design of the artifact: a business process modeling method for documentation in creative work systems. Chapter 5 and 6 are concerned with the evaluation of the artifact, i. e. its application to the chosen context of television production. Chapter 7 discusses the findings and their implications for research and practice.

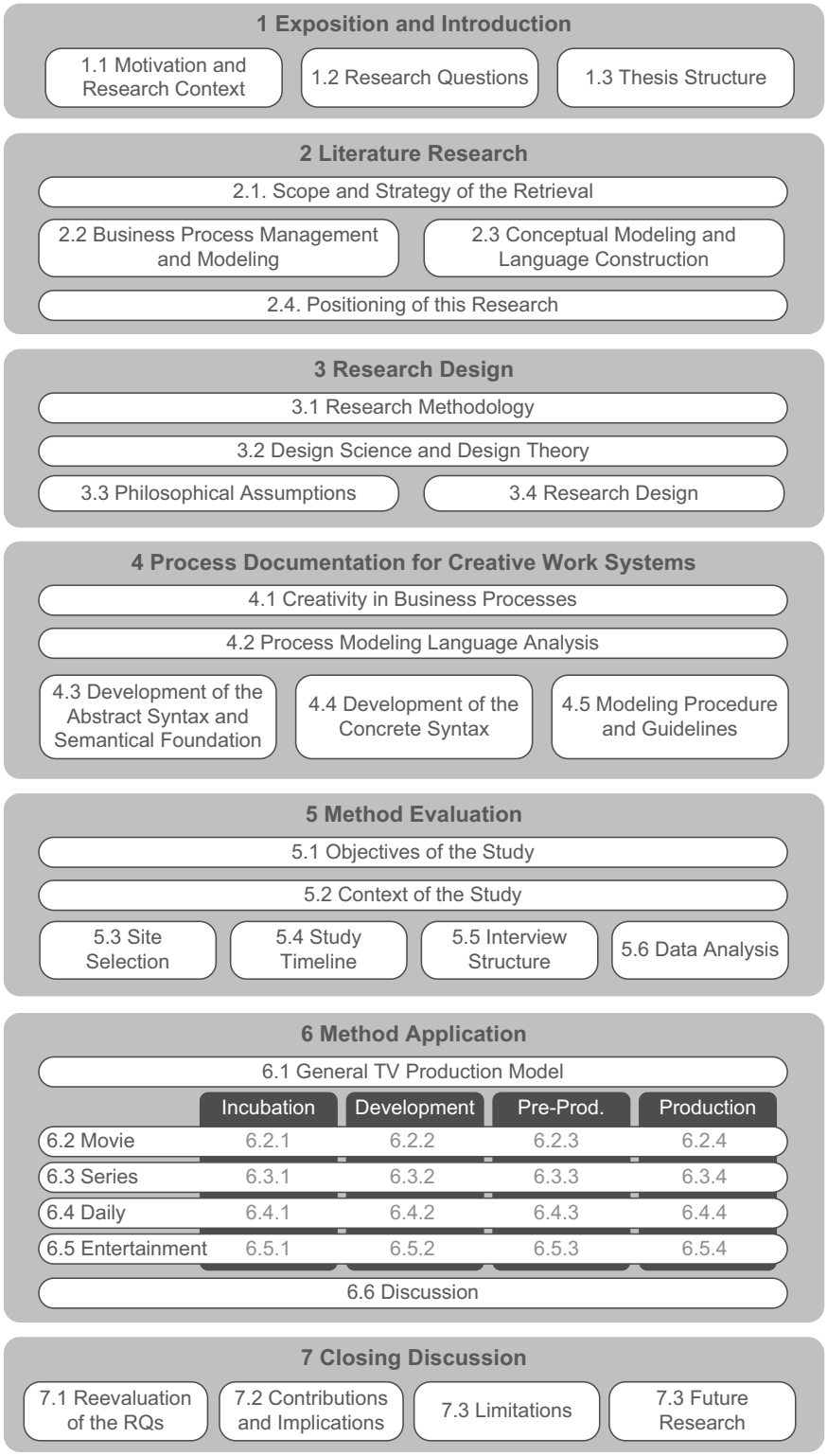


Figure 1.1: Structure of the Thesis

2 Literature Review and Related Work

2.1 Scope and Strategy of Retrieval

The purpose of the literature review is to position this research into the context of the scientific discussion. It intends to recapitulate the formation of the used terminology and conceptualization based on the existent literature on both business process management as well as conceptual modeling. By doing so, the particular influences of this work become transparent as well as presuppositions that are consciously objected. Furthermore, the literature analysis aims to identify research gaps that guide future efforts to contribute to the discussion in the field (Webster & Watson, 2002).

Cooper (1998) defines three basic criteria for conducting a literature review. The *domain* refers to the discipline that is considered for the search, the *sources* refer to the publications that are scanned, while the *strategy* describes the procedure of accessing these sources.

Two major domains have been targeted by the search. Literature on *business process management and reengineering* has been reviewed to investigate into the role of process modeling in the context of organizational design. Furthermore the influence of knowledge and creativity to the take on process management practices was of primary interest. Literature on *conceptual modeling* and *knowledge representation* has been reviewed to gain insights to what extend models and other representation techniques are used to codify process knowledge in organizations. Furthermore, approaches and methods that guide the creation and specification of modeling languages were analyzed.

As a representative set of periodical sources for the IS discipline, the extended senior scholars basket of journals has been systematically analyzed: i. e. *European Journal of Information Systems* (EJIS), *Information Systems Journal* (ISJ), *Journal of the AIS* (JAIS), *Information Systems Research* (ISR), *Journal of Management Information Systems* (JMIS), *Management Information Systems Quarterly* (MISQ), *Journal of Strategic Information Systems* (JSIS) *and the Journal of Information Technology* (JIT). These journals have been complemented with

specialized journals: *Communications of the ACM* (CACM), *ACM Transactions*, *Decision Support Systems* (DSS), *Information and Management* (I&M), *Information Systems Frontiers* (ISF) as well as the *Business Process Management Journal* (BPMJ). Conference Proceedings of the *International Conference on Information Systems* (ICIS), as well as the *Conference on Conceptual Modeling* (ER) have been analyzed. Furthermore the following sources of the management sciences discipline were scanned: *Management Science* (MS), *Harvard Business Review* (HBR), *Academy of Management Journal* (AMJ), *Academy of Management Review* (AMR), *Sloan Management Review* (SMR) and *Organization Science* (OS). The sources were systematically searched with a set of 25 search terms that have been chosen to identify the majority of relevant publications.

2.2 Business Process Management and Modeling

Business process modeling as a technique for documentation and design is an integral component to the field of business process management (BPM), which has taken different shapes throughout its evolution of the last two decades. This development is reflected in the changing notion of the term *business process* itself, which to date lacks a confident definition and is interpreted dependent on the specific take on organizational processes and workflows. Hammer and Champy (1993) define a process as a "set of partially ordered activities intended to reach a goal". However, this notion has been criticized as being a too "mechanistic view" on complex socio-technical systems (Lindsay, Downs, & Lunn, 2003), for ignoring the essential influence of human interaction in organizational processes. Furthermore, the feasibility of a radical reorganization approach has been contested and demands for more contingent approaches have been made. Melão and Pidd (2000) redraw the development from reengineering to business process management and classify the resulting process paradigms. They differentiate between three types of business process interpretations: processes as *deterministic machines* (especially associated to BPR and process modeling), processes as *complex dynamic systems* (associated with process simulation and system dynamics) and processes as *social constructs* (associated with a strong contingency perspective and respective "soft" methods and models like socio-technical system change and soft systems methodology).

With the advent of *workflow management* and supporting information systems, business process management has gained a further interpretation that is largely incompatible with

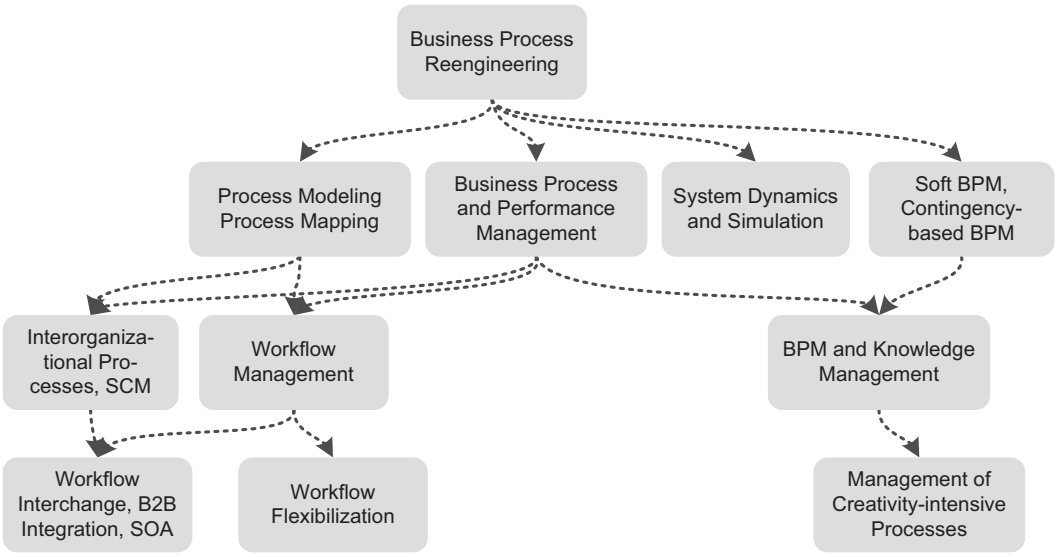


Figure 2.1: Strands and influences in BPM

the aforementioned notion of BPM. This strand of business process management seeks to design so-called *process-aware information systems* to support the automation of tasks. Ko et al. (2009) analyze and classify 'standards' that incorporate this particular view on BPM and identify different takes on the process term within that technical context. Of the different classes especially the views on *process design and enactment*, which refer to the topic of workflow management and respective systems, as well as on *interchange* are prominent. The latter view is concerned with interfaces and standards for interorganizational exchange of process information.

Figure 2.1 provides an overview on the different strands of business process management and indicates the respective influences between the different approaches. These notions are arranged in a way that rather mechanistic views are positioned to the left and more social takes on business processes are positioned on the right, showing the divergence between the seemingly incompatible views. The following subsections will redraw that development and discuss the evolution of business process modeling in that context.

2.2.1 Business Process Reengineering and Management

Business Process Reengineering The notion of process orientation as a novel approach on organizational structure has its roots in the works of Hammer and Champy (1990; 1993), which has been received with tremendous interest by researchers and managers in practice.

Their radical take on gaining efficiency by completely *reengineering* the corporate structure toward process orientation has triggered and shaped many reorganization projects in the early nineties. By identifying information technology as an important enabler for a process-oriented organization, the close relation to the information systems field has been made explicit. Davenport and Short (1990) and Davenport (1993) emphasize the role of IT by describing BPR as iterating between evaluating technological capabilities and implementing them in redesigned processes.

Joshi (1990) reports from an early reengineering case study and highlights the particular challenges of process design in the context of information systems implementation. Dennis, Daniels, and Nunamaker (1994) redraw a BPR pilot project that makes explicit use of software tools for modeling and analyzing business processes. Curtis, Kellner, and Over (1992) emphasize the utility and relevance of process modeling in the context of reorganization and information systems implementation. They mark the upcoming trend of business process modeling and present the stakeholder's mutual understanding of processes as the most important benefit of respective models. However, the automated execution of process models is stated as another important goal of the modeling efforts and therefore hints toward workflow management. Fiedler, Grover, and Teng (1995) directed their efforts on the relationship between corporate strategy and reengineering efforts and found BPR projects to be most beneficial for organizations following a strict cost strategy. Chang and Powell (1998) highlight the feasibility of BPR efforts especially for small and medium-sized companies.

Special emphasis has also been given to performance and quality measurement as a main driver for reengineering efforts. Davenport and Beers (1995) advocate for institutionalizing the function of *process measurement* to realize a sustainable process management. Harmon (2007) utilizes this notion of process ownership for his quality-driven *six-sigma* approach. Hammer (2001) emphasizes the integration of interorganizational processes to develop mutual strategies and increase effectiveness. His notion of the "superefficient company" focuses on the efficient supply chain management (SCM) as a new reorganization wave. McCormack and Rauseo (2005) propose high-level process models to develop interorganizational strategies. Major focus of all these efforts is process optimization in the sense of a global advancement of productivity.

Critique on Reengineering Methods Following the first excitement, reports of project difficulties and failures made way for critique regarding the feasibility of the radical approach. Grover et al. (1995) conducted a field study in 105 organizations investigating in

the problems organizations struggled with in their attempts to reorganize their business processes. They state that "... the original excitement concerning BPR's 'outrageous' performance breakthroughs has been tempered by a growing list of failures." (p. 138) The disregard of the social impacts of business process change has been identified as a primary source for these implementation problems. Thus, *change management* was identified as the most influential factor throughout the study whereas technical competence (although being viewed as relevant by the respondents) had the least potential influence on project success. Seltsikas (1999) highlights the inherent complexity while reporting from a 10-year project that aimed to integrate process and information management efforts to redesign the organization structure in a case organization. Mckinley and Scherer (2000) provide for a theory on both the initial attractiveness of the BPR approach as well as its aptness to failure. They argue that restructuring produces "cognitive order for top executives" (p. 735) while inducing "cognitive disorder in the lower ranks" to a point where reorganization projects will be aborted. Grant (2002) numbers the failure rate of BPR projects to 70%, stating the strong focus on the processes as the main cause. He thus advocates on extending the view on people and communication. Maxwell (2008) adresses the problems of process and task formalization from the viewpoint of motivation rather than efficiency. He suggests aiming for more flexibility in job design to increase worker satisfaction and thus process performance.

Business Process Modeling In the context of the BPR wave, a multitude of business process modeling techniques were developed to provide for means of analyzing and designing work and information processes. These techniques largely focused on representing processes as deterministic control-flow sequences of activities. Keller, Nüttgens, and Scheer (1992) proposed the architecture of integrated information systems (ARIS) for the integrated design of business processes and the information systems infrastructure of organizations. The IDEF (integrated definition) language family was developed to apply BPR knowledge in a military context (Mayer et al., 1995). Kettinger, Teng, and Guha (1997) provide for a comprising list of software products showing an exhaustive number of flowcharting and process analysis tools. The projects found in the literature that were associated with process modeling also had a very strong technological focus, seeking to implement new information systems along with reorganization. Oates and Fitzgerald (2007) argue that this association of BPM with information systems development becomes manifest in the constricted mechanistic metaphor for organizations.

This activity-centered view let modeling languages and tools come to the fore both as means of analysis and design. The modeling techniques and respective software products became more sophisticated and modeling projects larger and harder to manage. Yu and Wright (1997) advocate for the involvement of stakeholders to the modeling process but attest tools like ARIS a too high complexity for this purpose. The rising costs of modeling projects made way for endeavors of establishing "common practice" structures as reference (Malone et al., 1999). The concept of *reference modeling* strove to provide for the methodological means to the construction and application of respective models.

The focus on the meticulous reconstruction and design of entire organizations in process models introduced a risk of process modeling to degenerate to an end in itself. Rosemann (2006a, 2006b) advocates for caution not to loose the scope of modeling projects and advises to constrain modeling activities to relevant areas rather than achieving completeness. He also points to the importance of making the project goals explicit – especially regarding the question whether BPM or IS development is the objective of modeling. Bandara, Gable, and Rosemann (2005) investigate in process modeling success factors and measures and highlight the organizational challenges of modeling projects rather than technical qualities. Den Hengst and de Vreede (2004) also emphasize stakeholder involvement as a key success factor. Tarafdar and Gordon (2007) show process modeling as one of seven *information system competencies* on process innovation and frame it with managerial competencies. Recker (2010a, 2010b) investigates in the continued use of modeling grammars and emphasizes the impact of complexity and adequate training on the usage of process modeling techniques. Interestingly, his empirical findings are not in favor of sophisticated modeling platforms and find Microsoft Visio – a comparably simple diagram tool – as the most used software for process modeling. He concludes "End users mostly apply BPMN for purposes similar to what analysts did ten, twenty years ago with flowcharting techniques — they want to describe their operations in simple, graphical terms." (Recker, 2010b, p. 16)

2.2.2 Alternative Approaches to Business Process Formalization

Reports of project failures and problems of companies with implementing process-oriented strategies called for explanatory models that went beyond the efficiency-focused rationale of the BPR movement. Researchers in the field thus were aiming for approaches that both considered the complex interactions of actors in a social system and were built on a solid theoretical basis. The result of this strand of business process analysis were largely formalized

representations of these interactions.

Linguistic Approaches Pentland (1995) develops a rigorous model of the *grammatic metaphor* of organizational processes. He introduces *moves* as the atomic elements of processes, which each describe a distinctive unit of behavior (communication or nonlinguistic behavior) of an actor in the process. They can be combined to processes following an *organizational grammar*. This view is further developed by Lee, Wyner, and Pentland (2008) into a process modeling grammar that supports the generation of process alternatives complying to the "grammatic rules" of an organization. A process in this notion is a valid sentence of the grammatic. Van Reijswoud, Mulder, and Dietz 1999 introduce DEMO (dynamic essential modeling of organizations) that relies on the modeling of communicative actions of the actors in a process. Their approach is based on *speech act theory* (Searle, 1979), thus relying on its conceptualization of communicative actions for their language elements. A process in their notion is a composition of these speech acts. Goldkuhl and Lind (2008) integrate what they identify as the *transformational view* on business processes (sequential transformation of input to output) with the *coordinative view* (communicative actions between process actors). Kock, Verville, Danesh-Pajou, and DeLuca (2009) show empirical evidence for the benefit of *communication flows* on the perceived quality of business process models.

Goal-Driven Process Analysis Kwahk and Kim (1999) present *two-phase-cognitive modeling* (TCM) as an alternative modeling approach for the BPM context. Cognitive modeling is based on *cognitive maps* that display cause-effect relationships of causal concepts (means and ends). These representations are based on individual perceptions of process situations and desired states (goals). In TCM, local cognitive models are created for organizational units (teams, departments etc.) and later are combined to a global model by eliminating occurring discrepancies. A process in this view is perceived as a cause-effect path of means and ends that leads to an individual or global goal. The notion of formal process goals as a driving element can also be found in Andersson, Bider, Johannesson, and Perjons (2005), Soffer and Wand (2005) and Soffer and Wand (2007). Kueng and Kawalek (1997) also suggest a goal-driven approach but use it in a less formalized fashion to derive conceptual process models.

System Dynamics and Simulation Sierhuis, Clancey, Seah, Trimble, and Sims (2003) developed a process design tool that strives to formalize social components of work systems

in a formal model for simulation. The social component is represented by agent models that are comprised of *beliefs* and *world facts* that drive the behavior (activities) of an agent. Beliefs can be transfered between agents by communication to trigger activities and built an ad hoc process during simulation. Raghu, Jayaraman, and Rao (2004) use a similar agent-centric approach and propose an integration with activity-centric approaches for the simulation of organizational processes. They utilize agent models to formalize decision strategies withing these processes. Gregoriades and Sutcliffe (2008) present a similar simulation approach that aims to quantify human performance in processes to improve task structures. Xu, Tan, Zhen, and Shen (2008) employ an agent-driven process perspective in an evolutionary approach of process simulation.

The approaches presented in this subsection are rather analytic in nature and require detailed insights to individual incentives and goals of workers and groups. However, an active involvement of stakeholders to the process of process analysis and design is not focus of these methods. The resulting models are neither intended to be used or evaluated by process actors, so that their adequacy as means for a comprehensive process documentation is limited.

2.2.3 Socio-technical Approaches to BPM

The critique on the mechanistic, technology-focused process notion of the reengineering wave suggested a more people-focused take on reorganization endeavors that would incorporate social factors within the work systems of organizations. Mumford (1994, 2006) has been one of the early critics on the radical BPR approach in stating that it omitted the social perspective on organizational design, while both social and technical factors were essential for successful (re-)organization projects. Furthermore, she contests the perceived novelty of BPR in stating that *socio-technical design* had pursued similar goals since 1950 and therefore has a much stronger theoretical and methodological basis. However, Mumford also admits weaknesses of the socio-technical approach in terms of technical design and advocates for an integrated approach.

"Soft" Approaches to BPM Process models gained a new perspective in the context of socio-technical approaches both in form as well as function. Wastell, White, and Kawalek (1994) demonstrated the use of the *soft systems methodology* (SSM) in the context of their integrative BPR framework PADM (process analysis and design methodology). SSM is a

methodology for the analysis of complex and weak-structured systems and was developed by Checkland and Scholes (1981, 1990). The basic concept of the method is achieving a holistic view of a situation at hand and developing a contingent strategy for its improvement. A hallmark of the technique are hand-drawn *rich pictures* that aim to capture the essence of an organizational problem while rejecting all forms of formalism. Combined with written notes, these pictures are actually referred to as *models* and are used in the course of problem solving. Biazzo (2000, 2002) criticizes formal modeling approaches (referred to as *process mapping*, IDEF is explicitly discussed) as a *rational reconstruction* that neglects the basic nature of business processes. He proposes a *pragmatic reconstruction* that incorporates the social subsystem and also refers to SSM as a feasible technique. Keating, Fernandez, Jacobs, and Kauffmann (2001) develop an approach that combines process mapping for technical subsystems with socio-technical approaches for the social subsystem to derive integrated solutions.

Method Integration The social-centered approaches to business process management have in turn been criticized for being too difficult to apply and giving the analysts too little guidance in approaching an organization's problems. In this context Clegg and Shaw (2008) present *process-oriented holonic modeling* as a solution to bridge the gap between the "hard" and "soft" methods. In this method, processes are viewed as *human activity systems* that are described by *holons*, i. e. models that contain "...all the fundamental systems thinking principles such as a system boundary, entities, entity relationships, control loops, a name and an environment." These holons are part of greater holons, thus introducing the concept of decomposition to the soft systems approach. Great emphasis is also given to the concept of *model enrichment*, which refers to the extensive use of natural language to describe process subsystems. Garvin (1998) shows that a combination of different perspectives on processes can be beneficial. He distinguishes between work, behavioral and change processes and advocates for their distinctive treatment.

Organizations as Work Systems In the context of the discussion of BPM in the information systems discipline, Alter (2008, 2004b, 2004a) suggests the notion of *work systems* as the object of investigation since the term information system lacks a common definition. Bostrom, Gupta, and Thomas (2009) support this notion in defining the work system as comprised of the technical and social subsystem of an organization – a view that is shared by researchers that advocate for a socio-technical approach to BPM (cf. Section 2.2.3). How-

ever, the general notion of viewing organizations as work systems is not constrained to the socio-technical strand of BPM.

2.2.4 Workflow Management and Process Data Interchange

Business process management in recent literature is often associated with the notion of process automation and process-aware information systems. These works represent a strand of research that is only loosely coupled with the initial ideas of BPR, although efficiency of processes is a shared objective of both.

Workflow Management and Workflow Systems Georgakopoulos, Hornick, and Sheth (1995) present workflow management as the consequential step succeeding business process reengineering. In their definition, business process reengineering is the redesign of both material as well as informational processes. Workflow management is concerned with the automation of the latter type of processes through the use of software (workflow management systems). Informational processes are arranged on a continuum between "human-oriented" and "system-oriented", the former referring to coordination tasks, the latter referring to transactional tasks that can be supported by workflow management systems. The process notion is that of activity sequences, process models are used to define workflows. Van Der Aalst, ter Hofstede, Kiepuszewski, and Barros (2003) define business process management basically as workflow management that is enhanced by methods for the *diagnosis* of workflows, referring to monitoring and measurement.

Datta (1998) describes the automatic generation of as-is-models from workflow data. By monitoring the activities performed in the IT system of actors, activity paths are recorded and abstracted to process models. This approach is converse to workflow management, but stems from a similar notion of informational processes. Song and van der Aalst (2008) advance this idea with their concept of *organizational mining* by incorporating organizational settings and social interactions between coworkers into the tracking system.

Basu and Blanning (2000, 2003) provide for formal workflow definitions that allow for automated analysis of task dependencies. They introduce *metagraphs* as means of description for workflows and their resources. The model allows for subsequent workflow decomposition and thus can be utilized to analyze intra- and interorganizational workflows. The basic element is the information resource, while a process is defined by resource inputs and outputs of subsystems.

Workflow Flexibility Recent literature on workflow modeling indicates increasing demands for more flexibility in workflow management systems to broaden their area of application toward work processes with lesser structure. Narendra (2004) presents an approach for flexible workflow management by establishing a three-tier model of workflows to allow for workflow adaptations to changing requirements. He distinguishes between a planning layer (strategic/goal definitions), a schema layer (workflow models) and an instance layer (individual workflows). Depending on the *workflow control level*, workflows are changed differently. *Loose* workflows, for instance, operate merely on the instance layer, i. e. no respective schemata are formalized. These workflows can be defined by any user of a workflow system thus creating *ad hoc workflows*. Van der Aalst, Weske, and Grünbauer (2005) propose *case handling* as an information-driven paradigm to workflow management. This approach aims to provide more activity choices and comprising information to the user in contrast to the classical control-flow-based workflow model that constrains available data to defined activity inputs.

Process Data Interchange Another notion of business process management that is prominent in workflow-related literature is concerned with *interorganizational process orchestration* through loosely connected IT systems. In this setting, processes exist as *concurrent systems* that interchange information and thus form a composite interaction process (Kobayashi, Pierce, & Turner, 1999). In recent literature, these systems are usually realized through the use of *web service* technology as a means of standardized interface (Liu, Li, & Zhao, 2008). Puschmann and Alt (2005) use these technologies to generate interorganizational *process portals* that bundle services of different organizations at a single point of contact. Brambilla, Ceri, Fraternali, and Manolescu (2006) present a modeling approach for the design of web-based systems and employ the Business Process Modeling Notation (BPMN) as visual representation for their text-based description language *WebML*. Papazoglou and van den Heuvel (2007) provide a development process for service based process that considers the integration of legacy systems. In a more theoretical take on the topic, Ghattas and Soffer (2008) derive a high-level, ontology-based conceptual model that structures requirements for interorganizational process systems.

Business process management and modeling approaches in the context of workflow management share a formal interpretation of the process concept as a collection of input and output data that implies logical dependencies between processes and activities. Process actors are merely considered in terms of authorization. Coordination and interaction

of process actors beyond the predefined data exchange is not represented. Contextual information external to the system is also not considered, which has strong implications on the applicability of such systems to knowlege- or creativity-intensive processes.

2.2.5 Knowledge Representation and Documentation

An important aim of the literature review has been to identify ways to codify and explicate process knowledge in a way perceivable and usable by human actors in the process and external recipients. This focus draws the attention toward the concept of *knowledge management* as a collection of methods and techniques to facilitate organizational knowledge (Earl, 2001; Alavi & Leidner, 2001). Knowledge management also evolved from the critique on the efficiency-oriented BPR understanding of process management which seemingly has a limited or even negative impact on knowledge-oriented work and learning (Sachs, 1995; Brown & Duguid, 2000). Knowledge management thus was conceived as a new management paradigm that aims for a balance between structure and flexibility (Davenport, De Long, & Beers, 1998). However, later development also focused on the codification of knowledge and the support of its storage and deployment through software also referred to as knowledge management systems (Alavi & Leidner, 2001).

It has been stated that knowledge management should not be reduced to the design and implementation of knowledge-oriented information systems. Anand, Manz, and Glick (1998) emphasize the importance of tacit knowledge and thus show limitations of codification strategies. Hansen, Nohria, and Tierney (1999) contrast the codification strategy with a personalization strategy that relies on experts rather than knowledge assets.

The connection between process modeling and knowledge management has been discussed in different contexts. Abecker, Bernardi, Hinkelmann, Kühn, and Sintek (2000) develop the notion of *knowledge-intensive tasks* that specialize activities in process models. These are unstructured subprocesses that are specified by context information and have no defined output but are rather dependent on "social agreement". In a similar context Kang, Park, and Kim (2003) present a *knowledge map* as a means to integrate workflow management and knowledge-based systems that provides users with task-dependent knowledge. O'Leary and Selfridge (2000) discuss the codification of process knowledge to use knowledge-based systems in the context of BPR projects. Dalmaris, Tsui, Hall, and Smith (2007) present a BPM framework for knowledge-intensive processes that uses ontologies for process knowledge codification. Lee and Strong (2003) discuss the relevance of process

knowledge for human performance as a necessary prerequisite for effective work.

The representation of explicit knowledge in a useful and comprehensive form is a complex issue. Gaines and Shaw (1999) advocate for the use of text as a form of representation that is natural to users. They develop the concept of *active documents* that combines both graphical and textual representations. Gemino, Parker, and Kutzschan (2005) highlight the relevance of visual representations of knowledge in learning processes and advocate for providing navigational instruments for users to interactively explore content. Wu (2009) suggests form-based templates for dynamically generating knowledge artifacts from a repository in the context of decision support.

The overview shows that the representation of process knowledge for the use by process actors is a scarcely discussed topic. The available literature indicates toward moderation regarding formalization and suggests the use of rich textual information as a comprehensive aid.

2.2.6 Organizational Creativity

Attempts to capture the essence of creativity in the context of organizational business activities have been made for several decades (Cummings & O'Connel, 1978; Paolillo & Brown, 1978; Basadur, Graen, & Green, 1982). Creativity in a business context refers to the generation of ideas that are both novel and and can be purposefully transformed into products and processes (Amabile, 1998; Sternberg & Lubart, 1999).

In the context of this research, the impact of process management and process modeling on creative processes is a primary focus. Brown and Duguid (2000) argue that a tight structuring of work processes will impede both knowledge use and creativity of process actors. They advocate for finding a balance between allowing for freedom to foster innovation and furthering it by guiding the actual process. There have been attempts to structure those inherently ill-defined processes. Massey, Montoya-Weiss, and O'Driscoll (2002) develop the *performance-centered design (PCD) methodology* in the context of product development. They show the process as comprising of both "fuzzy" phases of divergence combined with problem-solving phases of convergence.

Creativity research has traditionally been focused on the creative processes of individuals with its focus shifting toward organizational settings in more recent literature (Williams & Yang, 1999). Woodman, Sawyer, and Griffin (1993) developed a first multilevel model of creativity that describes the phenomenon on an individual, group and organizational

level of interaction. On the organizational level, they identify six influencing characteristics: culture, resources, rewards, strategy, structure and technology. Drazin, Glynn, and Kazanjian (1999) criticize the prevailing notion of creativity as an outcome, thus ignoring the complex interactions that shape creative processes in organization. The resulting models framed creativity as a dependent variable that can be influenced merely by shaping the environmental factors of the creative process as kind of a black box. Drazin et al. (1999) model creativity as a process, thus allowing for the analysis of the interaction of groups and individuals in long duration projects.

Stemming from this process-centric view, Seidel (2009a, 2009b) develops a *theory of managing creativity-intensive processes* that allows for the identification of essential patterns and components in processes that are driven by creativity. He further identifies the creative product and specific roles in the process (cf. 4.1) as important factors that shape the nature of the creativity-intensive process. Seidel, Müller-Wienbergen, and Rosemann (2010) introduce the notion of the *Pocket of Creativity* as a conceptualization of creativity-intensive processes that allows for their subsequent decomposition for a detailed analysis. Both the theoretical model of creativity-intensive processes as well as the notion of the Pocket of Creativity will be drawn upon in this research.

2.3 Conceptual Modeling and Language Construction

Business process modeling languages can be viewed as being a specialization of *conceptual modeling languages*. These languages are used to reconstruct relevant knowledge about a domain (Wand, Monarchi, Parsons, & Woo, 1995). In information systems development, conceptual models are applied to describe the *organizational environment* of a software system to-be, rather than the system itself. Thus, aim of these models is to capture real-world information rather than to define formal systems (Mylopoulos, 1998). In this context, the *domain* refers to the partition of the real world that will interact with the information system to be, i. e. stakeholders (users, executives, business partners), tasks and existing IT systems.

Pfeiffer (2008) distinguishes structural modeling languages and process modeling languages. *Structural modeling languages* are applied to describe the elements of a system and their relationships. *Process modeling languages* capture the behavioral aspects of a system. Most activity-centered process modeling languages base on the mathematical model of Petri (1962), who formalized the procedural behavior of processes in states and transitions

(cf. Section 4.2.3). Pfeiffer further specializes process modeling languages to *business process modeling languages*, which are defined by having the "sequence of work in an organization" (p. 41) as their domain.

To specify the nature of modeling languages, they can be analyzed regarding their *semiotic properties*. The term *semiotics* refers to the *theory of signs and designation processes* (Morris, 1970). Morris distinguishes three perspectives on sign relations:

- **Syntactics:** The syntactics of a sign system (language) refer to the set of signs and their relationships. In the context of modeling languages, the *abstract syntax* refers to the set of language constructs and the syntactic rules that constrain their lawful combination. This aspect is typically specified in the language's *meta model* (Guizzardi, Pires, & Sinderen, 2002). The *concrete syntax* refers to the used symbols, i. e. the physical representation of signs. In graphical modeling languages these symbols occur as pictorial, geometrical or textual forms (Blackwell, 2001).

- **Semantics:** The semantics refer to the relationships of the signs to the concept they refer to, i. e. their *meaning*. For modeling languages this refers to the *conceptualization* of the language domain (Guizzardi, Herre, & Wagner, 2002).

- **Pragmatics:** The pragmatics refer to the relationship between the sign system and the sign user, pointing toward the intention of language usage acts. The pragmatics of a modeling language thus refer to its application to a given modeling need in the domain. To achieve a fit between language use and language capabilities, the designer of a modeling language needs to explicitly specify its intended area of application.

An important conclusion that can be drawn from this semiotic perspective is that the construction of modeling languages needs to be conducted in the sequence of specifying pragmatics, semantics and syntactics. The *pragmatics*, i. e. the intended scope of the modeling language, determines which concepts of the domain are to be purposefully abstracted into elements and relationships. The *semantics* imply certain beliefs and presuppositions of the language designer that are incorporated in the conceptualization of the language. Both the intended scope as well as the conceptualization will determine the *syntactic* dimension of a language. Concepts are transformed to language constructs while their relationships are stated as rules (Guizzardi, 2005) thus forming the abstract syntax. The concrete syntax needs to be constructed dependent on the intended model use and thus adheres to quality

measures of utility and comprehensibility (Bodart, Patel, Sim, & Weber, 2001; Krogstie, Sindre, & Jø rgensen, 2006; Jaffar & Shah, 2006). While the pragmatic dimension of process modeling has been discussed in the context of BPR and BPM, the semantic and syntactic dimensions will be elaborated on in the following subsections.

2.3.1 Language Conceptualizations

Conceptual modeling aims to represent real world phenomena. The constructs of a language therefore denote to concepts that are perceived in the domain, i. e. the partition of the real world that is perceived as relevant (also referred to as *Universe of Discourse*, see Lyytinen, 1987). Sources for such conceptualizations are manifold. The source that is the easiest accessible for a language designer is his or her own subjective internal model of the domain. However, this is potentially inappropriate for the intended scope of the language and can lead to misunderstanding for language and model users (Hadar & Soffer, 2006).

A possibility to draw on an established conceptualization is to base the modeling language on the concepts of a theory. This allows language users to trace and evaluate the associated presuppositions and their fit to the modeling problem at hand. Wand et al. (1995) name *ontology*, *concept theory* and *speech act theory* as possible candidates to ground conceptual modeling languages.

Concept or *classification theory* refers to the cognitive organization of human knowledge in categories (Parsons, 1996). In the context of modeling languages this sets an abstract foundation for structural modeling languages for application domains such as data modeling or knowledge representation (Parsons & Wand, 1997, 2008).

Ontology has been used as a means of conceptual anchoring for modeling languages. In the IS context *top-level ontologies* and *domain ontologies* can be distinguished as different takes on the concept. The most recognized top-level ontology bases on the work of Wand and Weber (1995, 2002) who apply the philosophical work of Bunge (1977, 1979) to the context of information systems. On the basis of this ontological foundation (referred to as the BWW-ontology) several researchers have investigated in aspects of conceptual modeling (Shanks, Tansley, & Weber, 2003; Soffer & Hadar, 2007). Indulska et al. (2008) and Recker et al. (2009) use the ontology to identify deficiencies of process modeling languages. Irwin and Turk (2005) conduct a similar analysis on the use case modeling grammar. Guizzardi (2005) develops a top-level reference ontology for *structural* modeling languages based on a variety of theoretical concepts of cognitive theory and language philosophy. Top-level

ontologies strive for general validity by incorporating mechanisms of human cognition and communication. While these approaches themselves are not undisputed (e. g. see Wussusek, 2006), they also fall short in incorporating the specific requirements of particular application domains.

Domain ontologies on the other hand are abstractions of particular differentiated real world conceptions. Domain ontologies have been constructed for various application contexts such as database design (Sugumaran & Storey, 2006), knowledge-based systems (Chen, 2010), secure e-business applications (D'Aubeterre, Singh, & Iyer, 2008) or semantic web applications (Horrocks, 2008). Devedzić (2002) argues that the construction of a domain ontology is essentially the same as constructing a metamodel for the description of that domain. This observation stems from the lack of most domain ontologies to reveal the source of their conceptualization. In this context, Evermann (2005) advocates for a sound empirical grounding of ontologies, so ensuring for a traceable link between the ontology and the domain it represents. Following the notion of empirical grounding, modeling language conceptualizations can also be directly anchored to empirical data. Becker, Karow, Müller-Wienbergen, Pfeiffer, and Seidel (2009) present a method for using qualitative data to derive appropriate language conceptualizations by utilizing *coding* as an analysis technique.

Linguistic theories have been referred to in the context of conceptual modeling based on the conclusion, that organizational behavior (the real world) is only observable through the language of its actors. Boje, Oswick, and Ford (2004) state "From this point of view, what an organization is and everything that happens in and to it can be seen as a phenomenon in and of language" (p. 571). Ortner (1993, 1997, 2002) advocates for developing a *normalized language* as a means for reasoning about material domains. Andrade et al. (2008) use linguistic categories to derive a conceptualization for knowledge management.

In summary, the conceptualization of a modeling language represents the link between the sign system and the real-world domain it is intended to represent. The different means of conceptualization presented in this section represent valuable choices if they provide sufficient traceability to actual domain knowledge, either by being part of a well-tested and accepted theory or by basing on adequate empirical data. If this relationship is comprehensively communicated, researchers and practitioners are enabled to evaluate the applicability of a given modeling language based on the source of its concepts.

2.3.2 Method Engineering

The term *method engineering* refers to the construction of development methods for information systems (Brinkkemper, 1996). A conceptual modeling method in this context is comprised of *modeling grammars* and respective *procedure models* (Pfeiffer, 2008). These method components can be reused in a modular fashion to derive a method suited for the given situation (Brinkkemper, Saeki, & Harmsen, 1998; Ralyté, Rolland, & Deneckère, 2004; Karlsson & Wistrand, 2006).

To be accessible for reuse, conceptual modeling languages need to have their *abstract syntax* made explicit through the use of a *metamodel* (Rossi, Ramesh, Lyytinen, & Tolvanen, 2004). The metamodel defines the language constructs and their lawful relationships. To combine method fragments, these metamodels must be integrated. Abecker et al. (2000) demonstrate the integration of domain-specific language constructs in the context of knowledge-intensive processes by enhancing the metamodel of the ADONIS modeling language. Abdullah, Benest, Paige, and Kimble (2007) apply a domain-specific profile to the Unified Modeling Language (UML) in the context of the development of knowledge-based systems (KBS). For means of explicating a metamodel in graphical form, the Meta Objects Facility (MOF) has been standardized by the Object Management Group (2002).

Method engineering approaches in the context of business process management methods are rare in the BPM literature. Bucher and Winter (2009) develop a situational method engineering perspective by defining a set of BPR project types. The implications drawn from the classification ,however, are rather of procedural nature and allow for little insight to representational aspects.

Since most evaluative research on business process modeling languages is concerned with adequate conceptualizations (cf. Section 2.3.1) only little evidence on quality measures regarding their *concrete syntax* is available. Although the relevance of comprehensive representations for complex information is well recognized (e. g. Pracht, 1990), only few empirical studies in the context of process modeling investigating in that aspect are available. Harel (1988) shows different general concepts of graph visualizations. Hahn and Kim (1999) as well as Kim, Hahn, and Hahn (2000) demonstrate the relevance of decomposition, organized layout, as well as context information for conceptual models through experimental studies. Huotari, Lyytinen, and Niemelä (2004) experiment with model comprehension on large computer screens that allow for the simultaneous display of different model perspectives, providing for one of the very few perspectives on IT-supported model use. Erickson and

Siau (2007) advocate for masking the internal complexity of methods by providing for comprehensive representations. Jaffar and Shah (2006) present one of very few sources of visual considerations in the context of process modeling and advocate for simplification and readability. From this body of knowledge, a more elaborate strategy for visualization will be discussed in Section 4.4.

2.4 Positioning of this Research

The literature review revealed a variety of different takes and perspectives on business process management and modeling. These perspectives can be structured according to five dimensions that provide for a comprehensible classification of the concept of business process modeling. Table 2.1 shows the dimensions and possible values in a morphological classification.

Dimension	Value					
Process paradigm	*Activity-centered*	Actor-centered	Organizational grammatic	State-based		
Scope	Business Network	*Work System*	Information System			
Perspective	*Analytical*	Synthetical				
Purpose	*Documentation*	*Process analysis*	Organizational redesign	SW requirements analysis	Workflow management	Reference modeling
Audience	*Process Actors*	*Executives*	*External Stakeholders*	*SW Developers*	*Researchers*	
Formalization	Formal syntax & semantics	*Formal syntax & material semantics*	*Free notations & natural language*			

Table 2.1: Morphological analysis of business process modeling perspectives

The *process paradigm* refers to the central category of analysis that a process management and modeling method is based on. Actor-centered methods define human or systemic process actors as the primary unit of analysis. This perspective is the basis of system dynamics and process data interchange approaches, as well as being the major perspective in socio-technical design. Organization grammatic approaches refer to formal process design

methods that use the grammar metaphor to derive lawful "sentences" of an organization. These methods are closely related to state-based (also referred to as goal-based) approaches, that reconstruct the organizational system by means of a state machine. The paradigm of this research is referred to as activity-centered, which represents the basis of most established business process modeling languages.

The *scope* refers to the units of investigation and analysis within a process management or modeling method. The business network perspective centers on organizations as actors in market or affiliation structures. This perspective is especially supported by the concepts of supply chain management approaches and interorganizational process data interchange. The information systems perspective is concerned with data flows between software systems and components. The work system perspective that is adopted in the context of this study, comprises both mechanical as well as human actors on individual, group and organization levels.

The *perspective* of process models on their real world original divides modeling methods into being either analytic or synthetic. Analytic methods aim to describe real-world process structures for means of documentation and analysis. Synthetic methods provide prescriptions of process systems to-be, so representing blueprints for organizational change. These modeling methods have strongly been criticized in the context of BPR, since they are inclined to neglect change management issues and social factors of organizational redesign. In the context of this research, the models are constrained toward being analytical. Although the models can serve as guidelines for action (Krogstie et al., 2006), their actual influence should be governed by the process actors.

The *purpose* of the proposed modeling method is both documentation as well as analysis. Organizational redesign based on process modeling approaches has been strongly criticized and is therefore not targeted. Workflow configuration and software selection are no primary goal of the method, while the models may serve as entry points for a more detailed analysis regarding automation and support potentials. The reference modeling perspective will not be methodologically supported.

The target *audience* of the modeling method is not explicitly constrained, while the emphasis lies on process actors as intended model users. Researchers are a secondary target group, since the modeling approach will be used as a means to support a substantive theory.

The degree of *formalization* determines the opportunities for automated operations of analysis and transformation on the models. However, purposeful formalization requires the feasibility of well-structured descriptions of the process domain. In the context of creativity-

intensive processes, this structuring would imply a semantical distortion by displaying a procedural stability that cannot be reflected in the real process system (Avison & Taylor, 1997). Furthermore, the approach developed within this research is largely targeted at human recipients. Therefore, formalization will be applied to syntactical structures to provide for model consistency and navigational guiding. However, it will also make deliberate use of natural language descriptions and non-formalized process information to foster comprehension.

In developing the modeling language for creativity-intensive processes, the conceptualization will be derived from a domain-specific theory. As result of a qualitative study, this theory is anchored in empirical data that provides the semantical foundation for the language. The actual language construction will follow a method engineering approach in integrating the novel constructs into existing process modeling methods. The precise process of this research and its methodological grounding will be described in the following chapter.

3 Research Design

3.1 Research Methodology

The goal of all research effort is to contribute to the scientific advancement and discussion of a given discipline. An explicit *research design* assists this purpose by structuring the process of investigation, so ensuring for valuable results. Primarily, however, the articulation of such a research structure enables other researchers to reconstruct the process of knowledge acquisition and its basic assumptions (Guba & Lincoln, 1994; Yin, 2003; Creswell, 2003).

The choice of a research procedure is governed by various factors, such as the researcher's intentions, the nature of the phenomena investigated, as well as preceding assumptions of prior work the research is built upon (Benbasat, 1984). This research is set in the context of the information systems discipline. This area is concerned with the creation and management of information technology (IT) and its interaction with people and organizational contexts (Davis & Olson, 1985).

Research efforts in the IS field have been categorized in adhering two different major paradigms (March & Smith, 1995). The *behavioral science paradigm* describes research that seeks for means of explanation and prediction of human behavior and organizational phenomena (Hevner et al., 2004). The respective central artifact representing these concepts and their interrelationships is the *theory* (Strauss, 1987). Theories are either created or tested by behavioral research efforts. The *design science paradigm* puts the creation of an *IT artifact* into the center of investigation. In contrast to the behavioral paradigm, design science research is characterized as being *proactive*, in that a researcher develops a solution to a perceived problem situation and evaluates the artifact's impact on the situation (Hevner et al., 2004).

March and Smith (1995) debate on the complement relationship between the behavioral and design-oriented paradigm and emphasize the relevance of both stances for the advancement of the discipline. Mingers (2001) furthermore argues, that a research paradigm is

"...useful as a shorthand for a particular constellation of assumptions, theories, and methods, but it is purely an heuristic device" (p. 243). Consequently, he advocates for a critical view on the fixation of paradigms and research methods and suggests a methodologically pluralist stance on IS research. Mingers states that "we need to develop new paradigms, with their own assumptions and commitments..." (p. 243), so underlining the relevance of explicating the individual assumptions on which research is based rather than clinging to a rigid world view.

This research has two primary objectives in creating a *process modeling method* in the context of creative organizations on the one hand and *evaluating a substantive theory* in this same context on the other. Conceptual modeling (of which process modeling is regarded as being a subclass, cf. Section 2.3) has been recognized as an essential IT artifact and is commonly associated with the design science paradigm (Hevner et al., 2004; Becker & Niehaves, 2007; March & Storey, 2008; Parsons & Wand, 2008; Lee et al., 2008; Umapathy, Purao, & Barton, 2008). Thus, the next section is dedicated to discuss the implications of the design science paradigm and their impact on this research. However, the artifact design is based on a substantive theory that is inherently interpretive in nature (cf. Section 4.1). Furthermore techniques of theory building are utilized in the artifact evaluation (cf. Section 5). Thus, this research is based on different methodological perspectives on the IS field and needs to discuss the interrelation of assumptions drawn from both behavioral as well as design-oriented methods respectively.

3.2 Design Science and Design Theory

Design science research (DSR) is concerned with the creation of innovative artifacts that are aim to improve the performance of organizations. The notion of researching the development of human creations and their impact on their environment is stemming from Simon's (1996) *sciences of the artificial*. The main objective is not to explain or predict phenomena observed in the domain of investigation, but rather the proactive advancement of situations perceived as a research problem (Hevner et al., 2004). This advancement is achieved by means of an IT artifact, that is both novel and purposeful in the context of application.

3.2.1 IT Artifacts in Design Science

The exact definition of the IT artifact has been subject to many discussions in the field (Baskerville, 2008) and there have been several attempts in defining this central concept of design science research. In a literature review, Orlikowski and Iacono (2001) discuss five views on information technology, identifying the *tool view* as the predominant perspective on IT artifacts as being engineered objects.

March and Smith (1995) differentiate four possible research outputs of design science. *Constructs* or concepts form the specialized language to describe problems and their solutions within the domain of application. As an example, they name data modeling constructs such as entities and relationships. *Models* describe the relationships between concepts and thus represent propositions or statements. In this context, models are merely descriptive and do not attempt to prescribe causal relationships. *Methods* are procedural guides that can be used to perform a specified task. They are based on the underlying language and a model of the solution. *Instantiations* are technical realizations that can be utilized and observed in the application domain. They are used to demonstrate and evaluate the feasibility of the incorporated models and methods.

Hevner et al. (2004) incorporate the artifact notion of March and Smith into their design science framework and make the artifact the foundational object through their first guideline. Baskerville (2008) concludes that "the artifact alone is not design science. It might be thought of as one important kind of 'data' in design science, or at least one major source of data." (p. 442). This notion points both toward the evaluation of the artifact (source of data) succeeding its construction, as well as the knowledge gained through the creation of the artifact as "kind of data" in itself.

Design science is not perceived as a distinct research method but rather as a foundational paradigm. Thus, different suggestions can be found in the IS literature regarding procedural guidelines on how to conduct research adhering to this type of investigation. While March and Smith (1995) constitute the DSR process of the core activities *build* and *evaluate*, Peffers, Tuunanen, Rothenberger, and Chatterjee (2007) as well as Vaishnavi and Kuechler (2008) give additional emphasis on the *problem identification* and *definition of objectives*. A commonly accepted research process in its context does not yet exist (Winter, 2008).

3.2.2 Theory in Design Science

Theories are essential to the advancement of a scientific discipline. They represent the linguistic foundation for analyzing and structuring empirical observations and for communicating the results (Bacharach, 1989). While real-world perceptions present themselves in the form of data, theories abstract and generalize the observed relationships (Walsham, 1995). The magnitude of this abstraction is dependent on the area of theoretical validity. Regarding the nature of generalization, Gregor (2006) refer to three classes of theories depending on the breadth of their focus. *Formal theories* represent the highest level of theoretical abstraction and therefore claim a general or *universal* (Popper, 1959) validity. *Mid-range theories* have a moderate level of abstraction. *Substantive theories* are developed for a specific focus and are applicable to the area of inquiry from where they emerged (Orlikowski, 1993; Fernández, Lehmann, & Underwood, 2002). This notion of theory is especially associated with the *grounded theory method* of theory building (Glaser, 1978).

The role of theory in design science is still a subject to discussion (Gregor & Jones, 2007; Winter, 2008). Theory is the indisputable result of behavioral research (either through its generation or validation, cf. Strauss, 1987). However, in the context of design science research, it is unclear whether the artifact, the process of its development, the knowledge gained in the course of its evaluation or a combination of these elements constitute the scientific contribution.

March and Smith (1995) emphasize the IT artifact as the central result and link the concept of theory to the natural sciences. Hevner et al. (2004) highlight the dichotomy of artifact and process by stating that "...the design-science researcher must be cognizant of evolving both the design process and the design artifact as part of the research" (p. 78). This design process is referred to as a *creative process* that is not inherently based on theory. In fact, creative design is presented rather as an alternative "in domain areas in which existing theory is often insufficient" (Hevner et al., 2004, p. 76).

Gregor (2006) refers to prescriptions (methods, techniques) that lead to the construction of an artifact as *theories for design and action*. She contrasts this type of theories with theories for *description*, *explanation* and *prediction*, which are regarded as results of behavioral science. Theories for design and action, also referred to as *design theories* (Walls & Widmeyer, 1992), are characterized as "principles of form and function, methods, and justificatory theoretical knowledge that are used in the development of IS" (Gregor, 2006, p. 628). In contrast to the view of Hevner et al. (2004) on DSR, Walls and Widmeyer (1992) base the

creation of a design theory explicitly on existing theory. These so-called *kernel theories* are theories from natural or social sciences, that govern both the requirements of the design artifact as well as the development process and enable the "formulation of empirically testable predictions relating the design theory to outcomes" (Markus, Majchrzak, & Gasser, 2002, p. 181). Markus et al. (2002) use the design theory framework devised by Walls and Widmeyer (1992) to develop a design theory in the context of knowledge management.

In contrast to Gregor (2006), Baskerville (2008) draws a definite distinction between design science research and design theory. His view seconds that of Hevner et al. (2004), in stating that DSR embraces problem situations that lack applicable theories and concludes "essentially, we discover new theories by 'making stuff to fix problems.'" (p. 442).

The present study relates to this more general approach on design science in information systems research and thus does not raise the claim for actually building theory. However, this research makes explicit use of existing theories and uses them for the design of an artifact (a business process modeling method). Furthermore, the study makes use of research techniques[1] predominantly associated with behavioral, interpretative research to conduct a qualitative evaluation of the artifact.

3.3 Philosophical Assumptions

The present study is set in the context of the design science research paradigm. However, the developed artifact is grounded in a substantive theory that is the result of an interpretative study (cf. Section 4.1). Furthermore, the evaluation of the artifact makes use of research techniques commonly associated with behavioral research (cf. Section 3.5 and Chapter 5). Thus, it is imperative to externalize the philosophical assumptions that underlie the research process.

3.3.1 Ontological Position

The ontological position of research endeavors determines the relation of the researcher to the concept of *reality* or the *real world*. The position of *ontological realism* is based on the assumption, that reality exists independently of human perception or representation. The

[1] The concept of *technique* in this context refers to specific parts of research methodologies, such as particular means for data collection or analysis. These techniques are not methodologies in their own right, but represent useful tools for the solution of particular research problems.

notion of the real world is thus not derived from subjective speech acts or thought processes alone. The position of *ontological idealism* negates the existence of a reality independent from the reconstruction by a human consciousness. (Becker & Niehaves, 2007, p. 203)

Becker and Niehaves (2007) discuss *Kantianism* as a third ontological perspective that mediates between the two extremes of realism and idealism. This position distinguishes between independent elements of reality (noumena) and human perceptions of these things (phenomena). It furthermore states, that "...knowledge which can be acquired by an observer is restricted to *phenomena*" (Becker & Niehaves, 2007, p. 203). In this light, Kantianism can also be viewed as a form of ontological realism that is combined with a constructivist epistemological stance (see next Subsection). Gehlert (2007) as well as Pfeiffer (2008) suggest *ontological neutralism* as an alternative stance. They reason that a subject might be "denied to come to a definite conclusion about the existence of an independent reality" (p. 22) and thus object to take a certain perspective. This "agnostic" view on ontology not only hints toward the problem of undecidability but also to the possible arbitrariness of this perspective, i. e. its missing influence on methodology.

Design science research is generally aimed at creating an artifact that is both novel and purposeful to the domain of its application. Thus, it is intended to "alter reality" in taking direct influence on the domain of investigation (Vaishnavi & Kuechler, 2008). This understanding suggests an ontological realist perspective. In fact, conceptual modeling has predominantly been associated to a realist stance (Wand & Weber, 1995; Becker & Niehaves, 2007). As information systems can not be observed independently of their organizational settings (Orlikowski & Barley, 2001), it can be argued though, that the impact of an artifact affects human perceptions of an organizational reality rather than an objective reality itself.

This research draws on prior work that is governed by an interpretative methodology and views reality as an intersubjective construction (Seidel, 2009a). Thus, a definite concession toward an objective reality would unsupportedly expand the claim of validity of the used substantive theory. In the consequence, this research adopts the stance of ontological idealism and thus views reality as a construction of communities of subjects. In the remainder of this document, the terms *reality* and *real world* thus will refer to subjective or collective constructions rather than objecting from a realist ontological position.

3.3.2 Epistemological Position

Epistemology is concerned with the nature of knowledge claims and how these are justified (Orlikowski & Baroudi, 1991; Creswell, 2003). The epistemological position determines the relation of a researcher toward the possibility of an objective cognition of the investigated domain.

Epistemological realism refers to the possibility of reality being perceived objectively. To achieve this objective access to reality, suitable measures are to be provided that eliminate distortions that are caused by sensory or cognitive influences from the subjective cognition (Becker & Niehaves, 2007). The assumption of an objective access to reality implies the assumption of its independent existence, thus it presupposes ontological realism. This stance is also referred to as positivism.

Independently of the ontological position, a researcher might acknowledge the inherent subjectivity of cognition, thus taking a *constructivist* stance. This implies that the association between the object of investigation (be it an objective reality or a intersubjective construction) is determined by the subject. Since the researcher needs to interpret his or her perceptions in order to reconstruct phenomena, this position is also referred to as *interpretivism* (Putnam, 1983; Orlikowski & Baroudi, 1991). Since this study neglects the existence of an objective reality, the epistemological position is that of constructivism and thus acknowledges the impact of the subject on the cognition process.

3.3.3 Concepts of Truth and Value

The concept of truth refers to the purpose of research activities to achieve "correct" knowledge, i. e. the question how obtained knowledge can be verified to be true (Becker & Niehaves, 2007).

The *correspondence theory of truth* postulates for a statement to be true, it must represent a *fact* in an objective reality. It is thus bound to an ontological realist stance. In the context of the *consensus theory of truth*, a statement is assumed to be true, if it can potentially be accepted as being true by everyone or a particular group. It thus states that that "...nothing exists or proves to be relevant in the context of a test of truth, which would not be apparent to the community/group doing the perceiving" (Becker & Niehaves, 2007, p. 204). The *semantic theory of truth* is a linguistic concept that aims to circumvent the issue of self-reference in speech acts that may result in logical paradox. The semantic theory seeks to prevent this by separating an object language, in which statements about the domain are made, from a meta

language that is used to analyze the correctness of such statements. Becker and Niehaves (2007) point out a tight relationship of this concept to the consensus theory, since languages are the property of a linguistic community. Thus, since the negotiation of consensus is conducted through speech acts, the subjects of the group sharing that consensus need to be member of the same linguistic community as well.

Vaishnavi and Kuechler (2008) refer to *axiology* as the study of values. They distinguish between the value of *truth*, which they link to a positivist philosophical stance and the value of *understanding* that is associated with interpretive research and basically resembles the socially constructed consensus as mentioned above. In design science research, they attribute researchers to value "creative manipulation and control of the environment in addition to (if not over) more traditional research values" (Vaishnavi & Kuechler, 2008, p. 18). In consequence, design science is based on the purpose of *utility* that is introduced to the domain by construction of an artifact.

The present study seeks to create value by both designing an artifact (a documentation method) for a particular domain (creative organizations), as well as extending the consensus group of an existing substantive theory by demonstrating the applicability of an artifact that is developed from this theory.

3.4 Multilingual Qualitative Research

The case study of this research is set to the context of german television production. Thus, all interviews, utilized interview guidelines and process models have been conducted or realized in german language. The decision to explicate this research in english language in the present thesis is based on the following reasoning:

- **Range of audience:** By publishing this research in english it is addressed to the greater part of the IS community and will therefore have a potentially greater audience and contributions to the discussion.
- **Prior work:** This research draws on the prior work in the context of creative organizations that has been conducted and discussed in the english-speaking community.
- **Scope of the Study/Findings:** The focus of this design research is to develop a language for process modeling on theoretical grounding and evaluate it through a qualitative study. Thus, it takes on an international discussion in IS research (c. f. Section 2).

> From the author's point of view, the research presented is therefore neither constrained to nor specific for the german speaking research community.

The translation between the qualitative data collected in the evaluation phase of this research and its translation for analysis in the context of this study introduces some limitations. Temple and Young (2004) discuss the epistemological and methodological implications of translations. They generally advise to explicitly reveal translation processes within research projects. Wong and Poon (2010) second this view by emphasizing the subjectivity of translation processes. In consideration of these concerns, all translations necessary have been conducted by the researcher himself. Furthermore, the quotations used to support the modeling decisions in Chapter 6 have been appended to this document in original language (cf. Appendix B)

3.5 Research Process

The research process specifies the sequence of actions undertaken within a research project and defines how process phases and activities interact. It reveals, how the research questions that are initially devised are put into action. Figure 3.1 depicts the overall research plan that structures this thesis. As has been discussed in Section 3.2, design science research projects are concerned with the construction of an *artifact*. The present research is concerned with the development of a documentation method for creative work systems. In the taxonomy of DSR outputs devised by March and Smith (1995), this artifact can be regarded as an instance of the *construct* class, since it incorporates a conceptualization of the application domain. It is also a *model* through expressing relational statements between constructs in the domain. Furthermore, it is an *instantiation*, since the modeling language has been incorporated into a software tool. The artifact is, however, only a *method* in a broader sense. While methodical guidelines for the application of the language constructs are indeed developed (cf. Section 4.5), they do not necessarily aim for the development of an information system.

The *first phase* of a design science process is concerned with the definition of the research problem (Vaishnavi & Kuechler, 2008). The first chapter of this thesis develops the research questions that seek for a means of documenting and analyzing business processes in creative organizations. The second chapter recapitulates the existing literature that is concerned with both business process management and modeling, as well as the development of modeling languages as means of organizational documentation. This analysis identifies the

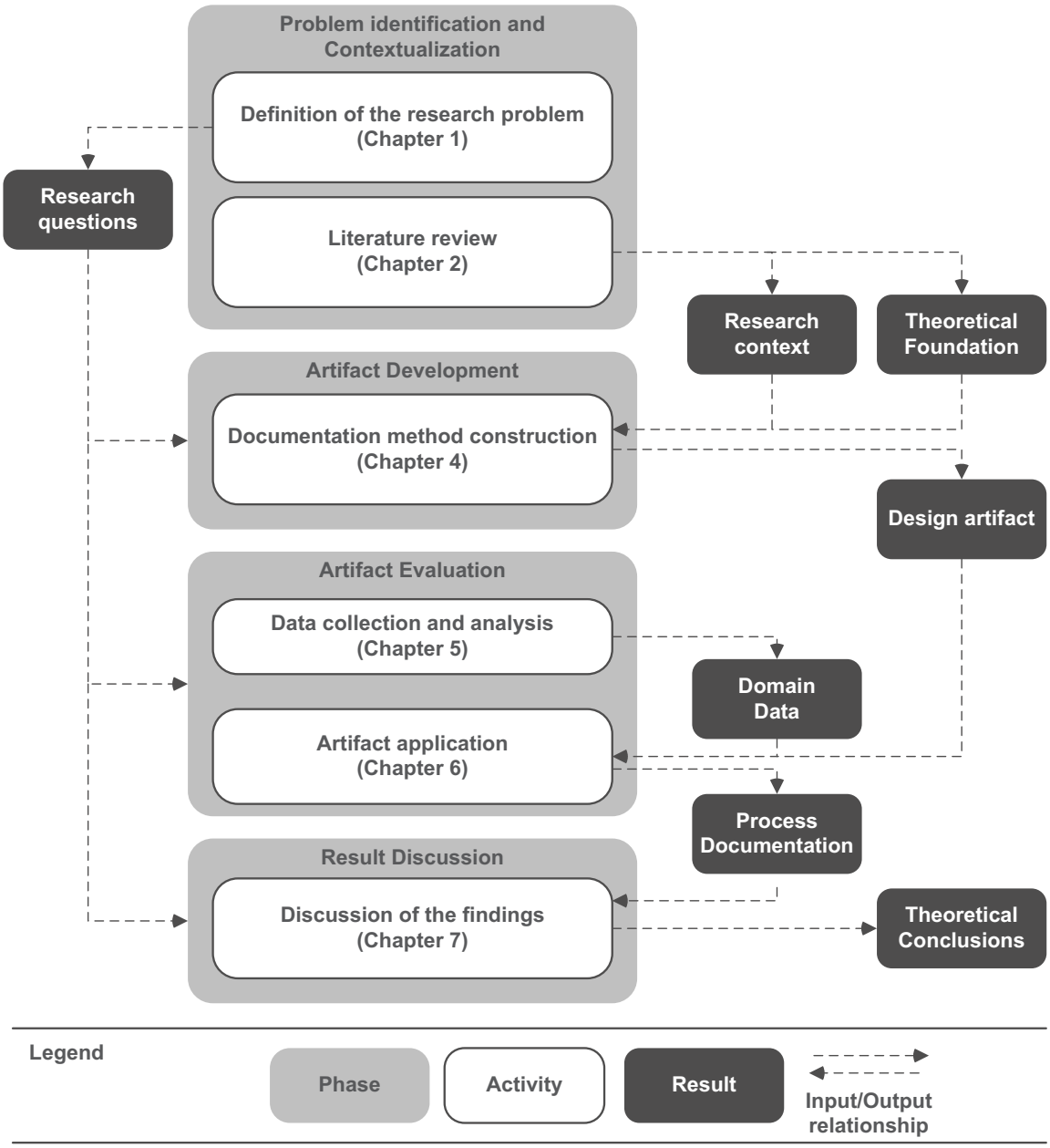


Figure 3.1: Research Process of the Thesis

research context of the present work as well as the perceived research gap that is addressed. Furthermore, it identifies the theoretical foundation on which the artifact development is grounded.

