Managing Resource Dependencies in Project Networks:

The Case of TV Production

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Introduction: Organizing Projects in Project Networks

The notion that 'no project is an island' (Engwall 2002) has occupied project theorists for years now. Typically, matrix organizations have been studied as (intra-)organizational contexts in which, in particular, large-scale projects are situated (Payne 1995; Eskerod 1998). However, by comparison, creative and professional service projects, which are designed to serve idiosyncratic, yet changing customer needs, and which, at least in part, provide intangible goods, seem to be embedded in project networks which, unlike matrix organizations, stretch beyond the boundaries of the firm, yet do not dissolve fully into the market. Project networks, as sets of inter-organizational, more or less systemic relationships are reproduced through and actualized by particular projects and allow for flexible resource allocation *and* stable actor, in particular customer, relationships. In so far, they resemble concepts like the virtual organization (Davidow and Malone 1992) or the dynamic network (Miles and Snow 1986). In particular, they have been studied in the media and advertising industry, where special attention has been drawn to individual career-making (Jones 1996), regional and institutional embeddedness (Grabher 2002; Windeler and Sydow 2001), and (inter-)organizational learning (DeFillippi and Arthur 1998).

This paper investigates the social reproduction mechanism project networks are based upon from a managerial perspective, in the case of the German television industry. In particular, the way resource (inter-)dependencies are managed through project networks by central actors is a major concern, which addresses the problem of how relationships can be sustained *beyond*, yet enacted *for* particular projects (see also Söderlund and Andersson 1998). As part of it, the mechanisms by which resources *become* critical for particular projects, and the practices central actors apply to deal with it, more or less reflexively, are scrutinized. In so doing, to further theorize the reproduction mechanism of project networks, with respect to the management of critical resources, the interplay of social practices, collaborative paths, and interdependent relationships is looked at, to illustrate how project networks are constituted as more than temporary systems. This, in turn, is meant to further stimulate the debate on the temporary-permanent dilemma (Sahlin-Andersson and Söderholm 2002), and to provide a framework for studying project-based relationships, not only in creative industries, but, increasingly also in research (see also Manning 2004) and manufacturing (Hobday 2000).

Theoretically, this study makes use of concepts from resource dependence theory (Pfeffer and Salancik 2003) and structuration theory (Giddens 1984), in an attempt to account for the importance of critical resources, as allocated and enacted in, systemically organized, social relationships. In particular, the rules according to which resource dependencies are (reflexively)

recognized and managed by social actors, in project networks, is paid attention to. Methodologically, this paper takes a processual and comparative, two-level case study approach, to examine the similarities and differences of systemic reproduction of project networks, combining a project and (project) network perspective. In doing so, methods of structural network analysis and qualitative analysis are employed. Empirically, project data based on film archives as well as interviews with project members, of two major German TV production companies have been collected and analysed for this study.

In the following sections, first the concept of project networks as an organizational form is introduced in more detail, in terms of its reproduction mechanism and the embeddedness of resource interdependencies in social practices, paths, and relationships, in the field of the TV industry. Next, the way critical resources are managed in projects and project networks is examined, in two case studies. Finally, conclusions are drawn for future research on project networks within and beyond the TV industry.

Project Networks: Concepts and Analysis

Project networks, as described here[1], are regarded as a coordinating mechanism that materializes in longer-term, yet project-based relationships of actors which are reproduced by the very projects they collaborate in (Sydow and Windeler 1999; Windeler and Sydow 2001). To illustrate how they come about, the empirical field of the TV industry will be looked at in terms of its structural properties and conditions for project-based organizing.

Project Networks as Organizational Forms: The Case of TV Production

The television industry in Germany can be characterized as a volatile, risky and innovative, yet mature and consolidated business where customer demands change rapidly, and entrance barriers and cost pressures are very high. In content production, in particular, competition is fierce since 'good' content is both a scarce and perishable resource. Looking at different content types, however, content can be of a simple or complex, as well as standardized or idiosyncratic nature (Sydow and Manning 2004). While TV news and reports are examples of rather simple and standardized content, produced in a quasi-industrial fashion, TV movies are both complex and idiosyncratic and, therefore, require a project-based form of production. Unlike in earlier times, however, when TV movies had been produced in-house by the TV

[1] The term 'project network' has been used in the project management literature different from the way it is used here. Most scholars use the term to look at operational networks of activities or sub-projects *within* larger projects (e.g. Gareis 1990; Larson 2000). Others refer to it when examining the relationships of project partners, again, within the time frame of one particular project (Hellgren and Stjernberg 1995).

broadcaster, in the course of privatization of German television in the 1980s, industry practices have changed and content production has been (quasi-)externalized, mainly to reduce costs and to promote content innovation and competition. In effect, semi-autonomous TV production firms have established which produce content within project networks in close interaction with the broadcaster (Windeler and Sydow 2001).

Looking at these project networks more closely, three levels must be distinguished, yet examined in relation to each other in terms of their systemic reproduction: projects, project networks, and organizational fields (see Figure 1). TV *projects* are regarded as 'temporary systems' (Goodman 1981) of production, managed by representatives of TV channels and TV production firms, involving creative artists, e.g. writers, directors, film actors; and technical services, e.g. camera teams, cutters, and lighters, most of whom work for TV production firms on a *temporary contract basis*. However, these actors are recruited from already established (external) pools situated in *project networks*, which TV producers and channels coordinate, more or less reflexively. These pools are 'network-specific' as far as the resources provided match with what *particular* producers and channels demand for collaborative projects. At the same time, the projects launched *from* the network are constrained by the very resources available *in* the network. Thereby, project networks sustain beyond the time limits of particular projects and the contractual boundaries of the firm, and, thus, constitute 'more than temporary systems'. However, they persist only as far as they are actualized by and institutionalized through particular projects (Sydow and Windeler 1999).

Moreover, the way project networks are reproduced in social practice must be viewed against the more or less regionally embedded *organizational field* (DiMaggio and Powell 1983) actors refer to when launching particular projects. Without going into too much detail here, organizational fields contain deeply institutionalized industry practices, such as the variety-seeking motive of TV channels and the reputation-seeking behaviour of creative artists, the cultivation of demarcation lines between the public and the private world of television, and the recursive interplay of art and commerce (see Lawrence and Philipps 2002; Faulkner 1976). Beyond that, regional institutions such as film boards, vocational training schools and film festivals serve as locations of 'noise' (Grabher 2002) and provide opportunities for signalling (White 2002), and, in fact, fuel and support the reproduction mechanism of project networks (Lutz et al. 2003). Also, property rights backing large media corporations which seem to maintain and concentrate their own project networks, as well as market conditions, such as the level of competition, cost pressure and the availability of qualified labour, co-

determine the way projects are launched and project networks are coordinated in the TV industry. Here, however, the levels of *projects* and *project networks* will be focused on.