The *second phase* of the process comprises the actual design of the artifact. For this purpose, the intended domain of application (creative organizations) is analyzed through

the use of a substantial theory that has been developed in this context. The result of this analysis is a set of requirements that are to be met by the artifact (Section 4.1). The language construction process follows a method engineering approach and thus aims for the reuse of existing method fragments for the given purpose. Thus, established process modeling approaches are analyzed for their support of the defined requirements and their general compatibility to respective extensions (Section 4.2). Based on the requirements and the conceptualization of the used theory, an abstract syntax (Section 4.3) and a visual representation (Section 4.4) are developed. Furthermore, guidelines for domain analysis and model construction are provided (Section 4.5).

The *third phase* is concerned with the evaluation of the artifact by demonstrating its applicability in a the target domain. Therefore a qualitative study has been conducted and data based on semi-structured interviews has been collected. Chapter 5 elaborates on the selection of the cases as well as the analysis method applied to the data. Chapter 6 comprises an extensive model of the selected domain (television production in Germany) and so demonstrates the application of the documentation method.

The *final phase* recapitulates the experiences gained throughout the process of constructing and applying the artifact. It discusses the implications of these findings on the foundational theory, as well as pointing out the inherent limitations of the research.

4 Process Documentation for Creative Work Systems

4.1 Creativity in Business Processes

Creativity as a phenomenon has been discussed over the last decades throughout various research disciplines, such as psychology, sociology and the humanities (Styhre & Sundgren, 2005). Unsurprisingly, this long history has induced a multitude of definitions for the term creativity itself. In a business context, the definition for creativity is derived from the *result* of creative action as being both *novel* and *purposeful* (Amabile, 1996, 1998; Seidel, 2009a; Woodman et al., 1993).

The term of the *creativity-intensive process* (CIP) has been coined by Seidel (2009a, 2009b), who integrates the notion of creativity on different levels of interaction with the particular requirements of business process management. The resulting *theory of managing creativity-intensive processes* provides strategies in dealing with the challenges of processes that largely rely on creativity, so striving for efficiency without risking the creative potential that lies within these processes.

A first necessary prerequisite for the successful management of creativity-intensive processes is their confident identification. This research stems on properties of the above mentioned theory to derive both methodical guidelines for the identification of creativity-intensive processes as well as language constructs for their description.

4.1.1 Properties of Creativity-intensive Processes

The theory of managing creativity-intensive processes has been developed based on a qualitative study in the context of movie post-production in Australia by utilization of the Grounded-Theory Method. The results of this study identify the creativity-intensive process (CIP) as the *core category* (Strauss & Corbin, 1998, p. 146) of the theory. Seidel (2009b)

defines this category as capturing "... the phenomenon of business processes that are largely characterized by creativity." (p. 107) This description can be interpreted as labeling CIPs a subset of business processes in general. The distinctive property of these processes is *if* and *to what degree* they are influenced by creativity. This influence is hard to assess as such, however, it becomes more tangible by introducing the properties of the CIP category (cf. Table 4.1, 4.2) that basically represent the possible *effects* of creativity on business processes.

Property	Description
Uncertainty with regard to process structure	Process structure (required process steps, number of iterations, process flow) of creativity-intensive processes is often not known in advance. This is mainly due to different perceptions of involved people.
Varying levels of structure	Parts of a creativity-intensive process have a predetermined structure, other parts do not. Thus, creativity-intensive processes comprise of both unstructured, hard-to-predict sections and well-structured sections at the same time.
Iterative nature	Creativity-intensive processes are highly iterative. They constantly iterate between understanding the requirements, doing work, and reviewing work.

Based on: Seidel (2009a, p. 114)

Table 4.1: Structural properties of creativity-intensive processes

The process properties listed in Table 4.1 outline the potential structural effects that creativity can exert on business processes. These properties have a destabilizing effect on the structure of a process and therefore constrain its formalized representation by use of process modeling languages that rely on strict predecessor-successor-semantics of control flows.

Table 4.2 lists properties regarding input and outcome of CIPs. Seidel (2009a) additionally formulates the properties of *creative risk* and *creative potential* (p. 122). Here, both properties are referred to the fact, that *customer requirements* are not explicitly stated prior to the creative production process and develop over the course of the process. While this might be considered as a defect in other production processes, to a certain degree this freedom to diverge is intended within CIPs. It enables the creative organization to generate innovative ideas and is thus a vital component of their creation of value. However, it also bears the risk that the process result will not meet the requirements of a customer. This dichotomy of balancing risk and creative freedom represents the major challenge within CIPs. The nature

Property	Description
Uncertainty with regard to outcome	Certain characteristics of the process-oriented object (creative product) are not known in advance. The result is dependent on the individual creative process and its actors.
Uncertainty with regard to customer requirements	Certain characteristics of the creative product are not made explicit in advance. Requirements are specified, changed and updated throughout the creativity-intensive process.
Uncertainty with regard to required resources	Similarly, required resources in creativity-intensive processes are often not fully known in advance. Uncertainty with regard to required resources varies on a dimensional range from low to high.

Based on: Seidel (2009a, pp. 114, 122)

Table 4.2: Input- and output-related properties of creativity-intensive processes

of the resulting compromise between efficiency and originality is largely dependent on the type of creative product (cf. Chapter 6).

Property	Description
Internal collaboration intensity	This property integrates the properties "collaboration intensity", "communication intensity" and "varying internal review points" (Seidel, 2009a, p. 119). It is interpreted not primarily as the number of contributing actors in the process but rather as the degree to which the work of the different actors is intertwined and interdependent.
External collaboration intensity	This property also integrates the properties "collaboration intensity" and "communication intensity" as well as "varying client touch points" (Seidel, 2009a, p. 119). It is interpreted as the degree to which external actors of the client organization influence the process of creating a product. This refers to both the frequency as well as the level of detail on which this influence takes effect.
Knowledge intensity	Artist require expertise as well as explicit and tacit knowledge for their creativity.

Based on: Seidel (2009a, p. 119)

Table 4.3: Organizational properties of creativity-intensive processes

Table 4.3 summarizes the properties regarding the organization and actors within the CIP. Creativity-intensive processes in a business context are characterized by involving many actors that contribute to the product. However, the degree of interaction between these

actors can be viewed as an indicator for creativity. The more defined the division of labor is in a process, the less opportunity for diversion remains for its actors. An example is the development process of *daily series* in television production (cf. Section 6.4.2): although more creative personnel is involved in the process, the defined milestones and points of review tightly constrain the individual creative freedom in contrast to formats like TV movies.

These constraints stem from the established structure of the process. In processes that rely on a much more loose structure (such as movie development), the loss of control is prevalently mitigated through the stronger involvement of external client actors where those will constrain the process rather on an *ad hoc* basis (cf. Section 6.2.2).

4.1.2 Subcategories of Creativity Intensive Processes

Seidel (2009a) describes a set of subcategories of CIPs: *contextual factors*, *strategies in managing CIPs* and *consequences*. These categories again comprise subcategories that detail the descriptive structure.

The contextual factors provide for helpful conceptualizations that describe the actors, objects and environment of creativity-intensive processes. Table 4.4 summarizes the contextual factors and their subcategories or properties.

Both the creative product as well as the roles (as abstractions of the involved actors within CIPs) are important elements in the course of identification of processes that can be labeled as being creativity-intensive. Since the aim of this research is not to explain the internal functioning of creative individual or group processes, but to isolate them against processes with no or negligible dependence on creativity, these contextual indicators need to be further elaborated.

4.1.2.1 Creative products as process objects

The creative product (in terms of result or outcome) is regarded a confident indicator for the occurrence of creative behavior by most researchers investigating into the phenomenon of creativity. Couger, Higgins, and McIntyre (1993) highlight the notion to evaluate the creativeness of a development process depending on the newness and value of the result. They also state that the product as constituent part of the so-called 4-Ps model (Rhodes, 1961) is a possible outset for creativity analysis "... by identifying characteristics necessary for objects to be classified as creative." (Couger et al., 1993, p. 379)

Category	Description
Roles	Three roles are described as actors in CIPs. The *artist* classifies actors in the process that directly contribute to the generation of the result by bringing in their creative capabilities. The *creative supervisor* of a CIP has the responsibility for the creative product and acts as an intermediary between the artists and the client. The *client* as the third type of actor provides the creative and economic requirements and triggers the creative process. The client organization, i. e. their respective representatives, will perpetually evaluate the emerging product and therefore influence the production process.
Constraints	Time and budget are the obvious constraining factors and represent *resource constraints* influencing the process. Furthermore *product constraints* can arise, such as preserving legal compliance, as well as meeting customer requirements. *Process constraints* represent either managerial or logical constraints of sequencing within the process (Seidel et al., 2010).
IT context	The IT context comprises the software systems utilized within CIPs. A rough distinction can be drawn between *artist systems* (i. e. software directly used to generate creative artifacts) and *support systems*, such as software for knowledge- or asset management, communication and workflow support.
Creative product	The creative product as the result of CIPs is characterized depending on its state by either *intermediate product specifics* or *final product specifics*. It incorporates a property of *quality* that refers to both creative (artistic) as well as technical aspects.

Based on: Seidel (2009a)

Table 4.4: Contextual factors in CIPs

As measurements for product creativity of information systems Couger and Dengate (1996) used the dimensions *novelty* and *utility*. In this light, the generation of creative products is very closely connected to the notion of *innovation*, which is also used as an alternative label from the authors. Both criteria are evaluated on a scale from low to high thus resulting in a notion of creativity as a quality measure on a continuous scale as well. This implies that a threshold had to be defined, should these measures be utilized for distinguishing creative products from others. This view bears some determination problems, since it results in separating the same type of product (such as a software model etc.) into a creative and a non-creative category, although their instances might result from similar processes.

Rhodes (1961) defines the creative product as an *original idea* that "...becomes embodied

into tangible form ..." (p. 309) thus pointing toward the intellectual property of the creator of an artifact. Furthermore he highlights that these ideas range on a scale of creativity, granting ideas in theory a higher order than ideas for inventions that apply such an idea. The notion of creativity as a result of some kind of production process is also demonstrated in the term of *creative industries* or "copyright industries" (Hartley, 2005). This term refers to the incorporated intellectual property as the *core value* of a creative product.

Firestien (1993) supports this notion as he states that "creative products are not limited to tangible products" (p. 263). He also highlights, that ideas must be "produced" and take effect on their environment to be referred to as products. The assessment of the creativeness for a given product is deemed a subjective process and is therefore hard to quantify or formalize. The acclaim a movie receives by critics, for instance, might not relate to appraisal by the audience and thus commercial success (Firestien, 1993). However, even a movie falling short of the expectations of both target groups will generally have been developed in a series of creativity-intensive processes. Furthermore, products might be highly original during an intermediate state of development but are cut down to mediocrity due to political barriers within the creative or the client organization (Firestien, 1993, p. 264). These issues are disregarded by the ex-post assessment of a final product's creativeness as a means to identify CIPs. To overcome this, the product analysis should consider the *creative intentions* of involved actors, i. e. their vision for a product to be creative (and thus aligning their processes accordingly).

Creative products of a certain complexity are developed in multiple process steps, transforming the product from one intermediate state of completion to another. In order to identify creativity-intensive processes on higher levels of detail, the *creative contribution* of these process steps is to be evaluated. This implies the evaluation of both the input and the result of such process steps in order to distinguish CIPs from technical transformation processes. Both novelty and especially utility as measures fall short of evaluating an intermediate product based on its former state. The value added by the personal contribution of ideas by the involved actors helps to identify the creative nature of a subprocess. The identification of *creative contributions* is not only important for the identification of CIPs but will also help to clarify issues of ownership and necessary attribution of products, such as the so-called "Chain of Title" in television productions (Collie, 2007, p. 97).

Table 4.5 summarizes the criteria for the identification of creative products and creative intermediate products. This distinction implies the existence of *non-creative products*, that might both be input to creativity-intensive processes, as well as results of non-creative tasks

Criterion	Description
Creative contribution	The creative value refers to the traditional measures of novelty (in the sense of originality) and utility but evaluates those measures on a product depending on the inputs to the process that produces that respective result. It assesses to what degree involved actors contribute their own original ideas to the product.
Explicitness	For an idea to become a product it has to be made explicit in some form. The minimal criterion to this property is that an idea has to be communicated to other stakeholders in the process. This criterion is met if the respective idea is communicated verbally (e. g. in a meeting), so that other actors can incorporate it as input to their creative processes.
Creative intention	The final result of creativity-intensive processes might fall short of the stakeholder's expectations for various reasons (individual performance, political press etc.), thus an evaluation restricted to the ex-post state disregards the nevertheless creative nature of the generation processes. Therefore the creative intention for a product is considered as a criterion.

Table 4.5: Criteria for the identification of creative products

such as technical tasks or well-defined transformations from other products.

4.1.2.2 Roles and positions in creativity-intensive processes

Seidel (2009a) identifies three roles within creativity-intensive processes (cf. Table 4.4). In the course of the process analysis, these roles can be interpreted as relationships between creativity-intensive processes or sub-processes and *positions* within the creative organizations. A *position* in this context refers to the relationship between the actors in the process and the creative organization, while the latter can be either a corporate entity (such as a film production company) or a temporary construct (such as a project team for a particular movie). Typical positions in the domain of TV production are the "CEO of a production company" (position related to a corporate organization) or the "director of the movie *Der Stinkstiefel*" (position related to a temporary organizational construct).

The internal roles of *artist* or *creative supervisor* as incarnated by the actors in fixed positions shift along both the sequence of the process, as well as the subsequent detailing. An example for the reassignment along the sequence can be made of heads of creative departments (e. g. a head of development in entertainment production, cf. Section 6.5.2) that start off developing an initial idea in the role of an artist, but will later delegate detailing

work to subordinate artists and will back down into the role of the creative supervisor.

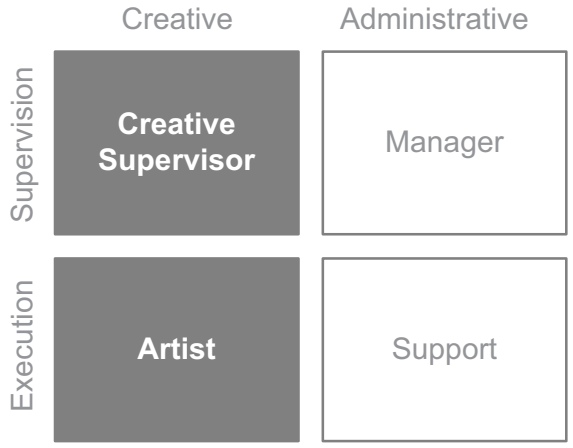


Figure 4.1: Roles in creativity-intensive processes

The notion of creativity-intensive processes as displaying a varying level of structure and creativity implies that CIPs contain process parts that are deemed non-creative. Artist and creative supervisor are understood as being the creative roles in creativity-intensive processes. This reveals the lack for a concept to refer to relationships between actors and processes that are not characterized by creativity. Analogous to the distinction between an executing role and a responsible role for the creative context, the roles of *support* and *manager* are distinguished. The role of *support* refers to tasks that are part of a CIP but do not directly contribute to the creative value of the product. In certain processes, the roles of support and artist are embodied by the same position (e. g. a development editor conducting a market scan for licensable formats), some positions are constrained to the support role (e. g. a set driver). The manager is responsible for the organizational and financial aspects of a CIP. Figure 4.1 depicts the classification of the four roles.

4.1.3 Conceptualization of Creativity in Processes: the Pocket of Creativity

Creativity-intensive processes are characterized by their varying degree of structuring (cf. Table 4.1), which hints toward the coexistence of structured process paths and seemingly unstructured tasks within these processes. On a high level of abstraction, these latter tasks represent subprocesses that might be regarded as creativity-intensive themselves, thus revealing similar properties and relationships toward actors and products. By analyzing their

inner composition in turn, a top-down-hierarchy of abstraction is successively revealed. The nodes in this hierarchy are either structurable subprocesses or creativity-intensive processes on a higher level of detail.

Seidel et al. (2010) develop the concept of the *Pocket of Creativity* (PoC) to refer to creativity-intensive process partitions. PoCs can be analyzed and broken down again into subordinated PoCs or structured subprocesses. Since a PoC represents a creativity-intensive process, its result always comprises one ore multiple creative products in some states of completion. Furthermore, a PoC can be related to involved actors by assigning one or multiple of the four possible roles (cf. Figure 4.1) that can be associated to a CIP.

PoC Decomposition The subsequent decomposition of PoCs has two main objectives. Firstly, structured subprocesses are identified and can thus potentially be made subject to business process management optimization measures such as process restructuring, organizational reassignment (e. g. outsourcing) or (semi-)automation. Secondly, PoCs on higher levels of detail reveal a higher potential for creativity-intensity, thus representing the core functions of the creation of value. Identifying these process parts makes way for opportunities to create a creativity-friendly environment and allocate resources accordingly.

The process of decomposition raises the need for indicators that prevent attempts to further subdivide PoCs that can not purposefully be analyzed for their process-oriented composition. Prior work (Becker, Karow, Müller-Wienbergen, & Seidel, 2009) stated the necessity of such a *termination condition* and refers to Harmon (2007), who suggested the decomposition of value chains to their *atomic activities*. However, the question what type of tasks are referred to as atomic remained largely unanswered. The forceful subdivision of an effectively atomic PoC might lead to false precision and overspecification which can in turn hamper or destroy creativity (Amabile, 1998). Thus, the conditions for the termination of process breakdown cannot be sought in properties of process structure but rather in the contextual factors. To determine an atomic PoC, the following questions are suggested:

- *Does the PoC contain identifiable intermediate products?* To identify potential sequences within a PoC, *defined* intermediate products (i. e. products in intermediate states) are to be identified. Depending on the context, this assessment might yield different results. For instance *script versions* in the daily series development (cf. Section 6.4.2) are defined intermediate products, since the number of revisions is fixed to a certain degree. In movie development, the script will traverse different versions

as well, however, the number of revisions is unknown in advance, thus rendering the script versions *undefined*. While the first example reveal a sequence of PoCs, the second suggests to retain one single (iterative) PoC.

- *Does the PoC yield multiple outcomes?* This hints toward potential parallel subtasks within a PoC. It also may indicate a sequence, if some products result of a PoC prior to its termination. If an outcome is identified as non-creative product, the PoC might contain structurable sub-processes.
- *Does the responsibility or execution shift within the PoC?* A shift in the association of positions as artists or creative supervisors within a PoC suggests a potential sequence.
- *Are actors involved that share the same role but attend to different aspects?* This again suggests potential parallel subtasks within a PoC. If artists attend to different tasks within a PoC, these tasks might in turn be candidates for being modeled as a PoC.

If these questions are negated, a further subdivision of the PoC in question is not advised, as it may result in false precision of the description and artificial formalization of creative tasks. If one or more of these criteria apply, a further subdivision can be considered depending on the desired level of detail of the analysis.

4.2 Process Modeling Language Analysis

Creativity-intensive processes bear particular properties regarding their management and documentation (cf. Section 4.1). This implies specific requirements to modeling languages trying to adequately document these processes. In both business practice as well as the scientific community, a plethora of modeling grammars and techniques exists (Indulska et al., 2008; Ko et al., 2009; Recker et al., 2009; Yu & Wright, 1997; Davies et al., 2004) incorporating a multitude of process paradigms (Abeysinghe & Phalp, 1997; Melão & Pidd, 2000) and stemming from diverse application domains (Lindsay et al., 2003).

A necessary justification for any addition to this ample collection is a detailed assessment of features and properties already provided by established techniques. These techniques represent candidates for a foundation that can then be enhanced toward a tailored modeling grammar (Dreiling, Rosemann, von Der Aalst, & Sadiq, 2008). Furthermore, the analysis will reveal missing features as well as highlight the compatibility of different modeling paradigms in the context of an intended integration.

4.2.1 Requirements for Process Modeling in Creative Contexts

To derive requirements for the language constructs and mechanisms necessary, the intended scope of the language has to be identified. As has been mentioned before, the aim of this research is to provide analysts and process actors with comprehensible means for analyzing, documenting and understanding creativity-intensive processes. Thus, the major scope of the resulting models is to be interpreted by human actors. This understanding resembles the notion of Krogstie et al. (2006), who coined the term *active model* as an object of interpretation and guidance for action. The main objectives of modeling creativity-intensive processes thus are:

- **Documentation:** Creating a comprehensive repository for business process knowledge in creativity-intensive contexts
- **Knowledge Management:** The models can be used as means for transferring knowledge on processes, constraints and organizational structures.
- **Standardization:** Due to the heavy fluctuation of personnel in creative organizations, best practices are hardly communicated and established as business routines. The documentation method seeks to improve this transfer of knowledge.
- **Process Analysis:** The modeling method guides the process analyst in separating creative core processes from structured auxiliary processes thus creating potential for improving both creative as well as conventional process performance.

Process Structure: The subsequent *decomposition* has been identified as an essential analysis tool to extract process information from creativity-intensive processes (cf. Section 4.1.3). A language utilized in the analysis should provide for means to support the detailing of tasks in subordinated models. Furthermore, the absorbing capacity of human model interpreters is limited and prevents the comprehension of a comprising process in its entirety from a single model. Thus decomposition and navigational support throughout levels of abstraction are essential features in this context of intended model use.

The uncertainty regarding process flow implies that partitions of creativity-intensive processes will in some cases not reveal recurring process structures that can be abstracted in to predefined sequences in process models. If a process modeling language requires activities to be connected to the graph via strictly-defined sequence flows, the application of this technique will potentially result in one of two undesirable situations:

- The modeler documents the structure of the creativity-intensive process as it is revealed to him or her and stops at a level of detail where further analysis fails to identify reliably repeating patterns. In the case of a high proportion of creative activities, this strategy will result in a very high level of abstraction of the process models, rendering complex sub-processes as mere (atomic) activities. All information available about their inner structure – such as optional or mandatory sub-tasks – is lost due to the ill-defined flow structure.

- The more critical situation results in the modeler recording single instances of processes as precise activity sequences to incorporate all of the available process information. Due to the strict rules of the used language, a fixed generalization is applied to a process of potentially great variability. This results in misleading precision of the process model, which cannot be reflected in the real-world business process.

To avoid false precision while incorporating available process information, the modeling language should incorporate constructs to loosely define process structures. Seidel, Adams, ter Hofstede, and Rosemann (2007) conduct an analysis of concepts for workflow flexibility and relate them to the creative context of the screen business. Two identified concepts are a *declarative approach* (van der Aalst & Pesic, 2006) which allows for *soft constraints* of task sequence and the *case handling* paradigm (van der Aalst & ter Hofstede, 2005), which relies on a data-driven loose coupling of tasks. Both approaches aim to deal with uncertainty by overriding the strict control-flow semantics associated with workflow systems. From these approaches, two language concepts can be derived: as hoc processes and partial flows. *Ad hoc processes* are collections of activities or subprocesses that do not imply any sequencing. Upon instantiation of such a process, the activities contained can be executed partially and in arbitrary order and number of iterations. *Partial Flows* are flow sequences within ad hoc processes, revealing some information of inner activity sequence that is however loosely coupled to its comprising process.

Creativity-intensive processes are characterized by *multiple iterations* in which the intermediate product is converged toward the requirements of the client (cf. 4.1). These iterations follow an identical pattern of improvement and review and can therefore best be represented by specific constructs indicating the iteration. On the other hand, particular processes will iterate not over a single object, but generate a batch of creative products that have a similar structure but represent unique products nonetheless. This is especially common in serial productions (e. g. development of daily TV series episodes, cf. Section 6.4.2). The

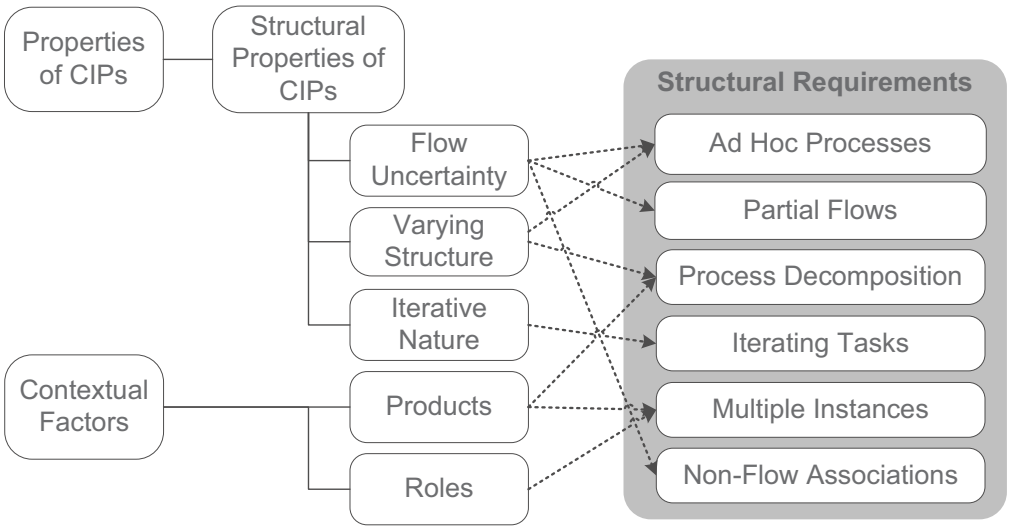


Figure 4.2: Derivation of language requirements regarding process structure

modeling language describing such processes should provide means to effectively represent both iterative as well as *multi-instanced* tasks and sub-processes. In the case of a serial production of creative products (as "similar uniques"), both iteration and multi-instancing are combined. Figure 4.2 shows the associations of CIP properties to the derived modeling language features regarding process structure.

Auxiliary Views: Creative tasks require special abilities for the actors performing them. In order to derive skills and knowledge necessary for organizational units, it is necessary to clarify their responsibilities within the processes. This includes both the *modeling of formal positions and job descriptions within creative organizations* as well as the association of these organizational units to the processes and tasks via their respective role. The distinction between roles and positions is relevant to document the shifting responsibilities along the process.

The relevance of goal-information in process descriptions for human actors has been discussed by some researchers (Kueng & Kawalek, 1997; Soffer & Rolland, 2005; Soffer & Wand, 2005). Stemming from a study in the context of data production processes, Lee and Strong (2003) argue that goal-knowledge as the "knowing-why" has an essential impact on quality of process outcomes and thus advocate for explicit documentation of process goals. Soffer and Wand (2007) use process goals as a criterion to analyze the validity of process descriptions. Here, goals are defined as lawful states in a formal description of a process.

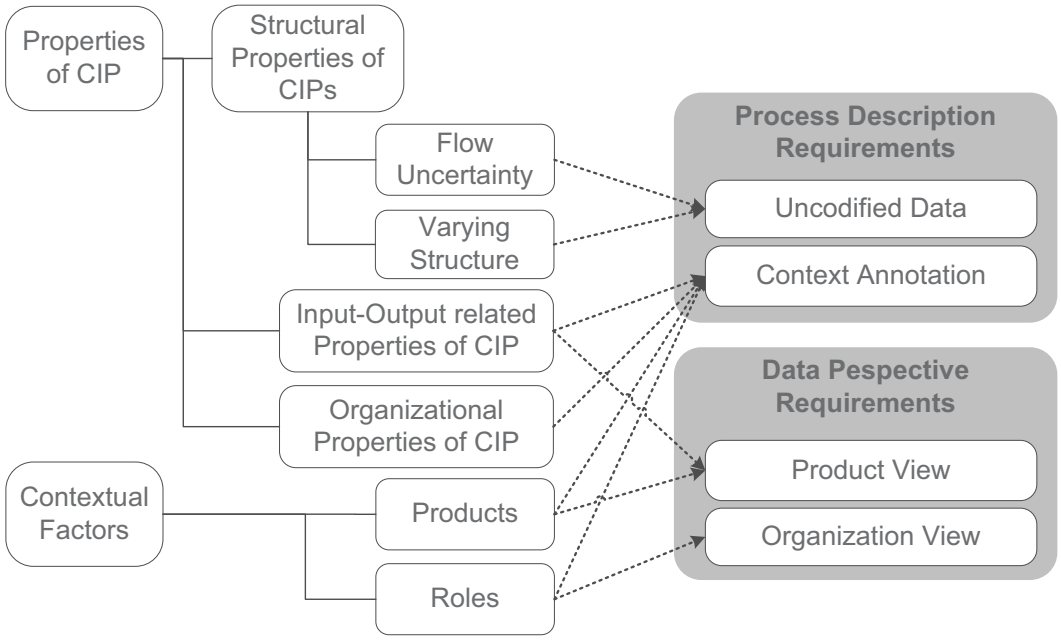


Figure 4.3: Derivation of language requirements regarding process context

Creativity-intensive processes are concerned about the creation of a creative product. While potentially having one or many material incarnations, the greatest value of a creative product lies in an immaterial component in many cases. The identification and *documentation of creative products and their structure* is crucial since these products bear complex regulations and legal implications regarding ownership or property. The association of partial or intermediate products to tasks and processes is essential to identify possible claims to creatorship by associated performers. Figure 4.3 reveals the associations of CIP properties to the derived modeling language features regarding process description and auxiliary views.

Rich process information: The focus on human interpretation implies relaxed requirements regarding a formal definition of the language semantics. However, it also implies a higher relevance of definition and representation requirements ensuring model clarity. Since the interpretation process is a subjective matter, the language should guide this process as far as possible by deriving constructs directly from the intended domain of application. This means, for example, that an activity might be annotated with the real-world-concepts of "product" and "actor", rather than an abstract type "business object".

The decomposition of creativity-intensive processes will reveal sub-processes with gradu-

ally higher partitions of variable and weak-structured activity sequences. This structural uncertainty implies that less process information can be documented by means of formalization. However, to capture all available process data that can be abstracted to a general type of process, a process modeling language and associated software tools should incorporate features to attach rich process information. Modes for this type of data could be free-text or other medial content, attached to typed model elements in order to improve the model's expressiveness and its comprehensiveness for human model users.

Table 4.6 summarizes the features discussed in this Section. These will be used for an analysis of existing modeling languages in the subsequent subsections.

Aspect	Feature	Description
Process structure	Task decomposition	Subsequent decomposition to further detail tasks in subprocess model parts
	Ad-hoc-processes	Specification of subtasks for a given subprocess without predefined ordering
	Partial flows	Specification of process parts that are loosely coupled with their process environment
	Multiple iterations	Marking of tasks and subprocesses as iterative
	Uncodified D Multiple instances	Marking of tasks and subprocesses as a batches
	Multiple iterations and instances	Marking of tasks and subprocesses as a batches where each instance has distinct iterations
	Non-flow association of tasks	Specification of relationships between tasks without inherent flow semantics
Auxiliary views	Product modeling	Specification of products, their component structure and interdependencies
	Organization modeling	Specification of the organizational structure, definition of positions, roles and organizational units
Rich process information	Context annotation	Specification of relationships between tasks and their context: resources, products, performers etc.
	Uncodified process data	Attachment of low-structured process data (text, multimedia content etc.) to typed elements

Table 4.6: Analyzed Language Features

4.2.2 Language Analysis: Sampling Strategy

To identify a representative set of languages for the analysis, this research draws on the comprehensive body of knowledge on modeling language evaluations and surveys existing in the IS community. Recker et al. (2009) conducted a *representational analysis* on 12 popular modeling techniques while referring to prior comparisons in this context. They base their work on modeling technique comparisons and evaluations by Keen and Lakos (1996), Green and Rosemann (2000), Green, Rosemann, and Indulska (2005) and Green, Rosemann, Indulska, and Manning (2007). Glassey (2008) conducted a *case study*, using three different process modeling techniques and compared their adequacy in relation to the *objectives*, *resources* and *mode of work* of the case organizations. Lu and Sadiq (2007) compared graphical based and rule-based workflow modeling by comparing the *formal expressiveness* of 12 grammars.

Kettinger et al. (1997) conducted a comprehensive *survey* of methodologies, techniques and tools in the context of business process reengineering. Besides some process modeling techniques (e. g. Flow Chart, IDEF, DFD, Petri Nets) a multitude of analysis and design concepts on different levels of abstraction are classified (e. g. Activity-Based Costing, Benchmarking, SSM, Total Quality Management). While this work does not conduct a comparison of these techniques' features, it represents a comprising list of techniques and tools of the time. Ko et al. (2009) conducted a survey on business process management standards and classified 22 standards into 6 discriminable types.

From the multitude of standards, languages and techniques a set of eight has been chosen filtered by the following requirements:

- The notation is targeted toward and can be read by human recipients. This especially excludes text-based, implementation-level standards for process enactment or data interchange, that are interpreted by software systems.
- The notation is implemented in a publicly available software tool.
- Comprehensive description of the notation's abstract and concrete syntax is available.

4.2.3 Detailed Analysis

The eight selected modeling languages as listed in Table 4.7 are shortly described and analyzed according to the feature list. Please note that the descriptions are not sufficient

Modeling Technique	Description	Tool Support	References	Evaluations Comparisons
ADONIS	Comprehensive modeling technique for business process management	BoC ADONIS	Junginger, Kühn, Strobl, and Karagiannis (2000)	Glassey (2008)
ANSI Flow Chart	Standardized, well-established process notation	Variety of commercial and free tools	American National Standards Institute (1970), Chapin (1970)	Recker et al. (2009) €
ARIS (esp. EPC)	Comprehensive modeling framework for information system architecture analysis and design	ARIS Enterprise Architect and others	Keller et al. (1992), Davis (2001), Scheer, Thomas, and Adam (2005)	Recker et al. (2009), Ko et al. (2009)
BPMN Version 1.1	Popular process modeling notation, part of OMG standards family	variety of commercial and free tools	Object Management Group (2008), Recker (2010b)	Recker et al. (2009), Ko et al. (2009)
Data Flow Diagram	Representation for data exchange within information systems, central technique of Structured Analysis	Variety of commercial and free tools	Gane and Sarson (1979)	Recker et al. (2009)
IDEF3	Process modeling language of the IDEF family, used in military context	KBSI COTS Tools and others	Mayer et al. (1995)	Recker et al. (2009)
Petri-Net	Mathematical modeling language for distributed systems	Variety of commercial and free tools	Petri (1962)	Recker et al. (2009)
UML™ Version 2.3 (esp. Activity Modeling)	Comprehensive modeling language family for software systems	Variety of commercial and free tools	Object Management Group, 2010a, Object Management Group, 2010b	Glassey (2008), Ko et al. (2009) (prior Version)

Table 4.7: Established Process Modeling Languages

to give a comprising picture of the modeling languages but rather point out specifics in the context of the investigation at hand. The result of the detailed analysis is summarized in subsection 4.2.4, which gives a formalized overview in Table 4.2.4 and discusses its

implications.

4.2.3.1 ADONIS Business Process Modeling

ADONIS refers to both a modeling tool as well as a modeling technique stemming from an academic background. It has been developed at the University of Vienna and pursued commercially by BoC GmbH, a private spin-off of the inventors. The intended application context of the tool is the graphical design of business processes (Junginger, Kühn, Strobl, & Karagiannis, 2000). While this incorporates manual processes as well as automated processes, special emphasis is made to the tool's integrated approach toward process automation.

The software incorporates the intention of customization for the given modeling context and offers functions to alter the generic meta models of the inbuilt model types. However, a proprietary set of model types – referred to as BPMS-method – is already built into the tool and user-defined meta models must be derived from these available constructs. Abecker et al. (2000) show how a project specific meta model can be derived from the ADONIS meta model. The tool incorporates further notations such as ARIS EPC as well as BPMN.

The BPMS-method offers a variety of model types for the description of business processes (cf. Table 4.8 for a selection). The business process model integrates these models that each contain means of annotation to the activities in the process.

In the context of creativity-intensive processes the language construct *control* is of particular interest, having a semantic resemblance to the creative review. Since reviews are a management strategy to cope with immanent risk, the explicit modeling of these risks suggests their association with the controls.

Process Structure: ADONIS supports the modeling of business processes as flow sequences. The dynamic element is the activity, which can be associated with further Business Process Models detailing its inner structure. The flow semantic is defined as a predecessor-successor-relationship. The metamodel does not natively support ad-hoc-processes, partial flows or non-flow-association and multiplicity of activities.

Auxiliary Views: As can be deducted from Table 4.8, ADONIS supports a multitude of auxiliary model types providing context information to the process models. Besides organization (working environment) and product models, the specification of risks and

Model Type	Description	Essential Language Constructs
Business Process Model	The business process model represents an organization's processes as sequences of activities that are connected by flows. Activities can be described in sub-process models. The business process model functions as an integrating view and navigational hub .	Activity Flow Start, End node Flow connectors (decision, split, merge) Swim-lane (vertical / horizontal)
Product Model	Represents products and their component structure	Product Part-Of-Relationship Aggregation Swim-lane (vertical / horizontal)
Working environment model	Hierarchical model representing the organizational structure	Organizational unit Member- and Supervision-Relationship Role, Performer Swim-lane (vertical / horizontal)
Risk Model	Lists risks that can be annotated to activities and rout to controls	Risk
Control Model	Lists controls that are either associated to activities or to particular risks	Control

Table 4.8: ADONIS Model Types

their controls is supported.

Rich Process Information: The Business Process Model integrates all views and allows for the association of typed context elements (such as products, performers, risks etc.) to the activities. Activity attributes are input in form-like dialogs that visually implement a *notebook metaphor*, which facilitates the usability of the models.

The ADONIS Tool is designed for adaptability and offers mechanisms to customize the predefined metamodels to the specific application context (Junginger et al., 2000). This enables the software to incorporate concepts that have been assessed as lacks in the analysis and makes ADONIS a candidate for a language integration in the context of creativity-

intensive processes.

4.2.3.2 ANSI Flow Chart

The flowchart as standardized by the American National Standards Institute (1970) is a simple and – due to its association to the ISO standard family[2] – well established process notation. It was designed as a "means of graphically stating ways of solving information handling problems." (Chapin, 1970, p. 119) The basic symbols (referred to as "outlines") are *Input*, *Output* and *Processing* (or Operation) that are connected via directed *flowlines*. Additional outlines provide language constructs for process start, termination, split/merge and decisions.

The standard differentiates between system charts and flow diagrams as two model types that basically draw on the same concrete syntax. While the system chart describes processes on a resource level (specializing outputs to media like tapes or punch cars), the flow diagram is aimed at describing algorithms of data processing, thus representing a more detailed description of the inner workings of an information system.

Process Structure: The Flow Chart supports the modeling of processes by connecting *processing* outlines (tasks) via object flows to their inputs and outputs. The sequencing of tasks therefore is realized by defining a preceding task's output as the input of its successor. **Process decomposition** is not explicitly specified as a structuring concept, however, operations may refer to other flowcharts as means of subroutines. Ad-hoc-processes or partial flows are not supported.

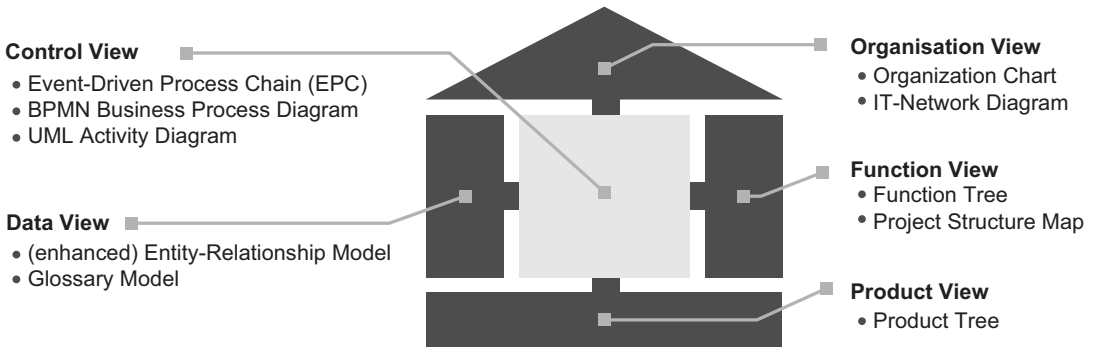
The merge and extract outlines, however, allow for describing the generation of multiple output objects from one input and vice versa. Multiple objects instances are visualized by stacking the respective symbol (Chapin, 1970, p. 127). This allows for specification of multiple instances on object level, multiple iterations of tasks or non-flow associations between them are, however, not supported.

Auxiliary Views and Rich Process Information: A variety of specialized symbols for operations, process objects and annotation are provided. However, as the application focus of the technique suggests, symbols (and thus specialized diagram types) for business concepts like organizational units or products are absent.

[2] The diagram type has later been incorporated into an international standard by the International Organization for Standardization (1985) in the ISO 5708 standard

4.2.3.3 ARIS Architecture of Integrated Information Systems

Similar to ADONIS, the Architecture of Integrated Information Systems (ARIS) has an academic background and has been commercially exploited by a private spin-off organization (IDS Scheer AG). The method and its associated software tool are especially popular in the german-speaking countries (Glassey, 2008). In its current realization, the ARIS software family (labeled ARIS Platform) is a collection of modules that strive to implement a vast variety of business process management techniques and standards from the strategic to IT-implementation layer (such as Six Sigma, Balanced Scorecard, BPMN, Archimate, UML, Service-oriented Architectures etc.). The modeling core is presented by the *ARIS Business Architect* that implements the general architecture symbolized by a 5-component house. Figure 4.4 depicts the five views and associated model types implemented in the tool family.



based on: Keller et al. (1992, Fig. 1)

Figure 4.4: ARIS – framework and model types

The original concept sub-divided these views into three layers, each representing a phase in the development process for an organization's information system: concept (business process and organizational design), data processing concept (software design layer) and implementation. Today the different tool bundles still are a reminiscent of that division.

Process Structure: The central model type of the *control view* is the *Event-Driven Process Chain (EPC)*. In its basic design it depicts processes as alternating sequences of functions and events connected by directed control flows. Processes can be split and merged through decisions (exclusive OR, inclusive OR) and parallelization (AND). Process decomposition is realized through association of functions to detailing process chains and can be explicitly depicted in function trees. Ad-hoc-processes or partial flows are not supported. The EPC does not provide constructs for multiple instances or iterations of functions.

Model Type	Description	Essential Language Constructs
Even-Driven Process Chain	The EPC represents an organization's processes as sequences of functions and events that are connected by control flows. Functions can be associated in sub-process models. The EPC functions as an integrating view and navigational hub.	Function Event Control Flow Flow connectors (OR, XOR, AND)
Product Tree	Represents products and their component structure	Product Part-Of-Relationship Generalization
Organization Chart	Hierarchical model representing the organizational structure	Organizational unit Member- and Supervision-Relationship Role, Position
ER Data Model	Represents the data structure of the information system	Entity Relationship
Function Tree	Hierarchical decomposition of functions	Function

Table 4.9: ARIS Model Types

Auxiliary Views: The five views of ARIS each incorporate a variety of model types to specify context information for the modeled processes. Organization and product modeling is explicitly supported and integrated to the control view. Data and risk models provide additional context information.

Rich Process Information: Functions can be associated to model elements (such as organizational units, data objects etc.) from the auxiliary views (cf. Table 4.9) by connecting edges between the typed elements. All model elements comprise a multitude of attributes that allow for further specification and textual description.

The ARIS tool supports customizing of methods by so-called filters, that allow the derivation of specialized language constructs from those provided off-the-shelf. This enables the software to incorporate lacking concepts and allows for a language integration in the context of creativity-intensive processes.

4.2.3.4 Business Process Modeling Notation

Among the process modeling languages discussed, the Business Process Modeling Notation (BPMN) is a specimen with a comparably short history (Recker, 2010b). Nevertheless, it has become a de facto standard for graphical documentation and design of processes. It has been developed by the *Business Process Management Initiative*, a consortium of tool-vendors, and later incorporated into the standard portfolio of the Object Management Group (OMG). The most recent official version to the date of this research is version 1.1 (Object Management Group, 2008), although a public beta specification of version 2.0 is available (Object Management Group, 2009).

With the *Business Process Diagram*, the version 1.1 of BPMN supports one single model type. However, the specification defines over 50 language constructs (Recker, 2010b). The most basic elements are *Flow Objects*, referring to *activities*, *events* and logical connectors (called *gateways*), and *Connecting Objects*, such as *sequence* or *message flows*. The majority of symbols are specializations of these basic constructs, especially events have a number of subtypes specifying their cause ("Trigger") and occurrence (Start, End, Intermediate).

Process Structure: *Sub-Processes* are complex activities that can be expanded to reveal their internal sequential structure, thus allowing for decomposition. Activities and sub-processes can be specialized by specific markers: the *loop marker* indicating the repeated execution of a sub-process as long as a condition holds, the *multiple instances marker* indicating a fixed number of repetitions or parallel instantiations, the *ad hoc marker* neutralizing the sequential structure of the contained activities, and the *compensation marker* denoting an undo-operation for an associated regular activity. Loops and multiple instances are defined as mutually exclusive and can therefore not be combined.

Auxiliary Views and Rich Process Information: Since the Business Process Diagram is the only supported model type, there are no additional views for describing the process context. Organizational information can be associated by the use of *pools* and *swim-lanes*. Data Objects can be routed between activities of different subsystems through message flows, the modeling of tangible objects like products or resources is not supported.

4.2.3.5 Data Flow Diagram

The Data Flow Diagram (DFD) is a modeling notation representing processes as communication structure of data interchange within information systems. Stevens, Myers, and Constantine (1974) developed it as a systems design technique, which has later been incorporated into the *Structured Analysis* (SA) method (DeMarco, 1979; Gane & Sarson, 1979). The communicating elements (nodes in the model) are *processes*, *data stores* and *terminators*, the *flows* represent forms of data. DFDs do not reveal any information about the actual sequence of processes, since causal relationships between input flows and output flows can not directly be determined from the model.

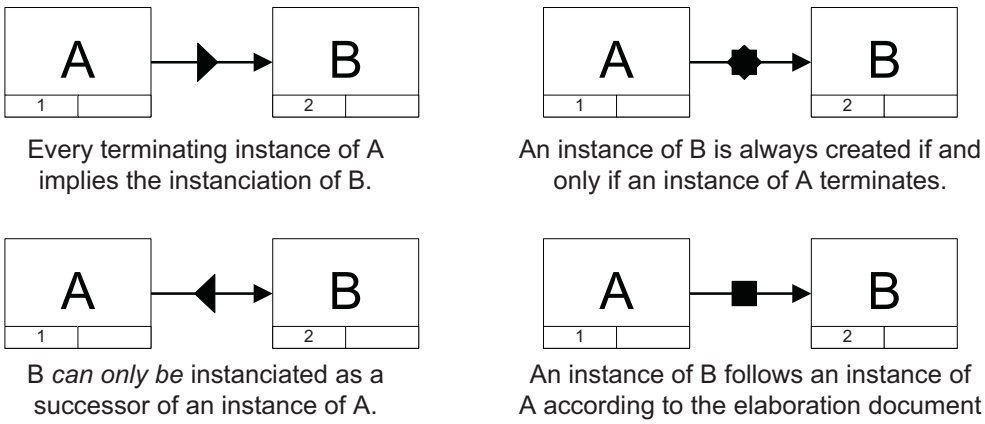
Process Structure: Hierarchical decomposition is supported by detailing processes on lower-level DFDs. The most abstract representation in the model hierarchy is the context diagram. It depicts a system as a central single node with incoming and outgoing data flows to external processes in its environment. From this outset, processes can be subsequently refined in detailing levels. Processes are connected via input-output-relations, ad-hoc-processes can not be represented. Since the procedural structure can not be explicitly specified, partial flows cannot be distinguished.

Auxiliary Views and Rich Process Information DFDs are tailored to describe information systems, thus, no views or constructs are provided for modeling the organizational structures of the system's context. Although the SA method incorporates means for data modeling, the integration between DFDs and data models is considered ill-defined (Toetenel, van Katwijk, & Plat, 1990).

4.2.3.6 IDEF3

The *IDEF3 Process Description Capture Method* is a modeling method developed in the context of the IDEF (Integrated Definition) method family. The IDEF methods have been developed in the ICAM (Integrated Computer-Aided Manufacturing) project of the US Air Force (Mayer et al., 1995). IDEF3 is tailored toward modeling real-world business processes for different purposes, e. g. "to assist with new worker training and to enforce company purchasing standards" (Mayer et al., 1995, p. 12). The method comprises two model types: *process schematics* and *object schematics*.

Central element of IDEF3 *process schematics* is the so-called *unit of behavior* (UOB). A UOB represents a process or activity. UOBs are connected by *links* that visualize *precedence constraints* between UOBs, i. e. a UOB at the outgoing end of a link must complete before a UOB at the incoming end can start. *Junctions* enable more complex constraint descriptions for UOBs by merging or splitting paths. Basically, links and junctions are equivalent to flows and connectors in techniques like ARIS-EPC. However, the notion of these elements as constraints of precedence provides well-defined semantics for their interpretation. Links are further specified into four types of precedence constraints (cf. 4.5). The first type renders the instantiation of a *following* UOB mandatory, if the precedent UOB is instantiated. The second type makes the *precedent* UOB mandatory for the instantiation of the following UOB. The third type combines these two, thus creating a strict sequence. The fourth type (labeled *general constrained precedence link*) allows for more elaborate constraints, such as time constraints etc. These constraints are described in natural language in a form-like element called *precedence link elaboration document*. A similar construct exists for junctions, allowing for complex constraints beyond the predefined logical (OR, XOR, AND) and temporal (synchronous, asynchronous) specializations.

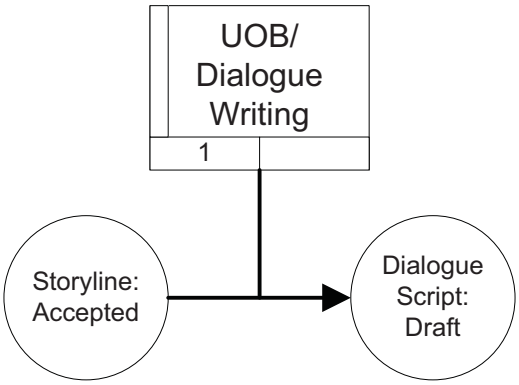


based on: Mayer et al. (1995)

Figure 4.5: IDEF3 link constraints

The IDEF3 *object schematic* is a model type that focuses on the objects that are generated and transformed within the processes. Objects can be materials, products or documents. The object schematic depicts an object class (*"kind"*) in a certain state as node and the transition between different objects or different states of a same object as directed edges. To these transitions, one or more *Referents* can be attached referring to the UOB that is responsible for the transformation. Figure 4.6 depicts an extract object schematic from

the development process of a daily series (cf. Section 6.4.2). The object *Storyline* in the state *Accepted* is a precedence for the object *Dialog Script* to take on the state *Draft*. The process involved in the transition is *Dialog Writing*, which is represented as a referent to the respective UOB. Corresponding to the links in process schematics, transition paths may be split and joined indicating the logical relationship between the states (AND, OR, XOR).



based on: Mayer et al. (1995)

Figure 4.6: IDEF3 object schematic for daily series development (extract)

Process Structure: The flexibility in describing constraints between UOBs allows for the description of *partial flows*. *Ad-hoc-processes* could be represented indirectly by modeling a process model as collection of unconnected UOBs, a language construct for containment of such collections (e. g. similar to the ad-hoc-subprocess in BPMN) does not exist. Iteration and multiple instances of UOBs are not supported.

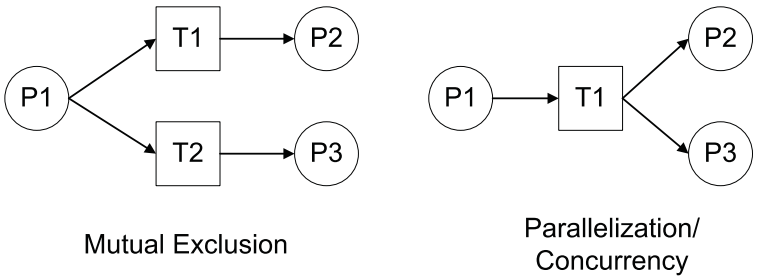
IDEF3 allows for process decomposition by associating one or many detailing process schematics to a UOB. The reference can be visualized by dispersing dotted lines from the UOB to its sub-process in the same diagram. The distinct indication of sub-processes is by the cascading numbering scheme. Associations between process parts can also be realized through *Referents*. These are nodes that refer to a specific UOB which are used to reuse the UOB's definition in other diagrams. Process schematic diagrams (also referred to as "scenarios") are not *connected* graphs per definition and thus may include unlinked UOBs.

Auxiliary Views and Rich Process Information: To represent relationships between objects other than transitions (such as part-of-relationships or generalizations), object schematics may incorporate relationship types of the *IDEF5 ontology capture method*. Most

interestingly – considering the military background – IDEF3 and indeed the IDEF method family do not provide means to describe organizational concepts. IDEF3 supports the textual description of model elements on different abstraction levels through the use of *Elaboration Forms* - these forms can be instantiated for UOBs, objects, links, states etc. and are prestructured for each supported element type.

4.2.3.7 Petri-Net

The Petri Net (Petri, 1962) is both a mathematical model of distributed systems as well as a graphical notation to design such systems and simulate their behavior. In its basic implementation a Petri net is a bipartite graph consisting of *places* and *transitions* that are connected by directed edges ("arcs").



based on: Oberweis (1996)

Figure 4.7: Petri Net Synchronization Patterns

In a Petri net process description, places represent conditions while transitions are interpreted as activities or events (Oberweis, 1996). Petri nets have precisely defined behavioral semantics that are based on the *Token* construct. Tokens can be stored in places (a place with tokens is referred to as "marked)". Transitions may remove these tokens from their input places and place tokens into their output places (the transition is "firing"). Based on this mechanism, petri nets are not mere statical descriptions of activity or event sequences, they also represent the *state* of a process by the marking of its places. Using the non-deterministic firing mechanism, petri nets can be simulated to determine the possible states reachable from an initial marking (e. g. to reveal undesirable states like deadlocks etc.). By modeling multiple outgoing or incoming arcs to places or transitions, mutual exclusions and parallelizations can be represented (cf. Figure 4.7).

Process Structure: Petri nets support hierarchical decomposition for detailing process parts. The lower-level petri net references the higher-level process by means of *link-nodes* (Sakthivel & Tanniru, 1988), i. e. places or transitions copied from the higher-level petri net and modeled as entry or exit nodes respectively in the detailed model. Ad-hoc-processes or partial flows contradict the dynamic semantics and can therefore not be represented. Language constructs for multiple instances and iterations of tasks are not provided.

Auxiliary Views and Rich Process Information: Stemming on the behavioral semantics, petri nets process models are basically of a predictive nature rather than representing a descriptive means for business process documentation. Thus unsurprisingly, the petri net syntax does not provide constructs for describing organizational or product structures. In the context of business process modeling, petri nets have relevance in workflow management, i. e. in business process automation (Van Der Aalst et al., 2003).

4.2.3.8 Unified Modeling Language

The Unified Modeling Language (UML) is a family of languages that have been integrated from basically three object-oriented software development methods[3] and then standardized and further developed under the regulation of the OMG. As with the original methods, the scope of UML is set on the object-oriented design of software systems. However, due to the high level of abstraction and the resulting semantic flexibility of the constructs, the language has a potentially broad range of application. The specification aims to provide "tools for analysis, design, and implementation of software based systems as well as for modeling business and similar processes." (Object Management Group, 2010a, p. 1)

The recent version to the date of this research has the number 2.3 and as of version 2 the specification is split into two major documents. The *UML infrastructure* (Object Management Group, 2010a) defines the core meta model and provides the base elements (like Classifiers, Associations, Primitives etc.) from which all diagram types and language constructs of the UML as well as of other languages (e. g. Meta Objects Facility, Common Warehouse Model) are derived. The *UML Superstructure* (Object Management Group, 2010b) defines the elements and diagram types particular for the UML such as Activity Diagrams, Use Case Diagrams etc.

[3] The early UML integrated the *Object Modeling Technique (OMT)* of Rumbaugh, Blaha, Premerlani, Eddy, and Lorensen (1991), the *Booch method* (Booch, 1994), as well as *Object-Oriented Software Engineering OOSE* of Jacobson (1992)

The central means for describing processes within UML is the *Activity Diagram*. Activity Diagrams depict processes as sequences of *Actions* that are connected by flows. Flows can be split and merged by *Fork Nodes* and *Decision Nodes* and are specialized into *Control Flows* connecting subsequent actions or *Object Flows* that pass data or objects between actions. These objects are either modeled as *Object Nodes* that represent objects or sets of objects that can carry a specific state or as *object node pins* attached to the actions.

Process Structure: For means of decomposition language constructs for containment are available. *Activities* are defined as action sequences, rather than representing single process steps. They are depicted as visual containers that enframe flows of actions. Actions may not be further decomposed within their containing activity. They may, however, be typed as *Call Actions* that invoke behavior modeled in other activities and thus allow for a means of hierarchical decomposition. While this may not seem intuitive in a business process modeling context, it is comprehensible if actions are interpreted as method calls in an object oriented software system. *Activity Partitions* group actions in a swim-lane type of construct that may be nested or even multidimensional. The semantics vary from representing the classifier responsible for the contained actions to attributes and values of these. The latter can be used to denote organizational units (Object Management Group, 2010b, p. 353).

Auxiliary Views and Rich Process Information: Despite the explicit reference to business process modeling as cited above, the UML does not provide for specialized language constructs to represent real-world-concepts such as organizational units or products. Dietz (2003) emphasized this lack in stating that "business processes are not 'conceptual things' but concrete things." and thus argues that UML is "...not a language that is appropriate for expressing business process models." (p. 132) However, generic classifiers can be specialized toward such means by the use of *profiles*, so enhancing the expressiveness of the language. Fatolahi and Shams (2006) apply this mechanism to utilize UML for populating the *Zachman Framework*, a conceptual structure for IS architecture that incorporates business processes as a part of an enterprise model component (Zachman, 1987; Sowa & Zachman, 1992). They show how UML constructs can be used for means such as modeling organization structures (organization chart, role model) and object structures (products, documents etc.) by defining a business modeling profile.

4.2.4 Analysis Summary and Verdict

Table 4.10 summarizes the results of the process language analysis. Notedly, languages that stem from a business process modeling background support the requirements analyzed to a greater extend. However, the comparison did not reveal a process modeling language that fully supports the modeling of creativity-intensive processes as yet.

	Modeling Language							
Feature	ADONIS	Flow Chart	ARIS	BPMN	DFD	IDEF3	Petri-Net	UML
Task Decomposition	✓	✓	✓	✓	✓	✓	✓	✓
Ad-Hoc-Processes	✗	✗	✗	✓	✗	✓⋆	✗	✗
Partial Flows	✗	✗	✗	✗	✗	✓	✗	✗
Multiple Iterations	✗	✗	✗	✓	✗	✗	✗	✗
Multiple Instances	✗	✓	✗	✓	✗	✗	✗	✗
Multiple Iterations and Instances	✗	✗	✗	✗	✗	✗	✗	✗
Non-Flow association of tasks	✗	✗	✗	✗	✗	✓	✗	✓
Product Modeling	✓	✗	✓	✗	✗	✓†	✗	✓†
Organization Modeling	✓	✗	✓	✗	✗	✗	✓	✓†
Context Annotation	✓	✗	✓	✓‡	✓	✓	✓	✓
Uncodified Process Data	✓	✗	✓	✓	✓	✓	✓	✓

⋆ only implicit through unconnected tasks
† only supported through abstract structural
‡ through use of swim-lanes

Table 4.10: Analysis Summary

Furthermore, the analysis showed that of the requirements stated, only the combination of multiple iterations and instances are not supported by any of the languages. This implies that

the language mechanisms required for the documentation of creativity-intensive processes can largely be realized as recombinations of existing method fragments. Comprising and up-to-date modeling frameworks such as ADONIS, ARIS and the UML support the generation of custom language elements and can thus be enhance toward a comprising representation of creativity-intensive processes.

Stemming on this prospect of being able to customize a common process language core, the method development following this section will be accompanied by the perpetual monitoring of newly introduced language constructs regarding their compatibility. By doing so, two major objectives are targeted. Firstly, the developed method should be capable of being integrated into existing tools, thus drawing on the multitude of customizable software available. Secondly, the method is aimed to be applicable in contexts, where creativity might influence only specific functional areas of corporate systems and thus is to be integrated as subordinated part of a comprising methodology. This is intended to enable researchers and practitioners to apply or investigate the method in areas outside the creative industries.

4.3 Development of the Abstract Syntax and Semantical Foundation

The method for analyzing and documenting processes in creative work systems is comprised of three major elements. The *abstract syntax and semantical foundation* represent the set of language constructs and their relationships. These syntactical specifications are derived both from the theoretical grounding and the language requirements mentioned above. The *concrete syntax* is developed with the aim of supporting human modelers and model users to analyze, document and communicate process information in creative contexts. The *procedural model* guides modelers in the application of the modeling language, i. e. in analyzing the creativity-intensive process to subsequently extract and document process information regarded relevant for their modeling purpose.

The *semantical foundation* of the modeling method draws on the conceptualization of the substantive theory of managing creativity-intensive processes as described by Seidel (2009a). While the theory is semantically anchored in the qualitative empirical data of its substantial area (three cases in the australian film industry), this research stems on the hypothesis of its generalizability. This implies the semantical foundation of the language being the result of a subjective translation of the theoretical concepts to a set of more abstract constructs.

These constructs are aimed at a broader focus of application. Subsection 4.3.1 is dedicated to disclose this transformation process to ensure the traceability of presuppositions made during the language construction.

As has been identified as a requirement for the documentation of creativity-intensive processes, the resulting language will comprise three major perspectives. The *process view* will document the process hierarchies by subsequently refining processes and sub-processes in their creativity-intensive and structurable parts. The *product view* will identify intermediate and final products, as well as their tangible components. The *organization view* will reveal organizational structures along with their temporal contingencies. Following the example of modeling frameworks like ADONIS or ARIS, the process view functions as the integrating perspective connecting actors and products via the respective processes.

4.3.1 Derivation of Language Constructs

The theory of creativity-intensive processes is comprised of a set of *categories* that incorporate different *properties*. Becker et al. (2009) proposed the application of grounded theory techniques for the construction of modeling languages and thus assigned concepts of modeling language design to basic elements of the grounded theory (cf. Table 4.11).

This assembly can be used to derive language constructs from a theory that has been developed by applying the grounded theory method to generate its conceptualization. It shows that both categories and properties can result in explicit element types. However, not all categories and properties qualify for their codification in a language construct. To be transferable to a component of a modeling method, the theoretical concept must comply to specific requirements:

- **Tangibility:** To result in language constructs, a concept must represent an abstraction of tangible and neutral objects or processes within a domain. Intangible or normative concepts might however result in specific guidelines of process steps incorporated into the procedural model of the method.

- **Accessibility:** Instances of a concept must be accessible to the analysis. Modelers are dependent on qualitative data either explicitly available in textual descriptions or extracted from interviews with process actors. For process information to be accessible, sources must be both willing and able to externalize their views on their work system. Concepts like the private “creative agenda” of artists for instance are

Grounded Theory Method	Description	Language Design	Description
Code/Concept	Building blocks of a theory, abstracts descriptions of real world phenomena	Language construct candidate	Concepts of a domain can be translated to constructs of the domain-specific language
Category	Derived from concepts, aggregated and structured, constituent part of a theory's statement	Language construct	Categories indicate core concepts of the domain, thus a language for describing instances of that domain should provide a dedicated representation
Property	Derived from concepts, give concepts/categories further explanation	Language construct/Construct property	Properties will usually be translated to discrete language constructs, their existential dependency is codified in the language's syntax rules
Hypothesis/Propositions	Relationships between concepts may take the form of propositions or hypotheses	Language rules	Constituent relationships will be represented in the language's syntax rules (meta model and context conditions)

Source: Becker et al. (2009, p. 1335)

Table 4.11: Relationships between elements of GTM and language design

hard to elicit reliably. The individual take on the own personal development with the processes is both hard to express and potentially something that will not be disclosed by interviewees.

- **Feasible to Instantiate:** Language elements have to be purposefully instantiated to provide information value. Some concepts, although important concepts of the theoretical domain, cannot be instantiated on a process modeling level of abstraction. This can be due to concepts being either on a level too general or too specific for a process model. An example for a general concept is that of *creative risk*. On a process level, it cannot be specialized beyond the point of customer dissatisfaction or disagreement. This type of risk, however, is valid for all creativity-intensive processes so that its explication in a model does not provide informational value.

An example for a concept too specific is the *budget* constraint. It is immanent in most processes but generally will be specified only at process instance level (particular projects) since it is subject to the individual negotiations prior to a particular project. Thus, it is not feasible to state reliable budget information on a process model level, which renders the respective language construct useless.

Method Component	Description
Element Type	Element types are the basic components of every modeling language. In graph-based languages element types are usually represented as nodes. They occur independently of other language constructs and are therefore the first elements to identify in the modeling process. Element types in meta models explicated by use of the Meta Object Facility (MOF) are generally represented as *classes*.
Property Type	Property types are language constructs whose instances are bound to particular instances of an element type. In graph-based languages, those instances can be represented by annotations to a node or in auxiliary tabular descriptions associated to an element. Properties are only instantiated once per element. In MOF models, properties are represented as *attributes*.
Relationship Type	Relationship types are language constructs whose instances are dependent on at least two instances of one or multiple element types. They represent the possible associations model elements can be engaged in. In graph-based languages, instances of relationship types can be displayed in various forms: e. g. by connecting arcs/edges, spatial relation (inclusion, adjacencies, alignment) or by reference (via ID or label). In MOF models, relationship types can be modeled as *classes* or *associations*.
Language Rule	Language rules constrain the possible combinations of above mentioned language construct instances and complete the syntax of a modeling language. Typical language rules are upper and lower bounds of relationships as represented by associations and multiplicities in MOF meta models. More elaborate rules can constrain the language by prohibiting or forcing certain modeling patterns. In context of MOF models, such rules are explicated by the use of the Object Constraint Language (OCL).
Modeling Procedure	Guidelines concerning the modeling procedure accompany the modeling language and guide its application in the domain. They provide for techniques to derive model elements from incidents found in the qualitative data and ensure for a logical sequence of analysis (or design respectively). The modeling procedure can be explicated in natural language in combination with a process modeling technique.

Table 4.12: Elements of a modeling method

The theoretical concepts are either translated to one of five different components of a

modeling method or omitted by the method. Table 4.12 lists the components and their characteristics, informing about their typical occurrences in both concrete model syntax as well as meta model elements.

Table A.1 in Appendix A provides for a complete list of theoretical concepts and their resulting method components, as well as descriptions regarding their interpretation. This assignment aims to ensure the traceability of method elements to the corresponding theoretical concepts. Furthermore, it reveals parts of the theory that were omitted and have no correspondent within the method.

4.3.2 Product View

As has been discussed above, products have a central role in the context of creativity-intensive process as they are the tangible incarnation of seemingly intangible creative processes. The analysis and description of creative products helps to identify creative contributions of individual process steps. Aim of the product view is to provide for a set of constructs that are *meaningful* to actors in the domain. This objective favors the discrete notions of products and their relationships in comparison to more general concepts like objects and classes (as seen in the IDEF framework or other ontological approaches, e. g. Thomas and Fellmann, 2007) or abstract goals (Soffer & Wand, 2005; Levi & Arsanjani, 2002; Soffer & Wand, 2007).

Figure 4.8 shows the meta model for the product view in the syntax of Meta Objects Facility (MOF). Basic element of the product view is the *Product*. This element type represents both final as well as intermediate products. Products generally origin from tasks or processes but can also be introduced into the domain of discourse by external events. The product diagram distinguishes between two different types of products: *generic products* and *creative products*, the latter being a specialization of the former. The necessity for this distinction is not immediately comprehensible through the elements' features in this perspective but can be explained through the meta model of the process view.

Each product has a *description* that allows for further specification. The *is abstract* attribute allows for the definition of generalized products that have no concrete instances but combine mutual properties and relationships. Furthermore, *product states* can be associated with a product to describe different points in a product's life cycle. It is an optional feature to enable the modeler to describe the transformation either in defining a new state or by modeling a new product instance. For example an "episode treatment" of a TV series could either

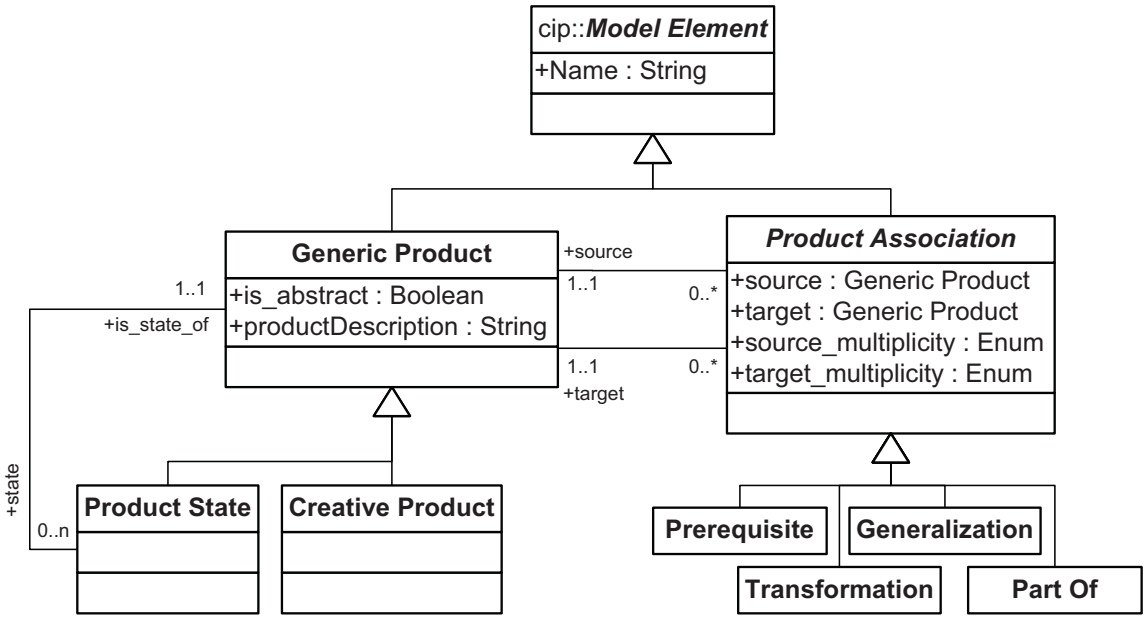


Figure 4.8: Product view meta model

be modeled as an early state of the "script" or as an individual creative product that will eventually be transformed into the script. By defining the product state as being a subtype of the generic product, states can enter into different relationships with other products or their states respectively.

The meta model provides for four predefined types of relationships between products. These relationships are codified as being binary with a defined source and target.

The *Prerequisite* relationship marks a product (at the source end) as being required for another product (at the target end) to be produced. This relationship can be used to model a variety of requirements. The required product could e. g. be an *instrument* for the process producing the dependent product (e. g. equipment) or it serves as an input (e. g. a script as an input for a shooting schedule).

The *Transformation* relationship defines a stronger association of requirement. The required (source end) product will eventually be transformed into the dependent (target end) product. This implies, that the required product will effectively cease to exist in the moment the dependent product is created. This relationship is especially used to mark state transitions of products, but may also be used on individual product definitions.

The *Generalization* relationship offers means to build classes of products that share properties and relationships. In combination with the *is abstract* attribute, this allows for more compact representations. A product (on the source end) will share all relationships

and properties of its generalized correspondent (on the target end).

The *Part of* relationship allows for describing the component structure of products. Note that creative products being part of composite product will render the composition being a creative product itself. Furthermore, prerequisite and transformation relationships annotated to the composition translate to its components. A composition that is specialized will imply the special type in inheriting the generalized product's components.

While both the *generalization* and the part-of-relationships represent typical ontological concepts of structural relations, bot *prerequisites* as well as *transformations* introduce dynamic elements into the product model. This is justified by the modeling procedure as follows. As has been mentioned above, the product view is intended as a starting point for the subsequent decomposition of creativity-intensive processes. By the above defined relationships, this decomposition is conducted in two directions. The *vertical decomposition* will perpetually define intermediate products and product states and resolve their interdependencies via prerequisite and transformation relationships. The *horizontal decomposition* aims to reveal distinguishable product components to refine the definition of a creative product and discover distinct subprocess that are conducted collaterally or in an intertwined fashion.

4.3.3 Organizational View

The organizational view provides basic means of description to document the organizational structure of both creative organizations as well as temporal project organizations. Figure 4.9 depicts the meta model of this view.

The model distinguishes between *positions* and *groups*. Positions represent fixed job titles within an organization. These titles may vary between organizations and are used to integrate certain job descriptions, although some of these titles may be legally defined by certain unions or associations (such as the Directors Guild of America). Groups are used to combine positions and define formal supervision relationships. These can either be formal functional divisions of an organization or project-related teams and working groups.

The organization view is conceived in a very basic way, since formal organizational structures have a comparably smaller relevance than in more traditional business sectors. The domain-specific contribution in the context of organizational modeling is the notion of a *project position*. It is intended to describe personnel that is contracted for a specific project or more often only for a particular project phase. Due to the great specialization, the

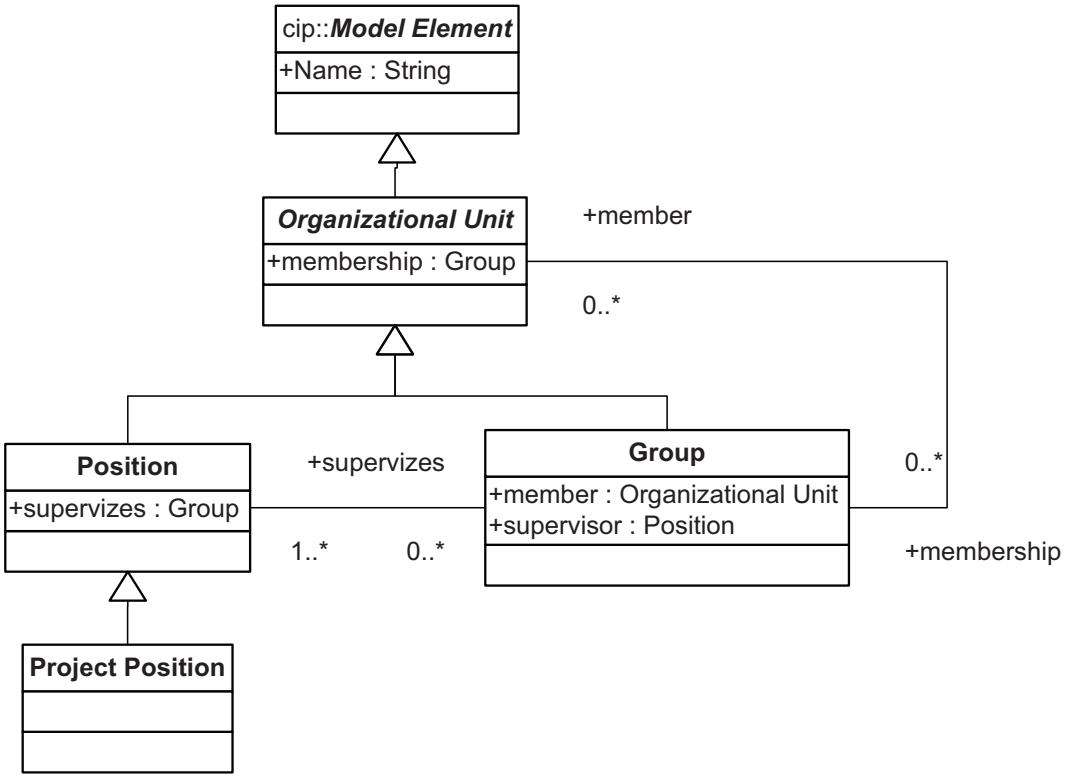


Figure 4.9: Organization view meta model

contracting of external freelancers is a common practice throughout the creative industries. In the film business, production companies are referred to as "concertina-organizations", as some of the interviewees of the qualitative study stated. The term refers to the extreme variation of staff size depending on actual projects.

This variation implies that organizational structures can only reliably be described in relation to specific projects and their phases. Although these structures are of temporal nature, they may resemble fixed sub-organizations depending on the lifetime of a project. Especially in the context of daily series production (cf. Section 6.4) project organizations reveal a quite persistent character.

4.3.4 Process View

The process view represents the integrating layer of the modeling language and so resembles the structure of comprising BPM modeling frameworks like ARIS or ADONIS. Since both creativity-intensive and standard processes are to be documented, the integration of CIP-

specific with established process description constructs suggests itself. This approach helps to prevent the redefinition of well-known structures while integrating the novel concepts into the language context. In the following, constructs of the Business Process Modeling Notation (BPMN) will be utilized as a foundation. The notation has been chosen for its diffusion and level of familiarity. However, its constructs are representatives for elements of other languages with similar semantics.

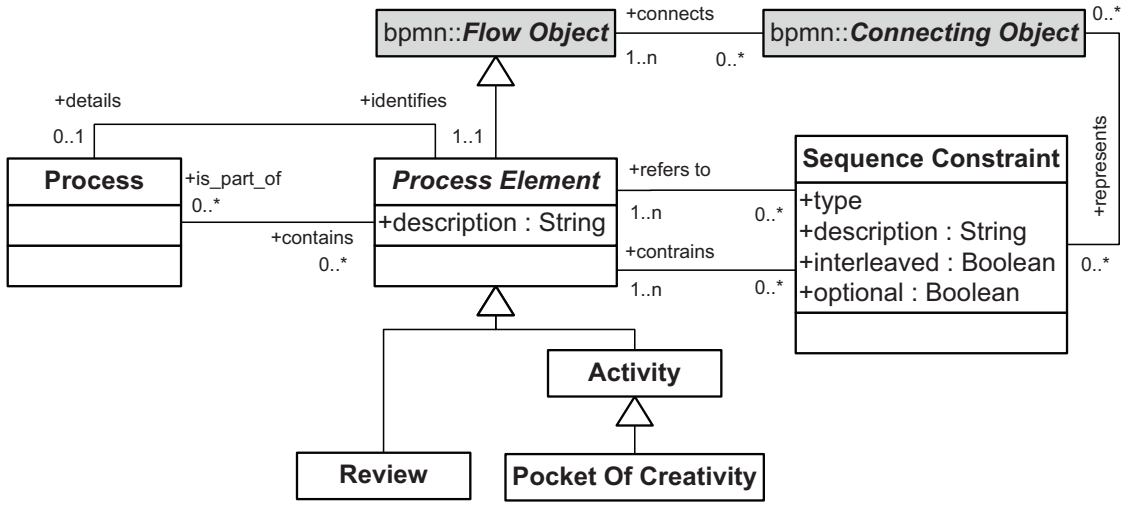


Figure 4.10: Process view meta model

The process view distinguishes between different types of *Process Elements* to support the decomposition of creativity-intensive processes. The *Activity* represents the entirety of tasks or processes, especially those that are characterized for their amenability toward structuring. It is compatible to the BPMN activity and its relationships to a great extent. However, it adds some connectivity features in the context of view integration. The *Pocket of Creativity* as a specialization of the more general activity is used to describe tasks and processes that are characterized and considerably influenced by creativity.

Both activities as well as PoCs can refer to a detailing *Process* to allow for their detailed description. The process can be interpreted as functioning as an attached container to the process element. The subsequent decomposition can be traced by subsequently navigating the *contains* and *details* association as can be seen in the meta model (cf. Figure 4.10). A process is always identified by its process element, this implies, that a creativity-intensive process is represented by a top-level PoC.

Due to its definition, a PoC can only be part of a process that details a PoC, since the containing process will yield the creative products of its components. The meta model as

shown does not take this constraint into consideration. This syntax rule can be expressed by the use of an expression formulated in Object Constraint Language (OCL). In the context of MOF OCL is used to define syntax rules that exceed the expressiveness of a structural class diagram. The following rule is formulated as an *invariant*, meaning that the expression must always be true for the syntax rule to hold. It defines that for all processes a PoC is part of, the defining process element must again be a PoC:

```
context Pocket_of_Creativity
inv: self.is_part_of->forAll(p : Process |
 p.identifies.oclIsTypeOf(Pocket_of_Creativity))
```

Referring to a PoC as its defining element has some implication for a process. Firstly, PoC processes are *ad-hoc-processes* by definition and thus may include unconnected sub-activities and partial flows. Secondly, PoC processes are perceived as being iterative, thus contained activities and partial flows might be instantiated multiply for each instance of the process.

Figure 4.10 depicts the *Review* as a special process element besides the activity. Reviews can be both part of a PoC or a structured subprocess (i.e. an activity detailed by a process). However, they considerably differ from activities and PoCs regarding annotated roles and products.

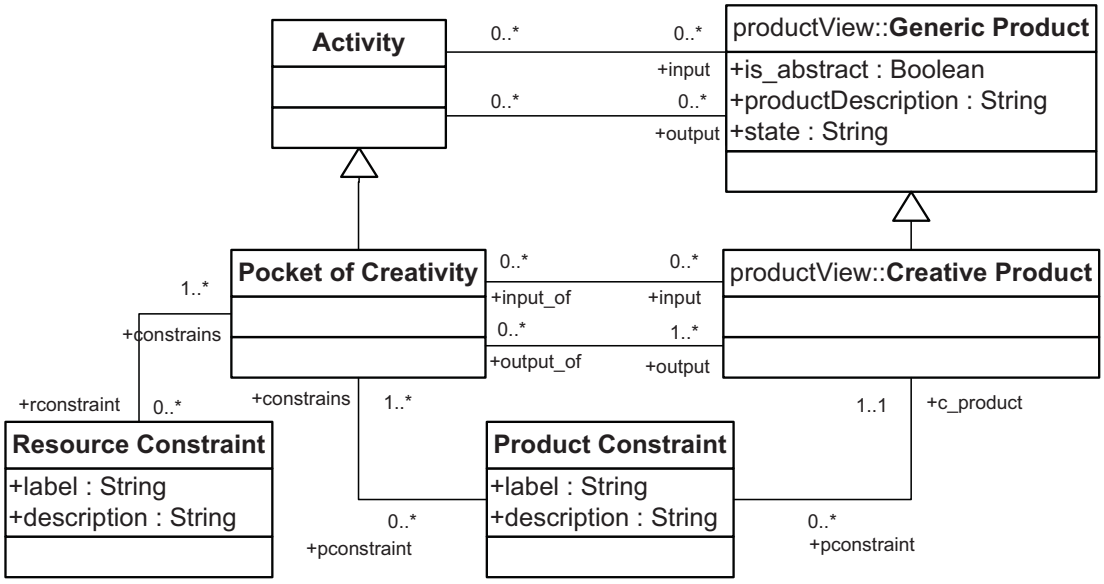


Figure 4.11: Process view meta model, products and constraints

The *Sequence Constraint* enables the description of sequential dependencies between two process elements. The *type* attribute allows for the definition of soft constraints, such as optional predecessors etc. The possible types of sequence constraints are elaborated on in detail in Section 4.4.4. The *description* attribute is used to specify more complex sequence constraints, and thus corresponds to the elaboration forms found in IDEF3. Sequence constraints can be represented by *connecting objects*, such as sequence or object flows. The gray elements in the metamodel represent the respective imports from the BPMN language.

Product and *Resource Constraints* are specified in the meta model section as depicted in Figure 4.11. Furthermore, the diagram shows the integration of products as inputs and outputs of activities. Note, that PoCs yield at least one creative product as per definition. The product constraint is used to describe specific requirements that are valid for a product in the context of one or many PoCs. The structure as described, however, does not ensure that product constraints only refer to products that are outputs of the respective PoC. This again can be ensured by an OCL constraint:

```
context Pocket_of_Creativity
inv: self.pconstraint->forAll(c : Product_Constraint |
 c.c_product.output_of->includes (self))
```

Resource constraints can be annotated as textual descriptions elaborating the type of limitation that takes effect on the associated PoC. At this point the associations of the constraints to a typed resource concept (such as products, organizational resources, IT systems) is omitted to reduce the complexity of modeling.

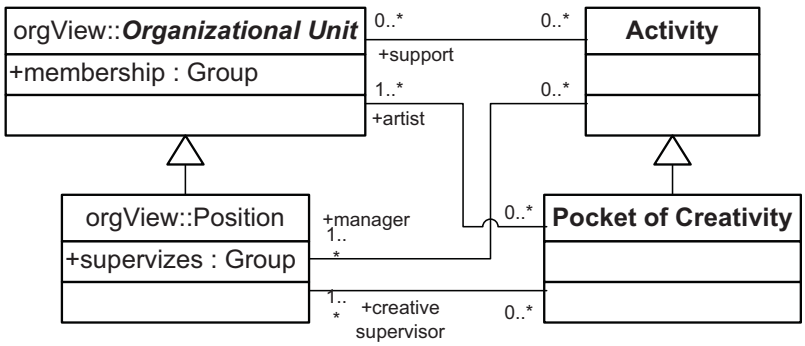


Figure 4.12: Process view meta model, organizational units

Figure 4.12 depicts the association of organizational units to the process elements. Due to the generalization association of PoCs to activities, organizational units can be associated

to creativity-intensive processes in the four roles of *artist, creative supervisor, support* and *manager*. These roles are not mutually exclusive, i. e. a position can take multiple roles in a single activity.

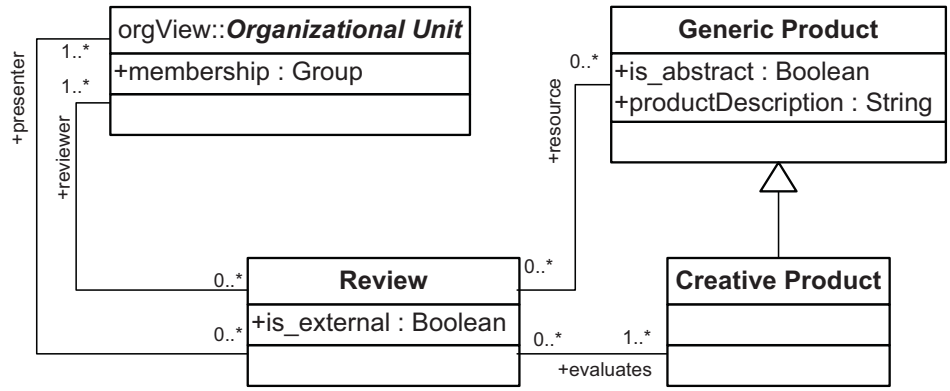


Figure 4.13: Process view meta model, reviews

Reviews support two distinct and mutually exclusive roles (cf. Figure 4.13). The *reviewer* role will evaluate the result of a PoC, while the *presenter* justifies the creative decisions. The *is_external* attribute will render the review to be external, by default resulting the reviewer role to be filled by representatives of the client organization. Reviews are evaluation processes for creative products and thus are associated with at least one respective instance. Furthermore, a review might draw upon additional products as supplementary resources, e. g. means of presentation, accompanying references etc.

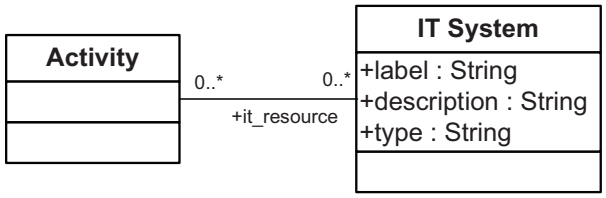


Figure 4.14: Process view meta model, IT systems

IT systems can be annotated to activities to mark them as a required resource. In contrast to the underlying theory, these systems are not distinguished into different classes on the language level. However, both the description as well as the type property allow for a respective specification.

The modeling of *knowledge* as a distinct language construct has been omitted. One reason for this is that the description attribute of activities is sufficient to outline necessary skills and

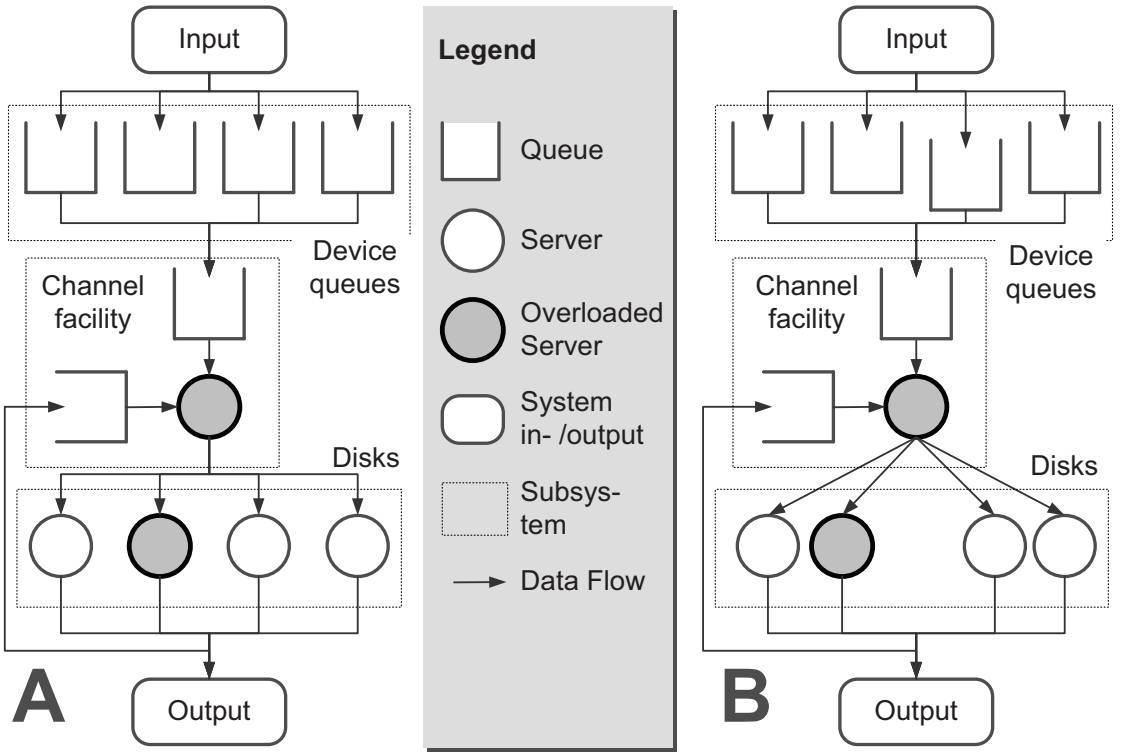
involved techniques. Furthermore, specific knowledge requirements such as tool knowledge can be derived from the annotated elements. Actors in creative processes will also activate different knowledge depending on their particular role. Implementing this dependency would considerably complicate the modeling and model comprehension.

4.4 Development of the Concrete Syntax

The concrete syntax of a modeling language refers to the visual representations of language constructs. Especially if the instances of a modeling language are intended to be perceived, understood and used by human recipients, an elaborate design of the visual components suggests itself. The benefits of using visual representations to foster human comprehension have been stated by multiple researchers (Boland, Goraya, Berente, & Hansen, 2009; Gemino et al., 2005; Krogstie et al., 2006; Pracht, 1990). However, very little research has been conducted as yet concerning the effectiveness of different visual representation patterns within conceptual modeling languages and models (Jaffar & Shah, 2006, p. 1950).

Aim of the graphical representation is to foster the intuitive understanding of a language's concepts on the one hand, while avoiding unintended semantical assumptions on the other. The first goal calls for the use of robust visual metaphors that can be interpreted easily. This is valid for both the notational symbols as well as their graphical relationships. The second goal is more difficult to achieve, for it implies that both the language designer as well as the modeler need to be aware of visual metaphors that are not defined by the language, but could be identified and misinterpreted by model users. Guizzardi et al. (2002) illustrate this visual defect on an architectural model (cf. Figure 4.15) taken from Marks and Reiter (1990).

The figure comprises two graphical representations (models) of the same system basing on the identical syntax (as explained by the legend in the center). The formal structure of both models as derived from the use of the language constructs and their relationships is identical as well. However, model B introduces two topological peculiarities. Firstly, the third *queue* node is positioned below the other three nodes in the subsystem, giving it a special emphasis. Secondly the *server* nodes in the *disks* subsystem are seemingly split in two groups. For a model user, it is impossible to deduce whether these layout properties are accidental (i. e. model A is semantically identical to model B) or not. In both cases, the comprehensibility of the model is impeded either by irrelevant visual complexity or undefined layout semantics.



Based on: Marks and Reiter (1990); Guizzardi et al. (2002)

Figure 4.15: Visual defects in a graphical models

4.4.1 Graphical Symbols and Metaphors in Modeling Languages

Visual (or *diagrammatic*) modeling languages base on a set of graphical symbols and metaphors to represent model elements and their relationships. The fundamental representational elements of modeling languages stem from the visualization of *graphs*. In the context of *graph theory*, a graph refers to a collection of *vertices* (or nodes) and a collection of *edges* connecting these nodes (Diestel, 2005). In diagrammatic representations vertices are generally represented by symbols or shapes, edges are represented by lines connecting the symbols.

4.4.1.1 Element Type Representation

Nodes in conceptual modeling languages are generally composite graphical elements consisting of a *symbol* and a textual *label* that is related to the symbol either by inclusion or topological proximity. Symbols can be abstract geometrical shapes (such as rectangles, ellipses etc.) or pictorial objects that may have an *iconic* relationship to the concept they rep-

resent (e. g. a pawn-like shape to represent a person, a building with chimneys to represent a production site).

An experiment in the context of visual programming languages conducted by Blackwell (2001) showed that the use of pictorial symbols "... directly support[s] mnemonic strategies that help users remember the meaning of language elements." (p. 249) In this respect, pictorial elements performed considerably better in contrast to abstract geometrical shapes. Blackwell further concluded, that the choice of a *consistent metaphor* did not contribute to the positive effects, so that language designers are advised to chose symbols that are easy to remember rather than being metaphorically consequential throughout the entire syntax specification.

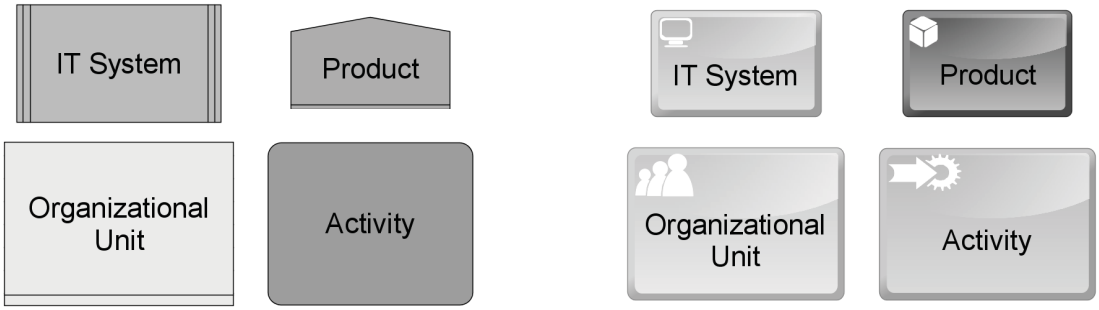


Figure 4.16: Use of abstract geometrical (left) and pictorial (right) symbols in ARIS

Among the languages that have been evaluated in Section 4.2, only recent versions of the business process modeling frameworks ADONIS and ARIS make consistent use of pictorial symbols. Figure 4.16 shows abstract and pictorial symbols in different versions of the ARIS software. Note that the element types on the right-hand side are composites of a geometrical shape (rounded rectangle) and a pictorial shape in the upper left corner. BPMN uses pictorial symbols for few special element types, such as specialized events. However, the main element types are represented by abstract geometrical shapes. The remaining languages are constrained to geometrical shapes, this is either due to their high level of abstraction (e. g. UML as multi-purpose language), their formal context or both.

The use of mnemonic support is especially essential for domain-specific, material modeling languages since these notations tend to specialize common abstract concepts into multiple domain-specific language constructs. As an example, PICTURE, a method specific for the domain of public administration, specializes subprocesses into 24 distinct building blocks. All these constructs carry elaborate pictorial symbols incorporating rich metaphors

as well as textual type labels (Falk, 2007).

Model elements can also be displayed as simple label strings. This is especially true for element types whose instantiation is bound on instances of particular other element types. These model elements will usually be displayed in the proximity or within the graphical symbol of the superior model element. An example is the representation of *Attributes* and *Operations* in *UML Class Diagrams*.

In order to use model elements in multiple diagrammatic representations, the modeling language for creativity-intensive processes will incorporate simple pictorial symbol that can both be used in combination with a geometrical shape or in single form beside its identifying label.

4.4.1.2 Relationship Type Representation

Costagliola, Delucia, Orefice, and Polese (2002) developed a classification framework for visual languages that distinguishes between *connection-based* and *geometric-based* languages. The two types contain archetypal classes of representation for the construction of visual relationships between concrete elements of a language.

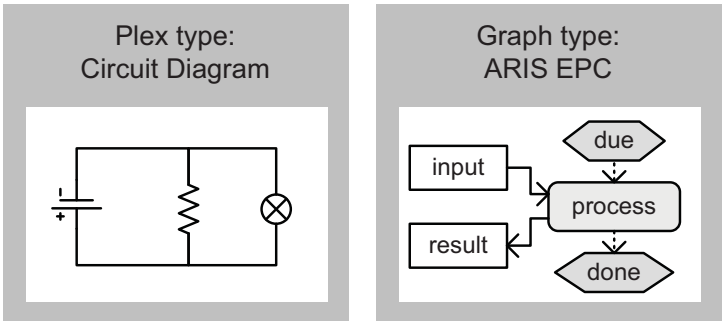


Figure 4.17: Types of connection-based relationship representation

The first group comprises graph languages, that rely on graphical objects that are interconnected by attaching lines to specific points on its outline (cf. Figure 4.17). Costagliola et al. (2002) distinguish two classes of connection-based languages: *plex* and *graphs*. Elements in plex languages have a pre-defined set of *connection points*, whereas graph language nodes have *connection regions* to accept associations by use of edge connections. An example for plex languages is the circuit diagram in electrical engineering. All modeling languages presented in Section 4.2 rely on graph representations. Edges may have a direction, which is commonly visualized by specific shapes (such as arrows, boxes or diamond shapes) at the

edge ends.

The second, geometric-based class refers to languages, that rely on the spatial relationships between graphical objects. These spatial compositions can be arranged in several different forms such as horizontal or vertical concatenation, inclusion, adjacency or intersection. Three classes of representation are distinguished. The *string* class comprises all textual representations of visual languages. This class "...can be seen as the reduction of a geometric class to the linear case." (Costagliola et al., 2002, p. 580) The relationships between elements are implied by their position and sequence in a string. An example for such a mechanism is the specification of an attribute's visibility and datatype in UML class diagrams (cf. Figure 4.18). The *iconic* class refers to languages that relate icons (graphical objects in a bounding box) in two-dimensional spatial compositions, especially horizontal or vertical concatenations. The *box* class is a generalization of the iconic class allowing for the size of the bounding box of an element type to be variable. Relationships are visualized by spatial relationships of these boxes, especially spatial inclusion or overlapping. An example for an instance of the box class in process modeling languages are BPMN's pools, swim-lanes and expanded subprocess that visually enclose their contained process elements.

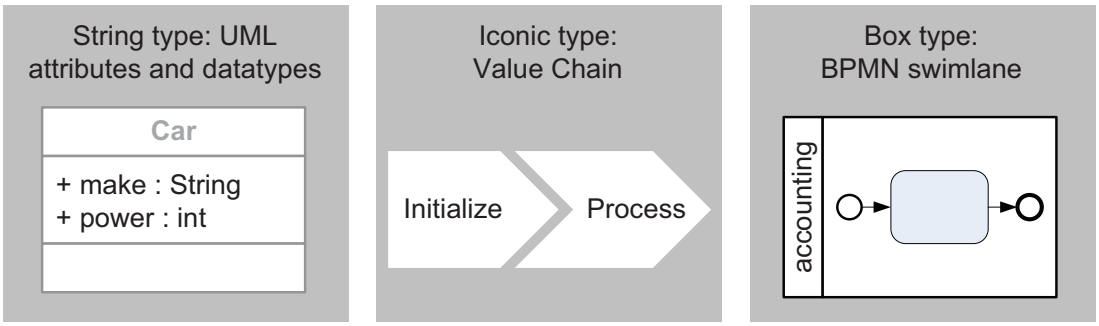


Figure 4.18: Types of geographical relationship representation

Most languages of a certain expressiveness combine both connection and geographical-based representation mechanisms in a *hybrid* form. Approaching the topic from a graph-theoretical perspective, Harel (1988) introduced the notion of the *higraph* and provided a formal definition of graphs incorporating topological representations. The general advantages of diagrammatic over textual (or sentential) representations for human perception have been discussed to some extent (Gurr, 1999). However, very little support can be found in the literature that hints toward the purposeful selection of specific visual patterns in process or conceptual modeling. The cognitive impact of this choice is therefore rather incidental and the decisions thus often rely on the aesthetic preferences of method designers

and tool vendors.

Representation Mechanism	Application
Undirected edges	**Binary associations:** Elements that engage in symmetrical relationships can be connected by undirected edges. **Implicit directions:** Undirected edges can be used to denote asynchronous relationships, if the direction is implied by other visual clues such as vertical of horizontal arrangement (e. g. tree representations).
Directed edges	**Sequential associations:** Activities, states or objects can be sequentially associated via directed edges with arrow-shaped ends. **Compositions:** Composite objects can be associated with their components by connecting edges. The component of the composition can be identified by a specific edge end. **Asynchronous associations:** Directed edges can be used to associate objects that engage in relationships that are navigable in only one direction or are interpreted depending on the direction (e. g. generalization/specialization). The use of edges is recommended if multiple levels of the respective relationshiptype occur or if the relationship is of M-N-multiplicity.

Table 4.13: Connection-based relationship visualizations and their application

The work of Purchase (1997, 2002) indicates toward the minimization of edge crossings as being beneficial for human comprehension of diagrams. The frequency of such crossings is potentially higher, if a modeling language comprises multiple types of association edges in a single diagram type. This suggests a combination of geographical and connection-based types. Jaffar and Shah (2006) advocate for approaching a "firstness" (p. 6) of diagrammatic interpretation by minimizing the abstractness of symbols and by the use of *background shading* to improve readability. Delen, Dalal, and Benjamin (2005) highlight the impact of providing multiple representations to communicate integrated perspectives on organizational knowledge. Damij (2007) supports this notion by using both graphical as well as *tabular* modes of representation for the same process information. Gaines and Shaw (1999) advocate the notion of *active documents* as representation mechanism combining graphical elements with explanatory text.

The Tables 4.13 and 4.14 relate the different relationship visualizations to the abstract

language features and thus provide for a selection framework to derive a concrete syntax. This framework is subsequently used to initially derive element representations and diagram types for the different views on creativity-intensive processes as well as show opportunities for alternate representations.

Representation Mechanism	Application
String concatenation	**Element attributes:** Enumerated attributes can be displayed in the vicinity of the respective element's label. The attribute type can be explicitly labeled or derived from the position in the String.
String text style	**Element attributes:** Text styles can be used to indicate the value of a binary element attribute (e. g. italic font for abstract objects). **Relationship Types:** In box-type representations of relationships, text styles can be utilized to indicate the type of relationship (e. g. bold font for the supervisor position in a box element representing a department)
Color	**Element attributes:** Colors can be used to indicate the value of a binary or enumerated element attribute. **Spatial inclusion:** Colors can be used to mark specific areas within boxes or improve general readability of box representations.
Spatial concatenation	**Implicit direction of edges:** Horizontal or vertical concatenation can be utilized to denote a reading direction of undirected edges. **Semantic specialization of box section:** Box type shapes can be sectioned to display particular data in a specific subarea of the shape. These sections represent boxed that can be arranged horizontally, vertically or in a grid.
Spatial inclusion	**Compositions:** Composite activities or objects can display their members in the area of a box shape. This should not be used for deep component structures. **Semantic specialization of box section:** Box type shapes can be sectioned to display particular data in a specific subarea of the shape. These sections represent boxed that can be arranged horizontally, vertically or in a grid.

Table 4.14: Geographical-based relationship visualizations and their application

4.4.1.3 Model Navigation and Presentation Medium

Comprising process models will usually amount to a size not purposefully presentable in a single diagram but partitioned in multiple representations. This calls for mechanisms to enable both modelers as well as model users to navigate between diagrams to get a comprising picture of processes and structures. Modeling tools support this type of navigation by allowing for the association of model elements to diagrams and enabling the modeler to jump between representations via these connections. In paper-based representations, such associations are realized by referring to connected diagrams by name (i. e. naming elements after detailing diagrams, e. g. detailed functions in ARIS) or an artificial identifier (e. g. in IDEF3).

The digital deployment and software-based use of models by human recipients is a topic only briefly touched by IS researchers. Only few publications are available concerning the impact of the medium through which a model is perceived. Hahn and Kim (1999) conducted a pen-and-paper experiment on the impact of *decomposition* and *layout* on comprehension and concluded that the "... computer interface may provide different direct-manipulation methods for diagrammatic problem solving, which may cause important navigational issues among multiple diagrams." (p. 208)

Huotari et al. (2004) conducted an experiment and showed that the use of large screens with colored graphics improves search tasks in comparison to paper diagrams. The experiment's results also favored the integrated display of different views as opposed to strict view separation. Furthermore, they concluded that three-dimensional representations do not seem to add to model comprehension.

Turetken and Schuff (2007) experimented with so-called *fisheye*-representations of business process models. In their experiment, they compared the effectiveness of different DFD representations. In the classical representation, the DFD was decomposed as intended by the method (cf. Section 4.2.3.5) in that processes can be refined in lower-level DFDs. Since the experiment was tool-based, these associations between processes and their detailing DFDs were realized as hyperlinks. The fisheye-representation was enhanced in such a fashion, that a navigation-step would show the lower-level DFD *in the context of the upper-level DFD*. This mechanism aimed to provide context and detail information at the same time. The results of the study concluded that especially users with low familiarity to the modeling language benefit from fisheye representations.

The use of web-based technologies in conceptual modeling have especially been investi-

gated in the context of collaborative model construction (Cai, Lu, Grobler, Case, & Jing, 2005) and web-service development (Weller, Juhrisch, & Esswein, 2006). However, the use of such technologies for the deployment and interactive representation of business processes for non-technical users is lacking both empirical as well as theoretical grounding.

The representational elements developed in the remainder of this section do not explicitly draw on the above mentioned works on software-based model representation. This is due to the objective of providing for a notation that can be readily integrated to existing modeling tools that incorporate respective customization functionality. However, a deployment strategy for the active use of such models should consider effective presentation and diffusion mechanisms.

4.4.2 Product View

The product view incorporates two different types of products that can be associated in four different types of relationships. Products are pictured by cube-like opaque objects (cf. Table 4.15). The cube shape of the creative product displays the letter 'C' in light gray on the foremost side of the cube. The shape for the creative product is darker for means of better distinction.

Depending on the context, the shapes can be used in either elemental form or as a composite with a rounded rectangular shape. In the latter form of representation, creative products are displayed with white label string on a darker background. Both creative products and generic products can be instantiated as *states* of a product. The state is represented as string in square brackets after the respective product label.

The relationships are modeled as directed edges (cf. Table 4.16). The structural relationships Part-Of and Generalization are drawn as continuous line, the process-oriented relationships are drawn as dashed lines. The reading direction is toward the line end, i. e. the source "is prerequisite for", "is transformed to", "is part of" or "is generalized to" the target node respectively.

The relationship types *part-of*, *prerequisite* and *transformation* between products can occur with different multiplicities. The visual specialization of the edge types or the explicit labeling of multiplicities however implies a considerably higher complexity of the resulting models. To simplify the representation, products can be displays as *sets*, denoting to multiple instances of that product. Sets are drawn as stacks of three product shapes standing as symbol for all set sizes greater than one. For process-oriented edges, sets can be source

Element Type	Elementary Symbol	Composite Symbol
Generic Product		
Creative Product		
Product State		

Table 4.15: Product Element Types

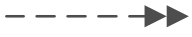
Relationship Type	Edge Symbol
Prerequisite	
Transformation	
Part-Of Relationship	
Generalization	

Table 4.16: Product Relationship Types

or target of the relationship, denoting to a merge or split interpretation . Relationships between sets always imply that both sets have the same size, i. e. the resulting multiplicity is one-to-one.

Sets can also be part of other products, however, a set may not have assigned parts. Furthermore sets may not be generalized or specialized. Should products of sets have to be described in their structure, they need to be modeled as single products in an additional diagram. The same applies, should set members be further split into individual sets. Figure 4.19 lists the possible combinations. Note that all the combinations in the figure are equally

valid for creative products.

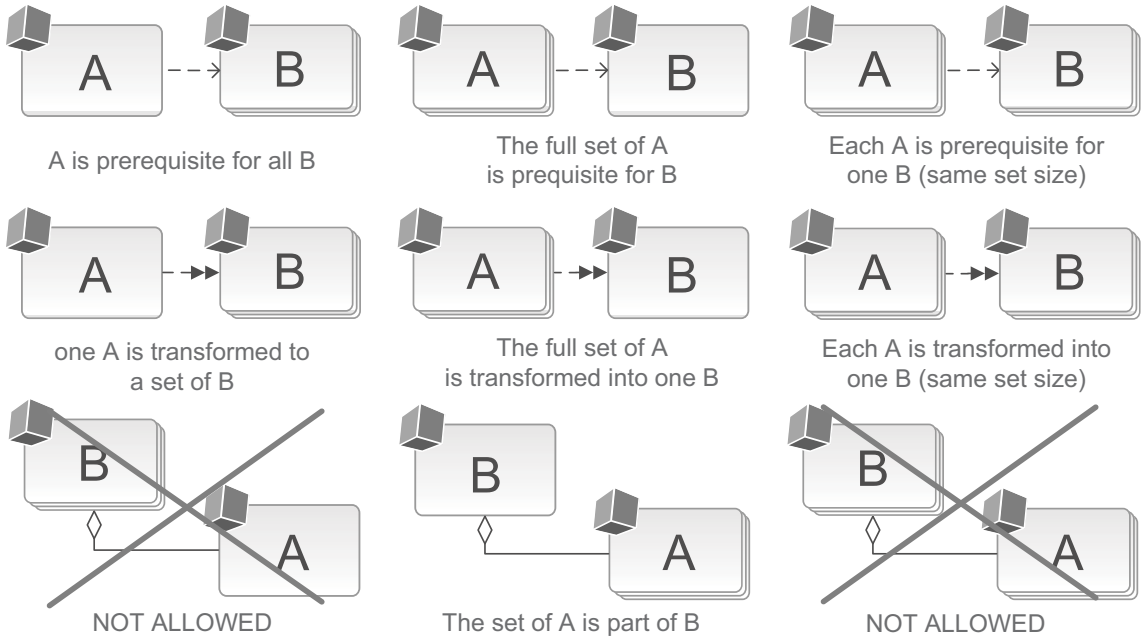


Figure 4.19: Multiplicity representation through sets

The language specification does not imply any connection areas for element type nodes, thus a predefined orientation of modeling edges is not implied. However, modelers are advised to model procedural edges from left to right and structural edges upward from the bottom for better readability. If possible, multiple products on the same level of a specialization or component structure should be aligned vertically or horizontally.

4.4.3 Organization View

The concrete syntax of the organization view is a simplification of the traditional organization charts. The *position* is represented by a pawn-like shape, the specialized *project position* additionally carries a paper that symbolizes the project contract. The element type *group* may stand for both formal and informal groups within organizations and is symbolized by a stack of three pawn shapes (cf. Table 4.17).

The organization view supports two types of relationships: a *membership* relationship between groups and their member organizational units (groups or positions) and a *supervision* relationship between a position and the group it supervises. The membership relation can be represented by two different graphical concepts. On the left-hand side, Figure 4.20

Element Type	Elementary Symbol	Composite Symbol
Position	A Position	A Position
Project Position	A Project Position	A Project Position
Group	A Group	A Group

Table 4.17: Organizational Element Types

depicts the membership relation between groups and positions as top-down tree graph. The direction of the membership edges in this representation is not visualized by an edge-end symbol but implicitly through the vertical arrangement of the nodes. The condensed representation on the right shows a composition of both graph-based and geographical relation (inclusion). The supervision relationship is either modeled through a directed arrow, or by emphasizing the text label (bold text in the picture).

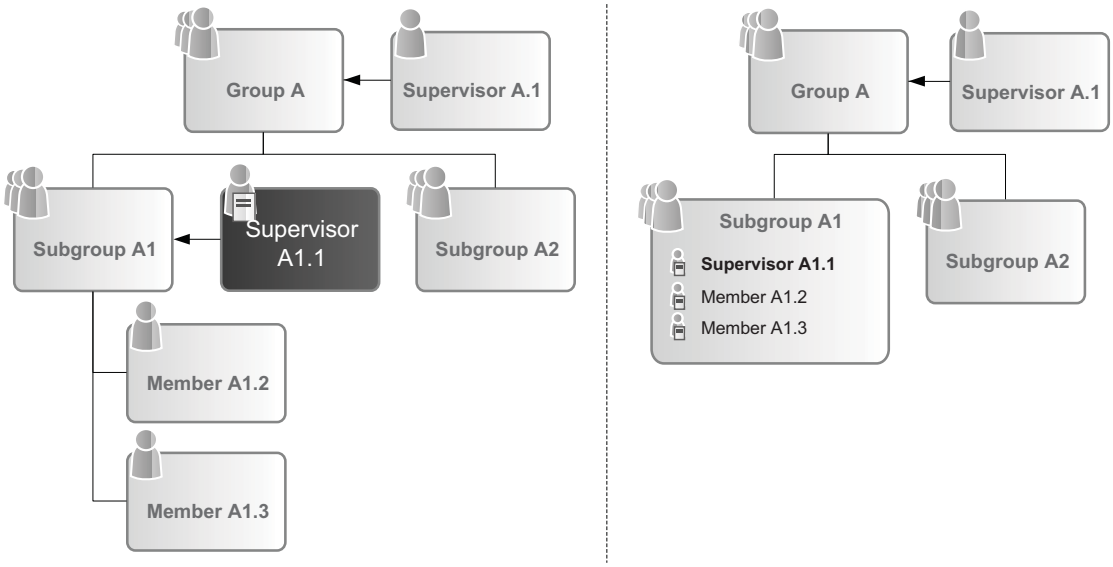


Figure 4.20: Representation variations of organizational structures

4.4.4 Process View

The process view as the central perspective of the language introduces the process-oriented constructs that integrate both organizational units and products as associable objects. The essential constructs for the view are the *Pocket of Creativity*, the *Review* and the *Activity*. All these elements can represent atomic tasks or subprocesses of varying structuring.

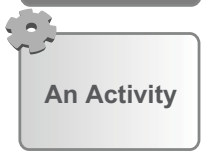
Element Type	Symbol
Pocket of Creativity	
Activity	
Review	

Table 4.18: Process Elements

The Pocket of Creativity is represented by a stylized letter 'C' encircled by arrow shapes that symbolize the iterative nature of PoCs. Instances of activities are visualized by a cogwheel, symbolizing the transformational character of non-creative processes. The review is visualized by a stylized eye-shape (cf. 4.18). As shown, colors and font styles may be additionally utilized to support the distinction between element types.

4.4.4.1 Process Hierarchy Diagram

The process hierarchy diagram (PHD) is a tree representation that displays the composite structure of a creative organization's processes (cf. Figure 4.21). Taking of from the creativity-intensive process or major business process phases, the PHD subsequently decomposes the processes with rising degree of detail. The PHD is constrained to displaying the hierarchical process structure, i. e. no sequential information is implied by either the used edges or the topological arrangement of the nodes. Furthermore, the PHD does not display any information whether a process or activity is mandatory or optional in its containing process. The

only relationshiptype represented in this diagram type is the "contains" association between processes and their components. Note that the processes in the PHD are represented by their identifying activities or PoCs.

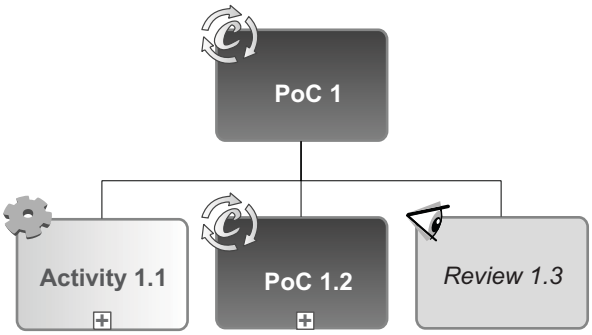


Figure 4.21: Process Hierarchy Diagram

Analogous to the organization chart, the direction of the edges is implicitly visualized by the vertical arrangement of processes from general processes on top to detailed activities in the bottom leaf nodes. The process hierarchy may be organized in multiple PHDs, based on the BPMN type *collapsed subprocess*, nodes indicate a detailing diagram by displaying a plus sign in the composite shape. Consequently, the PHD can be utilized as a means of navigation by model users.

4.4.4.2 Business Process Diagram

The *Business Process Diagram* (BPD) for creativity-intensive processes is based on the BPMN diagram type of the same name but adds some features to enable the modeling of structurally weak-defined process partitions. Sequence flows in BPMN are based on a formal *token* semantic similar to petri nets. This means a sequence flow drawn from an activity A (source) to an activity B (target) implies both that activity A has to terminate for activity B to start *and* that activity B must be instantiated as soon as activity A terminates (and conditions annotated to the flow apply if applicable).

For the modeling of creativity-intensive processes this strict procedural semantic is loosened regarding three aspects: *sequence*, *commitment* and *timing*. The *sequence* dimension refers to the possibility to model activities and partial processes without having to constitute their sequence before their actual execution. By refraining from such a sequence formalization, actors in the process are empowered to chose a sequential order suitable both to the situation at hand and to their individual working style. *Commitment* variability

provides for means to render specific process elements as being optional. On the one hand, this mechanism allows for modeling activities and processes that will be initialized only in special circumstances while refraining from formalizing these conditions (e. g. by means of gateway patterns, business rules etc.). On the other hand, it can be utilized to model alternative activities or combinations thereof to fulfill a particular goal. The alternation of the *timing* dimension allows for purposefully discarding the strict token semantics of control-flow oriented process models to describe the overlapping execution of process steps thus introducing a weak sequential constraint.

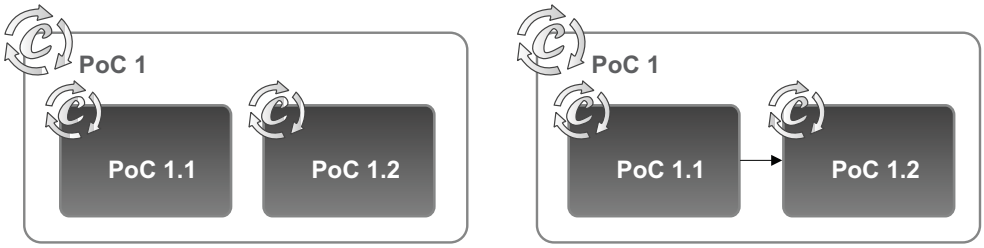


Figure 4.22: Visualizing Sequence Constraints in BPDs

Figure 4.22 depicts the concrete syntax of sequence constraints. The left PoC contains two sub-PoCs that have no ordering regarding their execution sequence. The representation in this case is merely a visual variant to a respective process hierarchy diagram, since it does not reveal any additional process information. The PoC on the right hand side contains two PoCs connected with a *sequence flow*, thus constraining the order of execution so that *PoC 1.2* will be executed after *PoC 1.1*.

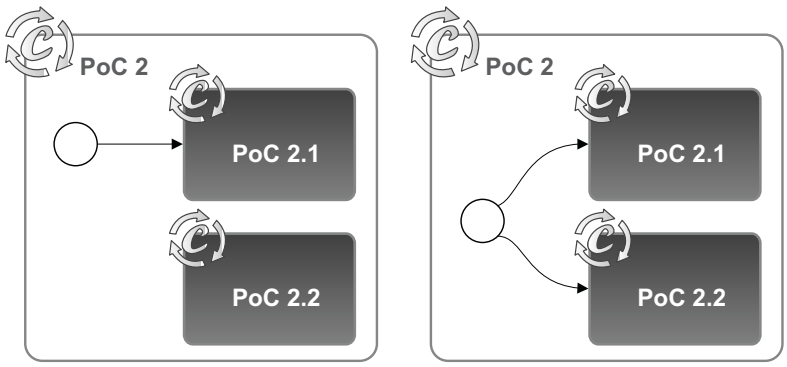


Figure 4.23: Optional and Mandatory Activities in BPDs

Figure 4.23 confronts two PoCs with differing inner structure regarding the commitment aspect. The PoC on the left hand side contains two PoCs where one (PoC 2.1) is mandatory

and the other (PoC 2.2) is optionally executed, should the outer PoC be instantiated. The inner PoCs on the right are both mandatory. Note that neither of the two representations reveal any information regarding the sequencing of the inner process steps. The visual representation of the commitment constraint can be generalized in the syntax rule that *every process element that has an ingoing flow edge is mandatory executed, should its container process element be instantiated.* A mandatory process element that has no successor in the context of its containing element will receive an incoming edge from a start node.

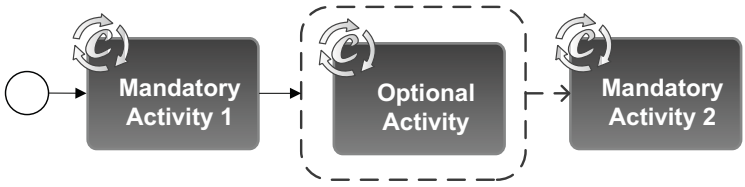


Figure 4.24: Intermediate Optional Activities

This implies that all process elements that are reachable by a path from any start node will be interpreted as being mandatory. In the case of optional activities that are located within a process sequence this might not always be desired. While encapsulating the optional activities in a PoC is a probable solution based on the presented mechanics, it would unnecessarily raise the complexity of the hierarchical process structure. Figure 4.24 depicts how this constraint is visually realized. The dashed rounded rectangle has an effect on the process flow similar to a PoC – since the contained optional PoC has no incoming sequence flow, its execution can be decided case-dependent by the process actors.

Figure 4.25: Timing Constraints between Activities in BPDs

The timing aspect of sequence constraints determines whether an activity in a sequence must terminate before its successor can be executed or not. The first case is displayed on the right hand side of Figure 4.25, where *PoC 3.1* is connected to *PoC 3.2* by means of a standard sequence flow. On the left, the sequence constraint is less strict. The model implies that *PoC 3.2* may not be executed before *PoC 3.1* is instantiated. However, it may be executed before *PoC 3.1* terminates, thus resulting in an interleaved execution of both

PoCs. This interleaving of activities allows for subsequent process steps to feed back into their still-running predecessors, thus detailing the iteration dependencies within PoCs.

The BPMN business process diagram allows only for minimal annotation of auxiliary information to process elements. *Pools* and *swim-lanes* can be utilized to represent boundaries of responsibility between organizational units and organizations. In the case of well-defined responsibilities throughout a process, this mechanism is also feasible for creativity-intensive processes. An example for such a representation can be found in Section 6.4.2.3 (Figure 6.34).

The annotation of process objects in BPMN is very limited. The BPD allows for the modeling of data objects that are exchanged between systems (pools) via message flows. However, since the concepts developed in Section 4.3 are numerous, the method presented here does not advise to annotate this contextual information in the business process diagram but rather provides for a specialized model type to capture the respective data.

4.4.4.3 PoC Sheet

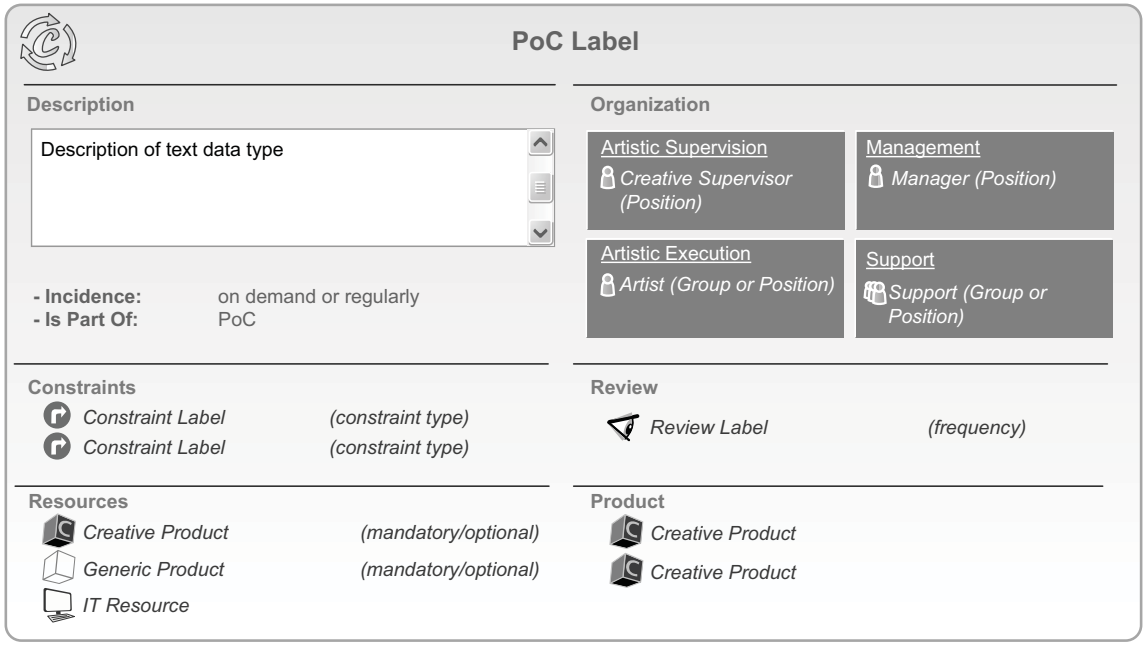


Figure 4.26: PoC Sheet

The PoC sheet is a model type stemming on the geographical-based type of relationship representation. The base metaphor is that of a one-page form capturing the auxiliary

information on a PoC in specialized data fields and providing for a quick overview. Similar forms of representation can be found in ADONIS (notebook pages) and IDEF (elaboration forms). Analog to the process hierarchy, the PoC sheet is additionally intended to be used as a navigational aid to access the accompanying views and element properties (such as textual descriptions).