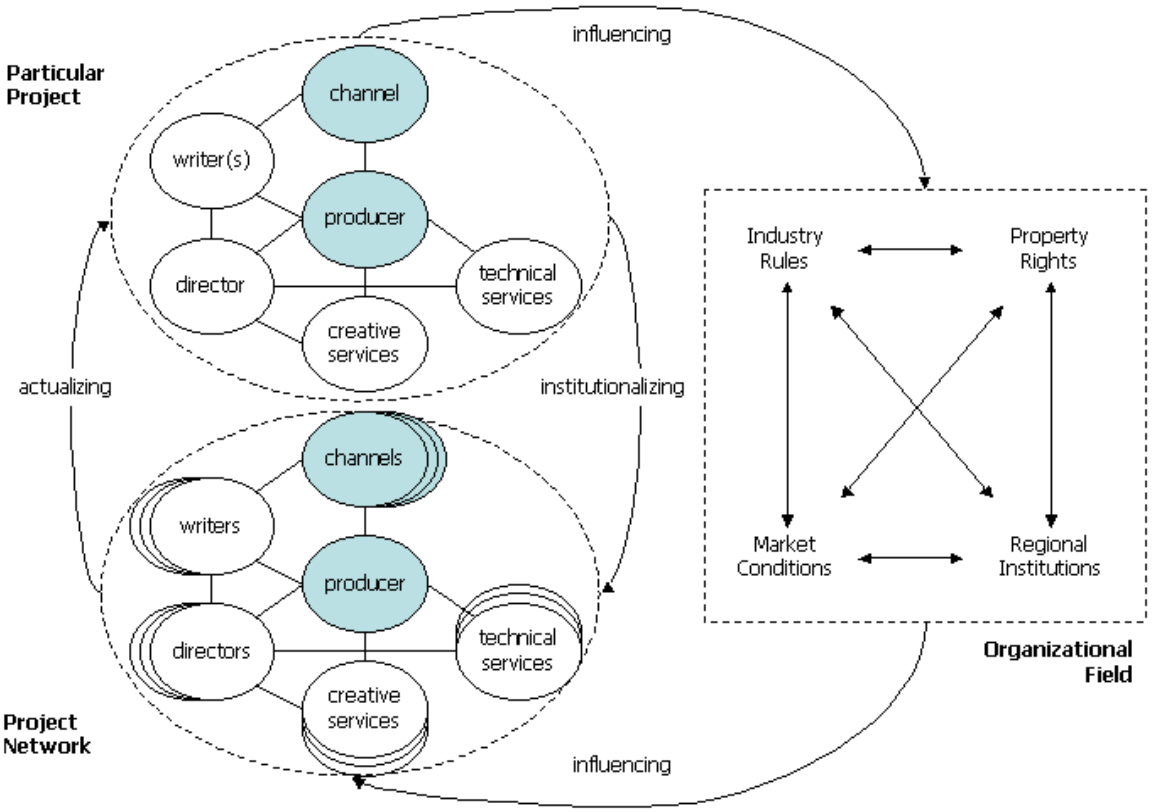

Figure 1: Projects, Project Networks and Organizational Fields

Analysing Resource Dependencies in Project Networks

As indicated above, more than other inter-organizational forms, project networks appear to allow for reconciling the needs for flexibility and stability in maintaining project-based actor relationships, from the viewpoint of coordinating actors. In particular, the capacity to provide *critical resources*[2] on a regular basis, in the face of specific, yet changing customer needs, seems to be a major characteristic of project networks. At a closer look, critical resources in project networks, as perceived by the actors involved, are embedded in systemically reproduced, yet changing formally *in*dependent, but economically *inter*dependent actor relationships. By managing those interdependencies, actors seek control over critical resource flows in the face of their own and others' demands (see also Emerson 1962). Project networks, therefore, can be conceived as an inter-organizational coordinating structure that helps central actors to maintain such control (see in general Pfeffer and Salancik 2003). Arguably, how-

[2] As used by Pfeffer and Salancik (2003), critical resources are those components of the environment that are (perceived as) critical for the survival of the organization (or the network), at any given point in time. Criticality becomes an issue, especially when environmental conditions change rapidly and unforeseeably, making resource flows uncertain, as seems very much the case for project-based organizations.

ever, this control seems 'network-based' rather than 'just' 'relationship-based' which means that stable, yet changing constellations of (more than two) actors must be looked at in order to capture the dynamics of relational autonomy and dependence in the network. These actors include, in particular, the production company, the customer channel, and critical (creative) actors from the network. To analyse those multilateral relationships, the concept of structural holes from Burt (1992) as well as the concept of the 'dialectic of control' (Giddens 1984) might turn out useful (see below). However, rather than applying them statically, the dynamics of project-based production must be considered. In particular the way projects create *contingency* as to which resources *become* critical, how they *relate* to other resources, and how they can be *controlled* in particular projects becomes an issue.

Understanding the dynamics of project network organizing, in turn, requires looking at both the *emergence* and the *reflexivity* of project-based relationships. While the former refers to (non-reflexive) processes by which relationships come about over time, and, hence, by which resource (inter-)dependencies arise, the latter refers to capabilities of coordinating actors to mindfully enact rules and resources of the organizational field to manage those project-based relationships. Again, two concepts might be useful to be employed for the analysis: practices of project organizing and collaborative paths (see also Manning 2004). *Practices* in structuration terms (Giddens 1984) refer to recurrent activities which social actors apply in their daily conduct. They do this by enacting (systemically embedded) rules and resources (social structures) which get reproduced in social practice. In the project organizing literature, 'routines' as deeply embedded institutional practices have received much attention, as they reduce the complexity of project organizing in the long run (Anell 2000; Grabher 2000). Yet, practices in more general also include those activities which are reflexively monitored by the very actors who apply them. By comparison, *collaborative paths* are processes through which projects follow one another. They materialize in sequences of projects with similar contents, involving path-affiliated actors. While doing so, they bind resources such that divergent projects are unlikely to be launched (Sydow and Manning 2004). That is, like practices of project organizing, paths facilitate, yet constrain the acquisition and the management of new projects, as they build on the trust, competence and experience of affiliated actors (see also Manning 2004). Along collaborative paths, resources *become* (and remain) critical and resource dependencies *emerge* (and persist). At the same time, collaborative paths promise to secure critical resource flows over time. Yet, the continuance of a path is constrained by the evolution of the organizational field and the network itself (Manning 2004). How these concepts help analyzing resource dependencies will be shown empirically next.