Figure 4.26 depicts the spatial arrangement of process information on the PoC sheet. The data within the description partition displays the PoCs native properties. The organization section distinguishes the four roles that characterize the association of positions and groups to the respective PoC. The constraints partition lists both product as well as resource constraints by name (sequence constraints are expressed in the business process diagram). Products that are input to an activity are modeled as resource, outputs are listed in the product section. The review section will list all review process elements associated with those products.

Figure 4.27: Review Sheet

Reviews, as an essential concept in the management of creativity-intensive processes, are described in a dedicated elaboration form, since their inner procedural structure is usually not revealed (especially for external reviews). Figure 4.27 displays the respective geographic placement of the contextual information, partitioned into product, review properties, actors and resources.

4.5 Modeling Procedure and Guidelines

Modeling as a (re-)construction process of socio-technical systems is a complex endeavor. This is due to the modeled original's inherent complexity, as well as the limitations of the subjective assessment of a system through its actors. Analysts are dependent on these inner models in the attempt to reconstruct business processes that largely rely on human actors. This is especially valid, if processes are not based on codified data such as detailed job descriptions or explicit company rules but rather rely on the personal knowledge and experience of the persons filling a position

Procedural models for process modeling are not near as numerous as available modeling languages and software tools. The *BPMN* specification does not provide for any guidance on how to build process models. In developing the *UML* the integration of a procedural model has deliberately been restrained from in favor to develop the procedural guidelines in a separate project. The *ARIS* method provides for a lightweight procedural model. The model introduces a project planning and definition phase as a start and continues by requiring the subsequent design of model instances following a classical software development process (analysis, design, implementation). The views, however, are populated in no particular order (Keller et al., 1992, pp. 17–24).

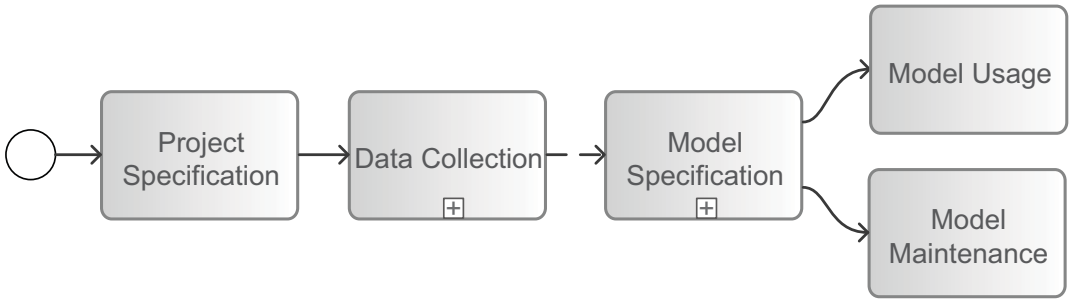


Figure 4.28: General Procedural Model for Modeling CIPs

An elaborate model has been proposed by Becker and Kahn (2008), which describes a process management procedure that stems on the use of process modeling techniques both as means for the analysis of organizations ("as-is-modeling") as well as for the prescriptive design of improved procedural structures ("to-be-modeling"). The procedural model emphasizes the relevance of the choice of an appropriate modeling technique and its project-specific customization and thus hints toward the use of domain-specific languages.

Figure 4.28 depicts a simplified version of this procedural model to apply it on the

documentation of creativity-intensive processes. The *project specification* is concerned with the definition of the modeling scope and granularity. Both dimensions are dependent on the intended audience of the models and their information demands and determine the choice of adequate interviewees for the data collection. Depending on the intended depth of process decomposition, different roles are necessary to give their impression of the processes at hand.

4.5.1 Data Collection Guidelines

Due to the iterative mode of data collection and modeling, a formalized procedure model for the purpose of a step-by-step guide cannot be given in a reliable form. The quantity and structure of necessary interviews with domain experts emerges during the early sessions and is dependent on both the expert's knowledge, willingness and verbal skills as well as on the analyst's experience and precognition. Collected data will subsequently point to previously unconsidered responsibilities and thus to potential new sources of process information. In the following, key questions to populate each model view are suggested. The questions are not intended to be meticulously followed but aim to guide the data collection.

Question	Intention
What are the results of a project? What does the client pay for? When is a project finished?	Identification of the final product, its components and properties
What is the result of your work? Where does your work end?	Identification of the intermediate products, product states and responsibilities
What do you need for your work? Where do you get in on the process?	Identification of prerequisite products, product states and resources
How does a particular product look like? What would be a typical example?	Identification of properties and components of a product
What is shown to the client?	Identification of distinct intermediate products and points of transfer

Table 4.19: Suggested Questions for the Product Category

As has been reasoned before, the *creative product* is a feasible entry point for the collection of process information in creativity-intensive processes. As tangible objects, products are comparably easy to communicate and mark process boundaries and points of transfer between process parts of different responsibility.

The identification of the final product and its components is essential for the analysis of the creativity-intensive process. The final product allows for tracing back the inputs and prerequisites along the process and thus for identifying subprocesses that contribute to the creative value. Table 4.19 suggests a collection of possible questions that aim for acquiring product-related data.

Organizational structures can be difficult to reconstruct in creative contexts, since actors do not necessarily accompany the entirety of a creativity-intensive process. The proposed language allows for the instantiation of project positions to describe such temporal associations of personnel. Similar to products outlining the boundaries of processes, the timelines of different actors within the process hint toward major subprocesses. The questions listed in Table 4.20 intend to reveal both organizational structures as well as responsibilities along the process.

Question	**Intention**
What is your position in the organization/in the project?	identification position labels and descriptions
Where do you get in on the process?	identification of project positions and responsibilities
By whom are you appointed for a project? Who do you report to?	identification of manager and supervisor roles
Who do you work with? Who is your contact person should problems occur? Who is involved in a particular activity, meeting or review?	identification of organizational structures and roles
Who are the contact persons on the client side?	identification of client structures

Table 4.20: Suggested Questions for the Organization Category

The main objective of the questions is to indirectly access the process knowledge of

domain experts without obstructing an open dialog with process management terminology. The information obtained by inquiring about products and people will already reveal a greater part of the procedural structure that can be incorporated into the process hierarchy. However, some process-oriented inquiries can be necessary to complete an analyst's image of the work system. These questions are aimed at assessing both the procedural structure as well as the relevance of creativity for particular activities (cf. Table 4.21).

Question	Intention
When do you begin with a particular activity?	identification of sequence constraints
When is your work approved upon? When is it shown to the client?	identification and localization of reviews
What parts of your work do you consider as being the most/the least creative? What is your definition of creativity?	triangulation for creative contributions and non-creative tasks
How much creative freedom do you have in your work?	identification of product and resource constraints
What equipment do you use? Do you use any special software?	identification of resources

Table 4.21: Suggested Questions on Process Structure and Context

To complete the picture of the process, it is advised to inquire the interviewees to describe their view of a comprising process based on a particular project as means of an example. This is helpful to cover gaps in the general process descriptions. Furthermore, it helps to identify areas of variability in the process based on narrative incidents ("exceptions" in a particular project).

4.5.2 Model Construction Guidelines

The activities of data collection and model specification are interleaved since the emerging model will reveal additional information demands to complete model partitions. Analogous to the loose structure of inquiry for the data collection, it is advised to approach the model construction from the contextual categories of product and organization. Figure 4.29 outlines the basic procedure. The procedure diagram makes use of the interleaved timing

sequence flow to indicate that the individual views are not populated in isolation. The subsequent decomposition of products, processes and responsibilities implies the iterative refinement of all views in a top-down direction.

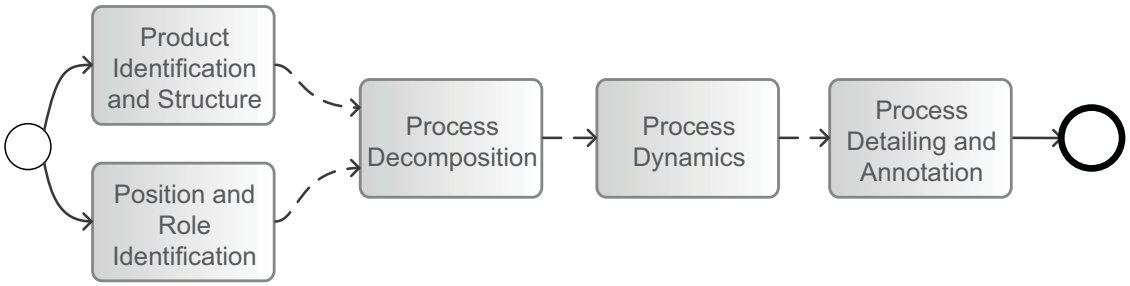


Figure 4.29: Model Specification

The qualitative data gained from expert interviews will generally lack the structure to be directly translated to a model representation. If the final product is identified, the data should be scanned for objects (e. g. resources, documents, equipment, contents) that act as intermediate products. This list of products can then be analyzed regarding their temporal and composite structure. In this step, potential synonyms or homonyms within the data should be identified and corrected. The assessment of a product's nature toward creativity can be conducted based on its properties as well as its structural context. The following questions help to identify creative products:

- *Can the product be evaluated by fixed quality or performance standards? Do precise requirements exist for the product?* Discrete values for a product's quality (such as completeness, technical capabilities etc.) hint toward standard (non-creative) products. In contrast, the assessment of creative products is largely dependent on subjective aesthetic values of both internal and external reviewers. Precise requirements provide an indication for standard products such as equipment or standardized documents.
- *Does the product incorporate additional creative contributions compared to its predecessors or prerequisite products?* Actors involved in the generation of a creative product will contribute their personal ideas that become part of the product. This is to be distinguished from producing standard objects as results of problem-solving tasks that rely on the knowledge and experience of an actor rather than his or her creativity.
- *Is the product transformed from a creative product? Transformations* that have a creative product as their input will generally result in a creative product. The transformation

might or might not add to the creative value of the product, this is assessed during the PoC identification.

Note, that the decision whether a product is modeled as being a creative product or a standard product is *normative* to a certain degree. This is due to the properties of both creative products and processes (such as uncertainty, creative contribution or creative intention) being continuous spectra rather than discrete values (Seidel, 2009b). Furthermore, the creative contribution might be evaluated differently by different actors in the process. Throughout the study conducted in the context of this research, the dichotomy between craft and art was repeatedly emphasized.

The generalization of products to generalized types is triggered by model management concerns rather than semantic requirements stemming from the data. The construction of generalized types helps to improve the comprehensiveness of the product model by eliminating redundancies. Since the generalization association is an abstract concept, it should be used in moderation.

Based on the product model, a process hierarchy can be derived by creating an activity for each *prerequisite* and *transformation* association between products or product states. The decision whether the resulting activity is a pocket of creativity or not can be decided upon by checking a list of requirements:

- *Does the transformation/prerequisite yield a standard product?* Transitions resulting in general products will be modeled as standard activities.
- *Does the transition have a creative products as input or prerequisite?* Creative products that have no creative predecessor or prerequisite can only result from creative subprocesses, i. e. such transitions are to be modeled as PoCs.
- *Does the transformation add a creative contribution to a product?* A transformation between two creative products or two states of a creative product can be either creative or technical. The latter resulting the subprocess being a standard activity.
- *Is the result of an activity subject to internal or external reviews?* Reviews as a management strategy to mitigate creative risks will accompany creative process phases.

Analog to the product assessment, the reconstruction of activities and subprocesses as PoCs or standard activities is normative to some degree and is dependent on the modeling

focus and the process management objectives. Based on the process hierarchy and product structure, sequential constraints can be subsequently detailed. Components of composite structures can initially be translated to parallel subprocesses while transformations indicate strict flow constraints. Prerequisite transitions result in sequence constraints with variable timing or commitment properties.

In the detailed view (PoC Sheet), the PoCs will be described regarding their properties as well as their associations to actors, products and resources. Each PoC should be connected to at least one review activity. PoCs should also be annotated with both artist and creative supervisor. In some cases, however, both roles can be assigned to the same position. Standard activities can be detailed by using standard BPD elements.

5 Method Evaluation: A Qualitative Study in German Television Production

5.1 Objectives of the Study

The language developed in the former sections of this chapter is intended to describe organizational and procedural structures in creative organizations. The language constructs derived are semantically anchored to the theory of managing creativity-intensive processes (Seidel, 2009a, 2009b). The application of the language in a real-world context therefore serves two major objectives.

Firstly, the modeling of real process structures in a creative context will serve as a test to the expressiveness and applicability of the developed language. This analysis will measure the fit of constructs to phenomena observed in the field and reveal both *construct deficits* as well as *construct excess* (Indulska et al., 2008) in dependence of the application area. Furthermore, it will reveal further dependencies and necessities in the guidelines and procedure of data collection and model construction. This data will shape the revision of both the language specification as well as the methodical guidelines.

Secondly, the applicability of the language provides valuable evidence for the generalizability of the theory of managing creativity-intensive processes or limitations thereof. The modeling language therefore serves as an operationalization of the substantive theory and thus a vehicle to enable testing the implied propositions in a setting outside the original substantive area. The results concerning deficits and mismatches between language and case will also feed back into the evolution of the theory.

In the following, the design and structure of the case study will be described to provide for a transparent specification of the application area. Furthermore, account of the sampling

strategy, data sources, interview technique as well as the time line of the study will be stated. The result of the study – an elaborate model of TV production in Germany – is presented and discussed in detail in Chapter 6.

5.2 Context of the Study

The context of television production has been chosen for its broad range of sub-processes and tasks that show great variety in their dependency on creative freedom and flexibility. Firstly, it should be noted, that the term television production is largely constrained to the generation of audio-visual (AV) content in the context of this study (Zabel, 2008). This notion excludes related branches of the economy that supply customers with the technical capabilities for TV consumption such as electronic manufacturers or cable service providers.

The main market actors in the context of this study are television production companies and television broadcasters that work in close interaction (Manning & Sydow, 2007). The broadcasting market in Germany is characterized as a dual broadcasting system (Hickethier, 1998; Collie, 2007) that is divided into public and commercial networks. In the context of television, the commercial system can be further distinguished into programs funded by advertising and subscription-based pay-TV. Publicly funded TV broadcasting has a considerably longer history than commercial programs. The current system can be tracked back to the founding of the consortium of public-law broadcasting institutions of the Federal Republic of Germany (ARD) in 1950 and the first broadcasting of a nation-wide TV program in November 1954 (Hickethier, 1998, p. 110).

Since then the German TV market has undergone a series of major changes. The production of non-news content was gradually externalized to TV production companies since the 1970s (Hickethier, 1998, p. 121). The advent of commercial broadcasters in the 1980s further accelerated this evolution (Windeler & Sydow, 2001). Although the TV broadcasters act as clients in the process of content production, they still form a powerful oligopoly that holds control over both financial resources as well as the channel of distribution (Windeler & Sydow, 2001). A noteworthy characteristic of the german system (e. g. as compared to the US) is the comparably great relevance of the public system – both culturally and in terms of market share (Bourdon, Ibáñez, Johnson, & Müller, 2008; Hickethier, 1999).

Since the early nineties, the programming has undergone some dramatic changes with the introduction of daily series (“soaps”) that were very successful regarding audience

ratings while having much lower production costs compared to traditional fictional formats. Following the turn of the millennium, even more cost-effective programs were established by introducing reality shows like "Big Brother" to the german market. Since then, reality formats have been produced in an increasing variety, a more recent type being *documentary-style* shows. Notably, these formats are exclusively sourced abroad and are adapted for the german market (Zabel, 2008). Recent developments furthermore include broadcaster endeavors to develop business strategies for online distribution of contents.

As has been stated earlier, in the process of TV production has been analyzed from the perspective of production companies. The process of TV programming is regarded as a parallel process that interacts with production processes at certain points but is otherwise conducted separately. Since the qualitative study has been targeted to production, aspects of TV programming will be accounted for in merely these points.[4]

5.3 Selection of Sites and Interviewees

The study is set in the context of television production companies. This context has been chosen for its products as being perceived as highly creative as well as for TV production being a sizable market with a variety of companies as case sites. Furthermore, in the context of the research project ManKIP, valuable contacts existed between research partners in the project and key personnel within production companies in Germany.

Site Selection To achieve a broad scope of process data within the TV production market, organizations were chosen to cover the entirety of content types produced for german television. This resulted in the selection of interviewees from seven different production companies. The goal was to gain an overview over complete production processes of the typical product lines of (semi-)independent companies of the sector. The product lines are each represented by multiple site organizations to achieve a normalizing effect over the organization specifics. The site selection basically adheres to the criterion of *literal replication* (Yin, 2003). This criterion points to samples, where similar results are expected. In the case of this research, this similarity corresponds to the applicability of the modeling method, where both potential language-related as well as procedural discrepancies are

[4] As indicated earlier representatives of TV broadcasters have been interviewed in the study. The focus of these interviews was on the role and influence of broadcasters to the process of production rather than the creation of the TV program.

Organization	Structure	Main areas
Production company A	National subsidiary of an independent international production company	Entertainment and fiction (in separated departments)
Production company B	National daughter of an international media group	Entertainment
Production company C	National subsidiary of an international broadcasting group	Entertainment and movies
Production company D	National subsidiary of an independent international production company	Fiction and entertainment
Production company E	Subsidiary of a national broadcaster	Fiction
Production company F	Subsidiary of an international media group	Entertainment and fiction
Production company G	Independent national production company	Fiction
Broadcaster I	Public broadcasting company	Publicly funded, nationwide television program
Broadcaster II	Private broadcasting company	Commercially sponsored, nationwide television program
Broadcaster III	Private broadcasting company	Commercially sponsored, nationwide television program

Table 5.1: Sites selected for the data collection

predicted to replicate among the sites.

The inclusion of the client perspective on the production process is regarded as being essential to gain a neutral view on the interaction patterns between production companies and broadcasters. Since client touch points are usually not codified or explicitly negotiated, they represent a controversial issue in this relationship. Thus, representatives of three different broadcasting organizations have been included in the study. Table 5.1 gives an overview to the sites selected for data collection.

Interviewee Selection During the study a total of 18 people were interviewed. Derived from the intended scope of the study, the interviewees were chosen with the intention of being able to describe large portions of the creativity-intensive production process. The majority of actors interviewed thus were persons that occupy positions of considerable responsibility and supervision. Both job titles being perceived as creative as well as managerial have been chosen to achieve a comprising picture.

As a counterpart to this key personnel, a selection of five freelancers has been included to the study to gain an in-depth understanding of the specific relationships that these specialists go into, both with creative organizations as well as with specific project teams. Furthermore, the data collected in the respective interviews gave a more detailed account of specific process partitions.

The third group of interviewees selected were the representatives of broadcasting organizations. The aim of the respective interviews was to identify creative involvement and influence as well as client touch points to the production processes. Table 5.2 lists the conducted interviews in chronological order and provides information concerning the position and affiliation of the interviewees.

5.4 Study Timeline

The study has been conducted in four phases. The *first phase* was concerned with both the development of an interview guide as well as the selection of data sources. To support the study, two domain experts have been contracted to accompany both the preparation as well as the realization of the study. The experts were a producer for fictional formats and a creative director in the context of entertainment production. In a first workshop, the basic outline of the production process as well as the product structure was framed. Furthermore, this workshop served as a means of preliminary interview to develop a feasible interview guide for the upcoming data collection.

The *second phase* of the study comprised the first set of seven interviews conducted in a two-week period in August 2009 (cf. Table 5.2). The data collected in these interviews was analyzed and evaluated. Based on the first findings, an intermediate workshop with the domain experts was conducted to reevaluate the interview guide. A basic process model was developed to use as means of a printed reference within the interviews. Aim of this supporting device was to lend procedural structure for the interviewees to correspond to

Position	Affiliation	Date	Length
CEO	Prod. comp. E	05.08.2009	78 min.
Creative Director	Prod. comp. F	05.08.2009	92 min.
Head of Development	Prod. comp. C	10.08.2009	58 min.
Screenwriter (B)	Freelancer	10.08.2009	74 min.
Head of Production	Prod. comp. D	11.08.2009	82 min.
Head of Program (Fiction)	Broadcaster II	11.08.2009	59 min.
CEO	Prod. comp. F	13.08.2009	49 min.
Director	Freelancer	14.09.2009	70 min.
Producer	Prod. comp. A	24.09.2009	58 min.
Chief Editor	Broadcaster I	24.09.2009	78 min.
Head of Program (Series)	Broadcaster III	25.09.2009	61 min.
Screenwriter (A)	Freelancer	25.09.2009	80 min.
Head of Development	Prod. comp. B	28.09.2009	97 min.
Set Designer	Freelancer	06.10.2009	85 min.
CEO	Prod. comp. A	12.10.2009	90 min.
Cinematographer	Freelancer	27.10.2009	67 min.
CEO	Prod. comp. G	30.10.2009	49 min.
Costume designer	Freelancer	04.11.2009	63 min.

Table 5.2: Conducted interviews

and to normalize the terminology within the interviews.

The *third phase* comprised the second set of eleven interviews. The abstract process model was used to attain more in-depth information of the production processes and to highlight routine and exceptional phenomena encountered in the processes. The interview strategy was altered by inquiring about particular projects the interviewees were involved in. This provided for more detailed process data in favor to a an abstract view of the actors concerning their work.

The *fourth phase* comprised the analysis of the interview data and its subsequent codification in instances of the developed modeling language. Verbatim transcripts of audio recordings made of the interviews have been produced. Due to the amount of data (over 21

hours of recorded material) these transcriptions have been contracted to an external service provider. Both interviews and the resulting transcripts were in German language and have been translated on-the-fly during the data analysis.

5.5 Interview Structure

The interviews were conducted in a semi-structured fashion. A basic interview guide was used as a structuring measure that provided for valuable entry-points to access the specific knowledge and experiences of the interviewed domain experts. The guide was arranged in seven major topics that each provided for basic and deep-level questions that served as steering devices for the interview. However, the interview strategy was founded on open questions and the aim to trigger narrative phases where the interviewee would reveal process data in an episodic fashion.

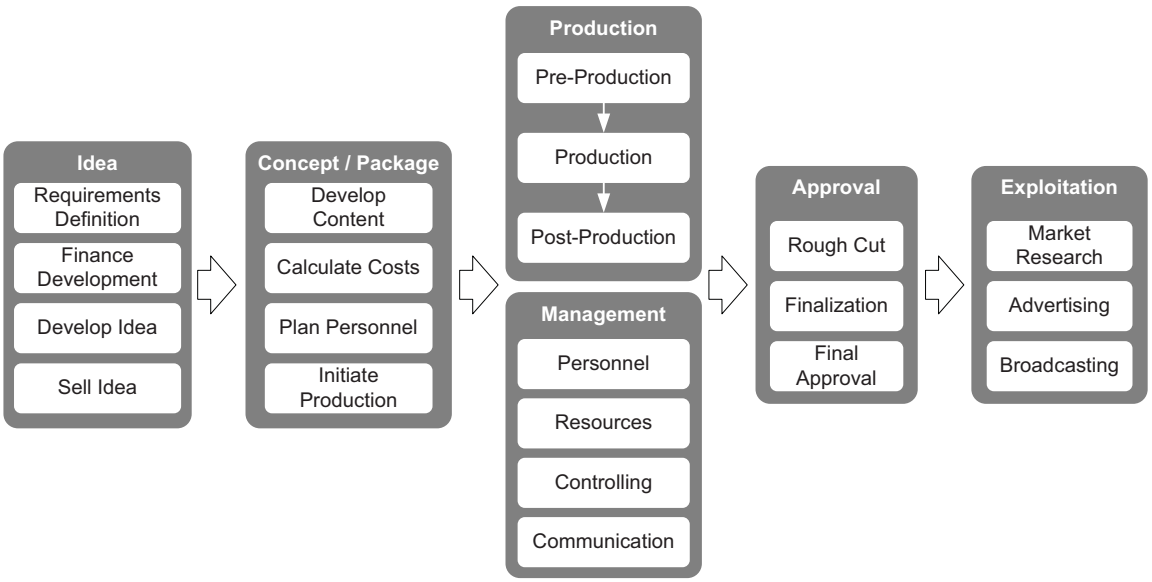


Figure 5.1: Generic process model

The following core topics were devised:

- **Personal background:** This topic aimed to attain data about both the current position of the person interviewed as well as former occupations that might influence personal views on organizational topics.
- **View on creativity:** The general views on creativity were inquired to gain reference

points between the different interviews during the discussion of both creative products as well as creative activities. In some interviews, this resulted in substituting the term "creative" with the more precise term "artistic".

- **Creative product and requirements:** This topic inquired about the ways product requirements are developed and communicated, the tangible forms of both products and requirements as well as creative risks during their generation. Furthermore, the influence of the client was discussed within this topic.
- **Creative processes and activities:** Here the domain experts were asked both about general processes and activities within the organization as well as personal tasks they are involved in. Another typical inquiry within this topic was the matter of personal tasks with the perceived most and the least creative freedom.
- **Interaction and collaboration:** This topic comprised questions about collaboration with co-workers, creative and managerial supervision and potential for conflicts between stakeholders in the process. Also the relevance and intensity of group processes was discussed.
- **IT support:** The domain experts were inquired about both standard and specialized IT products they use in their. Demands for additional IT-functionality were also discussed.
- **Market context and development:** The market situation was picket as a theme to attain experiences and personal views on competition and developments in the TV sector. This helped to understand certain interaction patterns between the production companies and their clients.

The results of the first interview phase indicated the necessity to narrow the scope of inquiry to access more detailed data concerning the creative and administrative processes in the production of television contents. As mentioned above, a generic process model was developed based on both the input of the contracted experts as well as the preliminary interview data. Figure 5.1 depicts a condensed representation.

Two primary requirements were to be met in devising this model. Firstly, the production process had to be presented on a level of abstraction where the interviewees could commit to its content notwithstanding their individual product line. Secondly, the model had to be intuitively understandable and representable on a single sheet of paper.

5.6 Data Analysis

The analysis of the interview transcripts was conducted in multiple stages to subsequently derive the codification of process data via application of the modeling method. For the data analysis, several techniques have been adopted and applied. To approach the unstructured data in a meaningful way, *coding* has been utilized. In the context of qualitative research, this technique is used to derive categories from the data by applying codes to the unaltered text (Holton, 2007; Esteves, Ramos, & Carvalho, 2002; Dey, 2007). *Codes* can be viewed as tags that identify incidents for similar classes of phenomena. In the context of the *grounded theory method* (GTM), different types of coding are employed to subsequently define a theory's categories and relationships (Strauss & Corbin, 1998).

The first step in this method is *open coding*. In this process the text is analyzed meticulously ("line-by-line") and tags are placed on incidents by the researcher. The first result of this stage might be a seemingly unstructured list of codes that is subsequently conceptualized by the researcher, so constructing *categories* of the theory and their *properties* (Strauss & Corbin, 1998). In the second step of *axial coding* these categories become interrelated so forming associations of categories with their subcategories, so building a structure. In the stage of *selective coding*, a *core category* is identified that represents the central phenomenon of the theory and represents a hub systematically linking all subordinate categories (Strauss, 1987). As the coding process is iterative, these steps are no strict sequences but rather recurring phases in the context of data analysis.

The GTM coding process as described above has been adapted for its application in the context of modeling language evaluation and process model construction. The existent theory as well as the derived conceptualization for the modeling language provide for a strong theoretical framework that takes a distinct influence on the data analysis. It guides the analyst to search for particular incidents in the data. Unsurprisingly, the equivalent to the open coding phase in GTM will not bear a similar relevance. However, the interview transcripts of the first batch have been approached without a predefined code structure in order to being sensitive to potential concepts that were not incorporated in the base theory.

The analysis procedure applied in this study bears a strong resemblance with the principles of axial coding, in that incidents are perpetually analyzed regarding their place in the hierarchical structure of categories and constructs. However, in contrast to the construction of categories and their relationships as emergent from the data in GTM, the modeling procedure imprints the language structure on the data and thus forming the model structure

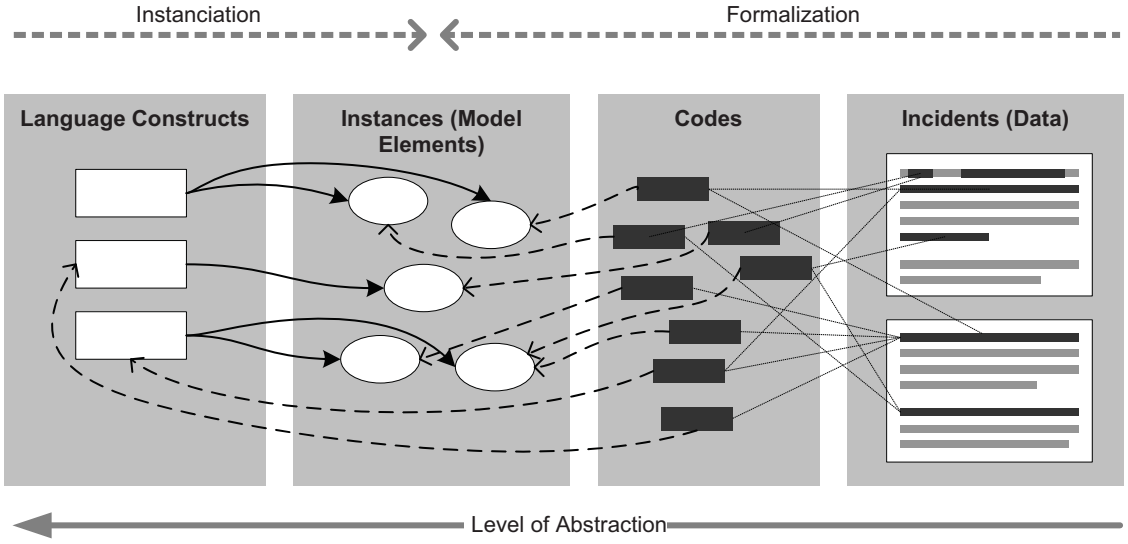


Figure 5.2: Modeling process based on qualitative data

both bottom-up from the codes, as well as top-down from the language constructs (cf. Figure 5.2). Incidents and codes can be either related directly to language constructs or may be coded as *instances*.

The utilization of GTM techniques to the structuring and formalization of creativity-intensive processes provides for a elaborate and well-documented means to approach weak-structured data as it results from semi-structured interviews. Furthermore it enables the use of software tools tailored for this type of research activity. In the present study, *NVivo* as a software tool for qualitative data analysis was used to both organize as well as code data (Bazeley, 2007; Gibbs, 2002). Existent modeling tools to date do not offer functionality to relate empirical data to models or model elements. While textual descriptions for model elements are possible e. g. in ARIS, a multi-dimensional association of textual descriptions (or other empirical data) with elements to trace back modeling decisions is generally not supported. On the other hand, NVivo offers only very limited for graphically representing structural and procedural semantics.

Thus the model construction was conducted with NVivo as an intermediate means of modeling in that served the identification and description of model elements. These elements have subsequently been manually transfered to both ARIS and Microsoft Visio. The method was incorporated in ARIS by means of a custom *filter*, enabling the instantiation of models for creativity-intensive processes. Microsoft Visio has additionally been chosen for its greater representation flexibility that was necessary to present the resulting model in

the present document. The model presentation in Chapter 6 will account for this traceability intent in providing for textual incidents that entailed particular modeling decisions.

6 Method Application: A Model of Television Production in Germany

6.1 General TV Production Model

The primary result of the study is an in-depth model of television production in Germany, which will be presented in this chapter.

The basic intention of this model is to demonstrate the feasibility of the documentation method in a setting that is deemed highly creativity-intensive (Seidel, 2009a). Furthermore, the resulting model also represents a high-level description of the domain of TV production that integrates process knowledge of a variety of companies in this sector. Therefore, the model can serve as a *reference model* for organizational or educational purposes or specific modeling endeavors. However, the model presented holds no claim for completeness and shares the validity limitations of all qualitative studies (Eisenhardt, 1989). Also the temporal stability of the model is limited, thus its applicability should necessarily be reevaluated if the model is to be used in such a context. Although the TV production sector in Germany is deemed to be a mature market (Manning & Sydow, 2007), recent literature and most of the participants in our study see a major shift in distribution channels and business models due to severely changing viewer habits (Chan-Olmstead & Ha, 2003). What impact this development will have on the processes of content production is hard to predict as yet. Finally, reference model application is not methodically supported, i. e. mechanisms for individual variant creation (Delfmann & Knackstedt, 2007) have not been implemented.

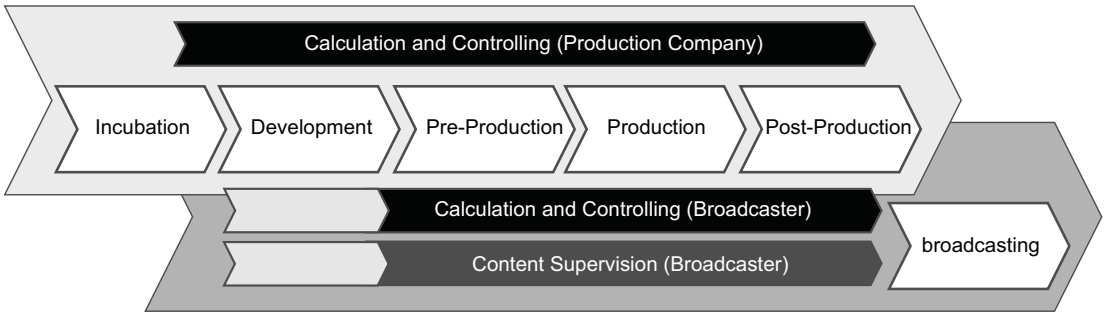
In the remainder of this section, the overall TV production chain will be analyzed on a level of abstraction that represents a common understanding of the process among all of the product lines investigated in. In the subsequent section, a more detailed analysis will frame out the different product lines and their individual structure. Stemming from this framework, the production processes will be modeled for each product line. This procedure

follows the process model developed in chapter 4 and makes use of the derived modeling constructs.

6.1.1 TV Production Value Chain

Viewed from a production perspective, the process of TV content generation can roughly be broken down into the stages of *development, pre-production, production* and *post-production* (Clevé, 2005; Seidel, Rosemann, ter Hofstede, & Bradford, 2006; Seidel, 2009a). Colloquially, the latter three are also commonly subsumed under the term *production*, referring to the phase comprising all tasks from the production contract to the final delivery. Figure 6.1 shows the general phases of the production process.

Note, that the actual generation of creative products is accompanied by the administrative process of controlling and calculation both on the side of the production company and the broadcaster. This shows the tight constraints to the production company's autonomy within the project's organization. One reason for this immediate control through the client can be explained by the immanent risk of the production process for creative products (Seidel, 2009a).



see also: Seidel (2009a) & Zabel (2008)

Figure 6.1: TV Production Value Chain

This tight coupling both in ways of organizational/financial as well as content-related authority differentiates television production from cinema formats. The actual degree of influence the TV broadcaster will claim is dependent both on the format and the formal relationship to the production company. The discussion in Section 6.6.3 further details this relationship. As indicated in the figure, the entry point of the TV broadcaster into the process varies depending on the product line. Another factor determining the intensity of client involvement is the funding of the development phase. While the development

especially of larger fictional products is usually covered by a development contract, a variety of formats is developed on the production companies' own financial risk.

The notion of the project phases is interpreted differently by practitioners and throughout the literature. Especially the development and pre-production phase often refer to similar sets of activities. In the context of this research, the phases are defined as consistent sets of activities aiming for validity throughout all studied product lines.

Incubation: The phase of incubation is introduced to the value chain to refer to the early process steps that lead up to an actual project decision. It comprises activities like creative meetings, workshops or client meetings that are not necessarily dedicated to particular identifiable projects as yet but are nevertheless institutionalized in many production companies. In this phase, ideas are collected and transformed into a tangible form that can be intersubjectively discussed and evolved. The transition to the next phase is marked by the explicit commitment to further pursue a given project idea and invest resources for its development. Depending on the product line, this commitment can be confirmed externally by the client or internally within the production company.

Development: This phase comprises the creation of a format's content and its detailed codification in a form presentable to the client. Aim of the development phase is the closing of a production contract with the broadcaster. The form of representation is dependent on the product line and can be realized as an interactive presentation or as a written document such as a specification or a script. The development is perceived as the phase with the highest creative potential.

Pre-Production: This phase starts with the closing of a production contract. During pre-production, the requirements for the actual shooting are planned and organized. The most prominent activities are the calculation of the production budget, recruiting and hiring the crew and cast, as well as scheduling the production. While the majority of tasks in this phase are related to administration and organization, a number of artistic departments of the production, such as costume or set design, will be introduced to the process.

Production: The production phase comprises all activities on the set or in the studio and the accompanying administration. Main activities are the short-term planning of shooting days, the actual shooting as well as daily wrap-up and reporting. This phase involves the

largest number of personnel and thus exhibits the highest organizational complexity within the process.

Post-Production: This phase comprises all transformation steps from the raw footage to the finalized product. Essential activities are editing and color matching, music and sound editing and visual effects. This phase is of varying relevance and complexity depending on the given product line.

Broadcasting: A completed A/V product is distributed by the broadcaster by implementing it into the program schedule of a TV channel to finally deliver it to its audience. The broadcasting phase also comprises tasks like advertising the program and selling time slots for commercial breaks. As the primary focus of the study has been the production perspective, the process of programming and broadcasting is not analyzed.

6.1.2 TV Product Structure

TV broadcasters set up their schedules by filling a channel's *program grid* with available contents. The time-schedule is derived from the broadcaster's strategy for the channel that strives to access different target-groups. Depending on the profile of a sending slot, matching content is either licensed or produced. Available (i. e. licensed or owned) content is generally not exclusively bound to one particular time-slot. In filling the grid, repeat broadcasts have gradually been established as key part of the programming strategy in recent years (Bourdon et al., 2008, p. 103).

If the production process is to be discussed and modeled in further detail, it is necessary to specify the different types of content that is scheduled in a broadcaster's channel program. Audiovisual products can be classified along different dimensions (Zabel, 2008). Here *vertical integration*, *genre* and *repetition* are discussed (cf. Table 6.1).

Vertical Integration The aspect of vertical integration as perceived from the broadcaster's perspective determines the level of influence the broadcaster exerts on the production process. On a generic level, it can be differentiated between content that is produced in-house within facilities of the broadcasting company and content from external sources. Examples for typical in-house productions are journalistic formats (e. g. news broadcasts) or live programs covering sports or other events of public interest (award ceremonies etc.,

Property	Value			
Vertical Integration	In-house	Dependent	External	Licensed
Genre	Informational	Non-fictional / Factual Entertainment	Fictional	
Repetition Level	Singular	Miniseries	Seasons	Daily

Based on: (Zabel, 2008).

Table 6.1: Morphological analysis of content types

Zabel, 2008). These formats offer the highest level of influence for the broadcasting company. There are several organizational strategies for TV broadcasters to render internal production more flexible, such as employing freelancers, sourcing technical infrastructure (filming studios etc.) on the market or establishing corporate-internal profit centers for production (Zabel, 2008).

Broadcasting licenses for ready-made A/V products mark the opposite extreme. These products can be sourced on an international market, examples for licensable material are cine films, TV movies and series. Apart from dubbing[5] and minor editing, the broadcaster has very little possibilities to alter or adapt this type of content.

The intermediate categories, termed as *dependent* and *external*, are the major focus of this case study. Contents of these types are created by autonomous production companies that are either free market competitors (in the case of external production) or affiliated organizations of broadcasters (dependent production). Dependent production companies usually serve to public broadcasters and are generally tightly-bound subsidiaries of their respective network. Thus they are more constrained in their flexibility than their counterparts in the commercial sector, but enjoy a comparably safe market position.

Genre The distinction of three different genres as depicted in Table 6.1 does not nearly accommodate the variety of contents produced for television and the multitude of genre terms (Bourdon et al., 2008; Zabel, 2008). However, the identified genre classes reveal major differences regarding the production process of their respective instances. *Informational* content comprises news casts and all types of journalistic reporting. The primary goal of

[5] Films and series are generally translated and dubbed for German television by employing professional voice actors. The recording and audio editing process is usually conducted by specialized synchronization studios.

these productions is the timely and unbiased communication of events of public interest (de Leeuw et al., 2008). Although there are degrees of freedom in the presentation of such events, creativity is generally not a major driver in the production of informational content. Because of this and the fact that their creation generally does not involve dedicated production companies (as noted above), these types of products are not subject of this study.

In contrast, both fictional and non-fictional contents are produced by dedicated production companies. Although these organizations might invest in the early development of new products at their own risk, the actual production (and in some cases the development) is generally based on a closed contract with a specific broadcaster. Fictional and non-fictional products vary greatly in their product structure and development process. These differences result in organizational specialization, often to the extent that production companies will constrain themselves to one particular type or build respective subsidiaries for each product line. An interviewed producer (production company A) emphasized the very personal incompatibility:

> "I for one could not do non-fictional program, I think. I just could not come up with anything. [...] They bore me or make me sad, these strange formats that pretend to have something to do with real life. [...] I do not want to be engaged in that and that is why I would not be any good at it."

As discussed in detail in Section 6.2, fictional products base on a script and are staged and filmed with actors. Non-fictional formats comprise a variety of content (such as game shows, reality shows, variety shows, talk shows, documentaries etc.) that can incorporate hosts and/or candidates but are generally not based on scripted dialog.[6]

Repetition Level The level on repetition of a particular format largely determines its production processes, especially regarding their organization and production costs (Zabel, 2008). Table 6.2 provides an overview to exemplary *broadcasting costs*[7] of different content formats. TV movies as a singular, fictional format are by far the most expensive content type and thus imply a high risk for the broadcaster. All repetition types from singular to daily production occur in both fictional and non-fictional programs. Note that the formats

[6] An exception are so-called "scripted reality" shows that aim to appear authentic to the viewer but nevertheless rely on scripts to some extend (Rose & Wood, 2005).

[7] For inhouse or contracted productions the broadcasting costs refer to production costs, for licensed material combined license and localization costs are listed.

listed represent typical instances of their respective product type and the resulting order represents a general tendency rather than a rule.

Genre	Example	Cost per Episode	Length (min)	Cost per Minute
TV Movie	Jagd nach dem Schatz der Nibelungen	4,850,000 €	120	40,417 €
TV series (seasonal, weekly)	Hinter Gittern	300,000 €	45	6,667 €
Licensed movie	Lord of the Rings	500,000€ (license costs)	90	5,556 €
Licensed US series	several	150,000 € (license costs)	52	2,885 €
TV series (daily)	Gute Zeiten, Schlechte Zeiten	80,000 €	30	2,667 €
Game Show (entertainment, daily)	Die Quiz Show	50,000 €	30	1,667 €
Improvised Comedy (entertainment, weekly)	Genial Daneben	50,000 €	60	833 €
Scripted Reality (entertainment, daily)	Die Streetworker	30,000 €	60	500 €

Based on: Zabel (2008, p. 57)

Table 6.2: Exemplary broadcasting costs of different formats

In the remainder of this chapter, the documentation method for creativity-intensive processes will be applied to four typical product types as a subset of the possible combinations that can be derived from Table 6.1. Figure 6.2 represents the specialization of these types as broadcasting units from the broadcasters perspective. The nodes in the figure represent single A/V content instances and are modeled as *creative products*. The distinguished types are defined as follows:

- **TV Movie:** The TV movie is defined as a singular A/V product with feature-length (usually about 90 minutes). It has a fictional plot that is realized by the performance of professional actors.

- **TV Series:** In the following, a TV series will be defined as a collection of A/V products (episodes) that are connected by a cohesive fictional plot. The production of new episodes is conducted in batches called *seasons*. The episodes are usually broadcasted on a weekly basis, especially during the premiere broadcast.
- **Daily Series:** A daily series is defined as a collection of A/V products (episodes) that are connected by a cohesive fictional plot. The major difference to the TV series is the daily frequency of broadcasting that implies the continuous on-the-fly development and production of new episodes.
- **Entertainment Show:** In the context of this study, an entertainment show will be defined as a collection of A/V products (episodes) with a common concept. It can include professional as well as amateur performers (hosts, candidates etc.) and is not generally based on scripted dialog, although exceptions exist (sketch comedy, scripted reality). The production of episodes is conducted in batches called seasons.

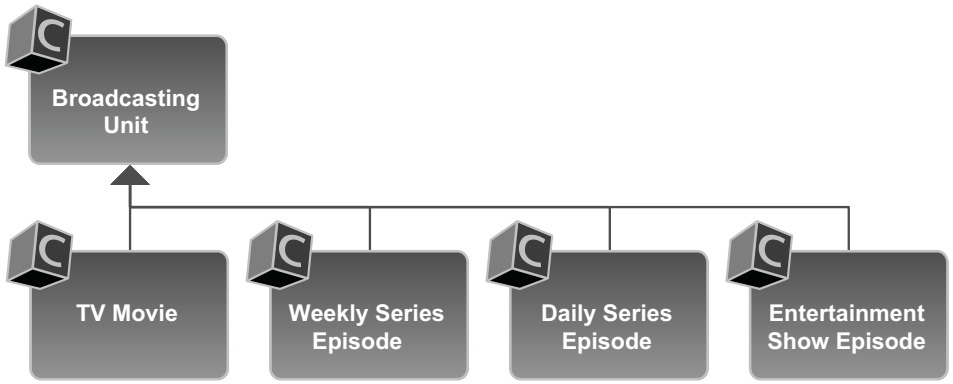


Figure 6.2: Product Types of the Study

6.2 Television Movies

Television movies represent the most elaborate fictional broadcasting format both in terms of production complexity as well as creative flexibility. Movies are also the most expensive broadcasting unit (cf. Table 6.2) and therefore pose an exceptional risk for both the broadcaster as well as the company contracted with its production, as the program manager of broadcaster III confirmed:

> "A great event-movie goes a very long way until you actually shoot. And then everything must be set up, this is the one chance you have, where you will not be able to make corrections."

Driven by their complexity, movie projects are long-term enterprises. However, the tight orientation on budget resource constraints and the close controlling through the client set the pace for all subprocesses. Screenwriter A described his perspective on this dichotomy:

> "There is a very high pressure regarding the tempo. Simply for the reason that a movie production is such a lethargic process. [...] It has to be written, then you have to shoot, then it goes to post-production and then you have to find a broadcasting slot. For a format from the first idea to the actual broadcasting it takes at least two years. And speaking of marketing: by then the parameters under which this has been produced [...] might be way over the hill."

As defined above, a TV movie is a feature-length (about 90 minutes) A/V product, that has a scripted fictional plot and is realized by the performance of professional actors. The contracting for this type of production is realized in two stages. The development of a movie will be funded by the client broadcaster according to a specific *development contract*. In concluding the development phase, the production company engages with the client to negotiate a *production contract*. At this point, the broadcaster will either affirm the commitment or the project will be suspended or even canceled.

6.2.1 Incubation

The phase of incubation for TV movies comprises the collection and evaluation of ideas and their advancement toward a *synopsis*. This written documentation of a movie idea acts as a foundation for both acquiring creative key personnel (e. g. director, lead actors) as well as for getting the further development under contract with a broadcaster.

As with other formats, the initiation of a movie project might result from different outsets. The active generation of ideas depending on a specific demand is described as being the default case by a movie producer of company A:

> "We have regular producer meetings, where we have a brainstorming toward specific requirements in a larger group. Where we consider sending slots and existing demands. [...] Eventually it comes down to small groups, someone has an idea, writes it down and consults a colleague for feedback."

While the development of movie content is driven by authors to a great extent, the original ideas are not generated by them in the majority of cases. Asked about the role of screenwriters in this early stage of development, producer (A) stated:

> "The authors will send in [their ideas], mostly to specific producers. Then you will have a look if that might do. However, many of the things we produce are actually our own ideas, where we will engage the screenwriter. But an idea coming from outside is a possibility and we will present that and discuss it."

6.2.1.1 Product View

The main products of the incubation phase are the *idea* for a television movie and its tangible form - the *synopsis*. Figure 6.3 shows these products and their relationships.

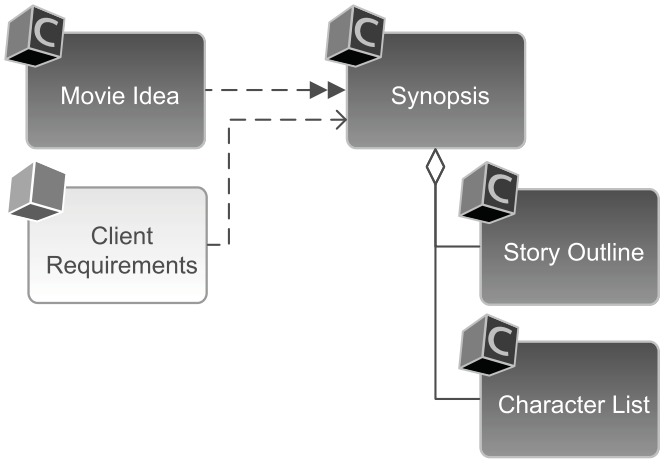


Figure 6.3: Product Model for the Incubation Phase of TV movies

The synopsis is a written document, that lines out the basic storyline of the movie and describes the main characters. Its intention is to generate interest and transport a notion of how the script will look like (Schütte, 2002). Asked about the usual length, a producer (PC A) stated:

> "That varies, about six to eight pages. That is, in many cases an idea will be captured on three pages. But basically you already have to prove that this is sufficient potential to fill 90 minutes. That takes six to eight pages. And with that we go to the broadcaster."

The synopsis is sent in to the broadcaster for review or it is presented during a pitch meeting. The form of *pitch presentation*, however, is neither as standardized nor as sophisticated in movie productions as in the entertainment product line (cf. Section 6.5.2.1). Thus, it is not regarded as a differentiated product here. Furthermore, movie ideas and synopses are generally not regarded as marketable or reusable assets. Producer (PC A) stated:

> "Ultimately it shows that ideas are bound to their time. I don't think there are many timeless ideas that are so great, that you can realize them five years later."

6.2.1.2 Organization View

In the beginning of a movie project, very few roles are engaged in the process. Figure 6.4 depicts the involved positions of the synopsis phase.

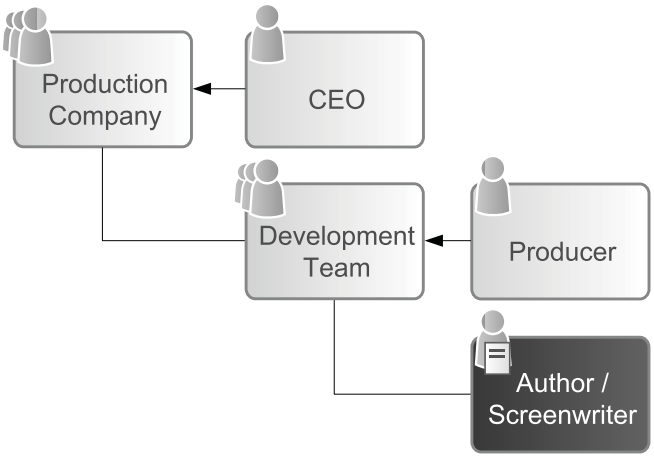


Figure 6.4: Product Model for the Incubation Phase of TV movies

Chief Executive Officer (CEO): The *CEO* will attend meetings with broadcasters to elicit demands. Since the development of synopses is funded by the production company, the CEO is consulted prior to any further development of a movie idea.

Producer: In contrast to the development of entertainment formats (c.f. Section 6.5.1.2), the producer is the central management role in the production of a TV movie. He or she will supervise the project over its entire life cycle and is the main contact for the client. In the movie section of production companies, producers are fixed employees that will specialize on specific subgenres.

Author/Screenwriter: The authors represent the essential creative workforce during the development of a fictional TV product (cf. Schütte, 2002). In this phase, their function is to write synopses to a given idea or set of requirements. Authors usually work as freelancers and are contracted for specific projects. This has been accounted for by modeling the author as instantiation of a *project position* type in the organization chart.

6.2.1.3 Process View

TV movies are brought toward a project structure comparably early in the process, especially in contrast to entertainment productions (cf. Section 6.5.1). The major reason for this is the strong orientation on particular demands of potential clients. The CEO of production company E emphasized this:

> "It is quite rare that an author will present an idea and says: 'I would like to do that for you.' It is how most people would imagine it, but that is rare. Actually, it is rather likely that an editor or program manager from a broadcaster will contact us and say: 'We would like to have this genre for that slot.' Then we will make an offer."

Figure 6.5 depicts the process hierarchy for the incubation phase of television movie development. The *client meeting* aims to elicit current demands and requirements toward new broadcasting content. The *producer meeting* serves as the internal breakdown (Seidel, 2009a) of these demands to generate concrete ideas for the movie development. The creative subprocess of *idea development* subsumes the solitary generation of new ideas by the in-house producers.

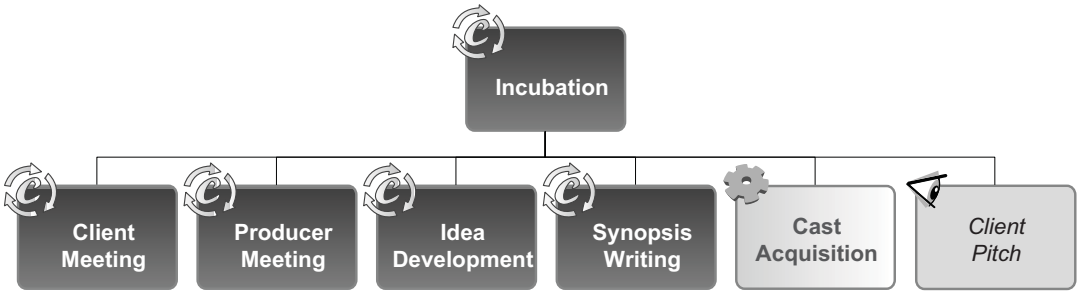


Figure 6.5: Process Hierarchy for the Incubation Phase of TV movies

The central creative subprocess of the incubation phase is the *development of the synopsis*. In this process, the author (or less frequently a team of authors) will generate a written representation of the movie idea. The synopsis is sent to the broadcaster or presented in a

dedicated *pitch presentation*. The pitch of a movie idea does not have a comparably elaborate function as compared to entertainment formats (cf. Section refsec2:IncubationE) but is utilized with increasing frequency. The evaluation of an idea will focus more on the originality of the presented content than on feasibility and structure. Thus, production companies are forced to diverge and invest into different ideas to successfully close a development contract. The Producer of Production Company A stated:

> "To clarify this, in order to sell one movie, to get a contract, you will likely have to develop 25 synopses."

A successful pitch will result in a development contract, i. e. the further development of the project is directly funded by the client broadcaster.

6.2.2 Development

The development phase is primarily concerned with the development of the script. Accompanying the content advancement, the production structures are preparatory planned and the budget is estimated. Aim of the development phase is the successful script review with the broadcaster and the closing of a production contract.

Due to the development contract between the production company and the broadcaster, the client will exert direct influence on the process of screenwriting. This immediate control entails a highly iterative work structure that will result in numerous script versions and intensive communication between screenwriters, the producer and the responsible editor. Freelancing screenwriter B affirmed this close contact:

> "As a rule, the editorial department wants to be part of the development. And you will involve them because it does not work any other way. [...] you will consult the editor with every single step."

In contrast to the accurate, cost-based calculation for the actual production, the development contract will fix a flat sum for the script. Concerning the development costs the producer (A) stated:

> "Because it is that expensive, you hope to bring it toward an actual movie, but this is not guaranteed. You only get a fixed sum so the actual costs are the risk of the

production company. [...] Public broadcasters will pay about 25.000 - 30.000 Euro. Private broadcasters will pay double but that includes a buy-out.[8]"

6.2.2.1 Product View

The product model in Figure 6.6 constitutes the essential outputs of the development phase. The main objective of this project phase is to transform the *synopsis* toward the *final script*. Depending on both the working style of the screenwriter and the requirements of the editor, this process will be broken down into iterative steps.

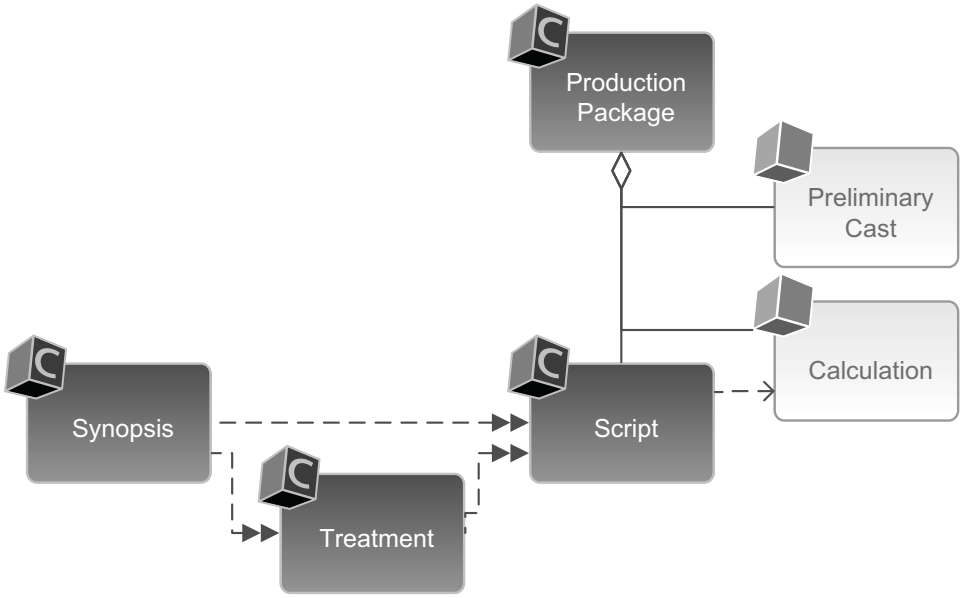


Figure 6.6: Product Model for the Development Phase of TV movies

A common intermediate product in screenwriting is the *treatment*. The treatment is a 15-20 page document comprising the detailed story of a movie without any dialog (Schütte, 2002). Depending on the way the project is advanced between producer and broadcaster, a treatment can also be created prior to a development contract as means to sell a more elaborate movie idea (especially if the idea origins with a writer). In certain projects, the treatment will be omitted altogether. Asked about the sequential breakdown of screenwriting Producer (A) stated:

"Ultimately every writer does it. You start with a synopsis, then you write a treatment, the story without dialog. And you make a scene treatment, what is happening in

[8] The term *buy-out* refers to the contractual transfer of all copyrights to the client.

> each scene. And finally you fill in the dialog. But some authors will immediately start writing a script. It depends on how they work."

According to this, the treatment in movie development does not have a comparably formal role as it has in television series production (c.f. 6.3.2). The reason for this can be found in the weak relevance of the division of labor between screenwriters for this product line and thus the missing necessity for defined points of transfer. Producer (A) highlighted this difference:

> "With a single piece you have this certain creative freedom to stay really close to the original vision of as few people as possible. I think the more people are involved, the more it will become a compromise. [...] I don't see any advantage of writing a single piece with as many people as possible."

The transition from the treatment to the *script* marks the beginning of a highly iterative process gradual refinement. The script for a 90-minute movie is usually about 90 pages long written document (following the "one-page-one-minute" rule of thumb, cf. Kellison (2005, p. 43), Schütte (2002, p. 187)). The advancement of the script will be supervised by the producer as well as the responsible editor on the client's side. During the development phase, the script will pass through multiple phases of revision. Talking about script versions, the producer (A) stated:

> "There were projects where we had only six script versions, but then there are projects where there are twelve. This is of course a nightmare for all authors and for yourself. [...] And quite frequently the third version will be worse than the first."

Along with the content-related progress, the production set up is planned. This includes a detailed *calculation* on which basis the production contract will be closed. Prerequisite for a detailed calculation is a script version that is near its finalization, i. e. it is stable in terms of cost-driving factors such as number of locations, number of characters, required night shots or special effects. However, the production management team will start calculations early accompanying to the content development. The head of production of company D described his approach:

> "To read a script from a production perspective is a standardized process. You count the number of locations for example, the number of lead and supporting actors [...]

> You will also develop some kind of virtual shooting schedule already from a treatment, where you predict things like the number of shooting days. Simply to have some figures during the development phase."

As another part of the production setup, the producer will begin to fill the key positions of the *cast and crew lists*. This includes especially the director, the unit production manager and lead actors.

6.2.2.2 Organization View

The creative progression of a movie project will generally be continued by the same roles involved in the creation of the original idea. With the preparation of the production contract, the production management will begin to develop the organizational structure of the project.

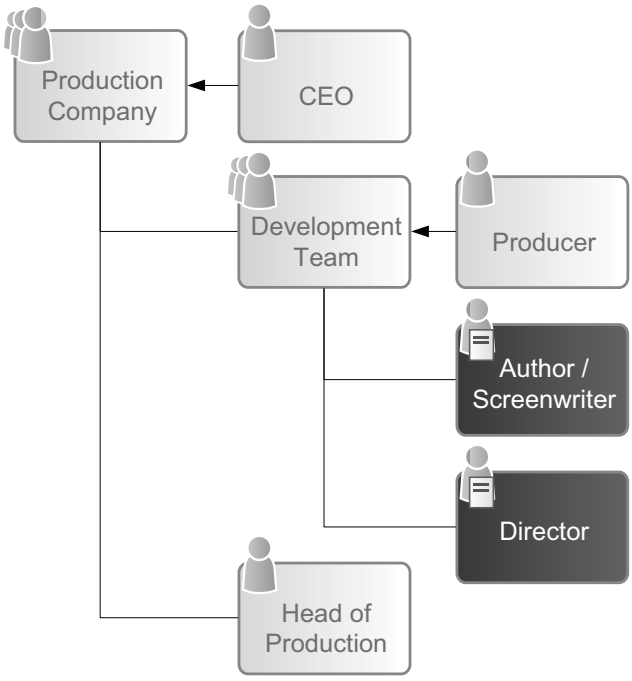


Figure 6.7: Organization Chart for the Development Phase of TV movies

Head of Production: In the phase of movie development, the Head of Production (HoP) is responsible for making a detailed calculation on which basis the production contract is set. In coordination with the producer, the HoP will make personnel decisions regarding the production unit of the movie project team (esp. unit production manager).

Director: The entry point of the director varies among individual movie projects. Due to the essential influence on the outcome of the project, he or she might already be involved in the later phase of script development, as the program manager of broadcaster I reported:

> "In this case the director was part of the later script meetings [...] in order to incorporate their visual ideas into the screenwriting, so that you don't suddenly rewrite the script or parts of it on set, just because there are some new ideas."

The interviewed freelancing director affirmed the variable point of entry:

> "This [points at content development] might be an area where I already get in, or maybe not, depending on the production. It depends on what you are hired for."

The *editor*, as the agent representing the client broadcasting company, has a great influence on the development of a movie project. Due to the very high financial risk of this product line, the broadcaster aims to control the product quality from the very beginning of the creation.

6.2.2.3 Process View

The essential creativity-intensive subprocess of the development phase is the creation of the script. Especially in the product line of television movies, the uncertainty regarding the process structure (such as number of iterations and sequence of activities) is comparably high. Figure 6.8 depicts both the generation of the story treatment as well as the scene treatment separated from the dialog writing as sub-PoCs of the screenwriting. However, depending on the working style of the screenwriters, these subprocesses will blend into each other.

The process of screenwriting is subject to recurring reviews both internal and external. The internal reviews with the producer serve as means of a quality assurance measure before sending a script version to the editor at the broadcaster. Movie producer (A) gave the following reason:

> "The writers will send their version to me first. I am sort of a link in-between, so I will decide whether to send it on or not. If I have the feeling that sending this version will kill the project... well, generally you will revise this before sending it to the broadcaster [...] Then there will be a meeting including the writers."

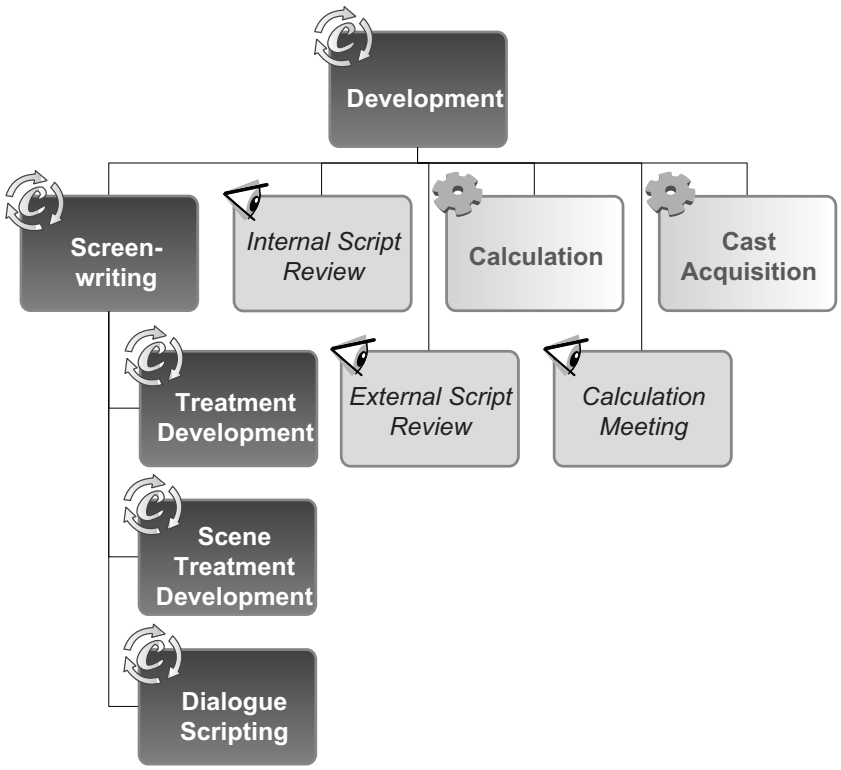


Figure 6.8: Process Hierarchy for the Development Phase of TV movies

Although the potential for divergence in content associated with movie projects is very high, the very close interaction and tight control exercised by the editors result in a restriction of the writer's creative freedom. Freelancing writer B contrasted movie productions with writing for daily serial fictional formats:

> "Compared to, say, a television movie – these are regulated much harder in a sense through these numerous editor meetings you have there and directors and whatnot. It is much more constrained regarding the dramaturgy. Everything is scrutinized about and actually this constrains creativity much more, especially later in the process. You can come up with many ideas at first but afterward they will not be implemented."

As parallel subprocesses, calculation and cast acquisition have been identified. The *calculation* is based on the script and will be conducted by the head of development. The calculation will be reviewed and negotiated in dedicated calculation meetings between the producer, the head of production and the editor. The broadcaster's willingness to pay, however, is quite predictable as the movie producer (A) confirmed:

> "And then you have a script and there is of course a calculation if the broadcaster approves of the script. Then there will be a calculation meeting. In general you always know what a broadcaster will spend. Only for special programs such as historic movies or for very expensive actors you might get more if you are lucky. In the calculation meeting you will see, if it is feasible. If not, that means revising the script."

This statement exemplifies, how subprocesses that are evidently not deemed as being creative can influence the creative process. They induce feedback loops that are not caused by artistic dissent, but rather stem from priorly unknown or more precisely ill-defined resource constraints.

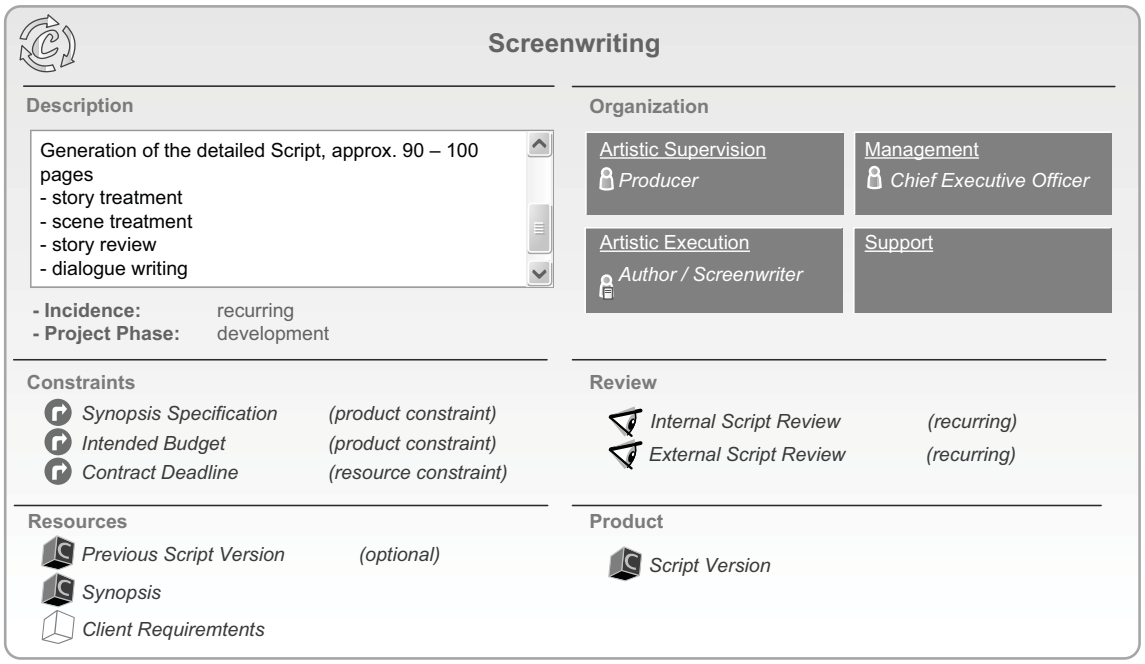


Figure 6.9: PoC Sheet for Screenwriting

In Figure 6.9, the screenwriting has been modeled by means of a PoC Sheet. The screenwriting is perceived as being a highly creative process that relies on the talent and expertise of the screenwriter. However, the work of a screenwriter in a contractual context is constrained in many respects, as one of the interviewees affirmed:

> "If you come to writing, the degree of creativity grows notedly. There are hundreds, thousands of possibilities to tell a story. [...] But especially in screenwriting there are many parameters and contextual factors that have to be met, that constrain you. [...]

> you have production conditions, budgets or simply the three-act structure if it is not an experimental movie."

These constraints have been accounted for in the model. Since the development contract is based on the approved synopsis, the screenwriter is constrained by the parameters set by the document. This might pose a special challenge, if authors should be exchanged during the process of development. Constraints regarding the *production budget* will occur as results of calculation meetings, where the client might pare down or cancel out certain positions. This has potential implications on a script such as the deletion of characters or the rewriting of story parts to cut filming locations.

The *cast acquisition* refers to the recruiting of key positions that both have a direct influence on the project's characteristics and that are therefore involved in the development of the script. The recruitment will be conducted in close communication with the responsible editor who will approve of the key personnel. More than with any other product line the selection of the director for a TV movie has an essential impact on its implementation and will therefore be made as early as possible. The acquisition of lead actors is also initiated. The program manager of broadcaster II stated:

> "This is straightforward: I need the script, the calculation, a review and then I make a casting. And not until I have the perfect actor and a director, I can initiate preparations with the departments. At some point we organized these processes for not to pay an outfitter for six weeks without having an actor yet."

Similar to the process in entertainment production, the development phase concludes with a closed production contract with the broadcaster. While the risk of aborting or freezing the project at this stage is existent, the interviewed experts stated this as being the exception. As a more immanent risk development costs exceeding the contractual development budget were stated. If occurring, these expenses must later be balanced with the production budget and will therefore cut profit margins.

6.2.3 Pre-Production

Similar to other product lines in television production, the start of pre-production is marked by closing the production contract with the broadcaster. The activities in this phase include the complete casting, recruiting and contracting, the meticulous scheduling of the shooting,

as well as the provision of equipment and material. A specific pre-production activity of *scenic productions* is the scouting for appropriate shooting locations.

6.2.3.1 Product View

The script is the basic resource of the pre-production phase since it will determine the necessary personnel and production means for the actual shoot. The creative products generated on the basis of the script require both its interpretation as well as film production expertise of how to transport a specific desired effect through the camera.

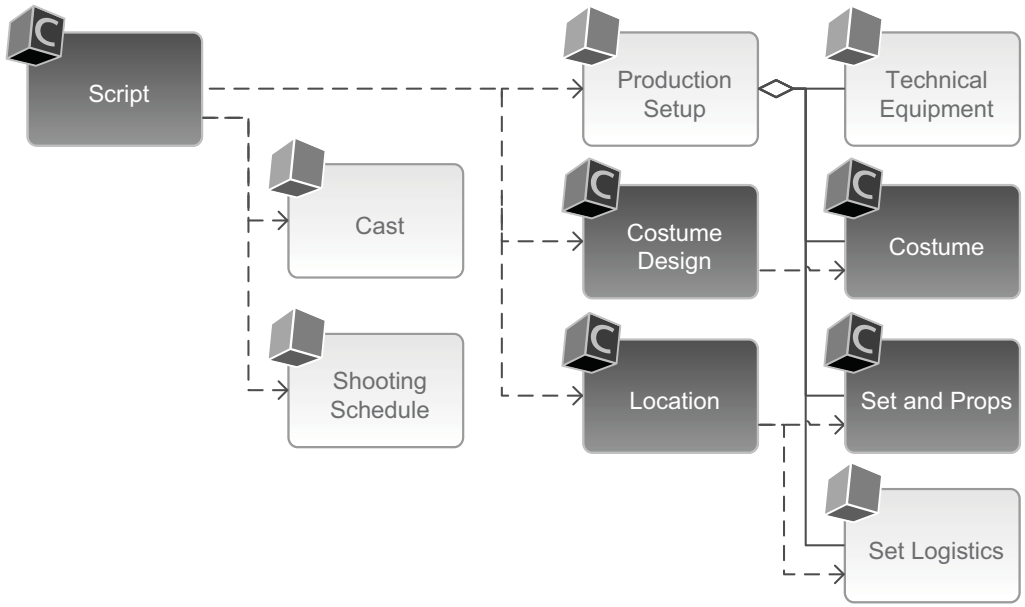


Figure 6.10: Product Model for the Pre-Production Phase of TV movies

Figure 6.10 depicts the product structure of the preparation phase[9]. The division of the production setup points toward the departments involved in the preparation. The categories as such do not differ greatly from other product lines. However, their instantiation is carried out much more deliberately in movie projects.

Especially the selection of *shooting locations* has great influence on both the final product as well as necessary resources and the production process. Depending on the particular plot, a television movie will be shot at several locations that have to meet requirements regarding both visual quality (adequacy for the story) as well as feasibility for the production

[9] The term preparation phase is used as a synonym to pre-production.

(availability, rent, accessibility, adaptability and versatility). For a particular scene, a location scout will typically find a number of locations as the interviewed set designer stated:

> "In most of the cases it is two or three suggested locations, and often directors will want to visit all of these."

The found locations are generally adapted to the specific demands of a scene. This might include complete redecoration and refurnishing that has to be restored after filming. The set designer as head of the props department also attends to special scene requirements:

> "You have to consider animals and their trainers [...] then there is the matter of cars and streets, if you have whole streets where road signs have to be hidden and historical signs installed [...] the complete indoor decoration, props [...] food, if it is made in the scene."

The necessary *technical equipment* will be derived by the script as well. Special technical requirements may arise from scenic visualizations like underwater or aerial shots, special effects (fire, explosives etc.), stunts, extended scenes inside moving vehicles etc. (Collie, 2007, p. 199) Depending on the genre of the movie, the *costume design* is an important component to transport the story visually. This is especially crucial for movies in historical settings or genres like fantasy or science fiction.

6.2.3.2 Organization View

The pre-production phase is concerned with the recruitment of all necessary staff for the actual production. The size of a film crew is dependent on the complexity of the shoot as derived from the script. Numbers quoted during the interviews refer to up to 150 people that are engaged for a time in the overall production phase of a movie. The project team of a movie production can be divided into roughly two groups. The *creative unit*, supervised by the director, and the *production support unit*, supervised by the production manager. These two units work in close conjunction but also with goals that oppose each other to a degree. While the creative unit will want to maximize the quality of the creative product, the production support has to keep expenditures to the given budget to ensure the profitability of the project. For reasons of clarity, the organization chart depicted in Figure 6.11 omits the organizational structure above the project organization.

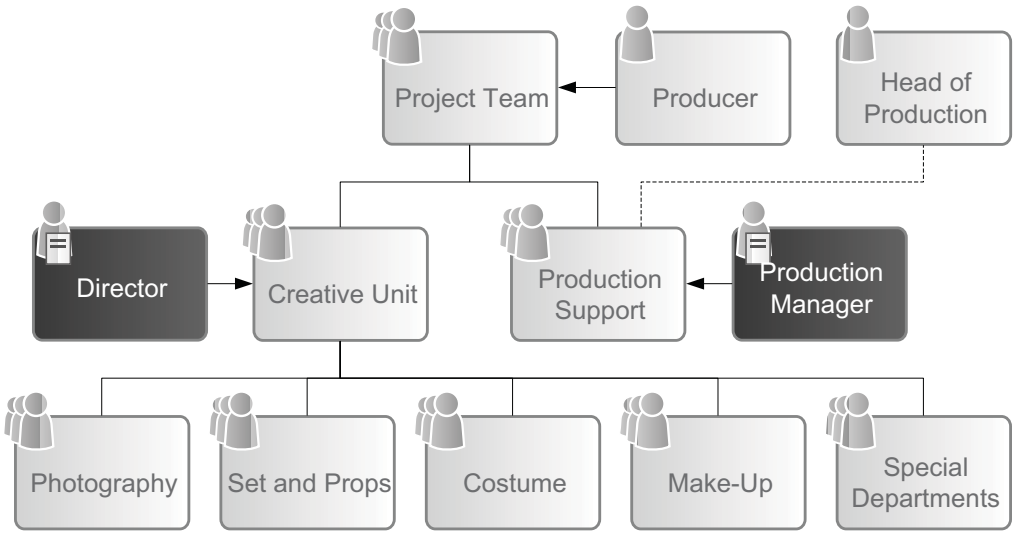


Figure 6.11: Organization Chart for the Pre-Production Phase of TV movies

The key positions in the preparation phase besides the producer are the *Director*, the *Production Manager* and the *Head of Production*. The model depicts the departments that constitute the creative unit of the production.

Production Manager: The production manager is an essential position in the phase of production preparation. In coordination with the Head of Production, he or she will negotiate and close the contracts of the complete crew. During the script breakdown, the production manager will derive the shooting schedule dependent on the availability of actors, special crew and locations. The production support office is the information central of the production.

Director: In movie productions, the director will either directly select the crew members of the creative unit him-/herself or at least will have a strong voice in the decision process. During the script breakdown, it is his/her job to identify potentially difficult scenes that might require special time, equipment and/or crew and so negotiate with the production manager about the scheduling and contracting. Asked about the communication during the preparation phase, the interviewed director stated:

> "...with the producer and the production manager definitely. At that point there is still room for creativity. [...] If I know the budget I can come up with ideas. Like, this scene needs to be made big to work, here I need certain resources to get the story

> across. Where can I find a scene that might be simplified compared to the script. That is always some kind of trade that you make both inwardly and in coordination with the producer and also the production manager."

Creative Departments: In the preparation phase, the heads of the creative departments will be introduced at some point for individual preparations depending on the requirements derived from the script. Generally, the *set and props* department will start searching for adequate shooting locations by employing *location scouts* as early as possible. The *costume designer* will be introduced into the process a certain time before the actual shooting, depending on the number and complexity of costumes required. However, the handling time is cut as short as possible to save personnel costs. The set designer reported of one particular project:

> "That were 21 shooting days. We had the luxury of three weeks to search for locations and another four weeks for building the set. [...] A lot of positive factors concured there: we knew each other, we had enough time and the budget was already set. It was an ideal project. But sometimes you are hired at very short notice for whatever reasons [...] then you have only three weeks for everything."

6.2.3.3 Process View

The central subprocess of the pre-production phase is the *Script Breakdown*. Here, the director segments the script according to locations and required cast and identifies sequences with special requirements such as night shots, effects, stunts etc. This compilation is the foundation for the preparations of the different artistic departments such as *Costume* and *Set Preparation*, as well as for the *Shoot Scheduling*.

The *Recruitment* and contracting is conducted in a manner of cascading responsibility. Although the producer is formally responsible for personnel decisions, the director has a strong voice in the selection. The respective department heads might in turn suggest the staffing of their subordinates. Thus, the personal network between film crew members has an essential influence on its compilation.

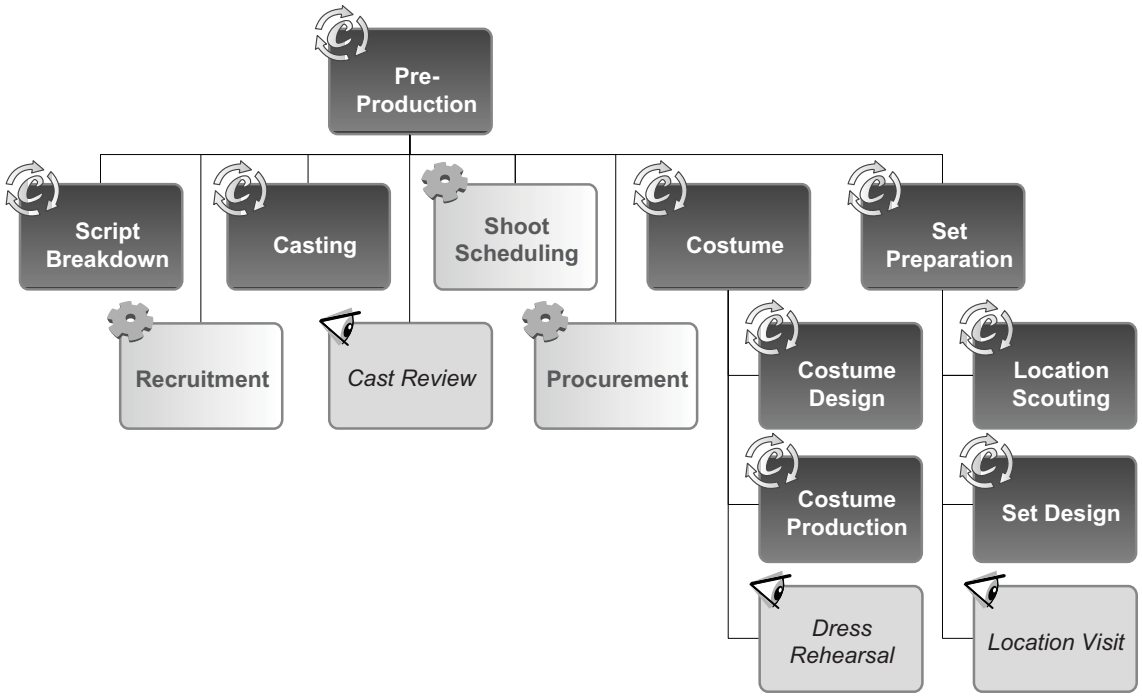


Figure 6.12: Process Hierarchy for the Pre-Production Phase of TV movies

6.2.4 Production and Post-Production

The production phase comprises the day-to-day activities of shooting the movie. This includes daily preparation procedures such as reorganizing the set and transportation of cast or equipment, the actual production of footage as well as the wrap-up including reporting and continuity tasks. This phase is the most people-intensive part of a movie project and therefore requires meticulous coordination of the different departments.

In contrast to the industrially produced media formats, on a typical shooting day only 3 to 4 minutes of the final product are produced, resulting in a production phase of approximately 5 weeks for a feature-length piece.

6.2.4.1 Product View

The outputs of the production phase comprise a multitude of contributions of the involved personnel to the functioning of the shooting procedure. However, the central product is the *Footage* produced, referring to the audiovisual material recorded on film or digital media. Figure 6.13 depicts the most relevant products of the shooting.

The production management devises a daily *Call Sheet* from the *Shooting Schedule*, usually

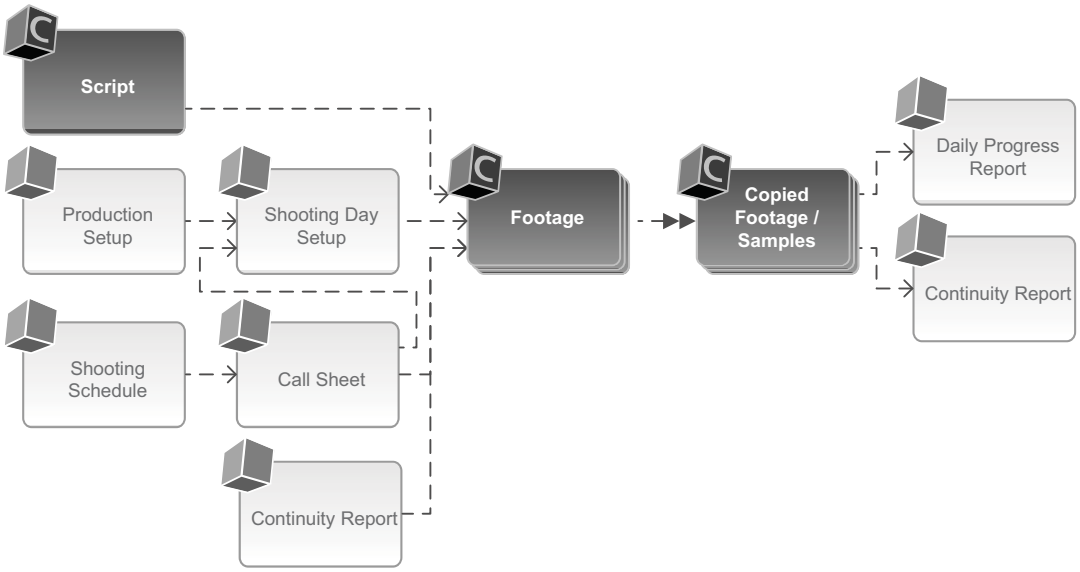


Figure 6.13: Product Model for the Production Phase of TV movies

on the evening before the next shooting day. This document contains information about the sequence to be produced, about required equipment, props and costumes as well as about the exact schedule and location. The call sheet is the essential source of information for all people on the set. Thus, the production management expects all involved personnel to internalize it as the director emphasized:

> "These are the situations where I say: 'Guys, there is the call sheet, it is to be read every evening so that you know what will happen the next day.' And one should be able memorize to this, it is one workday."

The basis for the artistic departments is the *Script*. Its interpretation both by the director as well as the actors represent the remaining creative freedom in this phase of the project. The *Shooting Day Setup* is a coarse generalization of all the daily prerequisites for the actual shooting that are prepared by the different departments.

Not all of the shot material is routed forward to editing. On the set, the director will immediately decide what footage is to be copied. This *Copied Footage* is sent for review to the producer and in most cases also to the broadcaster as the day's *Samples*. This material will usually already be digitalized, even if the movie is shot on film.

The *Continuity Report* lists details about the shot scenes, their cumulative timing, the scenery setup and camera frames. It is crucial for connected sequences that are shot in

several takes to reproduce the setup when such a scene is continued. This enables the film editors to seamlessly join the sequences in the post-production. The *Daily Progress Report* lists information essential for the controlling of the project such as the progress according to or deviating from the shooting schedule as well as resource expenditures.

Figure 6.14 depicts an extract of the post-production product structure. The *Rough Cut* is the first edited version of the shot material and represents the approximate sequencing of the takes. The rough cut is subject to the first major review of the movie before the audiovisual finishing takes place.

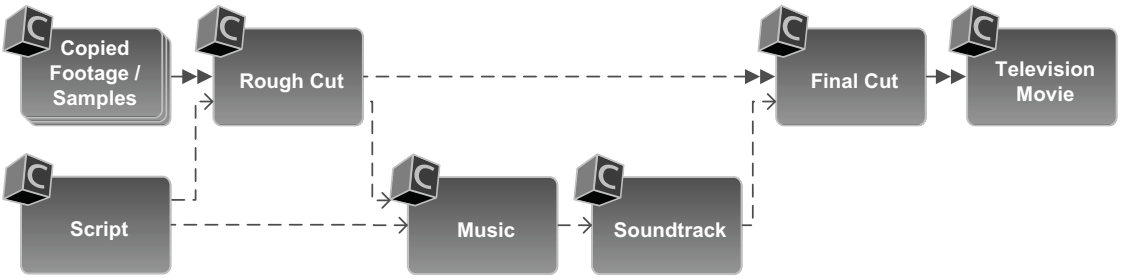


Figure 6.14: Product Model for the Post-Production Phase of TV movies

The process step from the *Rough Cut* to the *Final Cut* comprises the film editing toward the final sequence structure of the movie. Depending on the given priority, the composition or selection as well as the production of the film's *Music* is initiated within or before the production phase, especially if the music is used during the shoot. During the post-production phase, the recorded audio is merged ("mix-down") with the music and additional sound recordings (e. g. narrator) to the *Soundtrack*. The finalizing step to the finished *Television Movie* comprises final minor edits and the production of an intro and end titles. Promotional trailers will usually be produced in-house at the broadcaster.

6.2.4.2 Organizational View

In the production phase the project team increases to its maximum number of people employed. This implies the greatest part of the project's labor costs, although this phase is comparably short. Figure 6.15 gives a broad overview over the departments involved and their respective staff. The model shows an alternative visual syntax. The project positions are associated with their organizational unit through spatial inclusion rather than edges, which allows for a more compact representation. The semantics and underlying meta-model, however, is identical.

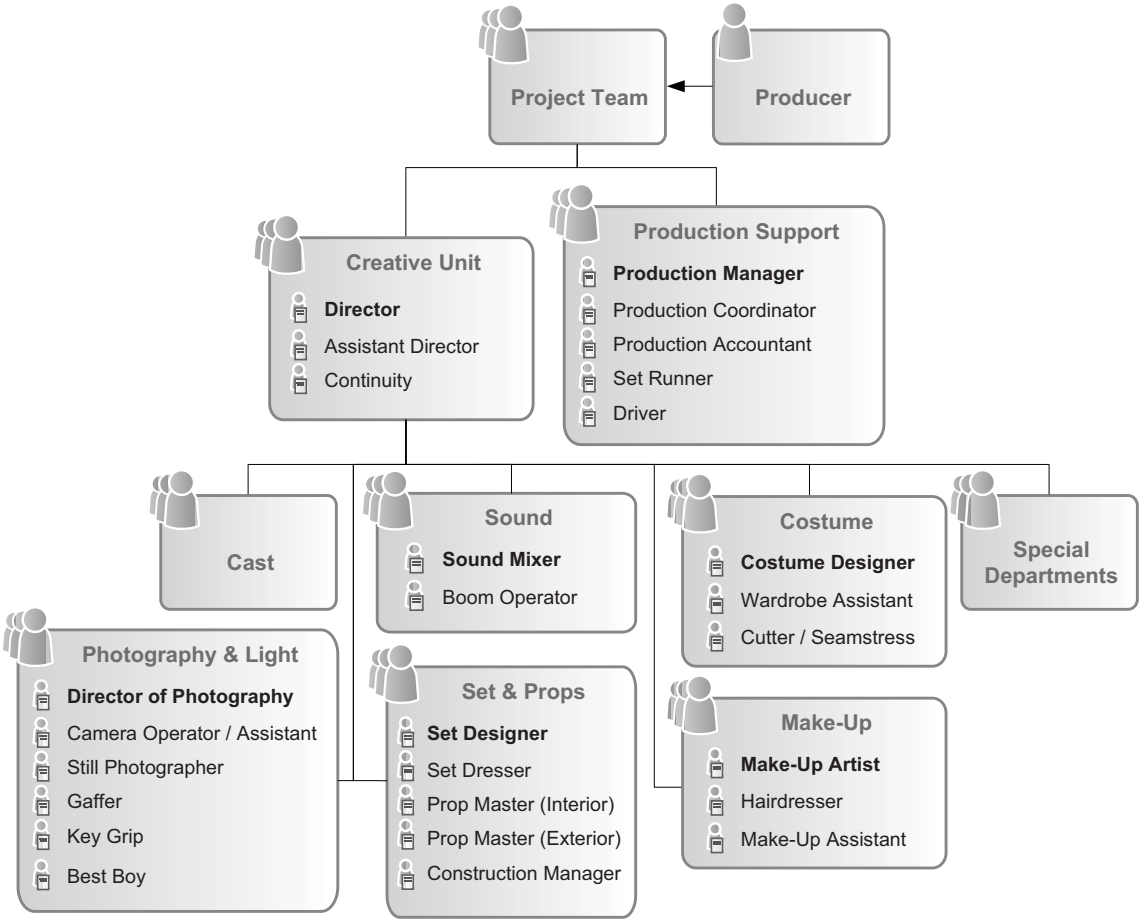


Figure 6.15: Organization Chart for the Production Phase of TV movies

The model exemplifies the typical movie production team. The actual crew, however, varies between every project depending on the genre, budget and priorities.

Production Support: The production support team is responsible for the administrative functioning of the running production. This comprises the planning of shooting days, organization and coordination on set, as well as documentation and reporting. While the production manager is responsible for the financial aspect of the production, the production coordinator organizes the crew on set.

Creative Unit: The creative unit comprises the cast and the crew directly contributing to the creative product. The director is the supervisor on set and is supported by one or two assistant directors as well as the continuity.

Departments: The different aspects of the shoot are organized within the departments that work in close interaction to each other. Depending on the budget of the production, some of these may be represented by a single person or positions may be staffed multiple. The element *Special Departments* refers to optional units that are required for some productions such as animal trainers, special effects crew, stunt men, vehicle technicians, underwater camera etc.

6.2.4.3 Process View

The process hierarchy analysis reveals the structure of the production phase, showing the daily *Preparation* and *Filming* as the central subprocesses that will iterate in alternation before the approved copied material goes into the rough edit in post-production. The weakness of this view is clearly the omission of sequential information as it is indicated from the product structure.

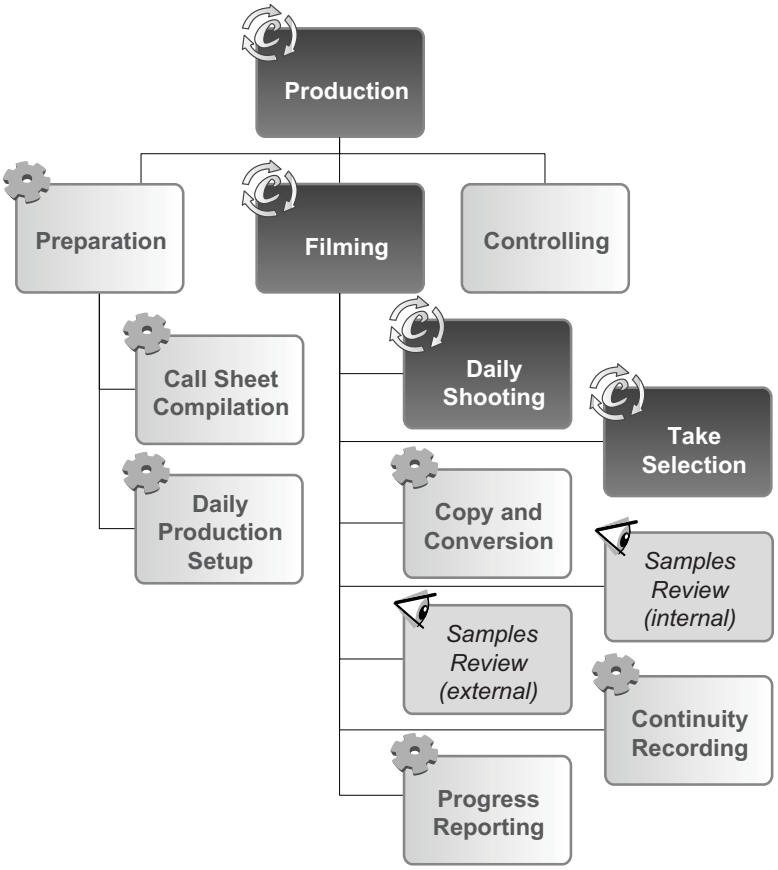


Figure 6.16: Process Hierarchy for the Production Phase of TV movies

The planning on a daily basis is due to a very high demand on process flexibility, since the shooting is dependent on a complex set of prerequisites. Contingent influences, such as declined or delayed filming permits, unplanned off-times of actors or crew or weather affect almost every production. To avoid the immense costs of delay, rapid and flexible replanning is necessary in such situations.

The interior and exterior *Review of the Samples* feed back into the running production and affect the remaining shoots. In exceptional cases the team is required to retake a sequence, which is a critical disturbance in the production schedule.

Several reporting and documentation activities have been modeled as regular subprocesses that either occur in the daily *Preparation* or along the shoot. The production management's outputs of the daily *Progress Reporting* are accumulated and passed on to the head of production for means of *Controlling*.

The post-production phase (cf. 6.17) commences with the *Rough Editing*, where the film editors and the director arrange the sequences in their final order. The *Rough Cut Review* is the first major approval step of a movie project toward its finalization. The broadcaster gives detailed feedback that is incorporated during the *Final Editing* and *Audio Editing*.

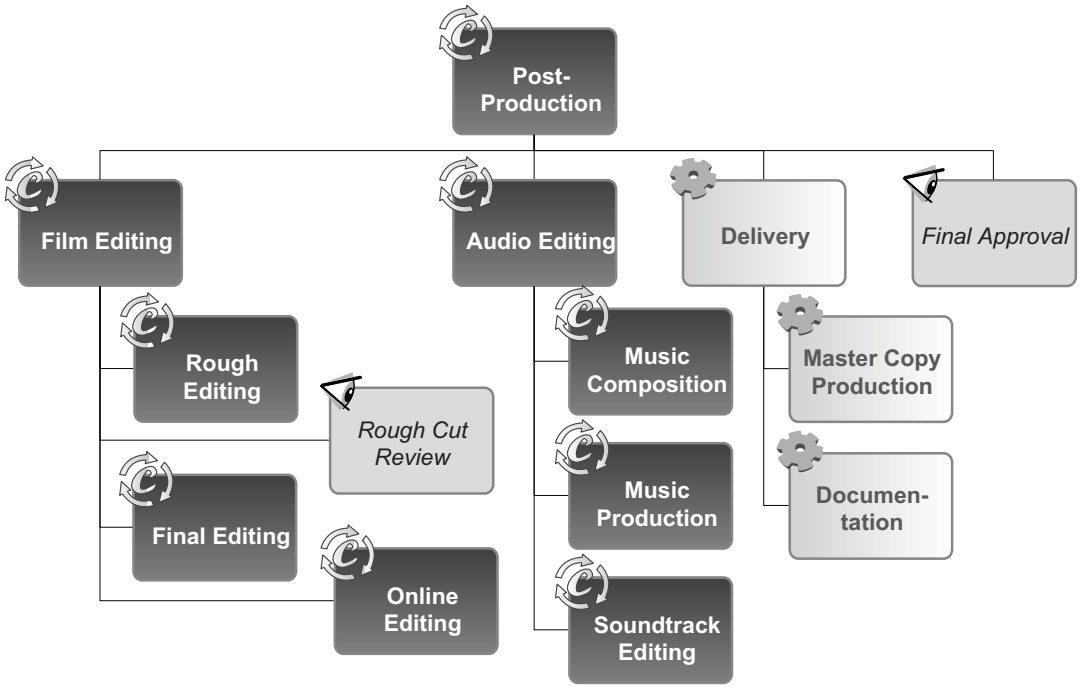


Figure 6.17: Process Hierarchy for the Post-Production Phase of TV movies

The *Online Editing* represents the final step of post-production. It applies the editing

information made during the final editing (offline-editing) to the original shot material. In this subprocess, beginning and end titles are added and technical corrections such as color grading and light correction are made.

6.3 Television Series

The product line labeled as television series refers to series that are broadcasted at a weekly basis during the German *primetime* (evening program from 8.15 to 10.15 pm) or *access-primetime* (early evening before news). The TV series shares several production properties with the television movie in both development as well as production. The German TV series has considerably lost relevance in the last 10 years, especially among commercial broadcasters. The major reason for this as has been stated by the experts within the study is the rising cost pressure along with a decreasing audience interest for the format. Also a certain lack of innovation as compared to other product lines was highlighted by the expert producer accompanying the stud<:

> "The audience's liking perpetually changes. And while the new reality formats were constantly probing and offering new variants, the 'classical fiction series' basically remained unaffected. But suddenly these were less close to the audience, because compared to the 'close and authentic' formats the artificiality and dedicated design of many fictional productions became more obvious."

The "classical" television series especially lost market share to the upcoming reality and show formats, that, while better attracting the central target group of the 14-49 year-old audience, where produced at considerably lower costs. Among the public broadcasters, however, television series are still an essential component of program design.

6.3.1 Incubation

The incubation phase of a television series comprises the generation of new series ideas and their explication in a series concept. As with daily series (cf. 6.4.1), the initiative usually originates at the broadcaster, who will bond specific requirements to the inquiry. Similar to the development of TV movies, the aim of the incubation phase is to successfully pitch the concept to close a development contract.

6.3.1.1 Product View

The incubation phase is concerned with developing a *concept* that will outline the series in a way sufficient to convince the client of its potential for success in order to close a development contract. The program manager from broadcaster I described the typical form for such concepts:

> "Generally it comprises the idea that is presented. What is the series about? It contains a character handbook and it contains the narrative structure, the exposition and a rough sketch of the story arc. This is what forms a series' concept."

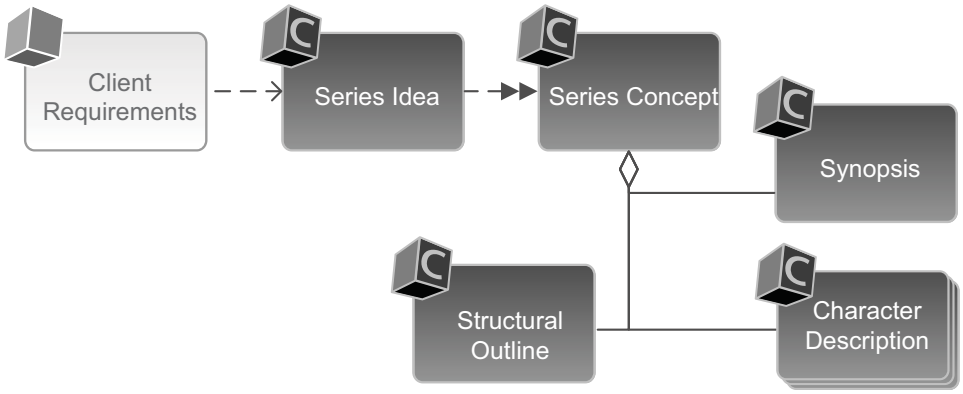


Figure 6.18: Product Model for the Incubation Phase of Television Series

6.3.1.2 Organization View

The organizational structure of a television series production basically resembles the organization of TV movie productions in the phase of incubation (cf. Section 6.2.1.2). Thus, the organization charts of both product lines in this phase are modeled identically (cf. Figure 6.4 in the aforementioned section).

Due to the greater extensiveness of the production volume compared to movies, however, television series are only contracted to companies with a certain size, number of personnel and level of experience. The producer employed as expert consultant in the study highlighted this:

> "Because of the higher overall costs and the longer time as compared to a single movie, the selection and influence of the broadcaster has more relevance. This means that [...]

> production firms with corporate affiliations to the broadcaster might have strategic advantages [...] It is extremely rare, that a new company manages to get a first series production."

This outset minimizes the opportunities for small production companies to entry the market for television series production. This also suggests a possible explanation for the perceived lack of innovation in this product line.

6.3.1.3 Process View

The processes in the incubation phase concentrate on the development of a concept based on the specific demand of the broadcaster in bringing it to a successful *client pitch*.

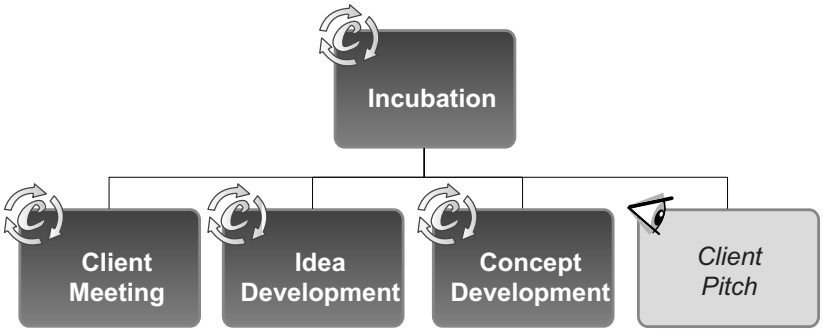


Figure 6.19: Process Hierarchy for the Incubation Phase of Television Series

Since the production companies that are generally considered for contracting of a television series are few, personal *meetings* with the client are a feasible outset for a new production. However, public requests for proposal are also a possibility, although these are more associated to daily series productions. In both cases, the broadcaster will explicate the requirements for the broadcasting slot, intended genre and target group. The PoC of *Idea Development* represents the internal breakdown of these requirements in order to derive possible series ideas. The concrete realization of this subprocess varies depending on the production company. Usually the idea regarded as bearing the most potential will be further developed to a series concept. The *concept development* is conducted by a contracted screenwriter or a small team of writers. The phase of incubation for a series is a potentially protracted process. The *client pitch*, rather than being a concise event of presentation, is a perpetual iteration of concept revision and review. Similar to movie projects, the end of the incubation phase is marked by the closing of a development contract.

6.3.2 Development

The development phase comprises all project activities based on the development contract and aims to lead the television series toward a production contract. The central activity of the phase is the development of a certain number of episode scripts that will be reviewed by the responsible editor at the broadcaster.

In contrast to movie projects, a new series development might additionally require the production of either a pilot movie or few episodes that are either appraised by the responsible decision makers or actually broadcasted and evaluated based on viewer ratings.

6.3.2.1 Product View

Drawing from the approved *series concept*, a *season outline* will be developed as the story synopsis spanning the intended first season of the series (cf. Figure 6.20). Contrasting to the development of a television movie, the development contract for a series will not comprise the development of the complete scripts of a season, but rather a given set of episodes. The selection of episodes does not necessarily have to represent the beginning episodes. In the case of the production of a *pilot movie*, any point in the storyline can be chosen that is deemed the optimal representation of the series' potential.

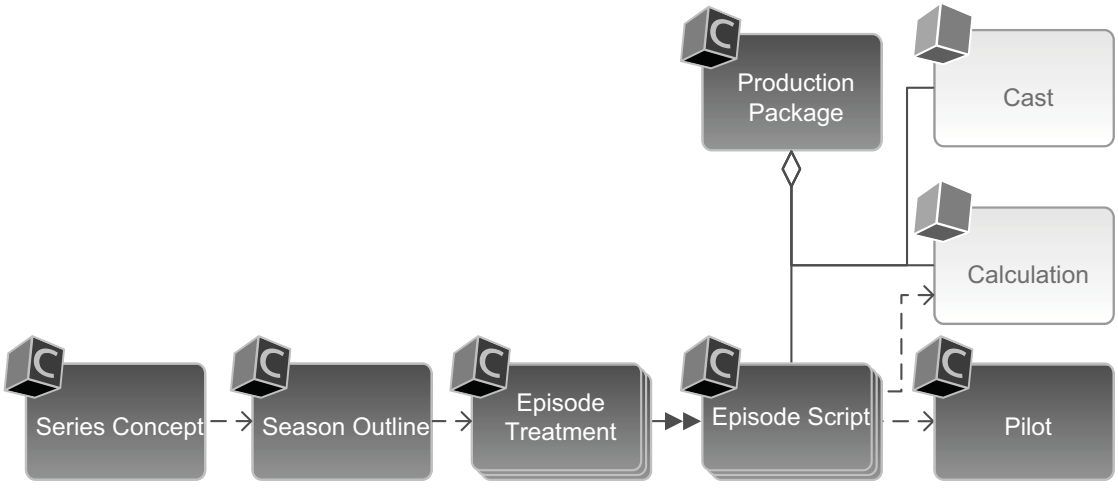


Figure 6.20: Product Model for the Development Phase of Television Series

The chief editor of broadcaster I described the overall development process:

> "For example four scripts are ordered and not until those scripts are accepted there will be a production contract. That means to have a script contract is no guarantee

> that there will be a series. First there is the decision 'Yes, we like the scripts, we can give the production to you.' Then there are calculations, the production company has to submit a calculation and discuss it with our program management. I myself might have a look, but we actually divide this [...] I don't really negotiate that..."

The writing of *episode treatments* is not a measure of division of labor as it is with the development of daily series episodes. It is rather the consequence of a dedicated client touch point for reviewing the episode's storyline before dialogs are incorporated, so that the episode treatments represent a tangible intermediate product. The constraining influence of the broadcaster has been highlighted by screenwriter A:

> "It is not possible anymore to develop a series based on an idea or vision. The broadcasters are so concerned about target groups and ratings that you necessarily write on format, because otherwise you cannot sell anything."

The *calculation* is an important component of the production package in that it is the basis for the production contract negotiations. The production efforts made for a television series resemble that of a television movie. While reuse of locations and sets as well as good capacity utilization of personnel offer cost savings, the television series represents one of the most expensive formats in terms of total sum.

The *Pilot* stands representative for actual filmed material produced within the development phase. This can be a short presentation, a complete pilot movie, representing a highlight episode, or even a small number of episodes that will be broadcasted as a means of an audience test. The product structure is abstracted to a high degree. These productions have similar requirements to the actual production as described in the (pre-) production subsections.

6.3.2.2 Organization View

The organization of television series development is again widely similar to that of a movie production. The organization chart in Figure 6.21 takes the building of a production team into consideration if a pilot unit is produced.

Screenwriter: The screenwriter works in a similar manner as compared to movie productions. However, the contact between writer and production as well as the client is even

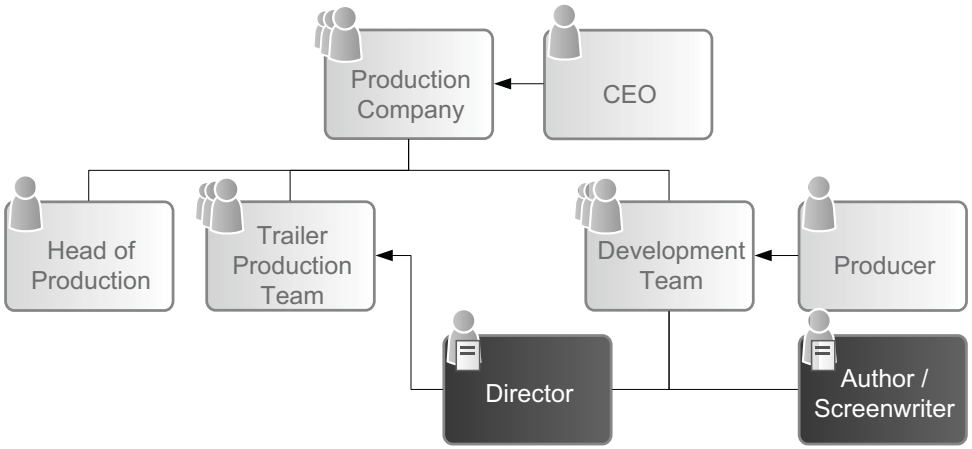


Figure 6.21: Organization Chart for the Development Phase of Television Series

closer in series production. The screenwriting is generally conducted by a single author or a small team without a dedicated inner structure. Although the writing of treatments and dialogs is done sequentially, there is usually no apparent functional division among the writers as it is found in daily series productions. Screenwriter A affirmed this when asked about the difference:

> "Well [this particular project] actually is not that different compared to a daily since it is produced industrially as well. That means it is quite rigid concerning story guidelines that have to be met. However, it has not this extreme division of labor. You are still a genuine screenwriter there, which means you develop the story all the way from its core to the final script."

Director: The selection of an adequate director is especially relevant if the development contract envisions the dedicated production of a pilot. As the creative supervisor of this preliminary production, this position has much influence on the impression of the product on the client. Later in the process, it is not uncommon to employ two or more directors that alternately supervise the production.

6.3.2.3 Process View

Figure 6.22 depicts the process hierarchy for primetime series development. The outlined structure strongly resembles the development of daily series (cf. Figure 6.33). However, the creative subprocesses are more loosely linked and less constrained – both regarding

structure as well as content. The major difference to the development of a movie is the occurrence of shootings, represented in the model by the subprocess of *Pilot Production*.

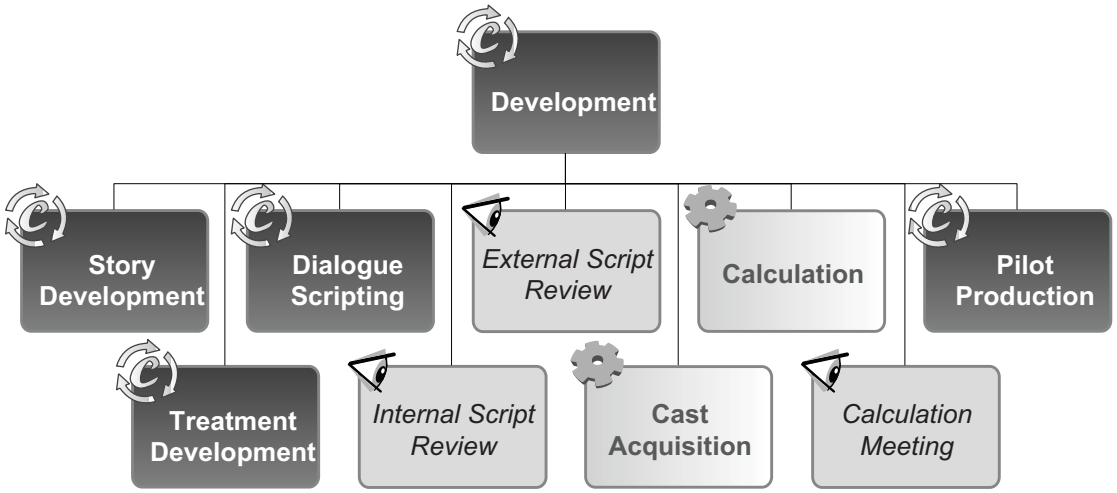


Figure 6.22: Process Hierarchy for the Development Phase of Television Series

6.3.3 Pre-Production

The preparation phase for television series strongly resembles that of movie productions. After the production contract is closed, the complete cast is selected and contracted and the crew is assembled. It is not necessarily given that the pilot production crew will continue the serial production. However, the team is backed up by more personnel, as all project positions up to the director will be staffed multiple times to alternate between shooting blocks.

6.3.3.1 Product View

The product model of the preparation phase (cf. Figure 6.23) strongly resembles that of movie productions. This is suggested by the comparable requirements regarding the scenic implementation of the scripts regarding location, equipment and style. A major difference lies in the script breakdown, since the entirety of a season's script will be dissected into blocks that can be shot efficiently, depending on mutual locations, cast and special requirements (such as night shots, special effects etc.).

This implies, that ideally a season's entire script collection is finalized prior to the start of the preparation phase. However, this is often not the case, as the program manager of

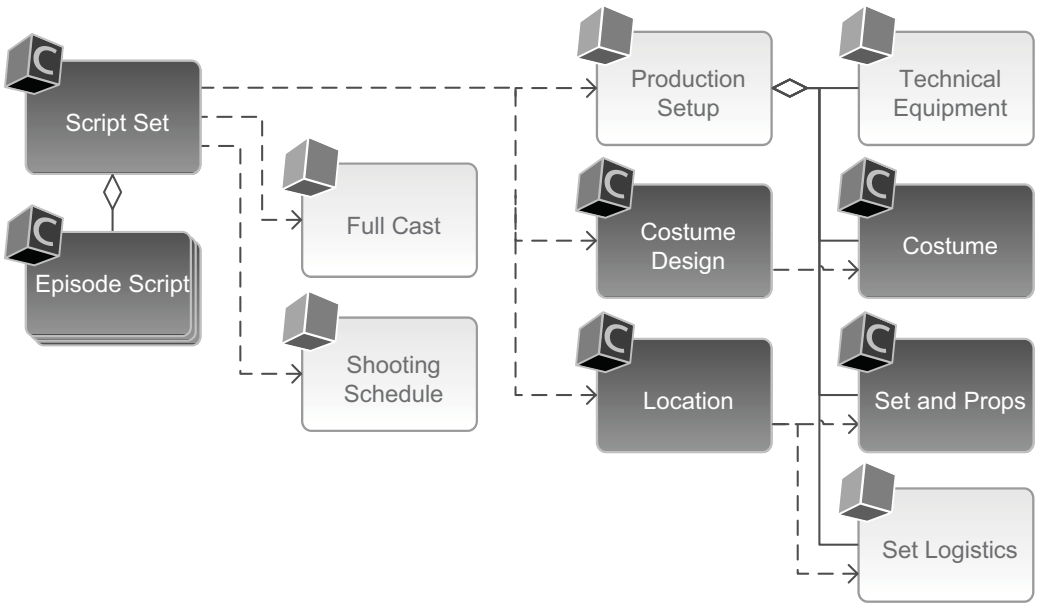


Figure 6.23: Product Model for the Pre-Production Phase of Television Series

broadcaster II reported:

> "Well, generally you should have the script finished before you start the production. But these process steps are not always adhered to [...] unfortunately, it is quite common for instance in serial development and production that you have a running shoot and the scripts come in later, so these steps become interleaved."

The *Locations* for serial productions have special requirements regarding their long-term availability and their production quality. It can roughly be differentiated between main locations where a majority of the plot is set and minor locations that will only occur in particular episodes.

6.3.3.2 Organization View

Due to the similarity on product requirements of TV movies and series, the organizational perspective again is very similar. However, the much larger amount of footage to be produced regularly implies alternating teams that will shoot in sequence or in parallel. Especially in latter case all personnel that is required on set will be staffed multiple times (cf. Figure 6.24). The producer has the specific artistic responsibility that the different teams will deliver results that resemble in the intended visual and narrative style of the series.

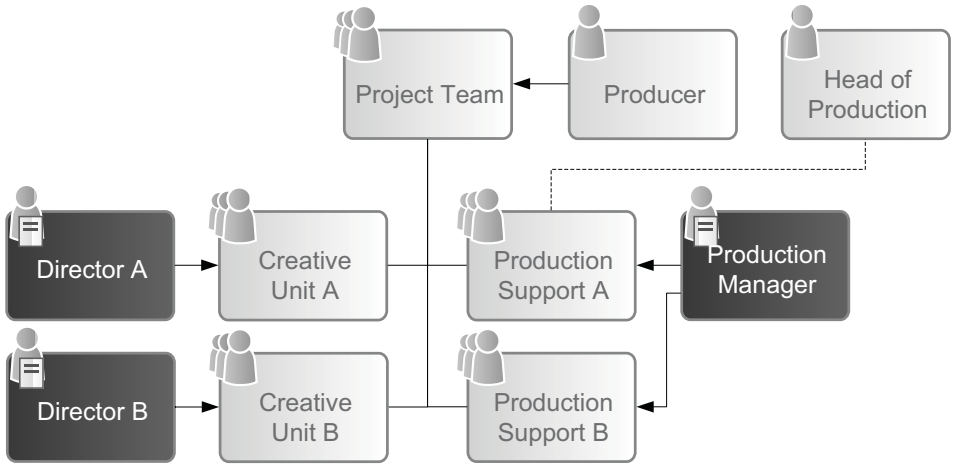


Figure 6.24: Organization Model for the Pre-Production Phase of Television Series

6.3.3.3 Process View

The pre-production of a new TV series is basically identical with that of a TV movie. A running series production, however, will require lesser preparation expenses since sets, costumes and props are already available for the majority of production needs. New material will be introduced gradually and can imply new instances of design and scouting processes.

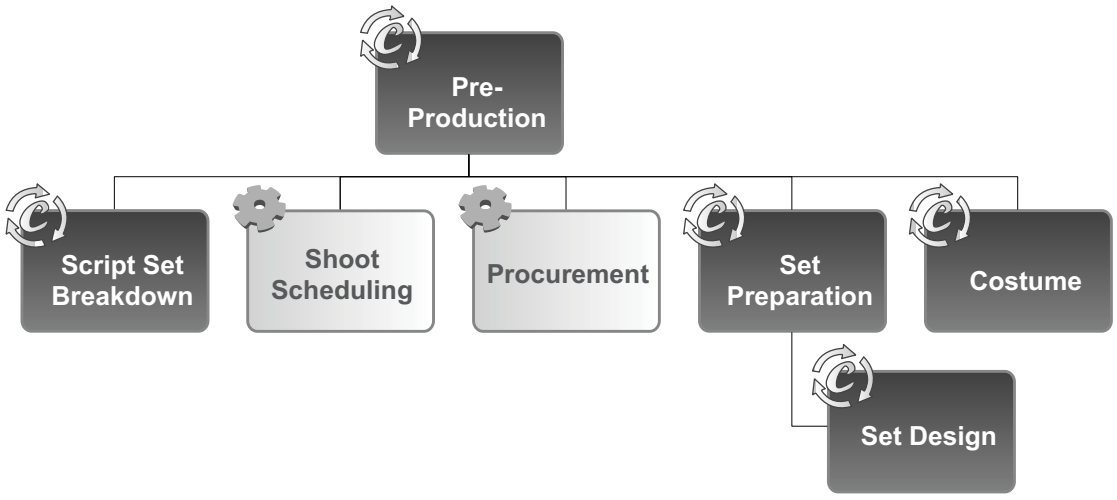


Figure 6.25: Process Hierarchy for the Pre-Production Phase of Television Series

6.3.4 Production and Post-Production

The production phase of television series is similar to that of movie projects in most respects. The budget as per shooting day is comparable, economies of scale are achieved through efficiency regarding location, personnel and equipment. The major difference is the volume of material that is to be produced and the thus long-running production phase. This results in the multiple staffing of project positions and the interleaving of production processes. The head of program of broadcaster II reported of the economic potential:

> "I met with the producer and we tried to change the procedures in a way, say, you have only two directors for 16 episodes. Each will shoot 8 episodes and use the studio simultaneously – in different sets, of course – but I have only half of the studio time. And then one shoots the outdoor scenes on Ibiza, while the other one does those in Cologne, and then they swap. I shorten the production time by half and thus have to employ the staff only for half the time..."

This distribution of responsibility implies stronger guidelines toward the creative product to ensure a consistent style and narrative pace throughout the complete season. The head of program of broadcaster III reported of the implications for the involved directors:

> "Well there were discussions because the one beginning the production will set a particular style. And that cannot be completely changed by the other one. [...] This is always aggravating for the one who is to be the second, because he won't be able to create with the same freedom."

In contrast to daily series, the production of a series' season is finished before any episode is broadcasted. Thus, similar review mechanisms as compared to movie projects are used within the broadcasting organization.

6.4 Daily Series

Daily series are long-running fictional formats with a comparably young target audience, that have been produced in Germany since the early 1990ies. They replaced many of the previously imported American serial formats, which were loosing popularity among the German audience (Hickethier, 1998, p. 465). Daily series are often referred to as "daily soap"

or short "soap", originating from the term "soap opera" which was a label for serial radio programs that were called after their sponsoring manufacturers of washing powder (Collie, 2007, p. 61). The longest running daily series with more than 4.500 episodes in German television is "Gute Zeiten, Schlechte Zeiten" (translates to: *good times, bad times*), which started in 1992 on the commercial channel RTL (derived from *Radio Télévision Luxembourg*) and is still running to the date of this study (Hickethier, 1998, p. 465). Other dailies, on both commercial and public channels followed quickly, some of them with comparable long-term success. The daily series is a very dominant format especially in the public program, as the consulting producer stated:

> "In the program of the ARD we have five dailies at the moment[...], on ZDF there is one, [...] three on RTL and [one on] Sat1. These are 6.5 hours of program every day!"

Another form of the daily series is the so-called *telenovela*. This series type originating from Latin-American television has been reinterpreted for the German market and is produced there since 2004. The distinction between the telenovela and the soap can be drawn on the differing story concepts: while the telenovela tells the story from the perspective of a (typically female) main character, the daily soap incorporates the stories of a set of characters that may change over the long-term course of the series. Furthermore, although having a considerable number of episodes, telenovelas are designed to end eventually (Zabel, 2008, p. 48).

However, in terms of production both formats have quite similar requirements due to the repetition level of (week)daily broadcasts and will thus not be regarded separately. Dailies are a very cost-effective product line due to the long term spread of production costs (Collie, 2007, p. 61). However, initial investments into the production setup are comparably high, since most dailies are produced in studio sets. The interviewed set designer highlighted the costs of studio shooting as opposed to original locations:

> "For studio you really need a lot of money. [...] It has to be built properly. Just closing a door... if this is not made with good walls, good doors it will always look fake."

Due to their perpetual broadcasting, successful daily soaps are a constant source of income for the production company. The Head of Production confirmed this:

> "This is a damn efficient procedure! And it shows that you can actually work creatively with such tight constraints. [...] It is not an accident that the daily soap survived all

> these years as business model. It still grows in market share, because it is profitable for both broadcasters and production companies."

To keep a series running, both broadcasters and production companies will invest into market research efforts to elicit changing viewer preferences and consecutively adapt the series. Long-running series aim to develop a brand name that is evaluated regularly.

6.4.1 Incubation

The incubation phase refers to the creation of new series concepts and the development of the most promising concept toward an elaborate outline that will be promoted within the production company and presented to the broadcaster in a pitch presentation. Ideas for daily series are generally developed on a specific demand of a broadcaster. The program manager of broadcaster III stated:

> "The first impetus comes from the broadcaster, but that is not a creative impetus as yet but it will set a creative process in motion."

Most of the daily series to the date of this study primarily serve a female target group and follow a certain stereotype of a romantic basic plot (especially the "telenovela format"). Thus the creative freedom in this early phase is constrained to some extent already.

6.4.1.1 Product View

The emphasis of the daily series product creation in this early phase is on divergence. The producer will contract several screenwriters or screenwriter teams to develop a set of concurrent *series concepts*. The most promising concept will be selected for the further development toward a *series handbook* in multiple iterations. The series handbook will outline the general structure of the plot and give short synopses of the different story threads. Furthermore, the characters will be described in detail.

The general structure of a daily series is constrained by the industrial production model, which will feed back into the development of the first concept. The constraints streamline the product design. The program manager stated:

> "If you start a daily you know right from the start this is the plot I will do for 250 episodes. [...] And so you have a type of net for all decisions, like, how many characters do I need. Because I know exactly what I am developing this for."