Resource Dependencies in Project Networks: A Comparative Case Study

Having looked at project networks from a theoretical standpoint, now, two cases are analysed. Some issues of *methodology* are explained first. The employment of a *comparative case study* approach serves the need for a deeper understanding of how project networks operate. It offers the possibility of 'thick rich descriptions' and promises to generate new categories and concepts (Denzin 1989). Therefore, two, seemingly similar cases of TV production firms have been chosen for this study (Eisenhardt 1989): Hood Productions and Beach Productions.[3] The cases, however, are not limited to qualitative data, but combine different forms of analysis (Yin 1984). Also, to account for the dynamics of project networks, they have been carried out on two levels – projects and project networks.

On the *project network level*, the systemic and relational context for organizing projects and managing resource dependencies is looked at. To so so, quantitative and qualitative network analytical techniques have been employed (see also Gulati 1995; Hansen 1999). Using the tools of UCINET and NetDraw (Borgatti et al. 2002), project affiliations of actors have been analysed (see also Breiger 1974). The network data is limited to archive data (Marsden 1990), based on lists of film references provided by the respective companies (see also Jones 1996; Hansen 1999). To compare the data, all film crews from 1997 to 2003 have been analysed for both companies. Overall, 63 projects by Hood Productions and 59 projects by Beach Productions have been included. From this data, actor-project affiliation matrixes have been created, including all individual producers, channel representatives, writers, directors, and camera operators involved in the projects.[4] The focus on individual actors derives from the notion that the film industry is a 'people business'. However, the way these actors relate to each other needs to be explained also by their organizational affiliations (see also Manning 2004). To compare both networks, simple ratios have been generated – pair stability index (PSI) and resource sharing index (RSI) (see below) – that promise to characterize relationships and the resource dependencies they imply. Unlike in other comparative network studies (Laumann and Knoke 1988; Human and Provan 2000) complex measures have been avoided to reduce the standardization problem (e.g. Marsden 1990).

On the *project level*, one project of each production company has been analysed. These are 'Tough Guy' by Hood Productions, and 'Black Rose' by Beach Productions. On this level, the dynamics of resource criticality and dependence are looked at more closely, against the background of the project network structures identified before. Thereby, the concept of 'net-

[3] The names of the production firms and all actors involved have been changed.

work-based control' (see above) is applied. To do so, the project analysis is carried out in three steps which relate to the pre-project phase, the project implementation phase, and the post-project phase. The data is based on twenty semi-structured interviews conducted with with key participants of the projects. For the first phase, the formation of a stable constellation of actors is looked at, including the production company, the customer and a critical creative artist, who initiated the respective projects and kept control over project development. For the second phase, the involvement of other actors in the projects and the way they relate (and are 'controlled') by the stable actor constellation is looked at. Finally, for the third phase, the way those actors might become engaged in follow-up projects is examined.

The Project Networks of Hood Productions and Beach Productions

At first, the profile and development of both production companies and their respective networks shall be looked at. *Hood Productions* (HP) is a spin-off subsidiary of one of the largest TV production companies in Germany. Since its foundation, HP has specialized in making detective movies for public television, in particular Channel C. One of the leading labels of HP is the 'Police' series for Channel C. Such labels constitute collaborative paths, by building up reputation, e.g. through winning awards, and by binding financial and human resources, from the TV channel and creative actors respectively. Also, label-affiliated projects serve as 'cash cows' in a volatile business, based on mutual trust, shared expectations and economies of repetition (Davies and Brady 2000). This is because for TV channels, in turn, films produced under these labels establish a certain audience for particular time slots, and, therefore *become* a critical resource for the successful operation of the channel.

At the same time, under increasing competition and in the face of changing trends in the field, the reproduction of such labels may turn out ambiguous, as they bind both producers and TV broadcasters such that un-affiliated projects are unlikely to be launched. With respect to the collaborative 'Police' label, Channel C and HP have indeed become interdependent, not least as detective movies (and movie series) of this kind have come out of fashion:

> "I think that HP is very dependent on Channel C, because most of their films they make are for us. […] I would also see a dependency of Channel C from HP, because we stopped doing *detective films* with other producers. However, in fact, as far as detective films are concerned, we say now 'No, we do not show them any longer', *except* those on Sunday produced by HP." (R2, editor of Channel C)

Against this background, HP applied certain practices, both to *refresh* and to *diverge from* the existent path, that is to exploit existent and to explore new competences (March 1991), in order to both maintain control over critical resources demanded by Channel C and to become

[4] Only those actors who participated in at least one project in the given period of time are included in the project network, which is *one* way of representing project networks empirically (see also Manning 2003).

less dependent on Channel C projects. For the former, HP has recruited *creative artists* to refresh contents produced under the established label. To secure the delivery of new writers and directors, in particular the founder of the company – P3 – would engage in talent recruiting from regional training schools, he teaches at, which is a good example of how environments are negotiated in the TV industry (Pfeffer and Salancik 2003). Also, P3 would try to recruit new *creative producers* along existing paths, to integrate new ways of film-making, to attract new creative artists and to address a larger (younger) audience. In fact, following this principle, a new producer *and* channel editor were put in place for the 'Police' series, P1 and R2, who have developed their own resource pools (see below).

For the latter, to *diverge* from the existent path and, thereby, to enlarge the adaptive capacity of the network (Staber and Sydow 2002), HP would, again, engage new creative producers. In particular, HP installed the new producer P2 who has been expected to acquire projects in the private world which the founder, P3, himself, seemed unable to do, since he was constrained by the very reputation he got in public television. In practice, however, the creation of a new path as a mindful deviation from the old one (Garud and Karnøe 2001), rather than (just) the acquisition of *singular* projects in private television, still seems far from being achieved. This is because P2 also comes from public television which once facilitated P2's recruitment for the company, and which indicates HP's risk of getting path-dependent.

The project network of *Beach Productions* (BP) shows several similarities, but differs in some respects. Unlike HP, BP is a family-run, formally independent enterprise. The founder, P1, has maintained close contacts with the editors-in-chief of public Channel B and A, in particular. Over time, BP has specialized in producing family-oriented movies, romantic comedies and melodrams, mostly for a mid-age audience. In particular, BP has produced novel-based movies, e.g. romantic comedies for Channel A, involving mostly female protagonists. That is, similar to HP, BP has established a collaborative path with a channel that facilitates and constrains follow-up production.