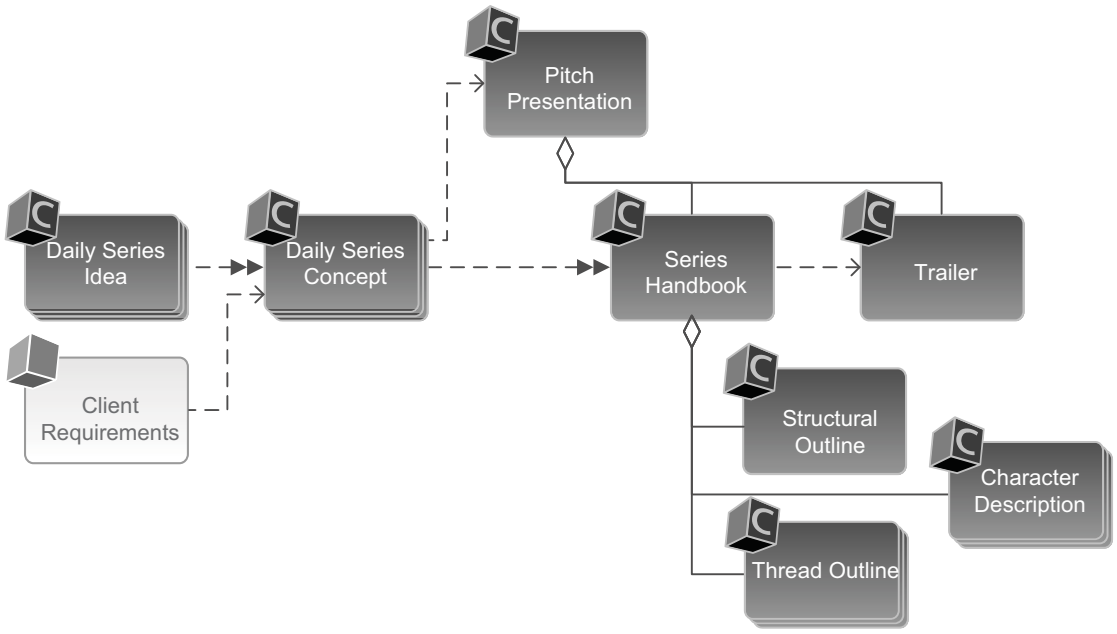


Figure 6.26: Product Model for the Incubation Phase of Daily Series

The series handbook represents an elaborate and codified series concept and will be further revised and specified before presenting it to the broadcaster. The procedure is similar to the development of entertainment formats, as usually a dedicated pitch presentation is prepared to sell the concept. This can already include the production of a *trailer* video presenting the intended look of the series.

Once the production is running, the broadcaster's influence on the product is considerably lower compared to product lines like a TV movie or a seasonal series. To minimize the risk of failure, the broadcaster will bring in a second level of divergence by contacting several production companies to devise potential future programs. This implies a competitive situation for the production company in which the broadcaster must be convinced not only of a sound story concept, but also of the production company's capabilities to implement the highly-efficient production setup necessary for the production of a daily series. In a written treatise, a producer stated:

> "Because the investments in the beginning are very high [...] and might amount to 10 million Euros or more, the risk of great deficit is eminent for every new daily production. This is mitigated to some extent in that production companies that are subsidiaries of a corporate group will conduct the production for the affiliated broadcasters."

6.4.1.2 Organization View

The production of daily series implies a considerably larger and much more diversified standing organization as opposed to the smaller and more flexible movie production organizations. Furthermore, the personnel involved is to be specialized on this particular type of fictional content. As the expert movie producer accompanying the study put it:

> "For the first daily series in Germany, completely novel ways of production had to be established. This was done with the aid of experienced 'executives' of Grundy Ufa from England and Australia. These producers taught their German colleagues the production method. And up to this date, all companies producing dailies employ people for the key positions that have been working for Grundy Ufa at some point."

Figure 6.27 depicts a possible organization chart for a production company engaging in this product line. Note, that the position of the *head of production* as the financial supervisor might exist. However, most companies in this sector afford a complete *controlling department* due to the long-running obligations that involve the management of a vast number of personnel and material expenditures.

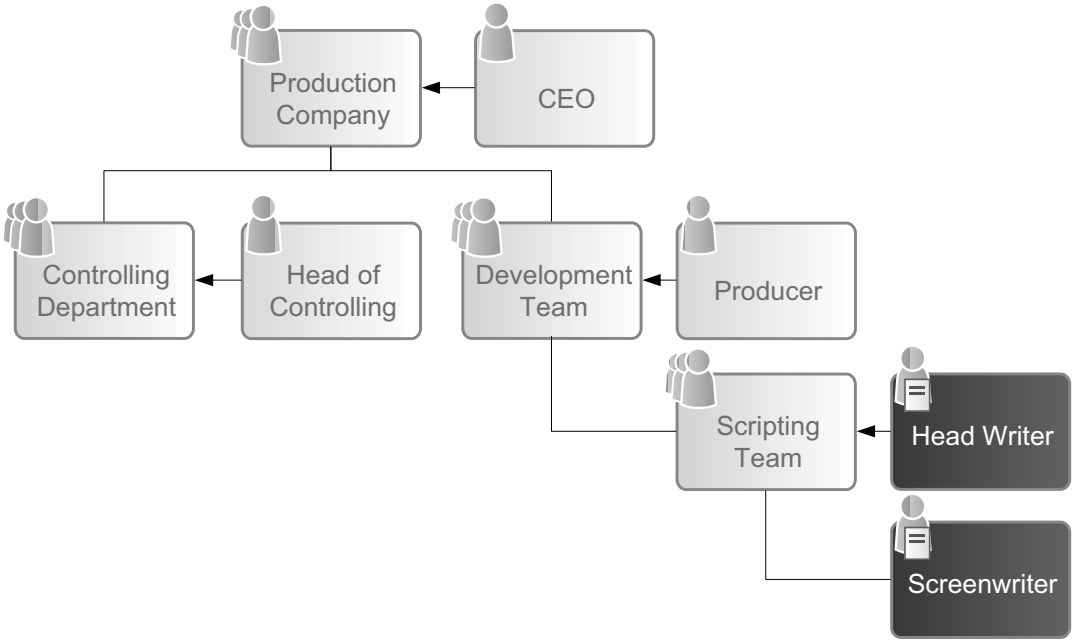


Figure 6.27: Organization Chart for the Incubation Phase of Daily Series

Producer: Like in all fictional product lines, the producer is the head of a daily series project. In this early phase, it is his or her function to contact adequate writers or writing teams that are able to work in the context of a daily production. The title "Creative Producer" is sometimes used to distinguish the position to the position of the *line producer* (cf. Section 6.4.3) or the *executive producer* – a position that has similar functions to a creative director (cf. Section 6.5.1.2).

Scripting Team: In the phase of incubation, the producer will employ several scripting teams that will generate concurrent series concepts in parallel. In this phase, the team might yet comprise of a single screenwriter. The position of the *head writer* as the head of the story department becomes apparent during the daily production of scripts in the running development. However, scripting teams might already be structured in the concept phase or the producer will contact specific screenwriters with the intention of recruiting a potential head writer.

6.4.1.3 Process View

Figure 6.28 depicts the process hierarchy of the incubation phase. The PoC *Concept Development* will have multiple parallel instances to create a set of different series ideas. The *Concept Selection* is modeled as an (internal) review. Potential reviewers besides the creative producer are the CEO of the production company as well as an executive producer.

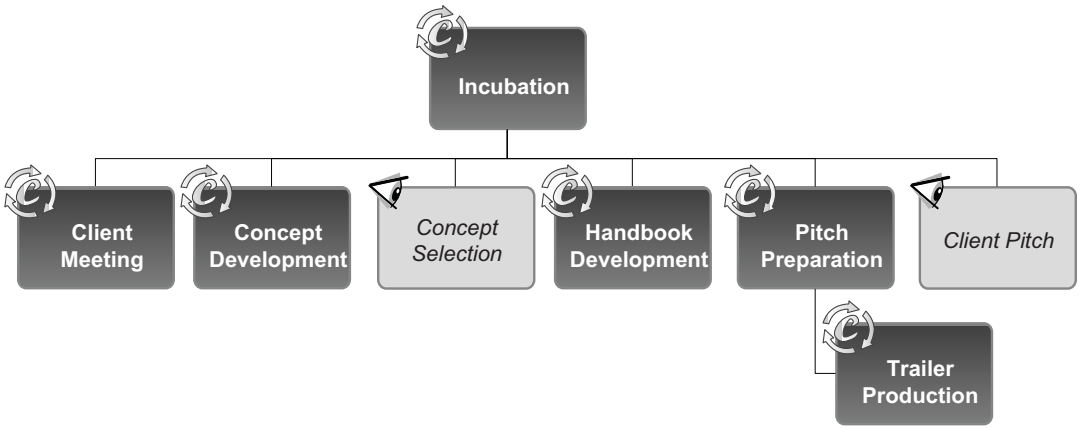


Figure 6.28: Process Hierarchy for the Incubation Phase of Daily Series

In the further development the selected idea will be detailed toward a series handbook. The PoC of *Handbook Development* will run through multiple iterations, where the concept is

subsequently revised by the screenwriters under the artistic supervision of the producer. The *Pitch Preparation* will be initiated as soon as the series handbook reaches a sufficiently stable status. The *production of a trailer* can be part of the preparation and will help the responsible representative of the broadcaster (editor or program manager) to further promote the series in his/her organization after a successful *client pitch*.

The result of the successful pitch might already be a production contract with the broadcaster. In many cases however, a first contract will often be constricted to the development of a defined number of episode scripts (e. g. two week blocks, i. e. 10 episodes) and the casting of potential actors.

6.4.2 Development

The development of daily series can be regarded in two distinct phases. The development of a *novel daily series* as one of these phases is characterized by a still existing headroom for divergence and the aim of gradually developing a working structure of characters, actors, storylines and sets. Aim of this phase is a production contract with the broadcaster – usually by developing the series toward a pilot. However, the actual decision toward the serial production is also dependent on factors on which the production company might not have an immediate influence, as screenwriter A reported:

> "I had quite a lot of development contracts, but the bottom line is that most of them have only been brought up to a pilot. And then the message was, well, sadly we do not have enough money."

The development within an *established series* differs considerably from novel daily series projects as it incorporates a very structured and constrained process that aims for efficiency. This form of development will rely on the division of labor to a great extent. The program manager of broadcaster III stated:

> "It is a dramatic difference whether I just start a soap, make the concept, or the first 5, 10, 20, 30 episodes, or I say at some point: 'I have created my brand, my project, my series.' And that is exactly the point where I can industrialize, standardize it and turn it into a deadline workflow system."

The development of scripts in an "industrialized" setting will run in parallel to the production with some advance time. However, since the production will in average output

a complete episode per shooting day, the screenwriting is conducted in a very constricted time frame and has to ensure a steady stream of new episodes. Due to this great amount of material and the time pressure, client reviews of the single episode scripts will result only in minor changes if any.

6.4.2.1 Product View

As has been stated above, the client will not necessarily close a production contract based on the series handbook only. In the development phase for a new daily series, the series handbook will be iteratively refined and an agreed set of episodes will be scripted. Furthermore, auditions will be conducted to build up a conclusive cast for the series.

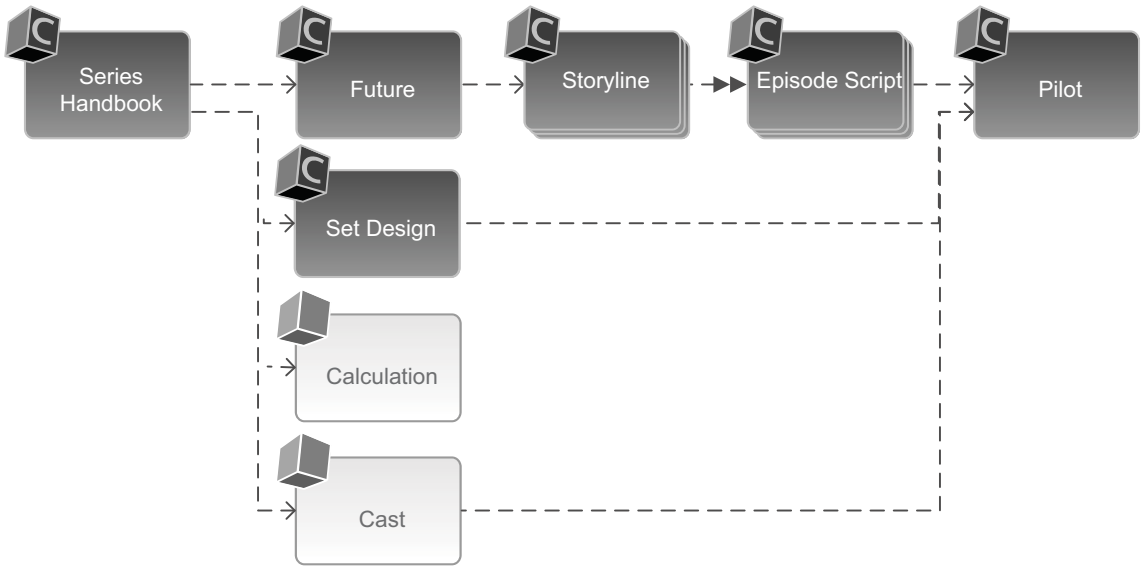


Figure 6.29: Product Model for the Development of Novel Daily Series

Figure 6.29 depicts the products generated within the initial development. The series handbook will be detailed to derive first *futures*. Futures are synopses covering the main story of two to three months of the series (approx. 50 episodes). They represent content guidelines for the weekly work of the authors and serve as means to align the creative input of the different writing team members. A *storyline* represent the story of a respective episode, including characters and scenes but has no dialogs as yet. Since the writing of the storylines and the dialogs is conducted by different screenwriters, these products are created sequentially. The final *episode script* represents the screenplay for the actual production. Based on the series handbook, the production designer will draft the *set design* for the

regular scenes of the series. The designs are visualized by means of photographs and/or graphics.

Part of the development phase is the compilation of a *calculation* for the series. However, rather than calculating actual costs per episode, a total budget for a complete season (up to 250 episodes) is proposed and submitted to the broadcaster. This implies that there is no necessity for a detailed external calculation that has to be adapted internally to actual production figures. The *casting* will be conducted by either a dedicated department or by contracting an external casting agency. The respective unit will suggest a range of actors for the different parts to the producer who will make a selection. The casting is an essential process, since the production budgets do not allow for payment that attract established actors. Thus, these departments will permanently scan for talented yet unknown actors.

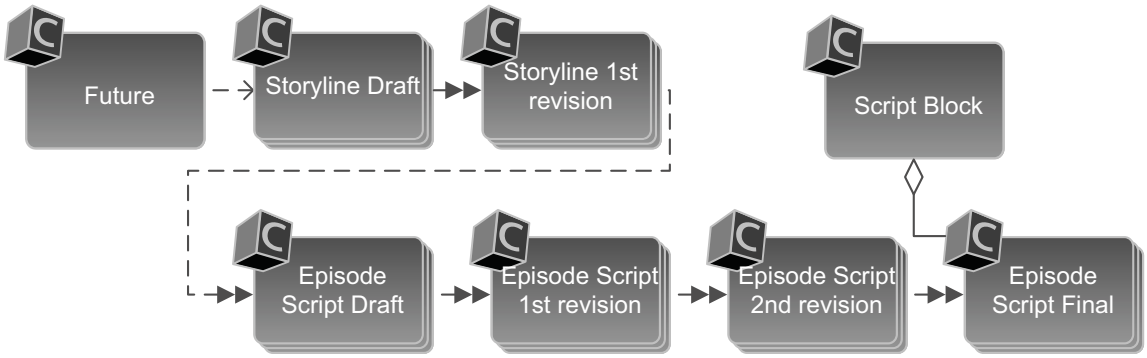


Figure 6.30: Product Model for the Development of Established Daily Series

Figure 6.30 depicts the sequence of creative products in the development of episode scripts for established productions. Note, that the different versions of storylines and episode scripts are fixed intermediate products of a highly structured generation process. The number of iterations for the writing of both the storyline as well as the dialogs is predefined and therefore allows for little variance. The scripts are written in sets of five episodes (a broadcasting week) also referred to as *block*.

6.4.2.2 Organization View

The organization chart in Figure 6.31 depicts the departments and positions involved in the initial development of a new daily series, typically before a production contract is closed with a broadcaster.

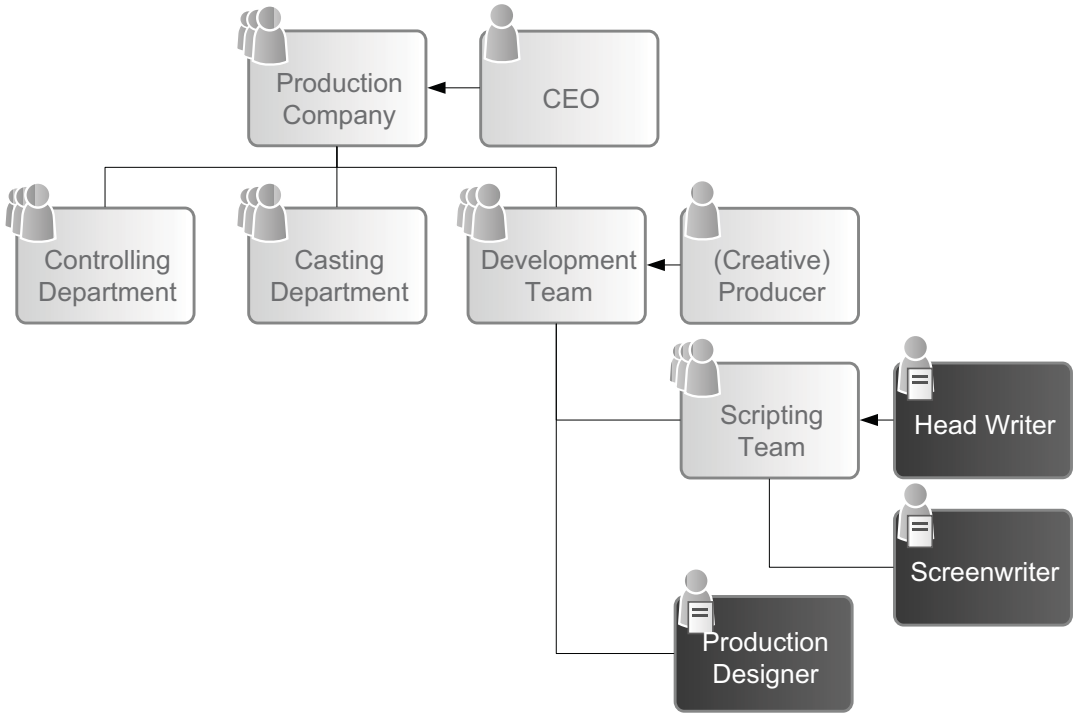


Figure 6.31: Organization Model for the Development of Novel Daily Series

Casting Department: Here, the casting department has been modeled as an internal organization unit within the production company. This is especially efficient for companies that produce multiple daily series, as there will be a constant demand for new actors also for running productions. The department will file contacts and organize auditions for new productions.

Production Designer: The production designer is the equivalent to a set designer for a daily production. Apart from artistic or aesthetic requirements, he or she will especially make production-relevant design considerations such as camera positions, light setup and effective layout.

As mentioned above, the script development for a running production is very structured and is conducted following an explicit division of labor. Figure 6.32 shows the inner structure of a scripting team.

Head Writer: The head writer is the acting supervisor of the scripting team. He or she is the primary contact person for both the producer as well as the responsible editor at the broadcaster. Freelancing screenwriter A described the role:

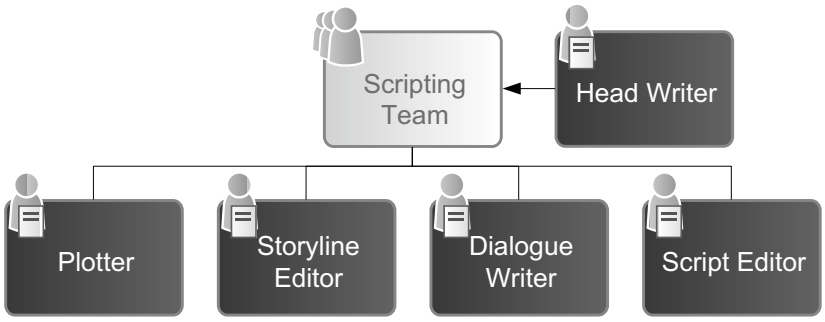


Figure 6.32: Organization Model for the Development of Established Daily Series

> "To the topic of teamwork. Yes, you actually need a head writer. He is not necessarily the most creative member of the team, but he will provide the structure [...] and communicate the results to the editor and to the production. In many cases you will have the head writer being the plotter in his next team and vice versa. The hierarchies are very flat, but you need someone to define how things are supposed to be done."

Scripting Team: The scripting team works in a specialized manner. The *plotters* are responsible to write the storylines, the storyline editors revise these. The *dialog writers* will incorporate the dialogs, the *script editors* are responsible for the final revisions of episode scripts.

6.4.2.3 Process View

The distinction of early development and post-contract development is also reflected in the process view. Figure 6.33 depicts the process hierarchy of the initial development, revealing a loose structured set of subprocesses, that will be instantiated in a non-predictable sequence and number of iterations. They reflect the different stages of plot and script development, as well as the planning and calculation of the production setup. Note that in contrast to fiction product lines such as movie or primetime series, screenwriting tasks can already be separated to the different stages since the writing team will gradually structure itself toward an efficient unit.

Figure 6.34 depicts a *BPMN business process diagram* as means for the process view of script development of an established daily series. The modeled process is an example as it has been described by the interviewed screenwriter A. The exact sequence will vary depending

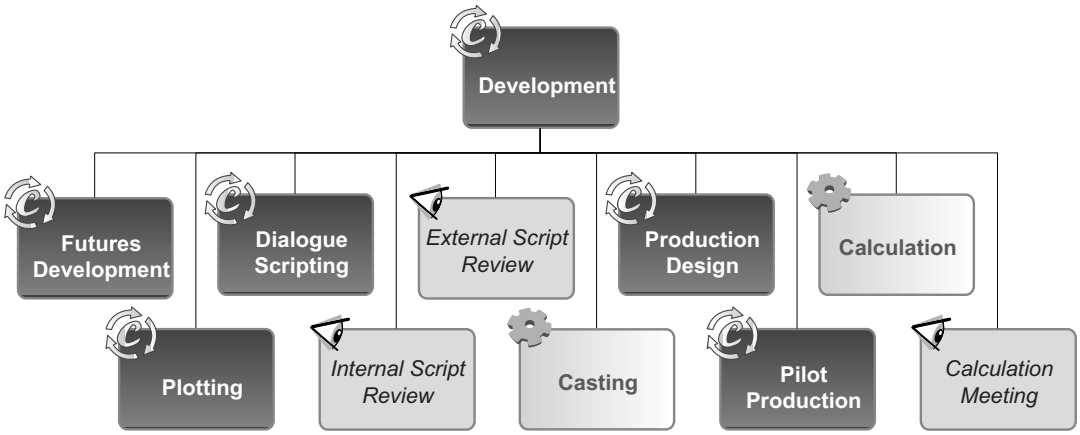


Figure 6.33: Process Hierarchy for the Development of Novel Daily Series

on the requirements of the stakeholders. However, the feasibility to adequately model the process shows its definite structure despite the involved pockets of creativity.

The involved organizational units are modeled as pools and swim-lanes, so revealing the oscillating responsibility for evaluating the creative product. The process is a simple, alternating sequence of creative tasks and reviews. Note that the BPM notation has been enhanced to allow for the specialization of tasks to PoCs and Reviews.

The structure reveals the tight organization of the scripting process to which the screenwriters have to comply. This limits opportunities to experiment or innovate. The development system shows the origin of the industrialization metaphor associated with dailies: the scripting process resembles an assembly line, where the storyliners will already work on the next block, while the dialogs are scripted for a precedent storyline block, while the production is running for a block scripted four weeks earlier. The process depicted in Figure 6.34 represents a fixed time period of about six to eight weeks.

However, the individual steps are still regarded as being creative processes, as the program manager of broadcaster III emphasized:

> "The tight constraints and the clear definitions of a running series do not kill the creativity. They channel the creativity precisely on the series. If you build your team right, it is similar to a tiger in a zoo. It is born there, it doesn't know that fences are bad, it is happy because it doesn't know anything different."

Each review subprocess will result in annotations of the respective reviewer that will be incorporated in the subsequent creative step of the process. However, the degree of

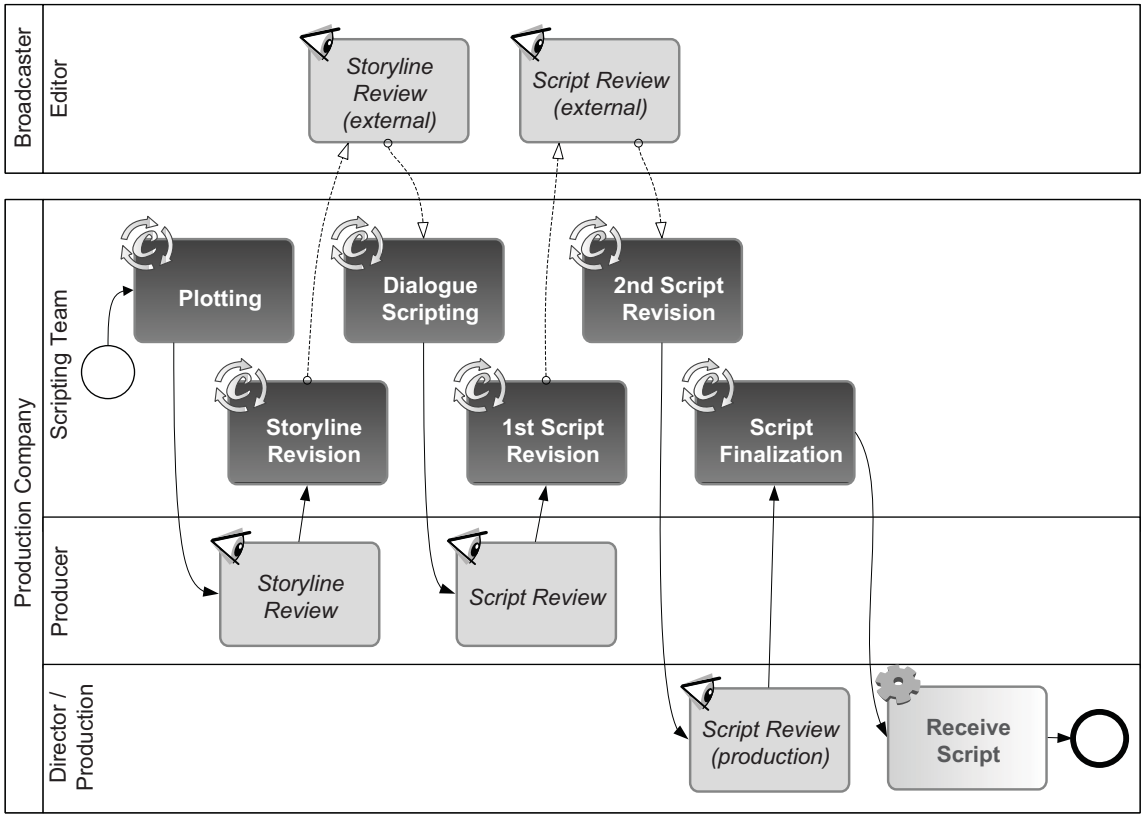


Figure 6.34: Business Process Diagram for Script Development

flexibility is limited due to the tight time constraints within a running production. The program manager of broadcaster I highlighted the consequences of change requests:

> "The creative influence of an editor is greater in the traditional series than with an industrially produced series. I might be able to say that a storyline does not work and that I want it redone maybe once – so forcing night shift on the story departments. If I do that twice or thrice in a row, I will stall the production. You simply cannot do that."

Thus, the time constraints also apply to the reviewing processes and constrain the opportunities for criticism. This in turn is recognized as a liberating influence on creativity by screenwriters, as opposed to the rigid and detailed script review in movie productions (cf. Section 6.2.2.3).

6.4.3 Pre-Production

The pre-production phase comprises the breakdown of the episode scripts and scheduling the week's shoots. Although footage of episode-length will be produced each shooting day, the shots are not taken in a sequential order, but grouped by production aspects such as minimizing set change or cast availability. If outdoor scenes are part of the concept, additional factors like weather will influence the week's schedule. The pre-production in a running series will be conducted in parallel to the development of subsequent futures and scripts as well as to the production of precedent episodes.

6.4.3.1 Product View

Figure 6.35 depicts the product relationships in the preparation phase. The *script set* refers to the episode scripts of a shooting week delivered en bloc to derive a weekly *shooting schedule*. The *production setup* will be built during the preparation of the first episodes. Later changes will be gradual and most of the props to prepare are minor items like costume or smaller requisites.

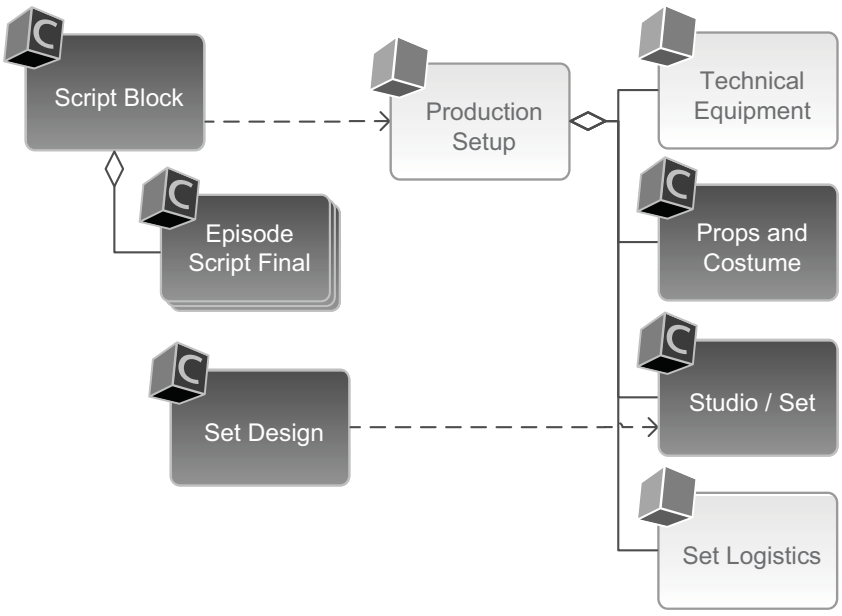


Figure 6.35: Product Model for the Preproduction of Daily Series

However, the initial *studio setup* is regarded as being a creative product, since it significantly influences the look of the final product. The set designer highlighted the complexity of studio building:

> "The studio needs a certain infrastructure, you need light, water, good access where the trucks can deliver planks, this is a package where you need a good studio. And this is much more expensive than an original set. You need a very good light setup [...] that has to be designed and it needs a lot of time."

The choice of technical equipment has an essential role in the production of daily formats. Dailies are recorded and edited in a completely digital workflow that poses particular requirements to camera and sound equipment. The studio setup is filmed by multiple cameras in parallel in order to avoid retakes for change of perspective and to have more flexibility during the editing process.

6.4.3.2 Organization View

The organization within the preproduction phase strongly resembles that of other fictional television productions (cf. Figure 6.36). However, the industrialized procedures shift responsibilities to some extend.

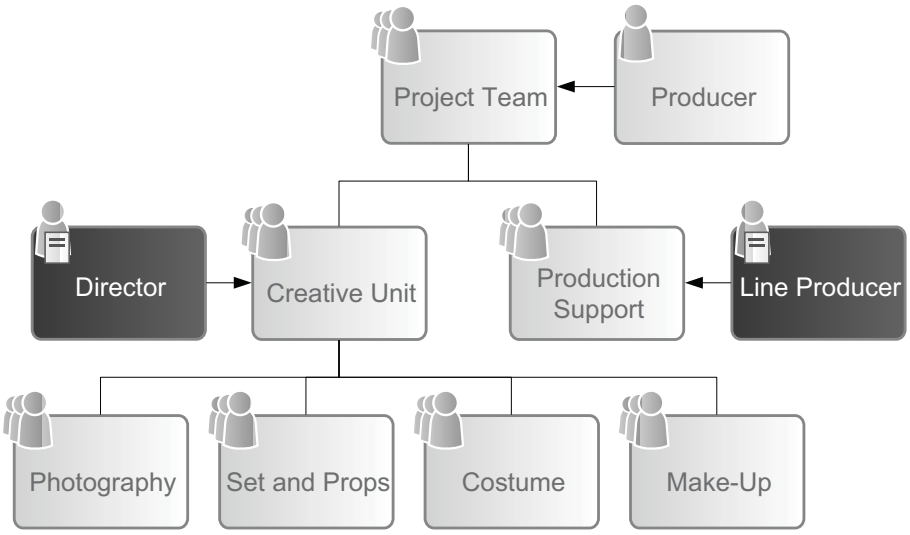


Figure 6.36: Organization Chart for the Preproduction of Daily Series

Line Producer: The position of the line producer in a daily series production is similar to a production manager in other fictional productions. Due to the long-term planned budget however, the line producer has a greater financial flexibility throughout a longer production period.

Director: The director in daily series productions has considerably less impact on the product as compared to movies or primetime series. Firstly, the fixedly installed settings constrain the headroom for creative divergence. Furthermore, the tight time pressure limits the opportunities for retakes. A daily production will prevalently involve up to six directors that work alternately, so further constraining the possible individual impact.

6.4.3.3 Process View

The central task of the preproduction phase is the resolution of the scripts to the shooting schedule modeled as *script resolution*. The subprocess has not been modeled as being a creative process, since the interpretation of the script is deemed a straightforward procedure and its results, the shooting schedule as well as the required production setup, are for themselves no creative products.

The *design of the costumes* as well as the *studio building*, however leave some creative freedom and are thus modeled as PoCs. The *procurement* (of costumes, props etc.) is a highly structured process that is controlled centrally. As the production of the series commences, the creative tasks in the preparation phase will loose relevance, as changes to the set will be limited by the budget constraints.

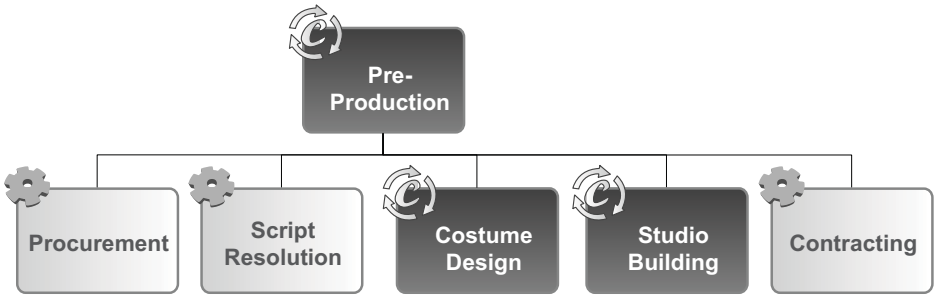


Figure 6.37: Process Hierarchy of the Preproduction of Daily Series

Another subprocess that is especially essential in the early production of daily series is that of *contracting* for both cast and crew. Due to the long-running character of the series, the actors and crew members will remain in the production company for a long time period, should the series prevail over the pilot phase.

6.4.4 Production and Post-Production

The production and post-production of daily series can be described as more industrialized in comparison to the fictional formats of movie and primetime series. The perpetual week-daily broadcasting requires the production of a week's broadcasting units in also a week production time. This calls for very special requirements regarding organization of the production and severely constrains the opportunities for retakes or trying specific ways of direction. Directors usually do not have sufficient flexibility to dedicatedly brief their actors or have scene rehearsals before shooting.

6.4.4.1 Product View

The basic elements of the product structures resemble that of all fictional productions (cf. 6.38). The scripts are resolved in daily shooting schedules, and footage is produced in studio or outdoor-locations. The *indoor-scenes* are, however, live-edited during the shooting, so that the post production will merely assemble these scenes to build the episodes. The *studio schedule* determines the order of scenes and is optimized toward cost-effectiveness. The *shot cards* contain the scene instructions for the cameramen. The *soundtrack* will consist of either licensed material or own compositions and is the final contribution to a daily series episode.

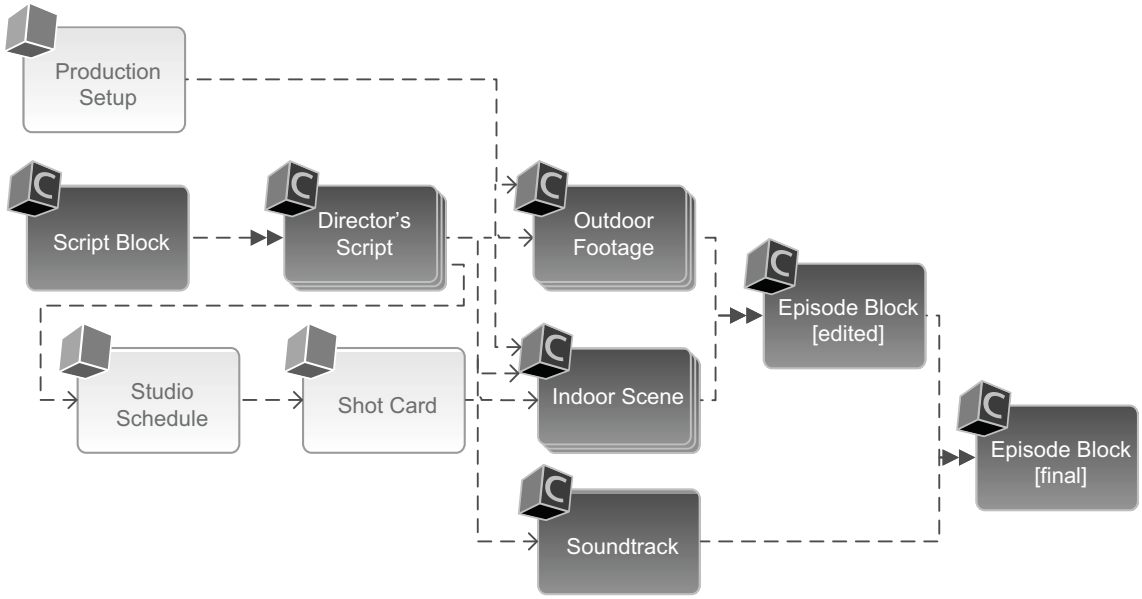


Figure 6.38: Product Model of the Production of Daily Series

6.4.4.2 Organization View

The organizational structure of daily soap productions is tailored to the tightly-structured process that heavily relies on parallelization.

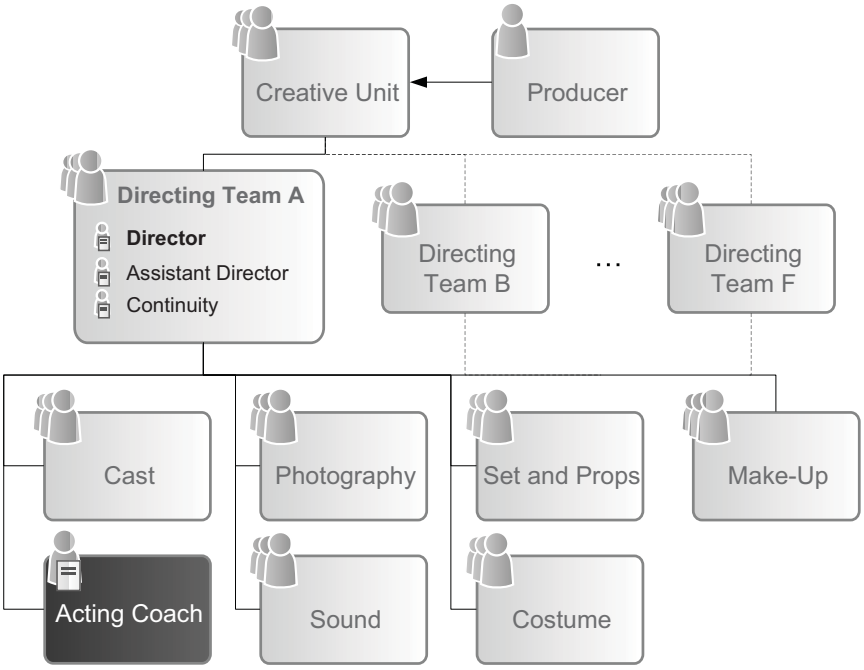


Figure 6.39: Organization Model of the Production of Daily Series

Directing Team The director, assistant director and the script/continuity build a *directing team* that will accompany a series block throughout the process from the disposition to the finalization. Since each production week must yield a whole week's broadcasting content, this means that multiple of such directing teams have to work in a shifted manner, working in a four-week rhythm. However, actors and technical personnel will still work in a weekly rhythm to shoot the block consecutively. In Figure 6.39, this change of direction is represented by the dashed lines that connect the directing team with the departments. During the studio shoot, the director coordinates the activity from a control room via radio connection to his assistant, who routes the directions to the personnel on the studio floor. In the control room, the scenes are live edited.

Producer In relation to a particular episode block, the team structure is similar to that of other fictional productions. However, in relation to the complete series, the *producer* has to

take the creative supervision and ensure the product quality.

Acting Coach The acting coach is a position particular for soap productions to prepare the actors for upcoming scenes in their shooting breaks. Due to cost restrictions, scenes requiring specialists or specialized equipment (like special effects, animals etc.) are largely absent.

6.4.4.3 Process View

The production and post-production process of daily series is very well-defined and largely sequential (cf. Figure 6.40). While *indoor* and *outdoor shooting* are logically independent process steps, their execution follows a fixed sequence (although the order could be exchanged for some production).

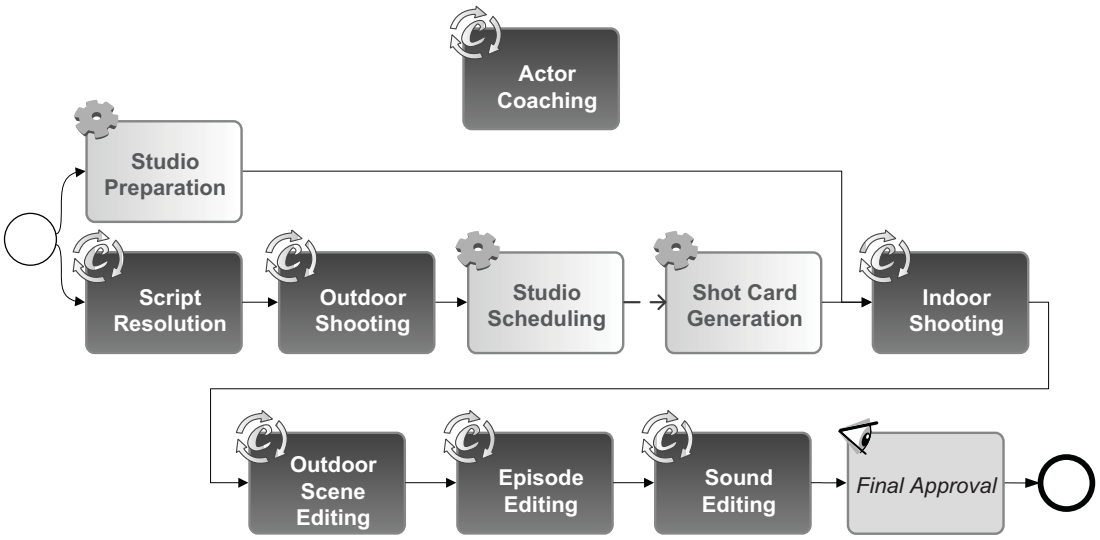


Figure 6.40: BPD of the Production of Daily Series

A major difference between daily series and other fictional productions is the use of a multi-camera setup in contrast to using a single camera. This implies that a scene considered finished by the director is instantly available in all camera angles. However, this also introduces compromises regarding the composition of scene and light, constraining the opportunities to use stylistic devices. Furthermore, daily productions were among the first to exclusively use digital recording equipment. Combined with the multi-camera setup, this allows for the *live editing* of the shot scenes. Outdoor scenes are, however, shot by a single camera. Thus, after concluding the indoor shooting the outdoor shots are edited and

and combined with the already completed indoor scenes to the block's episodes. The sound editing adding the music is the last step before the final approval by the broadcaster.

The *actor coaching* is modeled as an optional, unconnected PoC since it will take place mostly in between shoots of particular actors. It is intended to provide some sort of compensation for the lack of rehearsal time.

6.5 Entertainment Formats

The term *entertainment formats* has been chosen to contrast the product line from the classical fictional formats. Although the notion of *non-fiction* exists as an established concept, the attribution of certain formats to being either fiction or non-fiction is difficult and has some arbitrary quality (Keil & Rueger, 2002, p. 171). Alternative terms used throughout the study have been *infotainment* or *factual entertainment*. The genre of *(sketch) comedy* can be viewed as a hybrid that reveals both properties of entertainment formats (such as having no cohesive plot) as well as series or soap formats (such as professional actors, scripted dialog etc.).

The description of entertainment products is a particular challenge, since this product line comprises the greatest variety of different subgenres. Furthermore, the volatility of subgenres is especially high. The development of new product ideas is subject to the ongoing pressure of the genre to reinvent itself to keep up viewer's attention.

6.5.1 Incubation

The initiation of a new development process can occur on different paths. Entertainment production companies constantly strive to develop new format ideas. One possible outset is a concrete demand or requirement that is advertised by a TV broadcasting company for a particular program slot. Such demands can be revealed either through informal relationships between employees of both the broadcaster and production company or communicated in official client meetings.

The personal initiative of creative employees that have developed a promising idea is another possible starting point. Such ideas will generally be promoted first within the production company but can also already be presented to potential clients at a very early stage of development. Regarding the point of contact to the client, the Head of Development of production company B said:

> "It is quite variable depending on your relationship to the broadcaster. For instance, having worked at [broadcasting company], I can give the CEO a call and say: 'Listen, I have this idea. That might be something for you.' And he might reply: 'Okay, make it a pitch, write something down and we will see.'"

A third way of initialization are institutionalized creative meetings that aim to generate novel ideas by the group work of creative persons. The CEO of company A reported from international creative meetings organized by the respective parent production company:

> "We have regular meetings about two times a year, where we all come together. This is where we exchange ideas and experiences. We also have to prepare things for these pitch meetings. [...] There are even concrete tasks. For our recent world-wide meeting everyone had to prepare two concepts, visualized with a demo tape. These were presented to all attendees."

Formats that have already been produced in other countries have an essential role in the product development of entertainment production companies. For broadcasters, formats that have been successfully launched in other markets represent a considerably lower risk and are therefore easier to sell. Especially multinational companies benefit from formats of sister subsidiaries abroad. CEO (A) stated:

> "We are always happy, if there is something from the Netherlands or from England that is already on air and we have audience ratings. [...] They always look for proven success. There is definitely a trend of decreasing courage for doing something locally."

6.5.1.1 Product View

The products and outputs of the incubation phase are modeled in Figure 6.41. Both *Idea* and *On-the-Air Format* represent creative products. Although an idea is not necessarily a tangible asset as yet, it is explicitly modeled in the product diagram to emphasize the possible opportunities that might mark the starting point of a development process. The idea becomes a product as it is communicated to other stakeholders in the process. The transformation of these tacit creations to codified concepts is a creative subprocess that can either result in comprehensive format concepts or in reusable fragments that might be

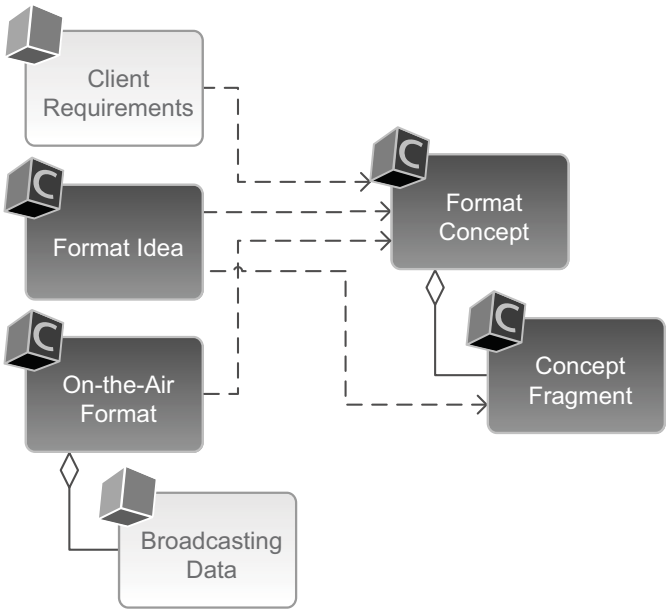


Figure 6.41: Product Model of the Incubation Phase for Entertainment

recombined in a future development. This inclusion is illustrated by means of a *part-of*-relationship. The *On-the-Air Format* is a format either sourced as a license from the market or from other subsidiaries in a multinational production company.

In this model *Customer Requirements* represent an either codified or personally communicated demand of a broadcaster for a specific product. It might already comprise information about a particular broadcasting slot, an intended target group and/or an approximate budget. These informations act on the development process as product constraints. The format concepts are eventually developed toward a *Format Concept*, which is the basis of the sales pitch with the client (c. f. section 6.5.2). The Concept Fragment represents format ideas that can be recombined and incorporated into new format developments, this life-cycle is especially valid for ideas that do not suffice to be fully developed into a program concept.

6.5.1.2 Organization View

As has been stated earlier (cf. Section 4.3.3) creative organizations largely rely on flexible organizational structures and set great value on teamwork. This is deemed especially crucial in the early phases of product development. The CEO A highlighted the value of recurring meetings in this phase:

> "Take your coffee and sit down somewhere, on the desk of your colleague maybe or on the windowsill. Or you meet in an organized fashion – of course they do that anyway – regular meetings again and again in different constellations. And finally: exchange, nurture and develop. At last you need someone to pick this up, give it structure, a manager..."

Since in this phase there is no defined project to speak of as yet, the responsibilities are can not be precisely defined. Figure 6.42 displays the organization charts of the units involved in this early stage of product development.

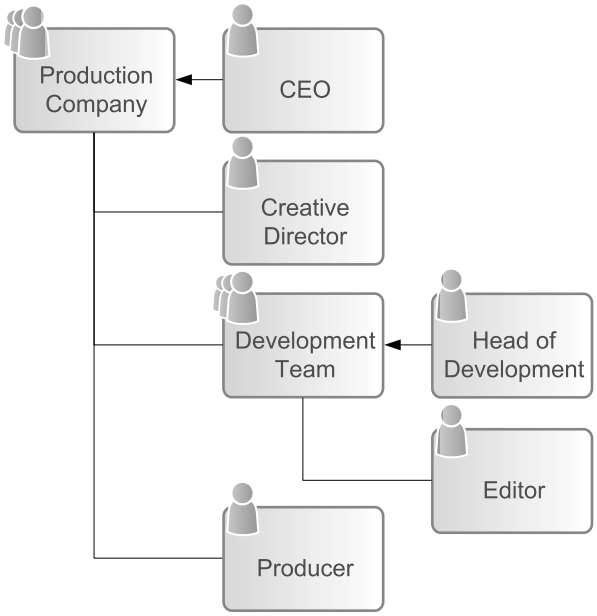


Figure 6.42: Organization Chart of the Incubation Phase for Entertainment

Chief Executive Officer (CEO): The *CEO* is responsible for both the organizational as well as the creative evolution of the production company. This implies the attendance at formal client meetings as well as internal board meetings. Regarding the development of product content, the CEO is involved especially in the early stage as an interface between the client and the creative unit of the production company. Regarding the capabilities and functions of the job, the CEO (A) stated:

> "My notion of a head of a production company is that he combines a lot of capabilities. He has to be creative and able to implement things. He needs negotiation skills as

> well as a basic technical grasp. And he must be able to make the calculations. [...] But to answer your question, first of all, my job is of course to coordinate these hundred people and keep the business running."

The creative influence of a CEO is a controversial issue and is dependent on both the organization as well as the self-conception of the person filling this position. The CEO of company F stated:

> "Everybody working in this sector for a certain time will have creative input to a project. However, I contain myself in that regard. In my experience the executive function is more managerial than creative. You assess the general direction of the things that happen and try to control it. [...] and that rather includes to scrutinize the production crew and maybe to exchange people if necessary."

Head of Development (HoD): The HoD is a central figure in this early phase that is both the superior to a team of development editors as well as a creative worker herself. On the question, whether the development of ideas is a teamwork effort, the HoD of company B said:

> "Generally, communication is extremely important. However, it is a bit difficult with a small development team, if you utter an early idea you kind of start an avalanche [...] before I let out just anything without thinking it through first, and then a whole lot of people engage in that, doing research, I rather work out something really tangible. [...] However, if one of my editors tells me: 'I watched some people arguing today, we could make something out of that, this could be something new.' Then I will say: 'Okay, let us all get together and think about this.'"

In the incubation phase, the major function of the *Development Team* is primarily to come up with novel and original ideas that can be developed into a format concept. In this early phase, the team is able to work autonomic and follow their own work design. However, the interviewees stated that the expectations of management regarding the quantity and quality of output constrain this freedom toward a cost-effective mode of operation. The team of editors will also conduct research tasks such as market scans for available format licenses.

Creative Director: A common position in production companies of a certain size especially in the entertainment branch is the *Creative Director (CD)*. However, since the job title is not legally defined it is interpreted differently throughout organizations. Generally, the CD is a management representative who supervises the creative branch of a production company. In contrast to the CEO, the CD might accompany projects from the early development all the way to the final delivery to the customer. The CEO of Production Company A stated it as follows:

> "It is actually his job to attend to both the contents as well as the running production processes.[...] you could say he develops and implements, and I develop as well but never actually implement – that is the major difference."

The CD will usually attend to both strategic client meetings as well as internal board meetings and will communicate the respective results to the creative departments. The position of the Creative Director might also be similar to that of a Head of Development. The interviewed CD from company F described his position as follows:

> "I attend to the contents. Since our producers work quite independently [...] and I usually do not interfere there, I am primarily focused on development and format sales."

In contrast, in Production Company B, the job of a Creative Director was associated with the responsibility for running productions, thus excluding the CD from development. Concerning the formal relation between her and the CD, the HoD of that company stated:

> "I just report to the CEO, we are a separate department. Our creative director has the responsibility to coordinate and control all the producers. [...] his job is a kind of quality management, to ensure that the results bear the company's creative hallmark."

Producer: As the head of a specific production, the *producer*[10] has a background role in the early phase of incubation. As soon as there is commitment from the management to further invest in a particular idea, a producer will be appointed to the project and accompany the development. The producer of an entertainment production will become the head of the project, as soon as the format is sold successfully (cf. Section 6.5.3).

[10] In the studied production organizations, the position impersonating the role of the producer for a specific entertainment production was labeled with the english term "Executive Producer". To avoid confusion and ensure comparability, this title has been translated to "producer". Both the interviewees as well as the literature (Collie, 2007, p. 79) emphasized the arbitrariness of the producer title.

6.5.1.3 Process View

The incubation phase can be seen as a loose coupling of different tasks and small subprocesses with no apparent nor ideal structure. Lacking a definable control flow, the documentation of this phase with traditional means of process modeling has little informational value in assessing the core facts of the tasks at hand. Deriving from the products identified in Figure 6.41, six basic activities have been identified. These activities are modeled in a process hierarchy diagram (PHD) in Figure 6.43. The activities do not imply any temporal or consequential order as yet.

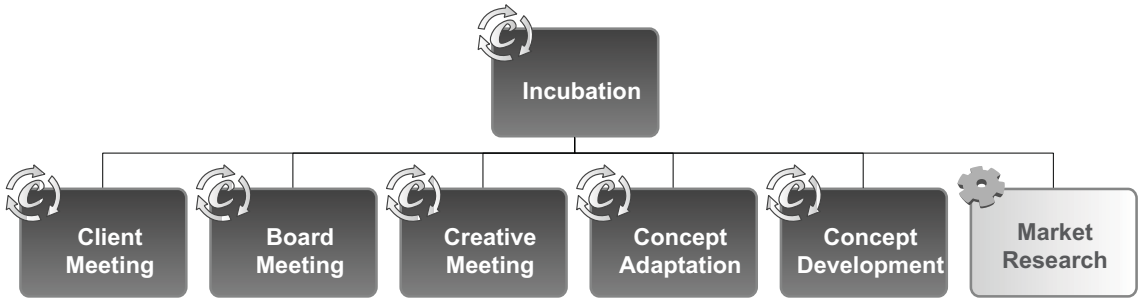


Figure 6.43: Process Hierarchy of the Incubation Phase in Entertainment

Apparently, even in this early phase of product development, a subprocess has been identified that can already be subject to a more structured description: that of *Market Research*. Depending on the subtask, the intended result could be a list of available format licenses, potentially based on a set of requirements filtering the entirety of results. Although this might be a task bearing some degree of knowledge-intensity, it is not a creative task and thus not modeled as a Pocket of Creativity. As has been stated in Section 4.1.3, subprocesses can be analyzed with traditional means of business process management.

An important PoC that has been identified is the *Client Meeting*. It has a multiple function both in eliciting current demands for new formats as well as reviewing ideas and concepts that already are in a phase of incubation. Figure 6.44 depicts this creative subprocess by means of a PoC Sheet. Characteristic for this type of creative task is that both the artistic supervision and the artistic execution are carried out by the same persons. This implies that there is no apparent hierarchy taking effect on the subprocess.

The PoC sheet shows some optional resource types, which a client meeting can be based on. In this context, the resource *Format Idea* can represent both a portfolio of available ideas from the production company as well as a concrete notion of a desired format provided by the client. The result of a client meeting will ideally comprise a set of *requirements* for the

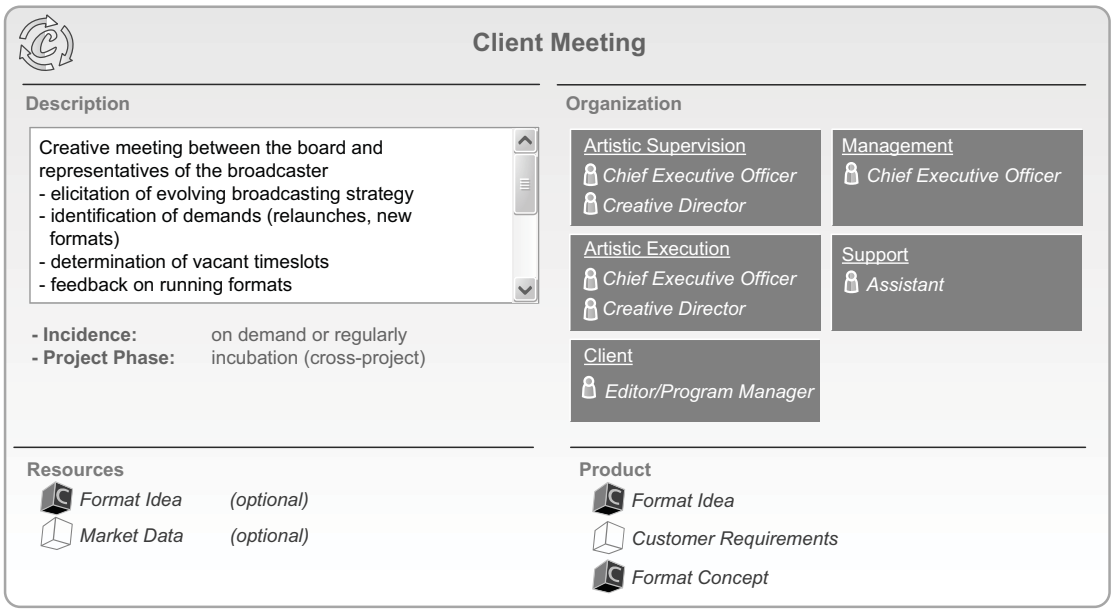


Figure 6.44: PoC Sheet for Client Meeting

development team to work on. Furthermore, new format ideas or even more comprehensible format concepts can result from the creative exchange between the heads of the production company and the broadcaster's representatives.

A more typical example of a Pocket of Creativity is described in the PoC Sheet in Figure 6.45. The process of *Concept Development* refers to the early work of the development team that comprises the advancement of own or acquired ideas (e. g. from a client meeting) to more comprehensible format concepts. The PoC sheet comprises perspectives for both *constraints* as well as *reviews*.

As constraints *Target Group*, *Time Specs* and *Production Budget* are associated with the desired outcomes of the PoC and are derived from the customer requirements. The *Development Capacity* represents a factor constraining the execution of the PoC itself. It determines to what extent the development team will be able to invest in generating novel ideas as opposed to concurrent tasks like pitch preparation or editorial work for running serial productions. Therefore, it is modeled as a *resource constraint*. The production budget, however, is not a resource constraint in this PoC since it does not constrain the process of idea development but its outcome. For an expected production budget, certain types of format ideas are not feasible to produce from a cost perspective and will thus not be pursued further. The actual comprehensiveness and influence of product constraints among different projects varies. The HoD of Production Company C said:

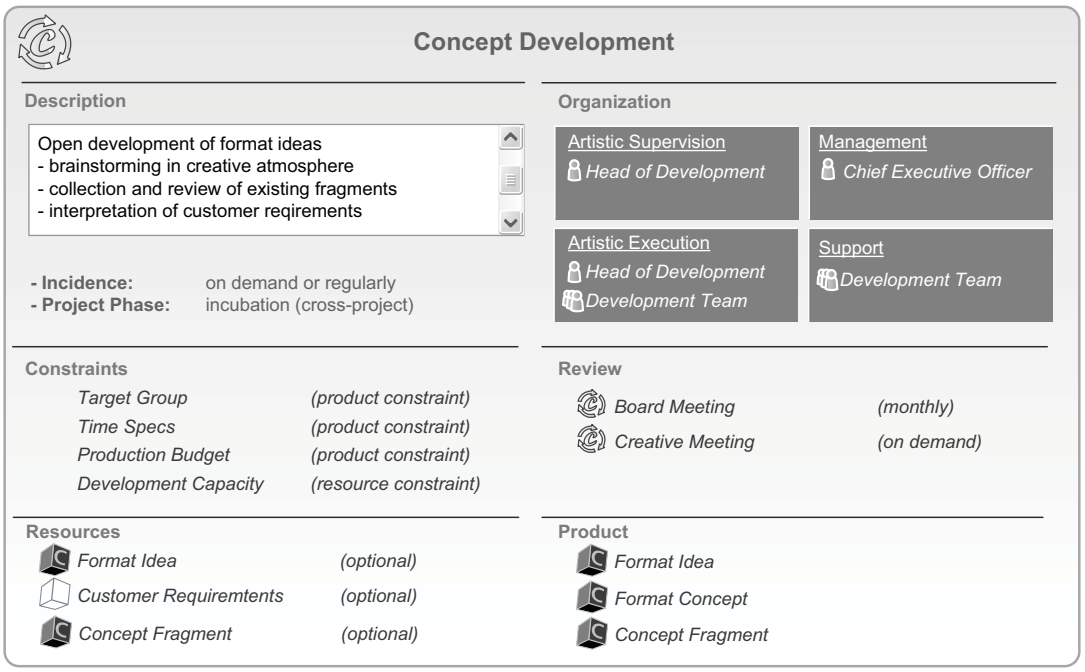


Figure 6.45: PoC Sheet for Concept Development

> "It depends on if you develop in a target-oriented way. There are opportunities, where there is a distinct briefing, where you know it is for that particular broadcaster, that particular broadcasting slot, and that kind of budget. [...] On the other hand, there are those creative processes where you think independently from broadcasters or budgets. What ideas do we believe to fit to the spirit of our time."

In this early phase of development, there are yet no apparent *flow constraints*. While striving for a multitude of format ideas, processes are largely unstructured. Being asked to what extent the management influenced the actual process in development, the abovementioned HoD replied:

> "Not at all. Our management couldn't care less about *how* we develop. [...] Of course we will present our ideas internally, it does not mean the CEO is ignorant about what is going on here. [...] Of course we discuss in meetings, what it is we develop, which direction. And the priorities are set, what client meetings are imminent etc."

A variant of the concept development is the subprocess of *Concept Adaptation*. This subprocess is concerned about the transformation of an acquired on-the-air format to a

format concept, that is adapted to the local requirements such as cultural specifics and viewer expectations. Here, specific constraints apply.

Regular meetings are arranged to keep up a steady pressure for outcomes, but do not necessarily represent hard deadlines for development efforts. They are thus modeled as *reviews*. Both the *Board Meeting* as well as the *Creative Meeting* are utilized to discuss and evaluate upcoming ideas. However, these meetings are creative subprocesses in their own right, since they contribute to the evolution of a product. The HoD (B) reported from these meetings:

> "We have a creative meeting, where we come together with the producers, with the department heads, to get everyone up to date on what we are working on, where we have advanced. [...] It is weekly, it has quite a regular structure."

6.5.2 Development

The development phase comprises all activities from the rough concept draft up to the closed production contract with the broadcaster. Generally the costs of development are borne by the production company and are thus its risk. In the entertainment sector, development contracts are unusual. However, the HoD of Production Company B reported from some exceptions:

> "Except if there is a broadcaster who says, you are now our producer and we require something for this particular slot. Here is your development contract. That almost never happens. Well, for our company this happened twice lately, but only because I work very close to the broadcaster."

The transition between the incubation and development phase is marked by the commitment regarding a distinct format concept for further investments into the idea. This decision can result from a client's proposition of intent or from the internal advocacy for a project through the management.

6.5.2.1 Product View

The focus of the development phase is the comprehensive specification of a format. Regarding the properties of a format, the Creative Director of Production Company F stated:

> "Many people mistake the idea for a format. An idea would be to say: we should do a modern kind of singing contest. In principle, that would be DSDS.[11] But that is not what the format is. The format is the recipe, the meticulous plan that says: we do eight episodes, with this particular length, this happens after that, there are these rules [...] we have quite rigid guidelines on how an episode must look like."

While the central product of the development phase in entertainment is the format, the essential step to advance it into production is the sales pitch with the broadcaster. The important role of the pitch presentation gives its preparation a very high priority. The creation of the presentation material and the specification of the format itself is conducted in an integrated manner. Figure 6.46 depicts an archetypal product structure for the pitch presentation.

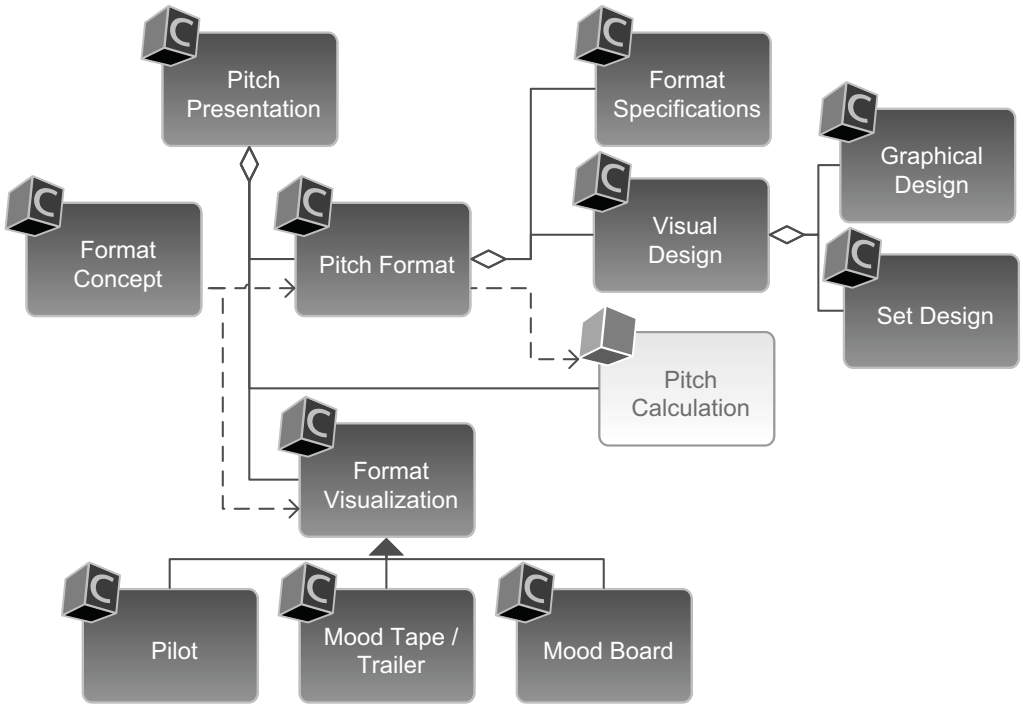


Figure 6.46: Product Model for the Development Phase in Entertainment

As can be seen in the model, the pitch presentation largely comprises of creative sub-products that are generated in the development phase. The format itself contains both the comprehensive *Specification* of the temporal structure (length, number of episodes), the procedures, required cast, rules as well as the *Visual Design* that aims to establish a

[11] DSDS stands for Deutschland sucht den Superstar and is based on the british format Pop Idol.

recognizable brand for the format. The visual concept will comprise basic design features like logos, but can also more extensively describe a complete set design. Furthermore, a draft *Calculation* of the production costs is included as a basis for budget negotiations with the client.

In the last subsection, both novel concepts as well as on-the-air-formats transferred within a multinational company (c. f. Figure 6.41) have been described as possible origins for pitch formats. Since most broadcaster-independent production companies in the branch of entertainment formats are subsidiaries of multinational corporations, transnational adaptations are a common strategy. The CEO of production company G highlighted the relevance of these processes:

> "This is what I regard as creative achievement, to figure out how to successfully adapt these formats in Germany. It is all about making a successful pitch out of an idea regarding the format. To give the broadcaster a visual impression on how we envisage the actual implementation in Germany."

In this context, both broadcasting data as well as footage of the foreign broadcast can be included into the pitch material. While this has regularly been done in the past, the necessity for careful adaptation has become more evident in recent years. The HoD of Production Company B described this shift during the interview:

> "The CEO walks in with a little case with 10 DVDs, shows everything, [...] and the broadcaster says: ooh.. this is sexy, this english stuff, we want that. It is not like that anymore. [...] It can just as well knock over completely, if I showed footage from a DVD and he thinks it is stupid, he will say: I don't like it. [...] You have to be careful not to constrain the concept too much. The best way is to make some clips yourself, showing some cool situations."

During the interviews, such client-tailored clips were also referred to as *Trailers* or *Mood Tapes*. The latter term is derived from the so-called *Mood Board*, a common tool for visually communicating design ideas (McDonagh & Denton, 2005), which were also mentioned as an important component of a pitch presentation. These boards are compositions of pictures and/or text headlines that aim to transport characteristic situations and impressions of the pitched format. Their primary function is to foster the client's imagination toward the realization of the format. The HoD of Production Company C stated:

> "These are for the broadcaster, you sit face to face with people that might have little time or little visual imagination. [...] We just try to transfer the idea in a short manner."

Depending on both the relationship between the production company and the broadcaster and on the particular subgenre the pitch format can be more or less extensive. Furthermore, the pitching of a particular format is not necessarily concluded through a single pitch meeting with the client. The CEO of company A reported from a pitch that went through multiple iterations:

> "We first drafted the general idea in three, four sentences and made a rough sketch of the structure. And that sufficed for the pitch then. In the next step we already produced several episodes. The broadcaster was okay with this in principle, however, we still had to convince them to buy it."

Although producing *Pilots* represents a more elaborate form of visualizing an entertainment format, such pilot episodes are produced with comparably simple means. Depending on the respective subgenre, pilot episodes are a feasible way to effectively visualize a format, e. g. in factual entertainment.

6.5.2.2 Organizational View

In the process toward a production contract, more positions within the production company become involved with the emerging project. Under the supervision of the *Head of Development*, the *Development Team* is both advancing the content of the format specification, as well as preparing the pitch presentation.

Graphics Department: If existing as an organizational unit, the graphics department will tend to the visual components of this creative product. However, due to the close integration of the different artistic tasks, the graphic designer's job is not necessarily constrained to that. For company A, its CEO described the organization:

> "We do have a fixed graphics department with one fixed graphic designer. However, he will do content-related creative work too - so no one-way road there."

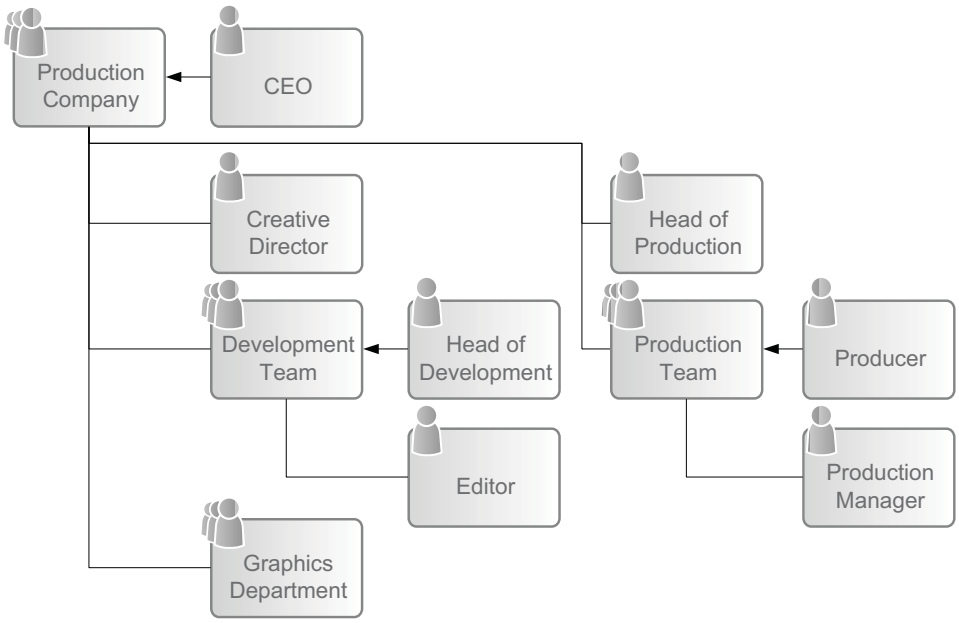


Figure 6.47: Organization Model for the Development Phase in Entertainment

Production Team/Producer: Accompanying the creative development, first calculations toward a project budget are made already. Since in most cases there is no client contract in effect yet, the production team will merely comprise the position of the producer. She or he will tend to the calculations in close interaction with the head of production and might be supported by the production manager. As the project is "in the pitch", the responsible producer will be involved in the project meetings and will become the major contact for the editor responsible in the client organization.

Production Manager: The unit production manager (PM) is a project-specific position that is contracted very early, but usually not prior to a closed contract with the client. However, in some production companies, the PM is a fixed position within the core personnel who can be assigned to sequent projects before an actual production contract (as has been reported for one of the studied organizations). In these cases it is plausible that the task of early calculations within the development phase adds to the duties of the production management. The primary duties of the PM, however, focus on the production phase (c. f. 6.5.4). The PM will report to both the producer as the head of the project as well as to the head of production as the financial supervisor.

Head of Production: The head of production (or production coordinator, head of controlling) is responsible for the overall financial situation of the production company. He or she controls the cross-project budgets and must be consulted regarding the feasibility of new format ideas. The Head of Production of Company D described his role in the phase of development:

> "You are well advised to engage early with the colleagues, the producers during development. You will avoid projects running out of budget already in this early phase. On the other hand you can already do some research regarding the feasibility of certain things. Because people have crazy ideas sometimes and the earlier you know, the better you can assess this."

In the phase of development, the head of production has a supervisory function regarding the draft calculations made in preparation for the client pitch and will review the budget internally. The head of production will also be consulted regarding recruitment decisions, especially for hiring the PM.

6.5.2.3 Process View

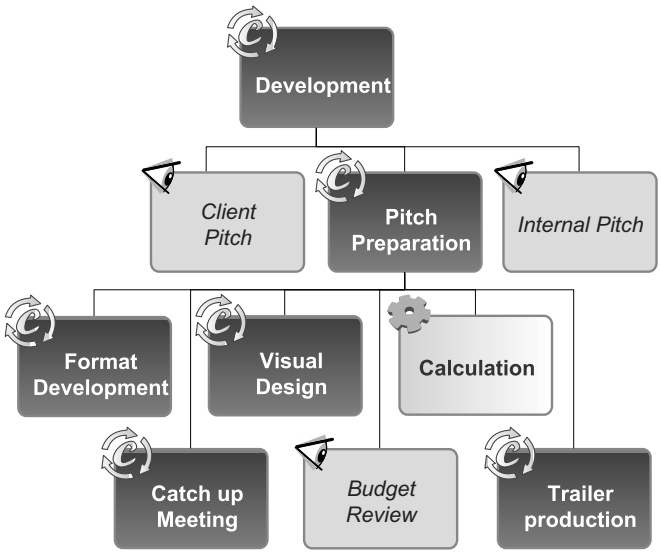


Figure 6.48: Process Hierarchy for the Development Phase in Entertainment

As has been described above, the main objective of the development phase of new entertainment formats is to prepare and successfully perform a sales pitch at the broadcaster.

Aim of the pitch is the closing of a production contract with the broadcaster. Up until that point, all efforts put into the development are preparatory. That implies a financial loss for the production company should the format fail to result into an actual production.

Figure 6.48 accommodates the significance of the pitch in tightly bundling the efforts of the development of the *format specification* with the *preparation of the pitch presentation*. This structure resembles the interaction between the structural development of the broadcasting units and the content-related and visual design.

Figure 6.49 introduces the procedural aspect to the activity structure. Note that a part of the inner flow of the PoC *Pitch Preparation* is modeled as a mandatory partial flow, while both the *Catch-Up Meeting* and *Trailer Production* are optional activities within this subprocess. Furthermore, the *Calculation* as a non-creative activity is strongly intertwined with the format development and will feed back into content-related decisions.

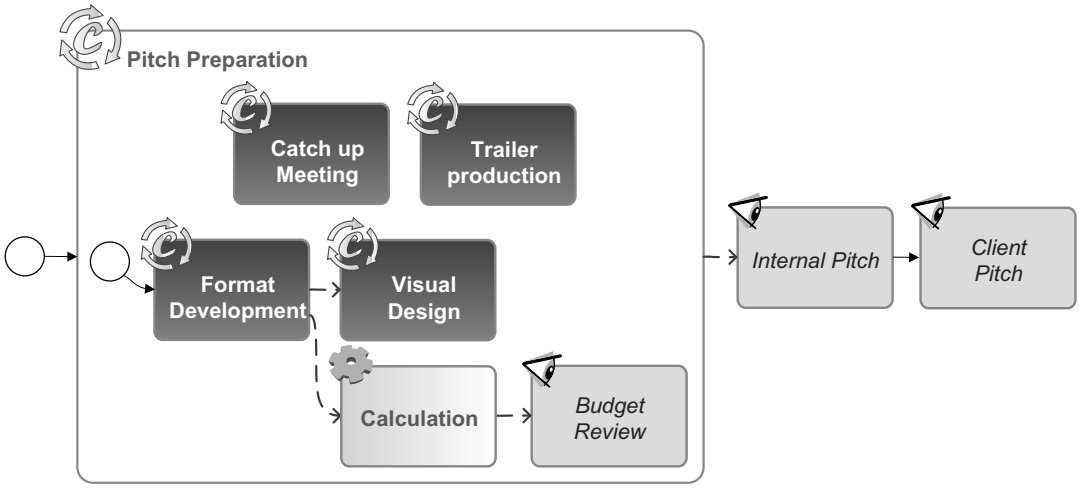


Figure 6.49: Business Process Diagram for the Development Phase in Entertainment

As one of the creative subprocesses, the *visual design* is shown in an expanded view as a Pocket of Creativity in Figure 6.50. The artistic execution lies in the hands of both the graphics department as well as the development team as they will work in close interaction while the format is still in development. If necessary, the development team will also do supporting tasks that are not deemed as being creative. Examples are research tasks like assessing the corporate identity of the client or scanning for registered trademarks to avoid legal risks. The PoC also contains a review perspective, referencing the respective activities, where the visual design will be evaluated both internally and externally with the client.

Figure 6.51 shows the expanded view of the *client pitch* as an example of a review function.

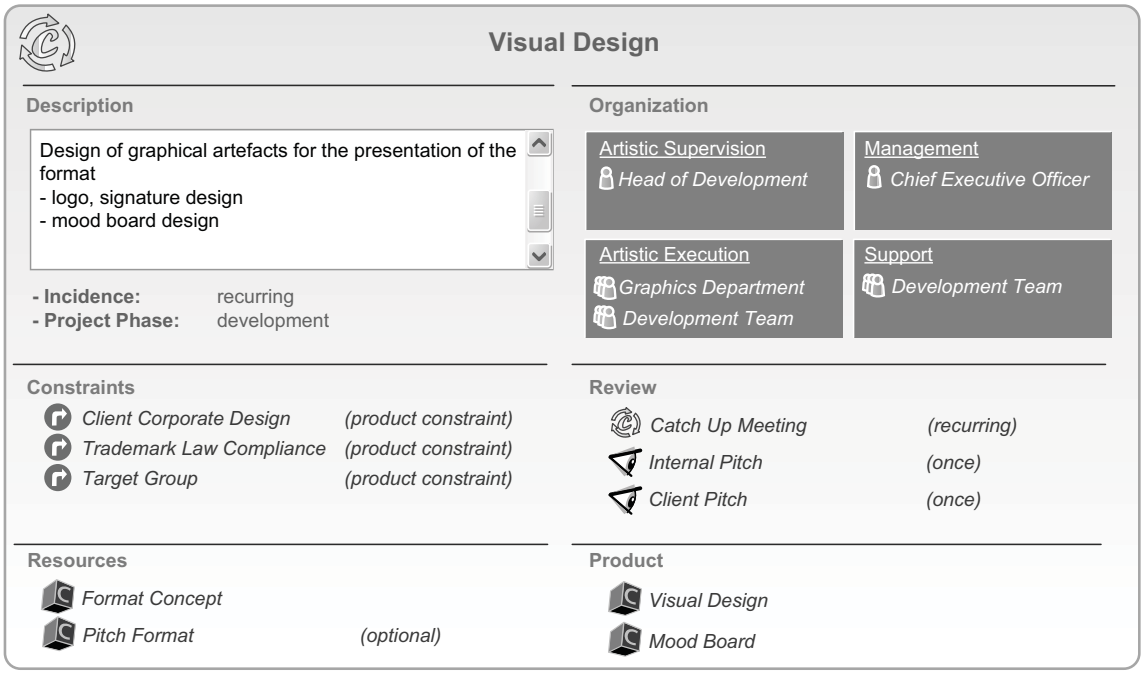


Figure 6.50: PoC Sheet for Visual Design

In most cases, the pitch will not result in an immediate decision regarding the approval or rejection of the presented *format*. The delegates of the broadcaster will present the format in an internal program conference where a decision is made. Therefore, they will not only evaluate the format, but also might give notes to the representatives of the production company for revising the presentation. As a component of the format, the calculation of the production budget will be reviewed and negotiated.

6.5.3 Pre-Production

The phase of pre-production is concerned with the preparatory organization of the actual shooting of footage in the subsequent production phase. In this phase, more key personnel will gradually be introduced to the project as the detailing of the format specification progresses. Core activities are budget planning, recruitment of the production crew, devising the production schedule and allocation of production resources (location/set, technical equipment, props etc). Characteristic for the transition from development to production is the decreasing level of creative divergence toward an increasing level of structure and professionalism (Collie, 2007, p. 195).

Figure 6.51: Expanded Review: Client Pitch

6.5.3.1 Product View

Figure 6.52 depicts a product model for the pre-production phase of an entertainment format. Since the subgenre of the format is not further specified, the information provided in the model remains generic. However, the model exemplifies the typical resolution of the creative products into concrete resources.

The detailed planning of the production budget has an essential relevance for all subsequent processes in the production of a format. As the study has shown, in the German television market it is an accepted routine to compile an *external calculation* to be approved by the customer, as well as an *internal calculation* for the actual allocation of the budget during production. The Head of Production (Production Company D) reported:

> "There is always the calculation for the broadcaster basing on the contracted figures. And then there is the production manager who calculates incoming data [...] He replaces the broadcaster calculation with project-related figures because there will be adjustments. [...] He has to design it in a way that the total remains stable, but there are margins he can work with."

Thus, the internal calculation will constantly be updated during production, e. g. to account for unexpected delays (illness, weather etc.). The external calculation will be fixed

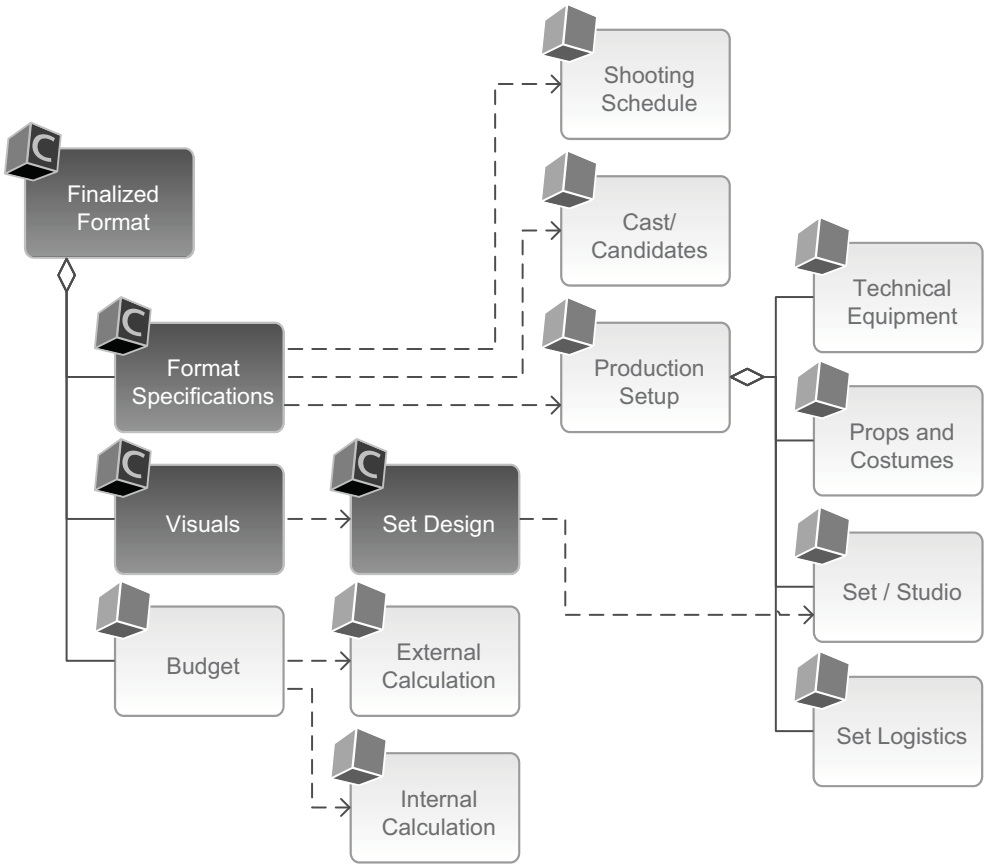


Figure 6.52: Pre-Production Product Model Entertainment

in a hard negotiation process, as the Head of Production described during the interview:

> "Calculation is submitted, calculation is audited. Then there are budget meetings where the broadcaster's production management will inquire about every single position, ask for justifications, discard things, because they are confident something can be purchased for less etc."

An essential task of the pre-production phase that is not represented in this view is the recruitment of the production team, since it does not result in a tangible product.

6.5.3.2 Organizational View

After closing the production contract with the broadcaster, the production team is to be planned and personnel is to be hired for the project. Figure 6.53 depicts the growing organization of the project.

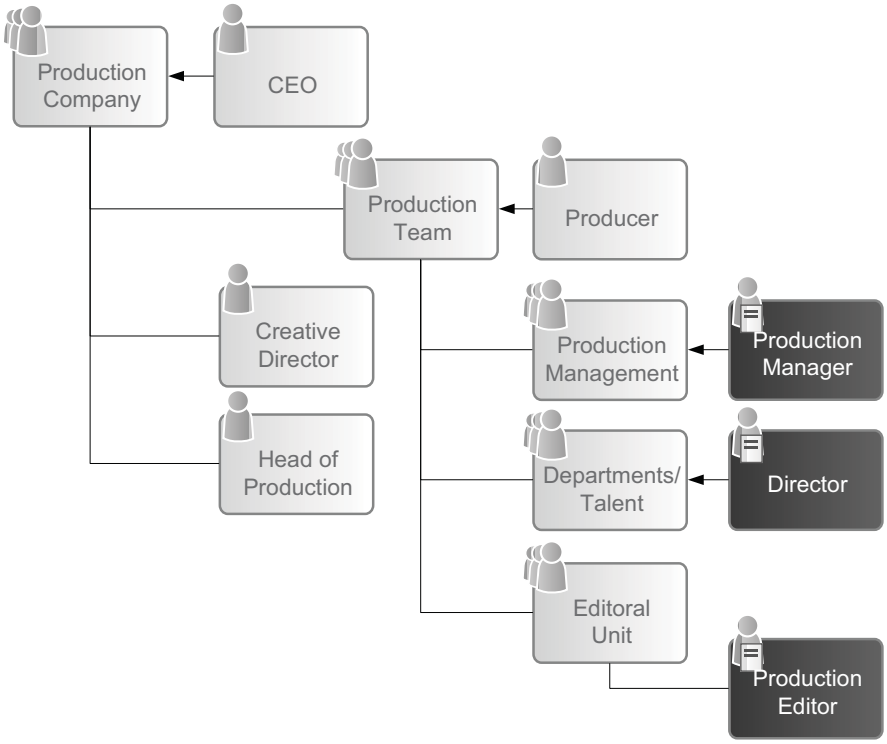


Figure 6.53: Organization Chart for Pre-Production in Entertainment

Head of Production: From the HoP's perspective, the pre-production phase is that with most responsibility for his or her position. The HoP is responsible for devising the detailed calculation, as well as for recruiting and contracting the project personnel. The HoD (Production Company D) described this activity:

> "The next big process is Talent. [...] I come in as soon as money and contracts are concerned. We consider which person we hire for which job, areas like technical equipment, camera, sound, props, direction etc. What people could fit and if they are available at that time. And we have a network of people, who we worked with, with whom we have experiences. We will call these people deliberately, things like unsolicited applications are rather uncommon in this area."

Producer: With the beginning of the pre-production phase, the producer will become the head of the project and the major contact person for the client for the remainder of the project. He or she will consult the CD only in exceptional cases such as major disturbances of the production schedule and/or budget.

Production Support: The production support team (or production office) will be involved in the calculation and planning of the shooting schedule. The production manager as head of the project finances will control the keeping of the budget on the basis of the daily reports of the assistant director.

Departments/Talent: The talent unit comprises all artistic and technical departments of the production such as set/location management, camera, sound, costume, make-up, props etc. Depending on the type of production, these departments will be involved in preparatory activities such as location scouting and preparation, procurement of props etc.

Editorial Unit: Depending on the type of format, the editorial unit will tend to tasks like candidate casting or research activities. These editorial tasks might also be attended to by the development department of a production company.

6.5.3.3 Process View

The most prominent subprocesses of the pre-production phase are the detailed *calculation* of the project budget as well as the *recruitment* of the production team. Both subprocesses require expert knowledge of both television production procedures as well as acquaintance with the professional community. However, both subprocesses are not deemed as being creative as they influence the final creative output only indirectly. Therefore they are modeled as standard subprocesses in the product hierarchy (cf. Figure 6.54). The *format breakdown* comprises all preparatory activities to allocate the production setup.

The actual activities necessary for this creative subprocess are largely dependent on the specific subgenre and structure of the format. This can comprise editorial tasks such as the casting and selection of adequate candidates, the preparation of in-show games (e. g. quiz questions etc.) or coordination with external private or public organizations (application of filming permits etc.).

6.5.4 Production and Post-Production

The production and post-production phase within an entertainment production is primarily described as an organizational challenge. The actual shooting on-location or in the studio leaves very little headroom for creative interpretation, since the concept of most entertainment and infotainment programs relies on the spontaneous reactions of non-professional

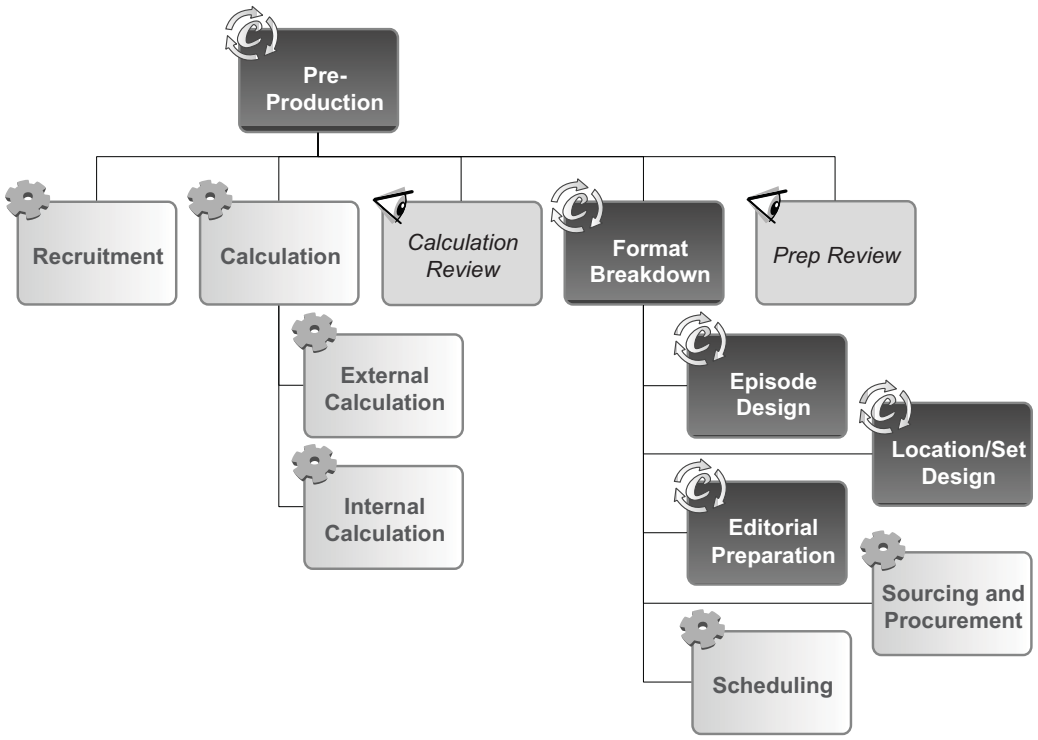


Figure 6.54: Process Hierarchy for Pre-Production in Entertainment

actors in front of the camera. The respective setup and process of an entertainment production is dependent on the specific subgenre. In the following, the process will be exemplified on a studio show production.

6.5.4.1 Product View

Entertainment shows are shot in studio locations, often with live audience. In contrast to fictional productions, the production and post-production phase can be much more intertwined, i. e. most editing activities will take place in the control room, as the interviewed director confirmed:

> "In a studio multi-camera system you almost finish the product, so the post-production is less extensive. [...] Take editing: the cameras are organized and there is a program saying who is on at which time and so I'll have the finished product there already. I have everything concentrated in one room where everything must happen."

This is especially valid for live or 'as live' productions, since for those productions only minor corrections are made in post-production. Soundtrack material such as jingles are

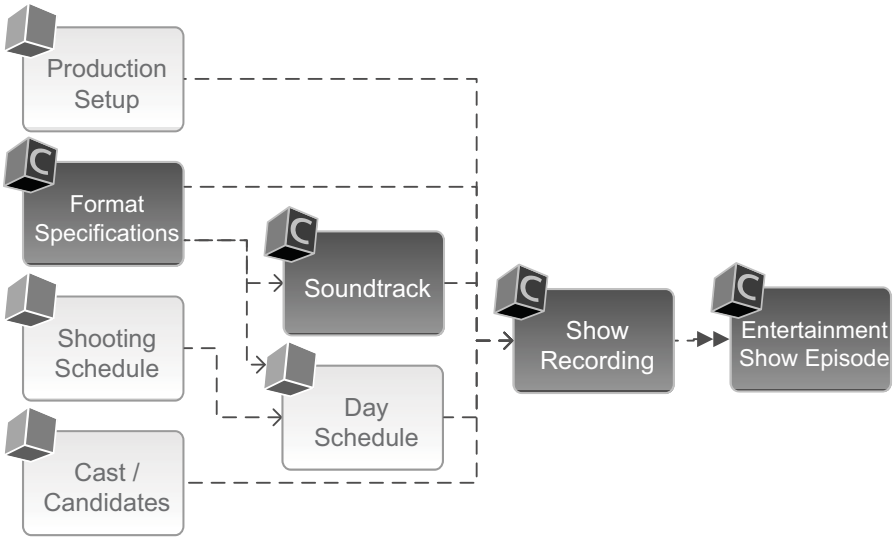


Figure 6.55: Product Model for Production in Entertainment

generally pre-produced and played back by a sound engineer in the control room.

6.5.4.2 Organizational View

The organizational perspective for the entertainment production has some similarity to that of a daily soap due to both formats being shot in studio setups. However, fewer specialized departments are necessary. Entertainment productions will for instance generally not employ a costume department.

Editorial Unit: The editorial unit is special to entertainment productions. During the production, they will primarily be responsible for the candidates and any short-termed research work.

Vision Mixer: The vision mixer is a control room technician typical for multi-camera studio productions. This position is similar to a cutter in a movie post production, since the vision mixer will control the switching between the different cameras according to the director's instructions.

6.5.4.3 Process View

The production process of a show episode is very well structured and is conducted in an almost linear fashion. Figure 6.57 shows the process on an abstract level. The recording

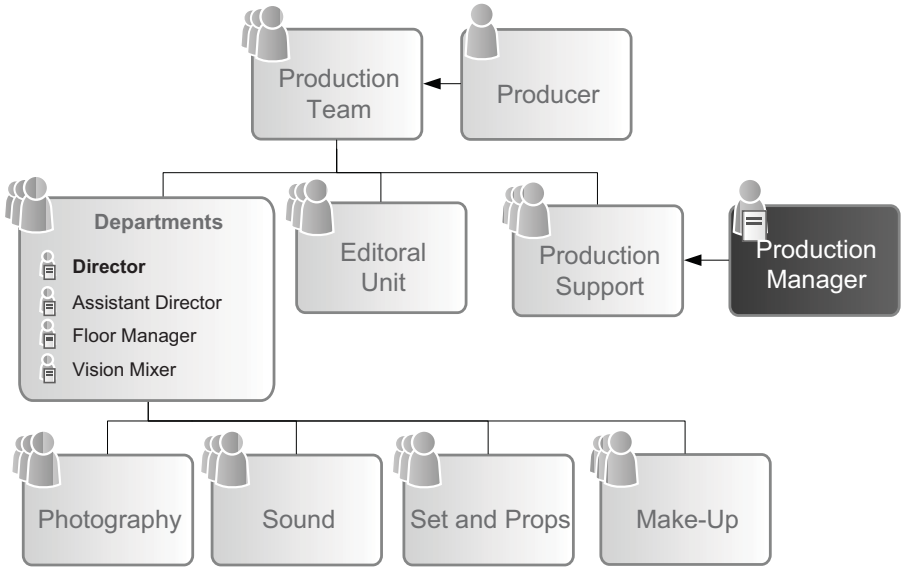


Figure 6.56: Organization Model for Production in Entertainment

does generally not include retakes and is edited live similar to the studio shooting of daily soaps. Commercial breaks are scheduled and will often be announced by the show host. Post-production is generally constrained to adding sequences like intros or end titles.

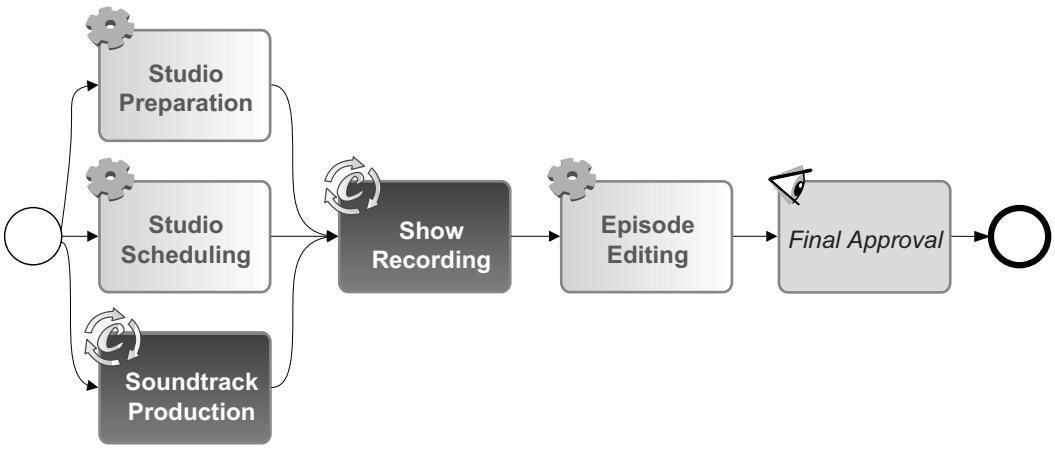


Figure 6.57: BPD for Production in Entertainment

The process is modeled by means of a business process diagram that exhibits no optional tasks or process forks on this level of abstraction. While this is an idealization (like all descriptive process models), it shows the diminished role of creativity in this late phase of production. While fictional formats incorporate the creative interpretation of a script by performing actors, most entertainment formats rely on the predefined situations to generate

interesting content by themselves.

This bears additional risks, since the behavior and reactions of filmed amateur show candidates is hard to predict. A common strategy to mitigate such risks is to introduce scripts to the formats. These are still "performed" by amateur actors, which aims to prevail the authenticity (Rose & Wood, 2005). This scenario, however, is not represented in the model.

6.6 Discussion

This chapter has shown a comprising model of the television production sector in Germany. Based on semi-structured interviews, organizational and process data has been extracted and reconstructed using the formalisms developed in Chapter 4. The modeling process revealed a number of characteristics and problems that need to be discussed.

6.6.1 Creative products versus creative services

The identification of pockets of creativity in business processes has been built upon the added creative value on or the creation of a creative product. This product focus, however, fails to recognize a certain class of processes and activities that require the creativity of the involved persons, while not immediately producing or altering a tangible creative product. These activities create their value within the activity itself, in some cases even merely for its duration, and can roughly be described as being a *service*.

A first example is the performance of the cast in fictional productions. While their activities are visible in the filmed footage, they do not produce a tangible product in their own right. On the level of abstraction that has been pursued in the modeling in this chapter, this is not immediately evident since the shooting activities are modeled as atomic PoCs. However, should a more detailed analysis become eligible, these activities cannot be derived from product values unless intangible products and components are explicitly modeled. This is, however, not desirable since the definition of these contributions is difficult to obtain in a way that is intersubjectively acceptable.

A second example is the function of the acting coach in daily series production (cf. Section 6.4.4). His or her function is the coaching of the comparably inexperienced cast on the basis of the script. While this activity is arguably creative in its nature, it does not directly contribute to a creative product. While its actual impact is hardly measurable, the

coaching is perceived as an integral component of daily series production that allows for the employment of rather unexperienced (and thus affordable) actors. In Figure 6.40 (p. 178), the resulting activity has thus been modeled as a PoC despite the lack of a directly product-related creative contribution.

A possible solution for this problem is the definition of *creative services* as an output of PoCs. However, a comprehensive description for creative services is difficult to obtain, since the service term itself lacks a commonly accepted definition. Vargo and Lusch (2004) for instance, define a service as "the application of specialized competences (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself"(p. 2). This and other similar definitions are not feasible for the identification of creative tasks since it relies on *knowledge and skills* as non-observable concepts (as is "creativity"), as well as rooting it on the action itself (deeds, processes and performances). In consequence, this issue remains unresolved as a limitation to this research and is thus object to further investigation.

6.6.2 IT in television production

The exemplary PoC-Sheets presented in this chapter do not make any use of the IT system construct. In fact, only very few tasks were associated with IT support, although every interviewee was explicitly inquired toward his or her use of IT and its relevance in the overall process of TV content production.

Digitalization of audiovisual material Due to the advancing utilization of digital recording equipment and increasing bandwith, the distribution of audiovisual material for means of *review* has changed. This especially facilitates external reviews by the broadcaster. Program manager (I) stated:

> "Something that has increased is to distribute samples via the internet, so that you don't send tapes or DVDs anymore."

The form of sample distribution is however still dependent on the respective format, as the program manager (I) reported:

> "Well, it depends. Sometimes I get the files and watch them on the computer, but this varies quite a bit. Regarding our daily, the production company will put all the precaps

> that we publish in our press portal on a server [...] The complete post-production is tapeless by now, there is nothing you carry from A to B anymore."

Very few tasks associated with specialized software are creative in nature. The few incidents found for IT use in creative tasks were mostly associated with post-production. More evidence for *artist systems* in the context of post production can be found in Lux (2007) and Seidel (2009a). Since the present study was largely focused on the early stages of TV production, very little incidents have been found in the data for this type of technology application.

Database applications for archiving and research tasks Several incidents have been found in the data that referred to the use of database or spreadsheet applications for uses of *knowledge and asset management*. In the majority of cases, the associated tasks are non-creative. The general sentiment among the interviewees toward these systems, however, was rather unsatisfied. The creative director (Production Company F) reported about challenges concerning archiving of format ideas:

> "We are quite IT savvy. But still, with all that server stuff and the like - we are not quite happy with that as yet. We're still working on a better way to archive our ideas and make them retrievable. [...] then again, a lot of stuff just happens in the conference room, when we sit together to think about certain things. [...] if employees leave the company and nobody is left who still remembers that we had developed a great idea for a show two years ago, you have a problem."

An extended use case for this type of asset management has been described for means of market observation and research. Especially in the context of entertainment formats the market is considered as being fast moving and a perpetual tracking would be beneficial to asses the potential value of new ideas. The CEO of production company A described the requirements:

> "Something like a database... Although we are informed quite well, having all kinds of newsletters, we frequently have things slipping through our fingers. The traceability of precedent formats in national or international markets is missing. One could save a lot of time, because you have to research this anew each time. Has there been a program with this content yet? If yes, how did they solve it?"

Especially in the pre-production and production phases the means used for the organization are largely improvised. This is especially due to the temporary nature of production teams. While freelancers do not have sufficient funds for specialized software, the production companies are reluctant to make the investments themselves.

6.6.3 Client interaction

The division of responsibility for the creative subprocesses modeled as PoCs is defined between the artists and the creative supervisor. While artists are concerned with the creation of products, creative supervisors both internally review the products as well as negotiating the requirements with and communicating the results to the client. The rationale for this is to keep the artists out of "political games" and enable them to focus on the creative process.

During the study, it became frequently apparent that this separation is an ideal pursued by the production companies that is not shared by their clients. Representatives of the broadcaster (editors and program managers) strive to exercise maximum control on the creative process and thus often directly interact with artists. This is especially evident in the development phase of fictional productions. In the interview with the program manager of broadcaster II, it was made explicit that the screenwriting process was not necessarily perceived as the territory of the production company:

> "No, that is not external to the broadcaster, because the script work is led by the broadcaster..."

In extreme cases this influence can also reach into the creative departments of the production team. While directors are default contacts for the editors and program managers, the interviewed costume designer recounted from direct interaction with a client representative:

> "Sometimes you do have editors that want to have their say, I had that only once so far though."

The program manager from broadcaster I described similar interactions, especially with authors in the development phase of fictional formats. On the question, if the producer was the main contact person she replied:

> "No. Although every editor has his or her own style of work in that regard. The higher up in the hierarchy, the less close is the contact to the artists, this is a completely usual process."

The strong involvement of the broadcaster on the production of TV content has also been described as a phenomenon that is particular for the German market. The CEO of production company A compared the situation with other countries:

> "We have an extremely powerful broadcaster network in Germany. There are projects where we have up to three editors involved, each one with an own opinion, mind you. The control is completely different. In America or the Netherlands I get a contract because they believe in me and in the idea. Maybe they might take a peek from time to time, but basically there is one final review and that's it. In Germany there is always the editor, always involved, deciding about music, partners, crew ..."

This client behavior is driven by the objective to mitigate creative risks, since the representatives of the broadcasters are very exerted to prevent major product failures. This is especially due to the fact, that the editors have limited power of decision and have to justify product decisions within their own organization. Depending on the broadcaster, this process of justification, review and approval will reiterate over multiple hierarchy levels. This has been pointed out as a major barrier for *innovative* formats by different participants of the study and hints toward a multi-level view on creativity (cf. discussion in Section 7.2.2).

7 Closing Discussion

7.1 Reevaluation of the Research Questions

This chapter concludes the thesis in revisiting the exposition of the research and summarizing its results and implications. First the research questions are reevaluated to redraw the initial objectives of the research.

Research Question 1 *How can creativity-intensive processes be documented?*

The modeling constructs developed in this thesis represent a feasible means to generate structured documentations of creative work systems. To ensure this adequacy, the method development has based on theory for creativity-intensive processes and its essential conceptualization has been transformed into a set of language elements and rules. This design artifact has been complemented with a set of modeling guidelines that support its application in a real life context.

The first research question has been associated with the *design science paradigm*, thus the solution to the phrased problem is provided in the form of an *artifact*. Hevner et al. (2004) describe a set of guidelines for design science research (cf. Table 7.1) that allow for the justification of research results and the evaluation of the research process regarding adequacy and completeness. In the following, these guidelines will be recapitulated to justify the research decisions made in this thesis.

Design as an Artifact: The modeling language constructed is the central artifact of the DSR study. Derived from theory, it provides for predefined *constructs* that are used to classify and describe instances of concepts in the artifact's area of application. Since these constructs are related to each other via syntactic rules, the modeling language also represents a *model* of its application domain. Furthermore *instantiations* of the language have been devised both in the ARIS modeling platform, as well as in Microsoft Visio to enable their application in the subsequent evaluation.

Guideline	Description
Guideline 1: Design as an Artifact	Design-science research must produce a viable artifact in the form of a construct, a model, a method, or an instantiation.
Guideline 2: Problem Relevance	The objective of design-science research is to develop technology-based solutions to important and relevant business problems.
Guideline 3: Design Evaluation	The utility, quality, and efficacy of a design artifact must be rigorously demonstrated via well-executed evaluation methods.
Guideline 4: Research Contributions	Effective design-science research must provide clear and verifiable contributions in the areas of the design artifact, design foundations, and/or design methodologies.
Guideline 5: Research Rigor	Design-science research relies upon the application of rigorous methods in both the construction and evaluation of the design artifact.
Guideline 6: Design as a Search Process	The search for an effective artifact requires utilizing available means to reach desired ends while satisfying laws in the problem environment.
Guideline 7: Communication of Research	Design-science research must be presented effectively both to technology-oriented as well as management-oriented audiences.

Source: : (Hevner et al., 2004, p. 83).

Table 7.1: Design-science research guidelines

Problem Relevance: Current process modeling techniques are driven by a control-flow paradigm and are thus dependent on precise definitions of the logical sequence of activities. As an example, Seidel (2009a) concluded that "EPC is not capable of modeling the flexibility that is needed in order to model creativity-intensive processes" (p. 212). This lack of flexibility severely limits the application range of modeling techniques for documenting processes that are influenced by creativity or processes with varying structure in general.

Design Evaluation: The feasibility of the developed artifact has been comprehensively demonstrated by applying the documentation method to the domain of television production. Techniques of qualitative research have been applied to gather rich data that allowed for the identification of semantic excesses and deficiencies in the method. While this ensured the model construction utility, a comprising evaluation of the model usage is still subject to further research.

Research Contributions: The development and application of the design artifact generated

valuable knowledge concerning both the base theory as well as the field of process modeling. The contributions are discussed in detail in Section 7.2.

Research Rigor: For the language constructions, well-established methods of method engineering and meta modeling have been applied. The evaluation phase applied techniques of qualitative research to investigate into the fit between method and domain. All intermediate results along the process have been documented in this thesis and can be retraced.

Design as a Search Process: The work presented in this thesis represents a first cycle in an iterative process of artifact application and evaluation. The findings of the evaluation will feed back into the further advancement of the method.

Communication of Research: This thesis serves as a comprising documentation of the artifact and its development process. Furthermore, the method has been implemented to a commercial software modeling platform that is ready to be applied. This research is incorporated into a research project on the management of creativity-intensive processes (ManKIP) and its results will subsequently be distributed in the project's dissemination activities.

Research Question 2 *How can conceptual modeling contribute to the validation and enhancement of qualitative theory?*

The results of qualitative research do generally not yield operationalized and testable hypotheses and are therefore hard to evaluate in an objective manner. Corbin and Strauss (2008) state that "as a rule qualitative researchers [...] are more interested in understanding what is going on than they are in testing hypotheses." (p. 316). Theory building in this context results in substantive theories that are descriptive and explanatory conceptualizations of their constricted area of validity. However, the value of such theories lies in the depth of the provided domain knowledge.

Conceptual modeling is concerned with the description of real world systems. The conceptualization of a modeling method serves as a form of filter that helps to organize unstructured data gathered from an application domain. If substantive theories are used as means of a domain conceptualization for these languages, each application of the conceptual modeling language can be considered as being an evaluation of the theory's descriptive component.

7.2 Contributions and Implications

The present research addresses the gap between the formalization of processes through modeling activities as it is promoted by the workflow management strand of BPM and the necessity of flexibility for managing knowledge- or creativity-intensive work systems. By employing results of qualitative research efforts in the context of creative organizations contributions both to the management and modeling of business processes as well as to the theoretical knowledge on the influence of creativity on business processes could be derived.

7.2.1 Contributions to Business Process Management and Modeling

Section 4.2 showed a variety of business process modeling techniques that are perceived as being established in the context of business process management. While these methods each have their individual properties and areas of application, they predominantly rely on the *control-flow paradigm*. This view on processes views them as predefined sequences of activities that are connected via control-flows. The ingoing and outgoing flows of activities represent the pre- and postconditions that constrain the sequencing of their instances. Thus, both a precise definition of these conditions is necessary as well as a rigid separation of successive activities.

The documentation method developed in this thesis frees the documentation of processes from these temporal and logical boundaries while still retaining a clearly-defined meta model that provides a strong structural framework for the documentation activities. The introduced sequence constraints developed allow for the flexible description of relationships the vary concerning *sequence*, *timing* and *commitment* (cf. Section 4.4.4). This enables modelers to document smooth transitions from a mere decomposition of tasks toward a precise process definition as traditionally conducted with established modeling languages. Through this integration, knowledge- and creativity-intensive processes and activities become accessible to modeling. Furthermore, the integration into the BPMN has shown the feasibility of integrating the method into an existing business process management infrastructure.

A second contribution of this research is seen in the clarification of model usage in the context of business process management. A major critique on classical reorganization methods utilizing process modeling techniques has been the imprinting of a mechanical view on processes on a social system (cf. Section 2.2). The present research introduced

process modeling as a means of documentation and understanding, rather than performance analysis and organizational design. In this context, a clearly-defined documentation method helps to sharpen the view on the essential, value-adding activities of an organization. In the context of creative work systems, these activities add creative value to a product while more administrative processes provide the infrastructure for these creative subprocesses to be carried out. The identification of these process types helps to guide advancements through resource allocation or IT support. However, formalized process documentations cannot be the sole basis for optimization efforts. They are a documentation means for external stakeholders in BPM projects to foster their understanding of the domain rather than being a precise instrument for analysis.

In the context of major redesigns, formalized modeling methods may fail altogether, since they are generally not suited toward communicating the complex issues that trigger respective endeavors. For these applications, informal methods like soft systems methodology (SSM, cf. Checkland and Scholes, 1990) will be more suited. These methods allow for creative approaches to problem solutions since they do not constrain users by a predefined conceptualization. On the other hand, these methods are not adequate for documentation, since the interpretation of their graphical and textual representations relies heavily on the temporal context and the members of an active BPM project. The strength of process modeling languages on the other hand thus lies in a stable conceptual reference system that allows for intersubjective interpretations of process documentations.

7.2.2 Contributions to the Applied Theory

With the theory on managing creativity-intesive processes Seidel (2009a, 2009b) provides for both a conceptualization as well as an abstract model relating the categories and explaining the dynamics of the creativity-intensive process. The application of the modeling method has shown that this theoretical foundation is well-suited for describing procedural and organizational structures of television production. Furthermore, this evaluation has generated some insights that can be fed back to the theory.

As an essential property of CIPs, the *varying levels of structure* has been emphasized. Tasks and processes that are highly creative are typically associated with weak structure, while non-creative tasks and processes are rather characterized as well-structured. In theory CIPs can be decomposed into subprocesses that are either of one or the other type. However, in applying the modeling method it has been shown that processes advancing the creative

product can be conducted in a very structured fashion. The development process for daily series as discussed in Section 6.4.2 is an example for a subprocess with very tight structure as well as rigid time and resource constraints. Nevertheless this process and its activities are regarded as being creative since they directly add to the creative product. The structuring of this process includes the predefinition of the review cycles which largely obliterates the unpredictable iterative character of the individual tasks that is associated with CIPs. This obervation implies that while the level of structuring for a process can be regarded as a *continuous measure* from a complete ad hoc process to a formalized workflow, that process can still be creative in nature. The modeling method accounted for this result in providing for mechanisms that allow for temporal and causal flexibility.

Naturally, the increased level of control in creativity-intensive processes allows for much less creative freedom, as has been confirmed by the screenwriters being the artists in this particular process. Seidel (2009a) accounted for this in relating higher uncertainty with both higher risk and creative potential. For the documentation of these processes, this implies a problem of "creative threshold", i. e. the question, at what point an activity is still considered as being creative (cf. Section 4.1).

As a foundational strategy for managing creative risk, the *communication with the client* is emphasized to achieve mutual understandings of the requirements (Seidel, 2009a, p. 175). Especially in processes with high uncertainty, creative organizations of the original substantive area are described as exerting themselves for this interaction to prevent failures. As has been discussed in Section 6.6.3, in the domain of television production in Germany this communication is much more driven by the client side, i. e. the broadcasters. The interviewed executives of the production companies attested this current situation rather an abundance of client involvement that severely constrained the creative potential during the production of media content. Due to the current great *market power* of broadcasters however, production companies have very little opportunity to steer communication processes toward an optimal balance between risk mitigation and creative potential. In summary, the relationship between creative organizations and client in regard to market power and consequently the *market environment* as such seem to represent important influence factors on creativity-intensive processes as yet unregarded by the theory. Thus, in-depth investigation on the actual influence of these factors is an interesting subject for further research.

The strong influence of market mechanisms within the substantive domain of this study revealed another issue in defining creativity in the context of the so-called creative industries. Frequently recurring topics in the interviews were high cost and time pressure and immedi-

ate control and constraints through client intervention – a development which seemingly aggravated in recent years (as acknowledged by both representants of production companies as well as broadcasters). This is perceived as severely hampering creativity regarding novel experimental formats, stories and programs. In fact, the vast majority of television formats produced in Germany today are licenced abroad and adapted for the national market. While the adaptation and actual production of such contents is still considered a creative process, it is not perceived as *innovative* television making. A possibility to specify this, is to regard *creativity on multiple levels*. While the production processes still yield creative products, these products are merele unique on an *instance level*. On a *type level* in the majority of cases these products are copies of ideas already launched sucessfully in other (abroad) markets. This hints toward the existence of market environments, that have a positive influence on this type of creativity and others that lack such a nurturing effect. Thus, an investigation on the influence of market structures in creative business sectors, as well as cultural impacts and their feedback on creativity-intensive business processes are other issues for further research.

7.3 Limitations

This research has several limitations which originate from the used research methods as well as the domain in which the accompanying study has been conducted.

The *limitations originating from the chosen domain* lie in retaining the narrow focus of both the theory's as well as the documentation method's scope. Although the method is targeted towards creativity-intensive processes in general, both its conceptualization as well as the evaluation stem on observations in the film and television business. Statements regarding the applicability of the method in other creative branches (such as print design, electronic entertainment, advertisement etc.) are thus empirically unsupported. This is also true for creative processes in organizations in business sectors that are considered as being more traditional (such as new product development for manufacturers).

Limitations with regard to the data collection are especially evident in the compilation of interviewees. During the data collection process actors in key positions have been favored to get a comprising view on the complete production processes. Due to limited time and resources this implied a underrepresentation of creative "lower-tier" workers and their view on the processes.

Limitations regarding the artifact evaluation are due to the fact, that the evaluation has yet been confined to the model construction phase. To conclude the design science cycle, evaluations with model users need to be conducted to assess the value of the introduced modeling concepts concerning model comprehension. This is especially necessary to improve the representational aspect (concrete syntax) of the modeling language as well as to test navigational mechanisms.

7.4 Avenues for Future Research

This research has been a first attempt to advance the theory of managing creativity-intensive processes by evaluating its concepts in an additional application domain. While the original theory emerged from data of post production in a cine film context, this research was targeted on TV production, so investigating into a domain that is very much driven by the need for efficiency. However, as mentioned in the limitations above, many similarities exist between the two substantial areas. Further research efforts can target other domains by either using the theory as a sensitizing device as originally proposed by Seidel (2009a), or by applying the modeling constructs introduced in this research to further evaluate both the modeling method as well as its theoretical grounding.

Another more practice-driven research demand points toward the incorporation of the process knowledge into information technology to better support creativity-intensive processes. A specific demand stated by many of the experts involved in the study is the management of creative assets for search tasks. Models in this context could be utilized to set up *knowledge management* and *creativity support* structures to better access and retrieve creative assets. Seidel, Müller-Wienbergen, Rosemann, and Becker (2008) and Müller-Wienbergen, Seidel, Müller, Knackstedt, and Becker (2009) lay conceptual as well as technical foundations for this type of information retrieval. Here, the proposed documentation method could help both to identify creative products in various states of completion as well as identifying activities associated with those products and states. These instances could be used as navigation categories to provide a multidimensional access to creative assets.

Appendix A

Derivation of method components from CIP theory elements

This appendix lists all conceptual features of the substantive theory of managing creativity-intensive processes on the left side and derives their respective embodiment in the modeling language. The additional description informs about their usage and specific language construction decisions.

Table A.1: Method contribution of CIP theory elements

Theory Element (Category/Property)	**Embodiment**	**Description**
Creativity-intensive Process	Element Type (Pocket of Creativity)	The creativity intensive process is depicted as a node (labeled *Pocket of Creativity*) in the process view. The *Pocket of Creativity* represents creativity-intensive processes on all levels of granularity and can stand for single activities as well as complex processes.
Uncertainty with regard to outcome	Element type (creative product) Relationship type (output)	Information available regarding the outcome is modeled in the *product view* as *creative product*. The uncertainty of instances' properties is not modeled explicitly but is implicitly indicated by labeling a process' *output* a *creative product*.

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Theory Element (Category/Property)	**Embodiment**	**Description**
Uncertainty with regard to process	Element type (Pocket of Creativity) Syntax Rule (ad-hoc nesting of PoCs and subprocesses, modeling of partial flows)	PoCs may comprise unconnected PoCs and partial process flows.
Uncertainty with regard to required resources	*no correspondent*	The uncertainty with regard to required resources is not modeled explicitly. Known inputs are modeled by connecting *PoCs* to *products*. A process modeled as *PoC* is implicitly labeled as having resource uncertainty.
Varying levels of structure	Element type (PoC, subprocess) Property (PoC:Description) Sytax Rule (nesting of PoCs and subprocesses) Modeling procedure (subsequent decomposition)	The CIP is analyzed top-down in order to identify creative and structured subprocesses. *PoCs* might contain *structured subprocesses*. A PoC can itself be structured to a certain degree of abstraction. Non-flow process informations can be specified in a *PoC's description* property.
Iterative nature	Element Type (Pocket of Creativity)	Pockets of Creativity are defined as iterative.
Collaboration Intensity	View (organization view) Element type (position, group) Relationship type (client, artist, creative supervisor, manager, support)	The organizational structure is explicitly modeled and integrated to the process view via predefined roles.
Communication Intensity	see above	see above
Varying client touch points	Element type (review, client) Relationship type (review, presenter, reviewer) Property (Review:scope)	*Reviews* are specialized activities that evaluate *PoC* outputs. The *scope* can be either internal or external. During a *review presenters* justify the product to a *reviewer*
Knowledge intensity	Property (PoC:Description)	Knowledge has been excluded as an instantiable element type. It can be considered implicitly in the textual *description* of *PoCs*.

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Theory Element (Category/Property)	Embodiment	Description
Creative risk	*no correspondent*	Individual creative risks are not purposefully specializable beyond the general risk of customer dissatisfaction. A modeling concept aiming to deal with creative risk is the *product constraint*.
Operational risk	Element type (risk) Rekationship type (risk, compensation)	Operational *risks* can be specified and related to *processes* and *tasks*. *Risks* can be related to *compensation* processes.
Creative potential	*no correspondent*	Creative potential is implicitly incorporated in *creative product* and *PoCs* respectively. It can be constrained by *product constrains*.
Artist	Element type (position) Relationship type (artist)	*Positions* can be related to *PoCs* as *artists*. This implies, that the actors bearing that position will be involved in the creative execution of the process.
Process expertise	Element type (position) Relationship type (artist)	The set of *PoCs* connected to a *position* via the *artist* relationship represent the required process expertise for that position.
Creative skills	*no correspondent*	Creative skills are not explicitly modeled. They are implicitly assumed by connection *positions* to *PoCs* using the *artist* relationship.
Working style	Modeling procedure (PoC isolation)	Working styles are individual and therefore not representable on the abstraction level of a process model. The perpetual isolation of creative processes aims not to force working styles on creative actors.
Motivation	*no correspondent*	*not generalizable to process level*
Creative agenda	*no correspondent*	*not generalizable to process level*
Location	Property(PoC:Location)	The location property of PoCs distinguishes between *remote* and *local* collaboration.
Understanding of the requirements of the creative product	*no correspondent*	*not generalizable to process level*

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Theory Element (Category/Property)	**Embodiment**	**Description**
Creative supervisor	Element type (position) Relationship type (creative supervisor, manager)	*Positions* can be related to *PoCs* as *creative supervisors*. This implies, that the actors bearing that position will be responsible for the creative output of the process. The relationship *manager* refers to organizationsal responsibilities
Acting as process intermediary	Relationship type (presenter, reviewer)	*Creative supervisors* will *review* process outcomes internally and justify them externally.
Accountability	Relationship type (manager)	The *manager* role comprises responsibilities regarding financial issues, organization and personnel
Supervising expertise	*no correspondent*	Supervising expertise is assumed for *positions* that act in the roles of *manager* or *creative supervisor* for *PoCs*.
Understanding of the requirements of the creative product	*no correspondent*	*not generalizable to process level*
Client	Element type (position) Relationship type (client, reviewer)	*Positions* can be related to *PoCs* as *creative supervisors*. This implies, that the actors bearing that position will be responsible for the creative output of the process. The relationship *manager* refers to organizationsal responsibilities
Expertise	*no correspondent*	Required client expertise, e. g. as the means to being able to evaluate intermediate products, can be derived from the placement of external reviews.
Client processes	Element type (review, subprocess)	Client processes can be explicitly modeled if required. Minimum are client approval processess that are instanced as *reviews*.
Location	Property type (review:location)	*Reviews* can be conducted remotely or by having a client representive (*position* in client organization) locally reviewing a *product*.