> "We were the first to establish a movie series with Channel A. […] Now, these [kind of] films are the ones we earn our money with. […] 60% of our time is spent on producing these films, only 40% can be used for acquiring new projects." (Assistant producer, BP)

Similar to HP, BP would try to exploit this production path, while exploring new genres and ways of film-making. P1 employed P3, a family member and to-become chief executive of the firm, as a second main producer. P3 is supposed to represent a new generation of film-making to become a partner for the, yet unexplored, world of private television. However, in practice, P3 is still largely occupied with producing films for the established label of 'romantic comedy films' on Channel A to secure financial resource flows (see below):

Having introduced the development of HP and BP, now actor relationships and the resource interdependencies they imply are looked at more closely. Figure 2 and 3 show all project affiliations of producers, channel representatives, writers, directors, and camera operators involved in HP and BP productions from 1997 to 2003. Actors are represented as nodes, joint project affiliations as ties. The occupational role of actors is indicated by node shape. The affiliation of channel representatives with their channels is indicated by letters on the nodes. The thickness of ties (tie strength) represents the number of joint projects. Depending on their strongest ties, actors are further differentiated by colour: White actors [W-Actors] show only one-off collaborations with others, light red [gray] actors [M-Actors] have repeated at least one collaboration, red [black] actors [S-Actors] have repeated at least one collaboration more than three times. Furthermore, the way actors are located in the network corresponds to their geodesic (path) distance to other actors. That is, actors located close to each other have likely collaborated in a project (direct tie), while actors located far from each other have probably only collaborated with colleagues of each other (indirect tie) (see in more detail, Scott 2000). Finally, dotted lines demarcate systemic sub-networks of actors affiliated with a particular collaborative path and/or particular producers (Burt 1980, see below).

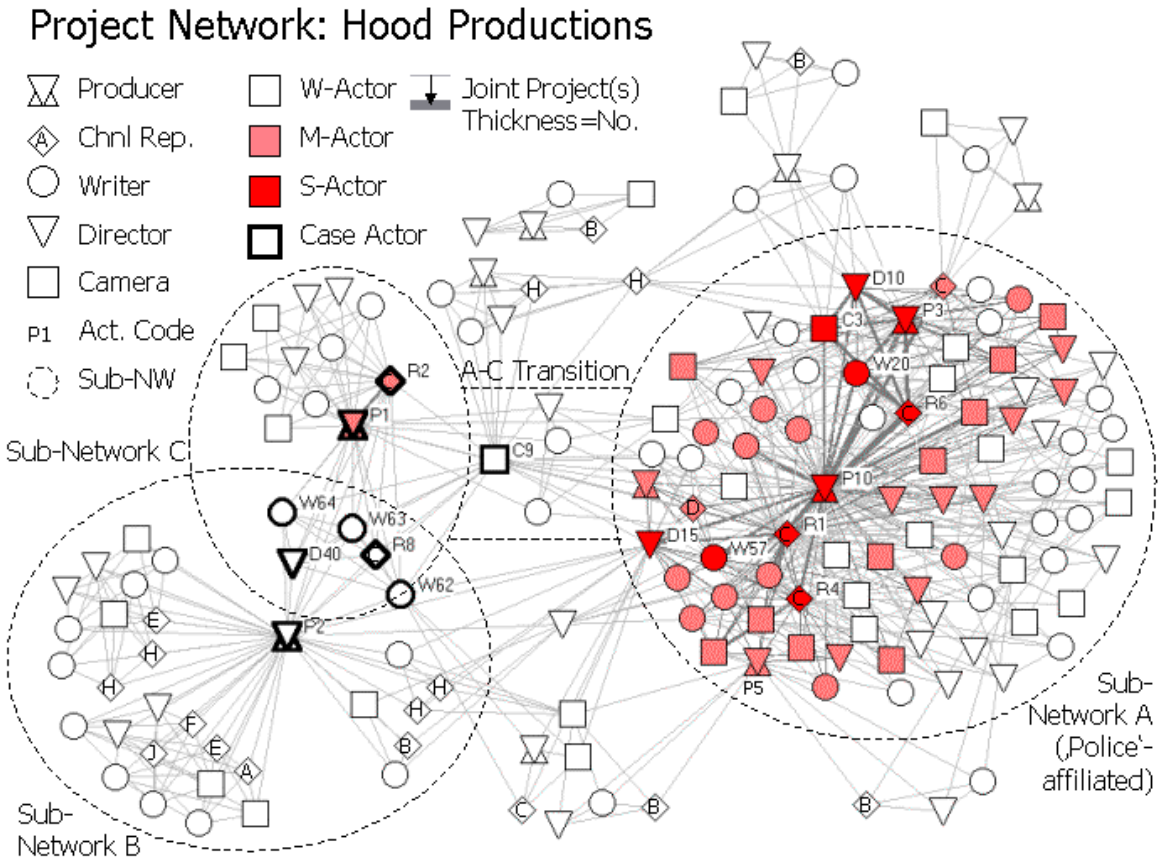

Figure 2: Project Affiliations of Creative Actors in the HP Project Network (1997-2003)