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Theory Element (Category/Property)	Embodiment	Description
Understanding of the requirements of the creative product	*no correspondent*	*not generalizable to process level*
Constraints	Element type (product constraint, resource constraint) Relationship type (flow constraint)	*Constraints* can be modeled and associated to *PoCs*. On the process modeling level, these constraints represent classes. Actual constraint instances might arise in process instances (e. g. "age rating" is a modeled product constraint that can potentially influence a movie production, "PG" is an instance on process level that is not modeled)
Time	*no correspondent*	Time as a constraining factor is effective on all process parts and is thus not feasible to purposefully transfer to a method component
Budget	Element type (product constraint)	Budget can act as a product constraint if certain intermediate product properties influence costs of subsequent process parts (e. g. a night scene in a movie script implies costly night shots).
IT Context	Element type (IT System) Relationship type (IT System)	*IT systems* can be modeled and associated to *processes*.
Knowledge management system	Element type (IT System) Relationship type (IT System)	*IT systems* are not further specialized on the language level.
Asset management system	Element type (IT System) Relationship type (IT System)	*IT systems* are not further specialized on the language level.
Group communication system	Element type (IT System) Relationship type (IT System)	*IT systems* are not further specialized on the language level.
Workflow-related system	Element type (IT System) Relationship type (IT System)	*IT systems* are not further specialized on the language level.
Artist system	Element type (IT System) Relationship type (IT System)	*IT systems* are not further specialized on the language level.

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Theory Element (Category/Property)	**Embodiment**	**Description**
Creative Product	View (product view Element type (creative product) Relationship type (input, output)	*Creative products*, their componental structure and relationships are modeled in the *product view*. *Products* are associated with their *processes* via *input* and *output* relationships.
Intermediate product specifics	Element type (creative product, product) Relationship type (is prerequisite for, is transformed to)	Intermediate products are modeled as individual products in the product view. Predecessor-successor-relationships are modeled by connecting products via relationship edges that denotate a flow constraint or a transformation.
Final product specifics	Element type (creative product, product) Relationship type (is prerequisite for, is transformed to)	Final products are placed at the end of product dependency paths.
Quality	*no correspondent*	*not generalizable to process level*
Strategies in communicating with the client	View (process view) Element type (PoC, review, client) Property type (description) Modeling procedure (modeling meetings as PoCs)	Client touch points are modeled via reviews and PoCs. In the latter case, PoCs might represent initial client meeting that develop a first set of requirements for a creative product. Suggestions for deailng with clients can be modeled in an uncodified fashion within the process description.
Understanding and refining requirements Creative brief Matching requirements with capabilities Providing stimuli Showing references	*see above*	*see above*

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Theory Element (Category/Property)	Embodiment	Description
Ongoing communication Showing work in progress	Element type (PoC, review)	External reviews are planned client touch points to ensure ongoing communication.
Direct interaction between artist and client	Element type (PoC, review, position) Relationship type (client, artist)	Artists can be included to meetings and reviews.
Approval and review	Element type (review, position) Relationship type (client, creative supervisor)	Reviews are approval steps ensuring complience to requirements both internal and external
Finality	Element type (review) Porperty type (finality)	Reviews can be marked as final.
Frequency	Element type (review) Porperty type (frequency)	For reviews, frequencies can be specified (e. g. singular, on-demand, weekly, monthly etc.)
Communication channel	Element type (review) Porperty type (location)	The communication channel is covered by the location attribute.
Involved people	Element type (position) Porperty type (artist, creative supervisor, manager, support, presenter, reviewer)	Persons are associated with processes and activities via their respective role.
Strategies in internally managing CIP	View (process view) Element type (PoC, review Property type (description) Modeling procedure (subsequent decomposition)	The internal management of CIPs is fostered by their documentation in a consice model. The support of this strategical theory component is a major motivation for the modeling method.
Task allocation and team building	View (organization view, process view) Modeling procedure (subsequent decomposition, PoC isolation)	The subsequent isolation of processes that add core creative value to the products supports the effective allocation of tasks and processes.
Resouce allocation	View (process view) Modeling procedure (subsequent decomposition, PoC isolation)	The subsequent isolation of processes that add core creative value to the products supports the effective allocation resources.

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Theory Element (Category/Property)	Embodiment	Description
Managing the scope of creativity	Relationship type (creative supervisor)	By clarifying the creative responsibility of each PoC, the scope of creativity can be channeled to support the overall creativity-intensive process.
Internal review	Element type (review, position) Relationship type (artist, creative supervisor)	Reviews are approval steps ensuring compliance to requirements both internal and external
Finality	Element type (review) Porperty type (finality)	Reviews can be marked as final.
Frequency	Element type (review) Porperty type (frequency)	For reviews, frequencies can be specified (e. g. singular, on-demand, weekly, monthly etc.)
Communication channel	Element type (review) Porperty type (location)	The communication channel is covered by the location attribute.
Involved people	Element type (position) Porperty type (artist, creative supervisor, manager, support, presenter, reviewer)	Persons are associated with processes and activities via their respective role.
Internal breakdown	Element type (PoC) Porperty type (artist, creative supervisor)	The internal breakdown of requirements can be modeled by means of a PoC.
Consequences		
Mutual understanding of requirements	*no correspondent*	not tangible on proces modeling level
Mitigation of operational and creative risk	Element type (risk) Modeling procedure (application of the method)	The application of the modeling method is aimed to clarify process structures and ensure for transparency and traceability. This helps avoiding general operational risks. Furthermore, specific risks can be explicitly modeled.
Operational process performance	Modeling procedure (isolation of creative tasks)	The subsequent isolation of creative tasks is aimed to help streamlining non-creative tasks and subprocesses.

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Theory Element (Category/Property)	**Embodiment**	**Description**
Creative process performance	Modeling procedure (isolation of creative tasks)	The subsequent isolation of creative tasks is aimed to set free time and resources to be reallocated to the creation of creative value.
Client satisfaction	*no correspondent*	not tangible on process modeling level
Keeping ownership over the creative product	Element type (review)	As a measure to keep the creative ownership and thus retain creative potential, the client touch points in the production process are to be clearly defined and artists are to be protected from direct client intervention and political processes.

Appendix B

Translations of Interview Quotations

This section lists all translated interview quotations used throughout the thesis with the original german transcription data. This aims to ensure the traceability of the modeling decisions made in Chapter 6. German-speaking readers can thus evaluate the interpretative influence of the author through the translation. Please note that the german text is the unedited transcription of the spoken replies and thus may contain grammar errors.

Chief Executive Officer, Production Company A

Table B.1: Quotations of the CEO from Production Company A

Original quotation	Translation	Page
We have regular meetings about two times a year, where we all come together. This is where we exchange ideas and experiences. We also have to prepare things for these pitch meetings. [...] There are even concrete tasks. For our recent world-wide meeting everyone had to prepare two concepts, visualized with a demo tape. These were presented to all attendees.	Wir treffen uns so alle halbe Jahre, regelmäßig alle zusammen, und da wird auch ausgetauscht, da müssen wir auch extra für diese Pitch-Termine Dinge vorbereiten. [...] Es gibt sogar Aufgaben. Das heißt, also das letzte Treffen war in Los Angeles, kommen alle zusammen, weltweit, und jeder musste zwei Konzepte erarbeiten, die er mit einem kleinen Demotape noch bebildert und das dann vor allen Leuten präsentieren musste.	180

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Original quotation	Translation	Page
We are always happy, if there is something from the Netherlands or from England that is already on air and we have audience ratings. [...] They always look for proven success. There is definitely a trend of decreasing courage for doing something locally.	Ja, oder häufig ist es so, wir haben eine Idee, wenn jetzt was aus Holland kommt, dann freuen wir uns natürlich immer, weil da haben wir was, was On Air ist oder aus England und da haben wir Quoten. [...] die gucken immer nach Proven Success, also dieser internationale Formathandel. Sagen wir mal, der Mut, lokal was zu machen, nimmt tendenziell eher ab, auf jeden Fall.	180
Take your coffee and sit down somewhere, on the desk of your colleague maybe or on the windowsill. Or you meet in an organized fashion – of course they do that anyway – regular meetings again and again in different constellations. And finally: exchange, nurture and develop. At last you need someone to pick this up, give it structure, a manager...	Geh mit deinem Kaffee irgendwo hin, setz dich irgendwie beim anderen auf den Schreibtisch oder aufs Fensterbrett oder triff dich halt organisiert, das machen die sowieso, aber ganz klar, immer regelmäßige Meetings in verschiedenen Konstellationen. Aber am Schluss: Austauschen, Füttern, Erarbeiten. Und dann brauchst du natürlich jemanden, der das strukturiert, dann brauchst du einen Manager	182
My notion of a head of a production company is that he combines a lot of capabilities. He has to be creative and able to implement things. He needs negotiation skills as well as a basic technical grasp. And he must be able to make the calculations. [...] But to answer your question, first of all, my job is of course to coordinate these hundred people and keep the business running.	Ein guter TV-/Filmproduzent vereint glaube ich diese ganzen Fähigkeiten. Und er muss kreativ sein, er muss selber umsetzen können, er muss verhandeln können, und er muss eine Ahnung haben, was das technisch bedeutet, er muss eine technische Vorstellung haben, er muss es auch kalkulieren können. [...] Aber, um die Frage zu beantworten, das ist schon ein bisschen so aufgeteilt, natürlich ist es meine Aufgabe hier, erst mal die hundert Mann und den Laden zusammenzuhalten.	183
It is actually his job to attend to both the contents as well as the running production processes. [...] you could say he develops and implements, and I develop as well but never actually implement – that is the major difference.	Seine Aufgabe ist tatsächlich, vor allem sich um Inhalte zu kümmern, aber auch um laufende Prozesse. [...] Also wenn man sagt, [er] entwickelt und setzt um, und ich entwickele, setze aber eigentlich nie um – also das ist der große Unterschied.	184

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Original quotation	Translation	Page
We first drafted the general idea in three, four sentences and made a rough sketch of the structure. And that sufficed for the pitch then. In the next step we already produced several episodes. The broadcaster was okay with this in principle, however, we still had to convince them to buy it.	Da ist es durchaus so, dass wir zuerst sagen wir mal die grobe Idee mit drei, vier Sätzen es skizziert haben, dann irgendwie die Struktur ganz grob skizziert haben, das reichte erst mal aus. So. Das reichte auch für den Pitch aus. [...] Und im nächsten Schritt gehen wir hin und machen wirklich schon einzelne Sendungen. Also der Sender fand das prinzipiell okay, dann mussten wir den aber trotzdem überzeugen, dass er das kauft.	191
We do have a fixed graphics department with one fixed graphic designer. However, he will do content-related creative work too - so no one-way road there.	Wir haben zum Beispiel eine feste Grafikabteilung mit einem festen Grafiker, der aber auch durchaus kreativ tätig sein kann, auch da keine Einbahnstraße, der kann auch mal inhaltlich mitarbeiten.	191
Something like a database... Although we are informed quite well, having all kinds of newsletters, we frequently have things slipping through our fingers. The traceability of precedent formats in national or international markets is missing. One could save a lot of time, because you have to research this anew each time. Has there been a program with this content yet? If yes, how did they solve it?	So eine Art Datenbank, Background-Information … häufig ist es so, dass sogar wir, obwohl wir noch so gut informiert sind und alle möglichen Newsletter haben [...] Aber sehr häufig ist es so, dass uns häufig was durch die Lappen geht. Also die Überprüfbarkeit von schon Dagewesenem oder auch im internationalen wie im nationalen Feld, also das fehlt so ab und zu. Also da könnte man sich viel Zeit sparen, weil man jedes Mal neu recherchieren muss, gab es schon mal eine Sendung, die das und das quasi als Inhalt hatte, oder wenn es sie gab, wie haben die es gelöst.	206
We have an extremely powerful broadcaster network in Germany. There are projects where we have up to three editors involved, each one with an own opinion, mind you. The control is completely different. In America or the Netherlands I get a contract because they believe in me and in the idea. Maybe they might take a peek from time to time, but basically there is one final review and that's it. In Germany there is always the editor, always involved, deciding about music, partners, crew ...	Und wir haben ein extrem starkes, was wir auch haben in Deutschland, Sendersystem, das heißt, es gibt ja Projekte, da haben wir bis zu drei Redakteure drauf von einem Sender, jeder mit eigener Meinung wohl bemerkt. Das heißt, die Kontrolle ist eine ganz andere. In Amerika oder Holland ist es so, da kriege ich den Auftrag, weil sie an mich glauben, weil sie an die Idee glauben, dann gucken sie vielleicht zwischendurch mal irgendwie rein, aber am Ende gibt's eine Abnahme, und das war es. In Deutschland ist ja immer der Redakteur, dieser Sender-Redakteur, immer involviert, der bestimmt mit über Musik, der bestimmt mit über Partner, Staab, der bestimmt mit über...	207

Producer, Production Company A

Table B.2: Quotations of the Producer from Production Company A

Original quotation	Translation	Page
I for one could not do non-fictional program, I think. I just could not come up with anything. [...] They bore me or make me sad, these strange formats that pretend to have something to do with real life. [...] I do not want to be engaged in that and that is why I would not be any good at it.	Ich könnte zum Beispiel glaube ich kein nicht-fiktionales Programm machen, fällt mir einfach nichts zu ein, [...] das langweilt mich oder macht mich traurig, diese komischen Formate, die so tun, als hätten die wirklich was mit der Realität zu tun [...] Damit will ich mich nicht beschäftigen, und deshalb könnte ich das auch nicht gut machen.	126
We have regular producer meetings, where we have a brainstorming toward specific requirements in a larger group. Where we consider sending slots and existing demands. [...] Eventually it comes down to small groups, someone has an idea, writes it down and consults a colleague for feedback.	Jetzt in unserer Firma gibt es regelmäßige Producer-Treffen, wo wir dann in einer großen Runde auch einfach mal ein Brainstorming haben zu bestimmten Anforderungen. [...] Aber letztlich bilden sich doch immer kleine Gruppen. Wenn jemand die Idee hat und die aufschreibt, sucht er sich einen Kollegen, bespricht das und überlegt, was kann man da noch verbessern, holt sich ein paar Anregungen.	130
The authors will send in [their ideas], mostly to specific producers. Then you will have a look if that might do. However, many of the things we produce are actually our own ideas, where we will engage the screenwriter. But an idea coming from outside is a possibility and we will present that and discuss it.	Im Grunde, die Autoren schicken das ja an die Firma, meistens an spezielle Producer, und man selber guckt ja schon, könnte das passen. Also wie gesagt, oft kommen die Ideen auch wirklich von uns, von den Sachen, die wir realisieren und dann suchen wir uns einen Autor. Aber wie gesagt, es kann eben auch sein, dass eine Idee kommt, und die stellt man ja dann vor, und dann wird darüber diskutiert.	130
That varies, about six to eight pages. That is, in many cases an idea will be captured on three pages. But basically you already have to prove that this is sufficient potential to fill 90 minutes. That takes six to eight pages. And with that we go to the broadcaster.	Ist auch unterschiedlich, ein Exposé so 8 Seiten, 6-8 Seiten, 6 sind vielleicht auch genug. Also eine Idee ist oft auf drei Seiten schon gefasst, aber man muss ja dann im Grunde schon beweisen, dass man damit 90 Minuten füllt und dass das das Potenzial hat, das sind so 6-8 Seiten, würde ich mal sagen. Damit sind wir dann an den Sender gegangen.	131
Ultimately it shows that ideas are bound to their time. I don't think there are many timeless ideas that are so great, that you can realize them five years later.	Ja, aber letztlich zeigt sich, dass Ideen auch zeitgebunden sind. Es ist sehr schwer, eine Idee, so viele wirklich zeitlose Ideen, die so grandios sind, dass man die dann 5 Jahre später noch mal machen kann, gibt's glaube ich nicht.	131

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Original quotation	Translation	Page
To clarify this, in order to sell one movie, to get a contract, you will likely have to develop 25 synopses.	Man entwickelt ja, um einen Film zu verkaufen, um das mal klar zu machen, entwickelt man ja gerne 25 Exposés, um dann mal eines zu bekommen, den Auftrag zu bekommen.	133
Because it is that expensive, you hope to bring it toward an actual movie, but this is not guaranteed. You only get a fixed sum so the actual costs are the risk of the production company. [...] Public broadcasters will pay about 25.000 - 30.000 Euro. Private broadcasters will pay double but that includes a buy-out.	Da das teuer ist, hofft man natürlich auch, dass das in der Regel danach auch zu einem Film führt, was aber keine Garantie ist. Und man bekommt vom Sender immer nur eine bestimmte Summe, was letztlich dafür ausgegeben wird, ist das Risiko des Produzenten. [...] Naja, bei den Öffentlich-Rechtlichen, wenn es kein Wiederholungs-Honorar ist, dann sind es so zwischen 25.000 und 30.000 Euro. Bei den Privaten, ist ja ein Buy-out, ist es die doppelte Summe.	134
Ultimately every writer does it. You start with a synopsis, then you write a treatment, the story without dialog. And you make a scene treatment, what is happening in each scene. And finally you fill in the dialog. But some authors will immediately start writing a script. It depends on how they work.	Letztlich macht das ja jeder Autor. Man fängt ja an mit einem Exposé, dann schreibt man ein Treatment, das ist ja die Geschichte noch ohne Dialoge, das ist ja im Grunde, man macht ein Bildertreatment, was passiert in jeder Szene. Und dann wird es mit Dialog gefüllt. Also manche Autoren schreiben auch gleich ein Drehbuch, nachdem sie die Idee haben, es kommt ja darauf an, wie die am liebsten arbeiten.	135
With a single piece you have this certain creative freedom to stay really close to the original vision of as few people as possible. I think the more people are involved, the more it will become a compromise. [...] I don't see any advantage of writing a single piece with as many people as possible.	Mit einem Einzelstück hat man ja doch auch noch eine gewisse Freiheit, dass man wirklich nah an der Vision möglichst weniger Leute bleibt. Weil ich glaube, je mehr Leute eingebunden werden, desto mehr wird es ein Kompromiss. [...] Dass man jetzt ein Einzelstück mit möglichst vielen Leuten schreibt, halte ich jetzt für keinen Vorteil, muss ich sagen.	135
There were projects where we had only six script versions, but then there are projects where there are twelve. This is of course a nightmare for all authors and for yourself. [...] And quite frequently the third version will be worse than the first.	Es gibt ja jetzt Projekte, bei denen gab es nur 6 Drehbuchfassungen, gibt aber auch Projekte, da gibt's 12, das ist natürlich der Albtraum für alle Autoren und auch für einen selbst, weil irgendwann sieht man dann den Wald auch nicht mehr vor lauter Bäumen. Und es ist auch oft so, dass die dritte Fassung schlechter ist als die Erste.	135

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Original quotation	Translation	Page
The writers will send their version to me first. I am sort of a link in-between, so I will decide whether to send it on or not. If I have the feeling that sending this version will kill the project... well, generally you will revise this before sending it to the broadcaster [...] Then there will be a meeting including the writers.	Also wenn die Autoren mir das schicken, die schicken mir ja die Fassung zuerst, ich bin ja meist so ein Bindeglied dazwischen, dann entscheide ich, ob ich die weiterschicke oder nicht. Wenn ich das Gefühl habe, wenn ich jetzt diese Fassung schicke, dann ist das Projekt tot, dann arbeitet … also in der Regel arbeitet man noch mal daran, bevor man es dem Sender schickt. [...] und dann gibt's ein gemeinsames Gespräch mit den Autoren.	138
And then you have a script and there is of course a calculation if the broadcaster approves of the script. Then there will be a calculation meeting. In general you always know what a broadcaster will spend. Only for special programs such as historic movies or for very expensive actors you might get more if you are lucky. In the calculation meeting you will see, if it is feasible. If not, that means revising the script.	Und dann hat man ein Drehbuch entwickelt und dann gibt's natürlich eine Kalkulation, wenn der Sender das dann abnimmt und sagt, das ist so gut, da wollen wir jetzt einen Film draus machen, dann gibt's ein Kalkulationsgespräch, im Grunde weiß man immer, was der Sender ausgibt, es gibt nur für spezielle Programme, Eventprogramme oder Historisches oder was Besonderes, oder sehr, sehr teure Schauspieler, dann bekommt man, wenn man Glück hat, mehr. Dann gibt's ein Kalkulationsgespräch, und dann sieht man, ob das geht oder nicht, oder man sagt, zu diesem Preis ist das nicht zu machen, dann muss man natürlich auch wieder an die Bucharbeit, dann muss man halt gucken, wo kann man da wieder abspecken.	139

Head of Development, Production Company B

Table B.3: Quotations of the Head of Development from Production Company B

Original quotation	Translation	Page
It is quite variable depending on your relationship to the broadcaster. For instance, having worked at [broadcasting company], I can give the CEO a call and say: 'Listen, I have this idea. That might be something for you.' And he might reply: 'Okay, make it a pitch, write something down and we will see.'	Das ist immer sehr unterschiedlich, je nachdem, was man für eine Beziehung zum Sender hat. Ich habe zum Beispiel zu [Sender], ich kann den Geschäftsführer anrufen und sagen, hör mal, die Idee habe ich jetzt gesehen, ich glaube, das ist was für dich. So und dann sagt der, okay, pitch mal, sag mal, und dann schreib mal was, und dann kann man immer noch.	180
Generally, communication is extremely important. However, is a bit difficult with a small development team, if you utter an early idea you kind of start an avalanche [...] before I let out just anything without thinking it through first, and then a whole lot of people engage in that, doing research, I rather work out something really tangible. [...] However, if one of my editors tells me: 'I watched some people arguing today, we could make something out of that, this could be something new.' Then I will say: 'Okay, let us all get together and think about this.'	Also normalerweise ist ja Kommunikation extrem wichtig. In der Entwicklungsabteilung ist es ein bisschen schwierig, weil, wenn man ein kleines Team hat und man lässt so eine Idee raus, dann bringt man so einen Schneeball ins Rollen. [...] bevor ich jetzt irgendwas rauslasse einfach so, ohne mir da Gedanken darüber zu machen, und dann ganz viele Leute damit beschäftige, die sich dann weiter damit beschäftigen, weil die irgendwas recherchieren oder suchen, überlege ich mir natürlich schon mal erst was ganz Konkretes. [...] Aber wenn jetzt zum Beispiel einer meiner Redakteure zu mir kommt und sagt, oh toll, ich habe da so Leute gesehen in der S-Bahn, die haben sich gestritten, und da müsste man doch mal was machen, das ist was anderes. Dann sagt man, okay, dann setzen wir uns mal alle zusammen und überlegen mal.	183
I just report to the CEO, we are a separate department. Our creative director has the responsibility to coordinate and control all the producers. [...] his job is a kind of quality management, to ensure that the results bear the company's creative hallmark.	Also ich reporte nur an den Geschäftsführer, also das ist hier eine Abteilung, die ist von allem losgelöst, wir unterstehen auch nicht dem Creative Director, weil, der Creative Director hier in diesem Haus ist dafür da, die ganzen Executive-Producer zu kontrollieren. [...] der ist ja dafür da, quasi so eine, das hört sich jetzt doof an, aber so eine Art Qualitätsmanagement zu betreiben, dass alles genau so umgesetzt wird, wie es [Produktionsfirma]-Style ist.	184

Continued on next page ...

Original quotation	Translation	Page
We have a creative meeting, where we come together with the producers, with the department heads, to get everyone up to date on what we are working on, where we have advanced. [...] It is weekly, it has quite a regular structure.	Wir haben ein Creative Meeting, wo wir uns alle zusammensetzen mit den Producern, mit den Köpfen der Abteilung, damit jeder so weiß, okay, wo arbeiten wir gerade dran, wo sind wir jetzt ganz weit. [...] Das ist wöchentlich. Also das hat eine sehr regelmäßige Struktur.	188
Except if there is a broadcaster who says, you are now our producer and we require something for this particular slot. Here is your development contract. That almost never happens. Well, for our company this happened twice lately, but only because I work very close to the broadcaster.	Es sei denn, ein Sender kommt und sagt, so, du bist jetzt der Produzent für uns und wir wünschen uns von dir jetzt für diesen Slot etwas, hier hast du den Entwicklungsauftrag. Kommt aber so gut wie nie vor. Für [Produktionsfirma], zwei Mal ist das schon vorgekommen in letzter Zeit, aber auch nur, weil ich immer sehr eng mit den Sendern auch zusammenarbeite.	188
The CEO walks in with a little case with 10 DVDs, shows everything, [...] and the broadcaster says: ooh.. this is sexy, this english stuff, we want that. It is not like that anymore. [...] It can just as well knock over completely, if I showed footage from a DVD and he thinks it is stupid, he will say: I don't like it. [...] You have to be careful not to constrain the concept too much. The best way is to make some clips yourself, showing some cool situations.	Der Produzent kommt mit einem Köfferchen an, hat dann so 10 DVDs und zeigt alles hier [...] Und die Sender so: Oh, das ist aber sexy. Da kommen englische Sachen, haben gesagt, ja, diese Sachen möchten wir gerne. [...] Aber das kann genauso gut auch umschlagen, weil, wenn ich dem eine DVD zeige und der findet das doof, sagt der, nein, das gefällt mir nicht. [...] Man muss eben gucken, dass man nicht sich das ganze Konzept so eng schnürt, dass man da nicht mehr rauskommt. Also am besten wäre natürlich, aus dieser Sendung ein paar Sachen zu clippen, ein paar coole Situationen.	190

Head of Development, Production Company C

Table B.4: Quotations of the Head of Development from Production Company C

Original quotation	Translation	Page
It depends on if you develop in a target-oriented way. There are opportunities, where there is a distinct briefing, where you know it is for that particular broadcaster, that particular broadcasting slot, and that kind of budget. [...] On the other hand, there are those creative processes where you think independently from broadcasters or budgets. What ideas do we believe to fit to the spirit of our time.	Es kommt ja immer darauf an, ob man zielgerichtet entwickelt, da gibt es ja verschiedene Möglichkeiten. Es gibt die Möglichkeit, dass man ganz konkretes Briefing hat, das heißt, dass man ganz zielgerichtet weiß, das ist für den Sender, für den Sendeplatz, das und das Budget steht zur Verfügung. [...] Auf der anderen Seite gibt es natürlich genauso kreative Prozesse, wo man völlig frei vom Sender, von Budgets sich überlegt, welche Ideen können wir generieren, von denen wir glauben, dass sie in die momentane Zeit passen, in den Zeitgeist.	187
Not at all. Our management couldn't care less about *how* we develop. [...] Of course we will present our ideas internally, it does not mean the CEO is ignorant about what is going on here. [...] Of course we discuss in meetings, what it is we develop, which direction. And the priorities are set, what client meetings are imminent etc.	Gar nicht. Wie wir entwickeln, das ist unserem Management völlig wurscht. [...] wir müssen natürlich unsere Ideen intern bei ihm vorstellen. Das heißt, es ist nicht so, dass der nicht weißt, was hier passiert und was nicht. [...] Also wir besprechen uns natürlich in Sitzungen, weiß natürlich unsere Geschäftsführung, was wir entwickeln und welche Richtung, und die Prioritäten werden ja zwangsläufig dadurch gesetzt, welche Senderbesuche stehen an, usw.	187
These are for the broadcaster, you sit face to face with people that might have little time or little visual imagination. [...] We just try to transfer the idea in a short manner.	Nein, das sind die Senderpräsentationen [...] Man sitzt Leuten gegenüber, die entweder wenig Zeit und wenig Aufnahmefähigkeit haben [...] wir versuchen einfach, relativ kurz und knapp erst mal eine Idee zu transportieren.	191

Head of Production, Production Company D

Table B.5: Quotations of the HoP of Production Company D

Original quotation	Translation	Page
To read a script from a production perspective is a standardized process. You count the number of locations for example, the number of lead and supporting actors [...] You will also develop kind of a virtual shooting schedule already from a treatment, where you predict things like the number of shooting days. Simply to have some figures during the development phase.	Ein Drehbuch produktionstechnisch lesen ist ein standardisierter Prozess, weil man beispielsweise die Anzahl der Motive zählt, weil man die Anzahl der Haupt- und Nebendarsteller zählt [...] Man macht auch standardisiert immer aus einem Treatment, schon mal ein Drehplan, so einen virtuellen Drehplan, wo man überlegt, ja, wenn das bestimmte Dinge voraussetzt, wie die Drehtage, wie wir das brauchen und wie kann man die Schauspieler einteilen, das fangen wir auch sehr früh an, um einfach immer parallel zu Entwicklung auch Zahlen liefern zu können.	136
This is a damn efficient procedure! And it shows, that you can actually work creatively with such tight constraints. [...] It is not an accident that the daily soap survived all these years as business model. It still grows in market share, because it is profitable for both broadcasters and production companies.	Das ist schon ein verdammt effizientes Prinzip, muss man schon sagen. Und da zeigt sich eben auch, dass man durchaus mit so engen Vorgaben kreativ arbeiten kann. [...] Aber nicht umsonst hat Daily Soap überlebt als Geschäftsmodell und wird täglich von den Marktanteilen, oder jährlich kommt noch mal dazu, weil es sich rechnet für alle, für die Sender, für die Produzenten.	162
You are well advised to engage early with the colleagues, the producers during development. You will avoid projects running out of budget already in this early phase. On the other hand you can already do some research regarding the feasibility of certain things. Because people have crazy ideas sometimes and the earlier you know, the better you can assess this.	Ansonsten ist man gut beraten, wenn man in der Projektentwicklung mit den Kollegen, Producern halt ein Dialog führt, weil damit verhindert man, dass Projekte in der frühen Phase schon den Budgetrahmen verlassen, der eigentlich schon in der Regel vorher so ein bisschen bekannt ist. Und andererseits kann man schon parallel zur Entwicklung Dinge recherchieren auf die Machbarkeit hin. Weil Leute haben ja manchmal crazy Ideen, und je früher man davon weiß, je besser kann man recherchieren und überhaupt checken, ist es machbar.	193

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Original quotation	Translation	Page
There is always the calculation for the broadcaster basing on the contracted figures. And then there is the production manager who calculates incoming data [...] He replaces the broadcaster calculation with project-related figures because there will be adjustments. [...] He has to design it in a way that the total remains stable, but there are margins he can work with.	Es gibt immer eine Sendekalkulation, das heißt, das sind die Zahlen auf der Basis, wo der Auftrag erteilt wurde. Und dann kommt der Produktionsleiter und verarbeitet sozusagen die ganzen Daten, die da laufend reinkommen. [...] Und der ersetzt dann diese Senderkalkulation durch die projektbezogenen Zahlen, wie sie dann auch vermutlich … da gibt's Verschiebungen. [...] Also der muss dann eigentlich das so gestalten, dass unterm Strich er den Rahmen nicht erweitert, aber er hat da Spielräume.	196
Calculation is submitted, calculation is audited. Then there are budget meetings where the broadcaster's production management will inquire about every single position, ask for justifications, discard things, because they are confident something can be purchased for less etc.	Kalkulation wird eingereicht, Kalkulation wird geprüft, es finden Kalkulationsgespräche statt, wo das Produktionsmanagement des Senders die Kosten einzeln abfragt, Fragen stellt, Begründung verlangt, Dinge streicht, Dinge, die anders budgetiert sind, runterstreicht, weil sie der Ansicht sind, da kann man was günstiger einkaufen, etc. pp..	197
The next big process is Talent. [...] I come in as soon as money and contracts are concerned. We consider which person we hire for which job, areas like technical equipment, camera, sound, props, direction etc. What people could fit and if they are available at that time. And we have a network of people, who we worked with, with whom we have experiences. We will call these people deliberately, things like unsolicited applications are rather uncommon in this area.	Also der nächste große Prozess ist Talent. [...] da komme ich erst dazu, wenn es um Geld geht und um Verträge, geht's beim Team, geht's über unsere Abteilung, das heißt, wir überlegen, welcher Mitarbeiter in welchem Bereich, Großbereich, Technik, Kamera, Ton, Ausstattung, Regie, welche Leute passen und prüfen auch die Verfügbarkeit in dem angenommenen Drehzeitraum. Da haben wir natürlich unser Netzwerk von Leuten, mit denen wir gearbeitet haben, mit denen wir Erfahrung haben, die ruft man dann gezielt an in der Regel, also das läuft wenig über Initiativbewerbung o. Ä.	198

Chief Executive Officer, Production Company E

Table B.6: Quotations of the CEO of Production Company E

Original quotation	Translation	Page
It is quite rare that an author will present an idea and says: 'I would like to do that for you.' It is how most people would imagine it, but that is rare. Actually, it is rather likely that an editor or program manager from a broadcaster will contact us and say: 'We would like to have this genre for that slot.' Then we will make an offer.	Ich glaube, da lassen sich so drei Gruppen einordnen. Relativ selten ist es so, dass ein Autor mit einer Idee kommt und sagt, das würde ich gerne für euch machen, das ist das, was die meisten glauben, ist aber eigentlich selten. Eigentlich ist es so, dass häufig ein Redakteur oder ein Senderverantwortlicher an uns herantritt und sagt, aufgrund der Expertise, die wir in bestimmten Bereichen haben, wir würden gerne für den und den Sendeplatz ein Genre für die und die Richtung machen. Und dann machen wir dem ein Angebot	132

Chief Executive Officer, Production Company F

Table B.7: Quotations of the CEO of Production Company F

Original quotation	Translation	Page
Everybody working in this sector for a certain time will have creative input to a project. However, I contain myself in that regard. In my experience the executive function is more managerial than creative. You assess the general direction of the things that happen and try to control it. [...] and that rather includes to scrutinize the production crew and maybe to exchange people if necessary.	Jeder hat natürlich, wenn er lange in so einer Branche arbeitet, gibt auch seinen kreativen Input in Projekte. Aber ich halte mich natürlich auch zurück, weil es auch immer nach meiner Erfahrung so ist, dass von Leuten in der Geschäftsführung und in solchen Positionen, das eher eine Steuerungsfunktion ist, als dass man selber kreativ ist. Man beurteilt höchstens das, was in der Firma passiert und versucht das zu steuern, ob das in die richtige Richtung geht oder nicht. [...] dann fragt man eher, ob die Produktion richtig besetzt ist, muss man die mal anders besetzen, muss man die Leute austauschen.	183

Creative Director, Production Company F

Table B.8: Quotations of the Creative Director of Production Company F

Original quotation	Translation	Page
I attend to the contents. Since our producers work quite independently [...] and I usually do not interfere there, I am primarily focused on development and format sales.	Und ich habe den Bereich Inhalt / Content, wie man den eben auch nennen darf. Da bei uns Producer aber auch sehr autark sind [...] da pfusche ich dem nicht rein, konzentriere ich mich primär auf die Entwicklung neuer Formate und den Verkauf dieser.	184
Many people mistake the idea for a format. An idea would be to say: we should do a modern kind of singing contest. In principle, that would be DSDS. But that is not what the format is. The format is the recipe, the meticulous plan that says: we do eight episodes, with this particular length, this happens after that, there are these rules [...] we have quite rigid guidelines on how an episode must look like.	Also viele Leute verwechseln ja ein Format mit einer Idee im Fernsehen. Eine Idee wäre zu sagen, man müsste mal einen modernen Gesangswettbewerb machen, das ist im Prinzip DSDS. Aber das ist ja das Format nicht. Das Format ist das Kochrezept, wo minutiös aufgeführt wird, wir machen acht Folgen, jeweils so lange, erst passiert das, dann passiert das, dann passiert das, es gibt die und die Regeln [...] wir haben relativ starke Guidelines.	189
We are quite IT savvy. But still, with all that server stuff and the like - we are not quite happy with that as yet. We're still working on a better way to archive our ideas and make them retrievable. [...] then again, a lot of stuff just happens in the conference room, when we sit together to think about certain things. [...] if employees leave the company and nobody is left who still remembers that we had developed a great idea for a show two years ago, you have a problem.	Wir sind schon relativ IT-affin. Aber trotzdem, alles mit so Servern und so, sind wir da immer noch nicht ganz glücklich, wir arbeiten da immer noch an der Art und Weise, unsere Ideen besser zu archivieren und wieder zugänglich zu machen. [...] viel passiert aber bei uns tatsächlich noch verbal und im Konferenzraum, wenn wir da zusammensitzen, um auf bestimmte Dinge einfach draufzukommen. [...] Wenn das verloren geht, besonders, wenn Sie das alles auf hier oben fixieren und die Mitarbeiter verlassen die Firma irgendwann, und dann gibt es keinen mehr, der weiß, dass man mal zu der Show eine Top-Rubrik vor zwei Jahren entwickelt hat, dann haben Sie da natürlich ein Problem.	205

Chief Executive Officer, Production Company G

Table B.9: Quotations of the CEO from Production Company G

Original quotation	Translation	Page
This is what I regard as creative achievement, to figure out how to successfully adapt these formats in Germany. It is all about making a successful pitch out of an idea regarding the format. To give the broadcaster a visual impression on how we envisage the actual implementation in Germany.	Und das selber sehe ich als kreative Leistung, zu überlegen, wie man die Formate erfolgreich in Deutschland adaptiert. Es geht darum sozusagen, aus einer Idee zu einem Format, auch einen erfolgreichen Pitch zu machen beim Sender, der sozusagen dem Sender erklärt und in Bildern dem dann aufzeigt, wie wir uns die Umsetzung, wie wir uns die tatsächliche Produktion vorstellen in Deutschland.	190

Freelancing Movie Producer

Table B.10: Quotations of the Director

Original quotation	Translation	Page
The audience's liking perpetually changes. And while the new reality formats were constantly probing and offering new variants, the "classical fiction series" basically remained unaffected. But suddenly these were less close to the audience, because compared to the "close and authentic" formats the artificiality and dedicated design of many fictional productions became more obvious.	Der Publikumsgeschmack wandelt sich ständig, und während die neuen Reality-Formate immer neuere Varianten ausprobierten und anboten, ist bei der "klassischen Fiction-Serie" im Großen und Ganzen alles beim Alten geblieben. Jetzt aber gab es weniger Nähe zum Publikum, denn angesichts der neuen "nahen und echten" Programme sah man das Gekünstelte und das Konstruierte bei vielen Fiction-Produktionen deutlicher als vorher	151

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Original quotation	Translation	Page
Because of the higher overall costs and the longer time as compared to a single movie, the selection and influence of the broadcaster has more relevance. This means that [...] production firms with corporate affiliations to the broadcaster might have strategic advantages [...] It is extremely rare, that a new company manages to get a first series production.	Die Bedeutung des TV-Senders ist bei der Serienproduktion noch größer als beim TV-Movie. Da es um höhere Gesamtkosten geht und eine längere zeitliche Komponente als beim einmalig ausgestrahlten TV-Movie, hat die Auswahl und Einflussnahme des Senders mehr Gewicht. Konkret bedeutet dies, dass in der Regel [...] Bei einer Auftragsvergabe Produktionsfirmen, die mit dem TV-Sender verbunden sind, eventuell strategische Vorteile haben [...] Dass es einer neuen Firma gelingt, erstmals eine Serienproduktion durchzuführen, ist äußerst selten.	153
In the program of the ARD we have five dailies at the moment[...], on ZDF there is one, [...] three on RTL and [one on] Sat1. These are 6.5 hours of program every day!	Im Programm der ARD finden sich aktuell fünf (!) Dailys (Stand: Juni 2009): "Rote Rosen", "Sturm der Liebe", "Verbotene Liebe", "Marienhof" und "Eine für alle". In der ZDF eine, "Folge deinem Herzen", bei RTL drei: "Unter uns", "Alles zusammen", "GZSZ"; und bei SAT1 "Anna und die Liebe". Dies sind 6,5 Programmstunden täglich!	161
Because the investments in the beginning are very high [...] and might amount to 10 million Euros or more, the risk of great deficit is eminent for every new daily production. This is mitigated to some extent in that production companies that are subsidiaries of a corporate group will conduct the production for the affiliated broadcasters.	Da die Anfangs-Investitionen sehr hoch sind [...] und je nach Aufwand bis zu 10 Millionen Euro oder mehr betragen können, birgt jede neue Daily das Risiko eines hohen Verlustes. Dies wird zum Teil dadurch wettgemacht, dass zum Konzern gehörende Produktionsunternehmen für die jeweilige Sendergruppe die Produktion durchführen.	163
For the first daily series in Germany, completely novel ways of production had to be established. This was done with the aid of experienced "executives" of Grundy Ufa from England and Australia. These producers taught their german colleagues the production method. And up to this date, all companies producing dailies employ people for the key positions that have been working for Grundy Ufa at some point.	Um eine tägliche Serie produzieren zu können, mussten 1992 für die erste daily völlig neue Produktionsformen in Deutschland etabliert werden. Dies geschah mit Hilfe erfahrener "executives" der die Produktion durchführenden Firma Grundy Ufa aus England und Australien. Von diesen Produzenten wurde deutschen Mitarbeitern die Daily-Produktionsweise beigebracht, und bis heute sind bei allen Firmen, die dailys produzieren, in den Schlüssenpositionen Personen zu finden, die irgendwann in ihrer Laufbahn bei GrundyUfa gearbeitet haben.	164

Freelancing Screenwriter A

Table B.11: Quotations of Screenwriter A

Original quotation	Translation	Page
There is a very high pressure regarding the tempo. Simply for the reason that a movie production is such a lethargic process. [...] It has to be written, then you have to shoot, then it goes to post-production and then you have to find a broadcasting slot. For a format from the first idea to the actual broadcasting it takes at least two years. And speaking of marketing: by then the parameters under which this has been produced [...] might be way over the hill.	Es besteht ohnehin sehr hoher Druck, was die Schnelligkeit angeht, ganz einfach aus dem Grund, so eine Filmproduktion ist natürlich ein sehr träger Prozess. [...] Wenn es geschrieben ist, ist es noch lange noch nicht produziert, dann muss es gedreht werden, dann muss es in Postproduktion, dann muss ein Sendeplatz dafür gefunden werden. Also bis ein Format von der ersten Idee auf dem Sender ist vergehen normalerweise mindestens zwei Jahre. Und bis dahin, wir sprachen über die Marktforschung, sind vielleicht die Parameter unter denen das entwickelt wurde [...] vielleicht schon wieder passé.	129
If you come to writing, the degree of creativity grows notedly. There are hundreds, thousands of possibilities to tell a story. [...] But especially in screenwriting there are many parameters and contextual factors that have to be met, that constrain you. [...] you have production conditions, budgets or simply the three-act structure if it is not an experimental movie.	Wenn man jetzt zum Schreiben kommt, dann steigt der Grad an Kreativität sehr stark an. Es gibt Hunderte, Tausende von Möglichkeiten, eine Geschichte zu erzählen. [...] Also gerade in dem Bereich Drehbuch gibt es auch sehr viele Parameter und Rahmenbedingungen, die zu erfüllen sind und die Kreativität einschränken. [...] Aber natürlich auch da sind Produktionsbedingungen, Budgets die man beachten muss, vielleicht auch die Dreiaktstruktur, wie man dass nun will, wenn es kein experimenteller Film ist.	140
It is not possible anymore to develop a series based on an idea or vision. The broadcasters are so concerned about target groups and ratings that you necessarily write on format, because otherwise you cannot sell anything.	Man ist eigentlich gar nicht mehr in der Lage eine Serie zu entwickeln, weil eine Idee oder Vision hat. Die Sender sind so auf ihre Zielgruppe und ihre Quote bedacht, dass man eigentlich zwangsläufig formatiert schreibt, weil man sonst nichts unterbringen kann.	155

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Original quotation	Translation	Page
Well [this particular project] actually is not that different compared to a daily since it is produced industrially as well. That means it is quite rigid concerning story guidelines that have to be met. However, it has not this extreme division of labor. You are still a genuine screenwriter there, which means you develop the story all the way from its core to the final script.	Ausgerechnet [Projektname anonymisiert] unterscheidet sich nicht so stark von einer Daily, weil es auch industriell produziert ist. D.h. es ist relativ rigide, Geschichten werden vorgegeben, die dann umgesetzt werden müssen. Es ist aber immerhin noch so, dass es nicht so extrem arbeitsteilig ist wie eine Soap. Man ist also noch ein echter Drehbuchautor, d.h. man entwickelt die Geschichte vom Kern bis zum fertigen Buch.	156
I had quite a lot of development contracts, but the bottom line is that most of them have only been brought up to a pilot. And then the message was, well, sadly we do not have enough money.	Und ich habe sehr viele Entwicklungsaufträge von Sendern gehabt, aber im Endeffekt wurden die Sachen dann meistens nur bis zur Pilotreife entwickelt und dann wurde gesagt, tja leider nicht genug Geld da.	166
To the topic of teamwork. Yes, you actually need a head writer. He is not necessarily the most creative member of the team, but he will provide the structure [...] and communicate the results to the editor and to the production. In many cases you will have the head writer being the plotter in his next team and vice versa. The hierarchies are very flat, but you need someone to define how things are supposed to be done.	Kommen wir aber noch mal auf diese Teamarbeit. Ja es braucht einen Chefautor, es braucht ihn auch tatsächlich. Nach meiner Erfahrung ist der Chefautor nicht mal unbedingt immer der kreativste, sondern er ist der, der die Struktur verleiht [...] und der auch die Ergebnisse gegenüber der Redaktion oder der Produktion zu kommunizieren und zu verantworten hat. D.h. meistens sind diese Teams, also oft ist es so, dass einer der eben noch Chefautor war in dem einen Team, in dem anderen Team wieder ein normaler Plotter ist. Und der der ein Plotter war, ist im nächsten Team der Chefautor. Es sind sehr flache Hierarchien würde ich sagen, bloß es braucht halt irgendwo einen, der dann sagt: so machen wir's.	170

Freelancing Screenwriter B

Table B.12: Quotations of Screenwriter B

Original quotation	Translation	Page
As a rule, the editorial department wants to be part of the development. And you will involve them because it does not work any other way. [...] you will consult the editor with every single step.	Also eigentlich will die Redaktion immer in der Entwicklung sein. Man bindet sie dann auch immer ein, anders wäre es nicht machbar. [...] mit jedem Arbeitsschritt geht man noch mal zur Redaktion.	133
Compared to, say, a television movie – these are regulated much harder in a sense through these numerous editor meetings you have there and directors and whatnot. It is much more constrained regarding the dramaturgy. Everything is scrutinized about and actually this constrains creativity much more, especially later in the process. You can come up with many ideas at first but afterward they will not be implemented.	Es ist aber im Gegensatz zu sagen wir mal einen Fernsehfilm, die viel stärker reglementiert sind auf eine andere Weise, weil dann durch diese vielen Redaktionsbesprechungen, die es da gibt und die Regie und weiß Gott, wird es dramaturgisch auf eine viel genauere Linie gebracht. Also alles wird genauer angeguckt, und damit wird eigentlich die Kreativität viel mehr beschränkt,später jedenfalls, man kann sich vorher viel ausdenken, aber später wird das eben nicht gemacht.	138

Freelancing Director

Table B.13: Quotations of the Director

Original quotation	Translation	Page
This [points at content development] might be an area where I already get in, or maybe not, depending on the production. It depends on what you are hired for.	Das [zeigt auf Stoffentwicklung] kann je nach Produktion auch so ein Bereich sein, wo ich mit einsteige oder eben nicht, das hängt immer davon ab, für was man auch gebucht wird.	137

Continued on next page ...

Original quotation	Translation	Page
...with the producer and the production manager definitely. At that point there is still room for creativity. [...] If I know the budget I can come up with ideas. Like, this scene needs to be made big to work, here I need certain resources to get the story across. Where can I find a scene that might be simplified compared to the script. That is always some kind of trade that you make both inwardly and in coordination with the producer and also the production manager.	Ja sicherlich mit Produktionsleiter und Producer, weil die Kreativität geht ja da noch da [...] Wenn ich den Rahmen kenne, kann ich auch überlegen: So, diese Szene hier erfordert einfach, dass man sie groß macht. Die funktioniert nicht ... Hier brauch ich bestimmte Mittel, um die Geschichte zu erzählen. Wo finde ich 'ne Szene, wo ich dafür vereinfache, wo es einfacher geht als geschrieben. Das ist ja dann auch immer so ein Tauschhandel, den man so innerlich macht, den man aber auch absprechen muss mit dem Producer, aber auch mit Produktionsleiter.	144
These are the situations where I say: 'Guys, there is the call sheet, it is to be read every evening so that you know what will happen the next day.' And one should be able to memorize this, it is one workday.	Sondern das sind so Sachen, wo ich sage: Leute, es gibt ne Dispo, die wird abends gelesen und da weiß man was am nächsten Tag los ist – das kann man sich auch merken, denn es handelt sich um einen Arbeitstag.	146
In a studio multi-camera system you almost finish the product, so the post-production is less extensive. [...] Take editing: the cameras are organized and there is a program saying who is on at which time and so I'll have the finished product there already. I have everything concentrated in one room where everything must happen.	Es ist 'ne Unterscheidung, weil man im Mehrkamerasystem im Studiobereich das Produkt nahezu fertig macht. Während die Postproduction hintenraus natürlich wesentlich geringer ist: ich mach eigentlich... um's einfach mal am Schnitt festzumachen werden die Kameras eingeteilt und es wird letztendlich ein Programm abgearbeitet wer wann geschnitten ist und ich hab letztendlich das fertige Produkt schon da. Ich hab alles geballt in einem Raum wo alles passieren muss.	200

Freelancing Set Designer

Table B.14: Quotations of the Set Designer

Original quotation	Translation	Page
In most of the cases it is two or three suggested locations, and often directors will want to visit all of these.	Meistens zwei, drei Vorschläge, oft wollen die Regisseure dann diese Wohnungen alle sehen, die man vorschlägt.	142
You have to consider animals and their trainers [...] then there is the matter of cars and streets, if you have whole streets where road signs have to be hidden and historical signs installed [...] the complete indoor decoration, props [...] food, if it is made in the scene	Tiere grundsätzlich mit Tiertrainer, das muss man auch einkalkulieren [...] aber dann gibt's natürlich noch Bereiche wie Autos, und dann natürlich auch Straßen, wenn Sie immer mal Straßenzüge haben, wo auch noch Schilder abgedeckt werden müssen oder historische Schilder hin müssen oder sonst was, [...] Und dann natürlich die komplette Ausstattung, also wie die Räume aussehen, und Spielrequisiten, [...] Dann das ganze Essen, wenn es in dem Bild gekocht wird	142
That were 21 shooting days. We had the luxury of three weeks to search for locations and another four weeks for building the set. [...] A lot of positive factors concured there: we knew each other, we had enough time and the budget was already set. It was an ideal project. But sometimes you are hired at very short notice for whatever reasons [...] then you have only three weeks for everything.	Das waren so 21 Drehtage, ich hatte Luxus drei Wochen Motive suchen, und dann hatte man fast 4 Wochen noch für das Szenenbild quasi. [...] Und dann trafen sich viele gute Faktoren, erstens kannte man sich, war eine gute Zeit, wo wir vorbereiten konnten, das Budget war von Anfang an schon gut durchgesprochen und gut durchdacht, und das war einfach so ein Optimalprojekt. Aber manchmal ist es so, wo das relativ spät los, also wo man relativ knapp angefragt wird, das Projekt aus welchen Gründen auch immer, der Szenenbildner relativ knapp. [...] Dann haben Sie nur drei Wochen Zeit.	144
For studio you really need a lot of money. [...] It has to be built properly. Just closing a door... if this is not made with good walls, good doors it will always look fake.	Studio braucht man wirklich viel Geld. [...] Und ein Studiobau muss wirklich gut gemacht und gut gebaut sein, allein, wenn die Tür zugeht, wo ein Studiobau gut gemacht ist, nicht massiv gemacht ist, mit einer guten Tür, mit einer guten Wand, sieht es immer doof aus.	161

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Original quotation	Translation	Page
The studio needs a certain infrastructure, you need light, water, good access where the trucks can deliver planks, this is a package where you need a good studio. And this is much more expensive than an original set. You need a very good light setup [...] that has to be designed and it needs a lot of time.	Das Studio muss eine bestimmte Infrastruktur haben, Sie müssen da Licht haben, Wasser haben, eine gute Zufahrt haben, wo die ganzen Lkw ihr Holz anliefern können, wo wir alle ebenerdig anliefern müssen und das kostet schon mal richtig viel als Motivmiete. [...] dass das gut entworfen werden muss, das braucht Zeit, also das braucht	174

Program Manager, Broadcaster I

Table B.15: Quotations of the Program Manager from Broadcaster I

Original quotation	Translation	Page
In this case the director was part of the later script meetings [...] in order to incorporate their visual ideas into the screenwriting, so that you don't suddenly rewrite the script or parts of it on set, just because there are some new ideas.	Es ist ja so, dass der Regisseur schon bei den letzten Buchbesprechungen schon mit dabei war, beide Regisseure bei jeweils ihren Büchern, die sie zur Verfilmen hatten, sodass da schon visuelle Ideen der Regie mit in die Bucharbeit einfließen können, sodass man nicht dann irgendwo steht und plötzlich am Set das Buch beginnt, neu oder in Teilen neu zu schreiben, weil plötzlich noch mal neue Ideen zukommen.	137
Generally it comprises the idea that is presented. What is the series about? It contains a character handbook and it contains the narrative structure, the exposition and a rough sketch of the story arc. This is what forms a series' concept.	Also das besteht in der Regel aus der Idee, die vorgestellt wird, um was geht es hier eigentlich, es besteht aus einer Figurenbibel, und das besteht aus der Geschichte, dem Einstieg in die Geschichte und den Handlungsbogen grob skizziert – das ist im Prinzip das, woraus ein Serienkonzept besteht.	152

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Original quotation	Translation	Page
For example four scripts are ordered and not until those scripts are accepted there will be a production contract. That means to have a script contract is no guarantee that there will be a series. First there is the decision 'Yes, we like the scripts, we can give the production to you.' Then there are calculations, the production company has to submit a calculation and discuss it with our program management. I myself might have a look, but we actually divide this [...] I don't really negotiate that...	Also es werden meinetwegen vier Bücher beauftragt, und wenn diese vier Bücher die Zustimmung finden, erst dann gibt es den Produktionsauftrag. Das heißt, ein Buchauftrag zu haben, heißt noch lange nicht, dass es auch wirklich zu einer Serie kommt. Sondern da gibt es erst mal diese Entscheidung, ja, die Bücher gefallen, wir können Ihnen die Produktion geben, dann wird kalkuliert, der Produzent muss eine Kalkulation einreichen, das wird mit unserem Programm-Management diskutiert, ich schaue dann gelegentlich auch drauf, aber wir trennen das. Also ich bin zwar dabei bei den Kalkulations-Gesprächen, aber ich verhandele das nicht im klassischen Sinne...	155
Well there were discussions because the one beginning the production will set a particular style. And that cannot be completely changed by the other one. [...] This is always aggravating for the one who is to be the second, because he won't be able to create with the same freedom.	Es gab natürlich dann auch Diskussionen darüber, derjenige, der halt anfängt, der die ersten Folgen macht, setzt natürlich einen gewissen Stil, und das darf der andere nicht komplett brechen. [...] Und das ist natürlich für den Regisseur, der als Zweiter dran ist, immer blöd, weil er nicht mit der gleichen Freiheit gestalten kann wie der Erste.	160
The creative influence of an editor is greater in the traditional series than with an industrially produced series. I might be able to say that a storyline does not work and that I want it redone maybe once – so forcing night shift on the story departments. If I do that twice or thrice in a row, I will stall the production. You simply cannot do that.	Also der kreative Einfluss, der kreative redaktionelle Einfluss ist bei der klassischen Serie sehr viel größer als bei einer industriell produzierten Serie... Da kann ich vielleicht ein Mal sagen, diese Storyline geht gar nicht, nix davon, alles neu – dann verurteile ich die Story-Departments zur Nachtschicht. Wenn ich das zwei Mal hintereinander mache, oder spätestens ab dem Dritten, bleibt die Produktion stehen, dann kann man das einfach nicht mehr machen	172
Well, it depends. Sometimes I get the files and watch them on the computer, but this varies quite a bit. Regarding our daily, the production company will put all the precaps that we publish in our press portal on a server [...] The complete postproduction is tapeless by now, there is nothing you carry from A to B anymore.	Unterschiedlich. Also manchmal kriege ich auch Files und gucke mir das über den Computer an, das ist sehr unterschiedlich. Also bei [Daily] ist es so, dass [die Produktionsfirma] inzwischen die ganzen Precaps, die wir an das Presseportal stellen, die werden auf den Server gelegt und holen die sich dann vom Server runter. Die ganze Postproduktion ist ja inzwischen bandlos, da gibt's gar nichts mehr, was man von A nach B trägt.	205

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Original quotation	Translation	Page
No. Although every editor has his or her own style of work in that regard. The higher up in the hierarchy, the less close is the contact to the artists, this is a completely usual process.	Nein. Wobei das sicherlich bei jedem Redakteur eine andere Arbeitsform ist. Je weiter oben in der Hierarchie, desto weniger ist der Kontakt mit den Kreativen, das ist ein ganz normaler Prozess.	207

Program Manager, Broadcaster II

Table B.16: Quotations of the Program Manager from Broadcaster II

Original quotation	Translation	Page
This is straightforward: I need the script, the calculation, a review and then I make a casting. And not until I have the perfect actor and a director, I can initiate preparations with the departments. At some point we organized these processes for not to pay an outfitter for six weeks without having an actor yet.	Es ist ganz klar, ich brauche das Buch, dann muss es kalkuliert werden, dann muss es abgestimmt werden, dann baue ich ein Casting. Erst wenn ich den optimalen Schauspieler habe, also inklusive Regisseur, dann kann ich überhaupt in meine Vorbereitungen gehen, da kann ich mit den Departments reden und sagen, jetzt fang an vorzubereiten. Also diese Prozesse haben wir mal alle kontinuierlich auseinandergezogen, und nicht irgendwann mit einem Ausstatter dazustehen, die ich schon sechs Wochen bezahlt habe, und ich habe immer noch keinen passenden Schauspieler dafür.	140
Well, generally you should have the script finished before you start the production. But these process steps are not always adhered to [...] unfortunately, it is quite common for instance in serial development and production that you have a running shoot and the scripts come in later, so these steps become interleaved.	Also in der Regel sollte man das Drehbuch fertig haben, bevor man irgendwie anfängt, zu produzieren. Diese einzelnen Prozessstufen werden halt nicht immer eingehalten, [...] meistens aber – das ist z. B. in der Serienentwicklung oder Serienproduktion – sehr häufig leider der Fall, dass eine Produktion im Dreh ist und man mit den Büchern leider dann irgendwann hinterherkommt, wo halt diese abzuhandelnden Stufen ineinandergeschoben werden.	158

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Original quotation	Translation	Page
I met with the producer and we tried to change the procedures in a way, say, you have only two directors for 16 episodes. Each will shoot 8 episodes and use the studio simultaneously – in different sets, of course – but I have only half of the studio time. And then one shoots the outdoor scenes on Ibiza, while the other one does those in Cologne, and then they swap. I shorten the production time by half and thus have to employ the staff only for half the time...	Und dann habe ich mich mit dem Produzenten in der Produktionsfirma hingesetzt und wir haben versucht, die Abläufe zu ändern, also sozusagen, was ist, wenn man z. B. bei 16 Folgen nur zwei Regisseure nimmt, die jeweils 8 Folgen drehen, die das Studio gleichzeitig nutzen, also natürlich in den unterschiedlichen Sets drehen, aber ich habe nur die Hälfte der Studio-Nutzungszeit, dann der eine in dem Fall halt die Außendrehtage auf Ibiza dreht, während der andere die Außendrehtage in Köln macht und die dann wechseln, sodass ich insgesamt die Produktionszeit um die Hälfte verkürze und nur die Leute um die Hälfte einstellen muss...	160
Something that has increased is to distribute samples via the internet, so that you don't send tapes or DVDs anymore.	Ja, was jetzt natürlich zugenommen hat, ist, über Internet Muster zu verschicken, also dass jetzt nicht mehr Kassetten oder DVDs verschickt werden.	204
No, that is not external to the broadcaster, because the script work is led by the broadcaster...	Nein die liegen nicht außerhalb des Senders, weil natürlich die Bucharbeit immer maßgeblich vom Sender begleitet wird.	206

Program Manager, Broadcaster III

Table B.17: Quotations of the Program Manager from Broadcaster III

Original quotation	Translation	Page
A great event-movie goes a very long way until you actually shoot. And then everything must be set up, this is the one chance you have, where you will not be able to make corrections	Ein großer Event-Movie, das ist natürlich, bis man überhaupt dreht, ist das ein ganz langer Weg, und dann muss alles so eingerichtet sein, dass man in dieser Chance, die man da hat, wo man auch nicht mehr korrigieren kann.	129
The first impetus comes from the broadcaster, but that is not a creative impetus as yet but it will set a creative process in motion.	Ich würde sagen, der erste Impuls geht vom Sender aus, aber das ist noch kein kreativer Impuls. Der Impuls geht vom Sender aus, um einen kreativen Prozess in Gang zu setzen.	162

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Original quotation	Translation	Page
If you start a daily you know right from the start this is the plot I will do for 250 episodes. [...] And so you have a type of net for all decisions, like, how many characters do I need. Because I know exactly what I am developing this for.	Wenn wir jetzt eine Daily starten, [...] dass man von Anfang an weiß, ist das jetzt ein Stoff, den ich 250 Folgen lang mache,[...] Und so weiß man natürlich auch mit allem, ist bei bestimmten Entscheidungen, wie viele Figuren brauche ich, usw., von Anfang an ein gewisses Netz da, wo man sagt, klar, ich weiß ja, wofür wir jetzt das entwickeln, diese Geschichte.	163
It is a dramatic difference whether I just start a soap, make the concept, or the first 5, 10, 20, 30 episodes, or I say at some point: 'I have created my brand, my project, my series.' And that is exactly the point where I can industrialize, standardize it and turn it into a deadline workflow system.	Also ich unterscheide auch immer ganz stark, nehmen wir ne Daily Soap, das ist ein riesen Unterschied, ob ich eine Daily Soap starte, ob ich das Konzept mache, ob ich auch die ersten 5, 10, 20, 30 Folgen mache, oder ob ich irgendwann sage, ich habe meine Marke, mein Projekt, meine Serie kreiert, und das ist jetzt genau der Punkt, jetzt kann ich es industrialisieren, standardisieren, in eine Deadline-Workflow-Systematik bringen.	166
The tight constraints and the clear definitions of a running series do not kill the creativity. They channel the creativity precisely on the series. If you build your team right, it is similar to a tiger in a zoo. It is born there, it doesn't know that fences are bad, it is happy because it doesn't know anything different.	Enge Netze einer laufenden Serie, klare Definition einer laufenden Serie, töten nicht deswegen dann Kreativität ab. Sondern sie kanalisiert Kreativität genau auf dem Kanal meiner Serie, ich vergesse jetzt wie der Tiger im Zoo. Der Tiger im Zoo ist im Zoo geboren, der weiß gar nicht, dass das Scheiße ist, dass es da Zäune gibt, der ist glücklich in diesem Käfig, er weiß es ja nicht anders.	171

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