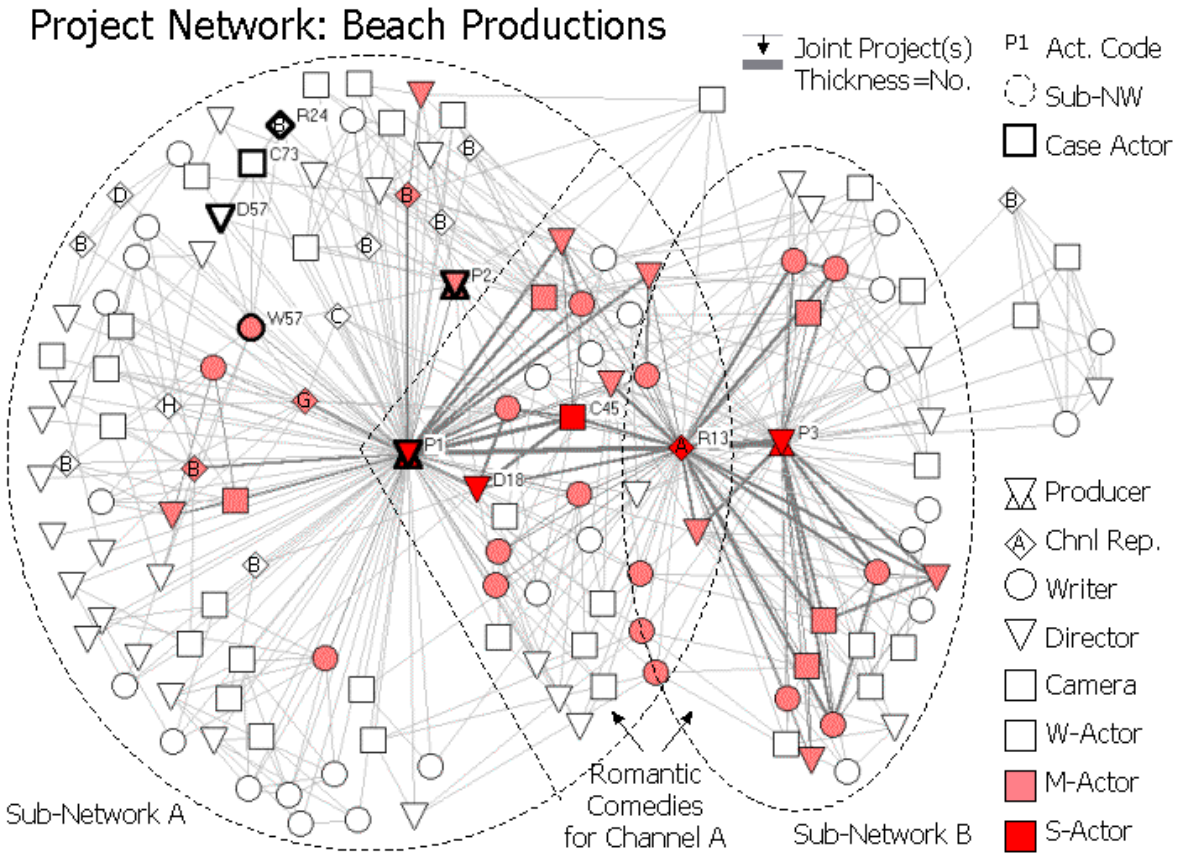

Figure 3: Project Affiliations of Creative Actors in the BP Project Network (1997-2003)

The figures show the development of the companies as introduced above. In the *HP network*, Sub-Network A consists of a group of actors that have established collaborative ties through 'Police'-affiliated projects. Many of them are M-Actors, while some are S-Actors. The latter, in particular, form stable constellations that sustain the collaborative path over time. Notably, P10 and R6 as well as P2 and R13 have strong ties reproduced over more than ten joint projects. These producer-channel pairs are critical for stabilizing such networks (see also below). However, they couple with particular creative artists, such as W20 or D15, who join these stable constellations. In particular, some writers may have become critical for the 'Police' series and jump in as 'rewriters', to solve creative problems when needed:

> "The main task of a producer of a TV series is to keep the series 'on track'. Everybody can write good plots, only some, however, can connect to a pre-existing series. […] " (P3, HP)

Sub-Network C demarcates a (successful) spin-off of the main 'Police' path. It is centrally coordinated by the team of P1 and R2 (see above). By contrast, Sub-Network B is managed as a largely independent part of the project network by producer P2. Beside these Sub-Networks, however, several small groups of actors can be identified, in particular on the edge of Sub-Network A. They represent singular spin-off projects of the dominant path.

The *BP network* contains two Sub-Networks A and B, where the first comprises all actor relationships of the founder and producer P1, in collaboration with Channel B and A, in particular. The second contains actor relationships managed by the newcomer producer P3. Interestingly, both sub-networks are linked via Channel A representative R13 who happens to be the main customer for romantic comedy movies. As indicated above, though P3 has not managed to attract new customers and to actually *deviate* from the collaborative path yet, P3 has *refreshed* the path with Channel A by attracting new creative actors. This, again, stresses the dialectics of exploiting and exploring network relationships in volatile fields:

> "It is true that P3 is largely occupied with producing for Channel A. […] But she has managed to bring in *new* creative artists. In fact, she could do this only *because* she has such a good standing with R13, as R13 trusts P1 and P3 based on a long-term [customer] relationship." (Production assistant, BP)

Having introduced the development of both project networks in qualitative terms, now some comparative measures are applied to contextualize the way particular projects are managed and the way (critical) resources are enacted from the networks. To start with, the stability of relationships between different types of actors is analysed using a *pair stability index* (PSI). A high PSI indicates stable resource flows and high resource interdependency between the respective actor groups. The PSI is measured by the number of *repeat* collaborations against *all* collaborations (see Table 1).[5]

HP	Producers	Writers	Directors	Camera	Channel R.
Producers					
Writers	0,63				
Directors	0,65	0,23			
Camera	0,60	0,18	0,58		
Channel R.	0,82	0,44	0,56	0,46	
BP	Producers	Writers	Directors	Camera	Channel R.
Producers					
Writers	0,67				
Directors	0,65	0,27			
Camera	0,71	0,17	0,44		
Channel R.	0,89	0,62	0,63	0,50	

Table 1: PSI between Actor Pools (1997-2003) [HP upper half, BP lower half]

Most importantly, the table shows very similar measures across both networks. For instance, while producer ties to channel representatives are most stable (HP: 0.82; BP: 0.89), ties to creative artists seem to fluctuate to some extent. While the former stresses how important it is for producers to keep stable relationships with channel representatives to sustain collaborative

[5] The pair stability index (PSI) was particularly created for this study (see for similar approaches Gulati 1995; Granovetter 1973; for a different approach using inter-pool density measures see Manning 2003). The PSI lies between 0 and 1, where 0 indicates maximum instability, 1 maximum stability between actors. The PSI between A and B type actors equals 1 less the sum of dichotomized project-based contacts (less the 'first' contact) between A and B type actors divided by the sum of weighted (numbered) contacts (less the 'first' contact).

paths and to keep operations running, the latter indicates that in order to do so, some creative variety is inevitable (see above). Interestingly, ties between writers and directors (or camera operators) are much weaker than between directors and camera operators. This is because, while writers and directors are recruited independent from each other, directors and camera operators maintain close working relationships and rely on mutual trust for collaboration (see also Manning 2003). In sum, the way *dyadic* relationships between types of actors are maintained seems deeply institutionalized in the field; in fact, it illustrates the *rules* by which particular actors and their resources can be enacted for particular projects (see below).

By comparison, the way *particular* producers maintain resource pools seems to differ within and across both project networks. Relational attributes of key producers in both networks have been looked at: number of related actors, number of projects managed, standardized degree and betweenness centrality[6], PSI within the producer network[7] and the *resource-sharing index* (RSI). The RSI measures to what extent producer networks are intertwined with other producer networks, that is in how far actors linked to the focal producer connect to other producers as well. High RSI indicates high dependence from other producers in the network, while low RSI indicates that respective producers have built up their own network and maintain largely independent from others. Table 2 reports all these measures.

HP	Actors	Projects	Degree	Betweenness	PSI	RSI
P1	23	5	13,45	11,31	0,04	0,39
P2	40	7	23,39	26,21	0,02	0,25
P3	30	12	16,96	4,86	0,48	0,97
P5	16	5	9,36	4,66	0,45	0,56
P10	88	41	50,88	34,35	0,41	0,45
BP	Actors	Projects	Degree	Betweenness	PSI	RSI
P1	104	40	73,76	66,89	0,23	0,23
P2	12	3	8,51	0,83	0,55	0,92
P3	52	18	36,88	14,02	0,33	0,33

Table 2: Measures of Attributes of Producers and their Networks

Comparing these measures, three types of producers can be identified for both networks: resident producers, affiliated producers and inventive producers. *Resident producers* have done many projects for the company, cultivating established labels and customer relationships. They have significant centrality in the network (high degree/betweenness), and enjoy responsible autonomy (Friedman 1977) when it comes to organizing path-affiliated projects. Clearly,

[6] Centrality measures indicate the degree of embeddedness of actors in the network. High centrality means great social capital and prestige, as well as managerial power (see e.g. Burt 1992). While degree centrality measures local centrality (number of direct ties to other actors), betweenness centrality measures the extent to which actors are in-between other actors and, thereby, obtain structural holes.

this is the case for P1 at BP, the founder of the company, as well as P10 (an executive producer) at HP. *Affiliated producers* are those who join an established collaborative path (high PSI) and make use of, yet depend on resources of resident producers to a large extent (high RSI). These are P3 and P5 at HP and P2 at BP. (P3, as the founder of HP, in fact, largely supported P10 as a co-producer in stabilizing the traditional path.) *Inventive producers* are newcomers who build up their own resource pools (low RSI) but keep loosely coupled with the rest of the network thereby getting access to others' resources as needed. These are P1 and P2 at HP and P3 at BP, respectively. Unlike affiliated producers, inventive producers (by their very role) enjoy a high degree of responsible autonomy for *non-affiliated* projects.

Organizing the Projects 'Tough Guy' and 'Black Rose'

Against the structural properties of both project networks, now, two projects are looked at in more detail, in terms of the way critical resource flows are managed in advance, during and in the aftermath of these projects. These are 'Tough Guy' at HP and 'Black Rose' at BP. The first was commissioned by Channel C – the main customer of HP. The second was commissioned by Channel B – the main customer in Sub-Network A of BP. To start with, the forming of a stable constellation of actors in advance of both projects is looked at. Next, the way this constellation exercised control over project development is scrutinized. Finally, the reproduction of the project network through these particular projects is examined.

Enacting Critical Resources for Launching the Projects

Typically, in creative industries only few project ideas get implemented, while many remain 'sleeping projects' for a long time. Project ideas, however, get channelled through existing project networks where particular actors, in particular producers and channel representatives, serve as gatekeepers who reject or let through ideas for prioritizing projects. This channelling process often connects to established collaborative paths which are maintained by stable actor constellations (see above). In fact, the idea for 'Tough Guy' was born along the 'Police' path, following the predecessor project 'Honour and Glory', produced by HP for Channel C, featuring *Joe Kramer* as the main protagonist. These three actors form a stable constellation that initiated the new project (see Figure 4A). By comparison, the 'Black Rose' project was initiated along a newly established path, labelled as *Kathleen Welch* films, which are based on books by Kathleen Welch, produced by BP for Channel C. These actors are displayed as the stable constellation for the latter project (Figure 4B).

[7] Producer networks are not the same as the sub-networks of Figure 2 and 3, yet they overlap. While the sub-networks have been used as devices to explain the structural development of the project networks, producer networks are formally defined as sets of relationships maintained by particular producers.

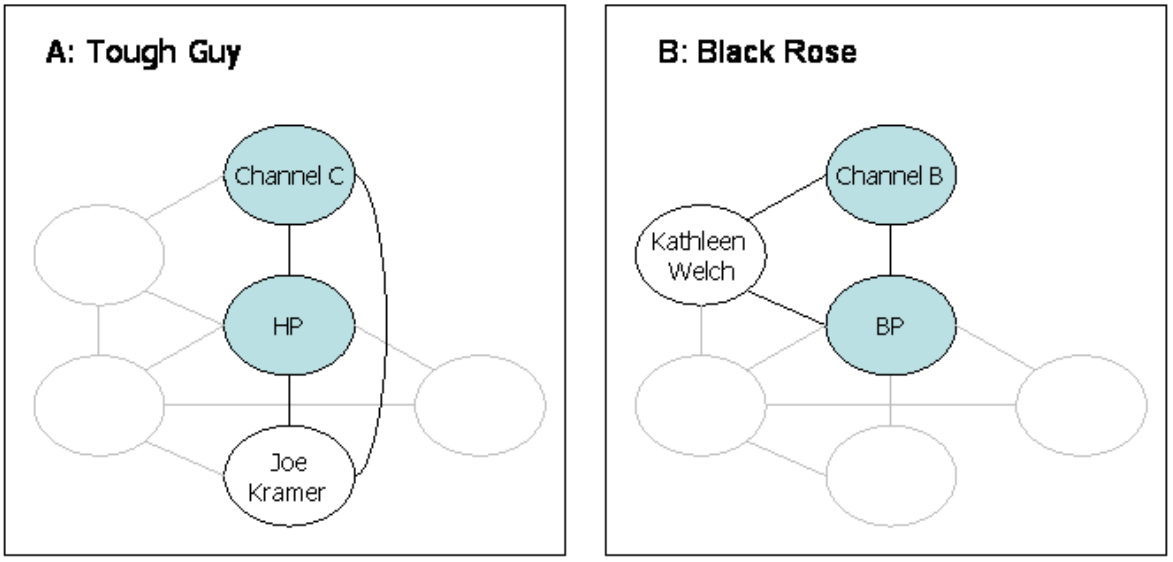

Figure 4: Stable Constellation of Actors Initiating the Projects (Compare Figure 1)

These constellations imply resource interdependencies that serve as drivers for prioritizing and initiating projects. In the HP case, both HP and Channel C are dependent on the popularity of 'Police' actor Joe Kramer in the public to sustain their collaborative path (see above). Joe, in turn, has become affiliated with this path, since, as a serial actor his reputation largely stems from his 'Police' actor role. However, in order to keep up good reputation actors like Joe must be able to prove their artistic talent from time to time by playing in different films:

> "'Tough Guy' was meant to let Joe play a new character. This is good for his image, because he comes from the theatre, and he wants to vary a little. In fact, as a successful 'Police' officer he is afraid of getting stuck in this role, and he longs for playing a different character." (P1, HP)

This would enhance the 'resource value' (or: scarcity) of Joe Kramer and, at the same time, strengthen the collaborative path of Channel C and HP. Thereby, HP could further concentrate control over the enaction of Joe Kramer as a label and creative resource. Several bilateral negotations followed, where HP made use of a structural hole situation resulting from the strong affiliation of Joe Kramer with Channel C, and the (exclusive) capability of HP to enact and reproduce this affiliation (Burt 1992). Thereby, HP built on mutual trust and transaction-cost advantages from previous productions. However, by committing Channel C (and Joe) to supporting this production, HP committed itself to implement the Joe Kramer project. After all, Channel C (and Joe) could have done otherwise by prioritizing other projects. Despite this 'dialectic of control' (Giddens 1984), the mutual commitment of all actors in the stable constellation granted time and responsible autonomy for further project development:

> "Over one year we have about 30 projects in development out of which 10 materialize. […] If the project ['Tough Guy'] had failed, I believe we would have implemented other projects with other production firms. Together with HP, we would have further worked on the project with Joe Kramer to be implemented maybe the year after." (R2, Channel C)

By contrast, the BP project was driven by established ties of BP and Channel B to a book author. This is because, unlike the 'Police' series, the label 'Kathleen Welch' depends on the repeat engagement of the author, rather than of other team members. Kathleen Welch is famous for deep stories about the destiny of women. Through a number of films, the author and Channel B have become mutually dependent, as they, by now, seek to attract a certain audience which they can do only by further collaborating. BP, like HP, has served as an entrepreneurial bridging agent by realizing this opportunity and by strengthening this collaborative path. 'Black Rose' was yet another project along this path. However, like in the first case, the way this film would turn out could hardly be predetermined. Yet, through this stable constellation critical resource flows for project development would be facilitated.

Managing Resource Dependencies and Project Contingencies

Both projects took about two years to be implemented. A main reason for this rather long duration was the difficulty to maintain 'network-based control' over contingent flows of critical resources in the course of the projects. To explain this, the way creative and technical actors joined and influenced the projects will be scrutinized. Thereby, the role the stable actor constellation played is examined. To illustrate this, Figure 5 shows who suggested (normal arrow) and who approved of (dotted arrow) the selection of actors for the team (see also Figure 2). The collaborating companies are further represented by the individual actors in charge of the project whose roles in the project networks are paid special attention to (see above).

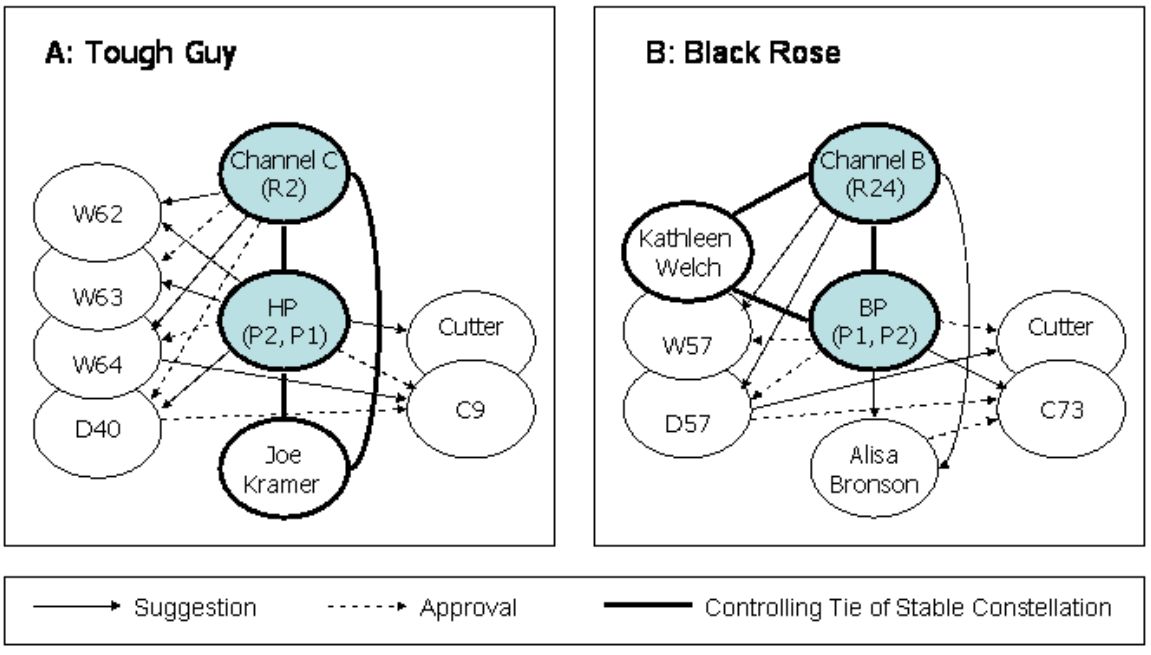

Figure 5: Stable Constellation of Actors Maintaining Network-Based Control

For the 'Tough Guy' project, producer P2 was put in charge. Later, P1 was additionally assigned; yet, P2, who was identified as an inventive producer (see above), took a primary role in decision-making processes. From the channel's side, R2 was made responsible. First, in order to proceed with project development, a script writer was needed. Since the main character – Joe Kramer – was pre-set for the film, it was critical to find someone who was able to write a script tailored for this actor, yet allowing the actor to vary from previous roles. Following the rule 'Never change a winning team' the writer of the predecessor project 'Honour and Glory', W62, was enacted, for he had the experience of writing scripts for Joe Kramer. However, as happens sometimes in creative projects, W62 turned out unable – this time – to write an appropriate story. That is, his creative resource could not be used for this project:

> "One problem was the character Joe Kramer. He possibly stood in the way of the writer's fantasy. W62 otherwise is a nice person and writer, but this time, he did not meet our expectations. […] After two versions W62 was not engaged for the project again." (P2, HP)

In fact, W62 left behind an unfinished version of the script. In such situations, it is crucial to find a good re-writer (or: script doctor). However, as most writers prefer to develop their own scripts, only those producers who engage in cultivating social relationships with writers beyond the business sphere would manage to enact those for such a job. W63, whom P2 had known from early on in his career, was asked and agreed to do the rewriting. Notably, P2 – as an inventive producer – enacted this writer from outside the project network, while other producers would have probably asked someone affiliated with the 'Police' path (Sub-Network A). In fact, this choice turned out unfortunate as W63 was not able to 'sense' the story needed for Joe. At this point, R2 of Channel C took over control by suggesting W64.

> "There was still lacking some 'warmth' in the character of the tough guy. This is something both men (writers) have not managed to integrate in the script. [...] Then I thought about asking W64 (a woman), foremost as a director but I knew she could write good stories as well." (R2, Channel C)

In addition, W64 as the new writer and to-become director suggested a camera operator – C9 – to join the team. In fact, C9 – as a peripheral actor of Sub-Network A – was quite familiar with 'Police' movies so that his choice would suit the (technical) requirements of a 'Joe Kramer film'. Notably, unlike (more) creative actors, technical actors and the resources they provide can be more easily transferred from different contexts and collaborative paths. On the other hand, more than writers for example, camera operators rely on good reputation for quality and efficiency which they can more easily develop *within* project networks, while the resource value of writers and directors is co-determined by field-wide reputation.

Unfortunately for the newly established film crew, three weeks before the shooting, conflicts arose between W64 and other team members, as a result of which W64 left. This, in fact, is a rare but always possible contingency of creative processes. Now, the project turned into a

'crisis mode' so that 'normal' practices of project organizing would not work out any longer. Pressurized by the channel, P2 was expected to find a new director that not only replaces W64, but that belongs to the top league of directors in the field. Notably, at this point in time, the project was not yet financed by the channel, which is a typical situation, for few channels in this field concentrate control over the (critical) flow of financial resources:

> "[…] We definitely wanted someone from the top league. My boss told me explicitly that, unless someone is found from the top, the film will not be made." (R2, Channel C)

Again, by enacting personal ties P2 had maintained over time, P2 could persuade D40 to do the job. Like W62, D40 had never worked for HP before. D40's engagement was quite risky, not only because little time was left to prepare the shooting, but because D40 was unable to choose a camera operator of his own as would be common in the field (see above). In fact, D40 and C9 did not get along very well in the end. By contrast, the cutter whom HP enacted from Sub-Network A turned out a good partner for D40 though both had not known each other before. Eventually, after two years of development, the project could be finalized.

For the 'Black Rose' project, the founder P1 took the lead, assisted by affiliated producer P2. For Channel B, R24 was put in charge. Similar to the HP project, first a script writer had to be recruited. However, while in the HP case the script was created from scratch, the BP project was based on an *existing* book by Kathleen Welch. Therefore, a script writer was needed who was able to convert a ready-made story into a film. Against this background, the channel suggested W57 who had worked for previous Kathleen Welch projects.

> "This is a writer who went through the writer training programme of Channel B. He writes for us also in other contexts, but he also was involved in the production of 'Sister, Sister' [K.W. film]. Writing for such a film requires great dramatic skills." (R24, Channel B)

For further project development, two factors were critical for BP. First, the setting of the film had to be selected such that both the original story could be reflected to satisfy the audience (which is critical for all parties in the stable constellation to survive, see above), *and* the production had to be made feasible to reduce the dependence of BP from Channel B for the provision of financial resources. Second, the main protagonist of the film was critical as only through him/her the book would turn out a successful film. Looking for a star actor in the field, BP promoted the recruitment of Alisa Bronson as the main protagonist. Alisa, however, entered as a powerful actor in the team who would further co-determine resource dependencies for production. To start with, she made her engagement dependent on the shooting location, which shows that *her* actor label counted as much as the label of Kathleen Welch:

> "Alisa Bronson planned to spend some time in Malaysia together with her agent whose friend produces films there. […] The final decision to do the shooting in Malaysia, therefore, played a significant role for committing Ms. Bronson to the film." (Production assistant, BP)

This decision further demanded for a director who was capable (and willing) to do the shooting at *this* very location. Fortunately, R24 knew about director D57 whom the representative had engaged for a previous film set at a similar place. In contrast to the HP project, the reputation of the director in the field was relatively unimportant, since Kathleen Welch as well as Alisa Bronson already provided enough reputational capital for commercializing the film. As the BP project developed further without major obstacles, D57 could successfully enact a cutter known to him. However, the selection of camera operator C73 was further facilitated by the approval of Alisa Bronson who knew C73 from previous projects. This, finally, shows that in addition to field practices of recruiting technical staff (see above), special actor constellations emerging in projects co-determine the way resources get enacted.

Reproducing Resource Interdependencies in the Project Networks

Both projects, arguably, reproduced the project networks of both companies by further binding key customers and creative actors to collaborative paths and by further securing critical resource flows from the parties involved *beyond* these particular projects. Looking at the HP network, the collaborative path sustained by HP, Channel C and Joe Kramer could even be broadened with the help of inventive producer P2 who enacted creative resources from formerly unaffiliated actors, such as W63 and D40. At the same time, through P2's collaboration with the 'Police' spin-off coordinating team R2 and P1, P2 himself got more affiliated with the dominant path. That is, while HP successfully satisfied *changing* customer demands along the collaborative path and thereby maintained control over critical path-affiliated resources, the company's dependence on further Channel C projects arguably increased, for the network position and reputation of (formerly non-affiliated) actors got reproduced *towards* the established, yet re-newed collaborative path (see also Figure 2/3).

By comparison, the BP project mainly exploited established competences along the collaborative path with Channel B. While writer W57 could be further tied to the path, D57 – who was recruited largely by accident – came in touch with BP as a production company and proved to be a reliable director for these kinds of projects. Whether or not the star actress Alisa Bronson will be accessable (more than before) for follow-up projects depends on the way her reputation gets reproduced through this project. However, being a star actress – not affiliated with any particular kind of film – she might maintain independent. Yet, in the face of Channel B's demands for top league cast, Channel B proved to be able to attract *one of the* stars in the field along the collaborative path which seems even more valuable than being dependent on *particular* stars (such as Joe Kramer) for follow-up productions.

Conclusion and Implications for Further Research

The case studies have examined how TV production firms manage resource dependencies in the course of and beyond particular projects. The cases demonstrated how coordinating actors seek to access and secure critical resources in project networks as constrained and enabled by collaborative paths and practices as well as relational project contingencies.

The following findings could be made:

(1) Critical resource flows can be secured through collaborative paths between central coordinating actors in the project network. This is because paths trigger mutual expectations and help prioritize decisions prior to and in the course of collaborative projects. By reflexively enacting (new) creative actors for path-affiliated projects, the path can be 're-freshed' or even mindfully 'deviated' from, which reproduces the relational autonomy of collaborating actors (see also Garud and Karnøe 2001).

(2) To survive in the long term, the configuration of a project network must allow for absorptive and adaptive capacity (see Cohen and Levinthal 1990; Nahapiet and Ghoshal 1998; Staber and Sydow 2002). This is achieved through employing resident, affiliated, and inventive producers who maintain their own (producer) networks more or less independent from each other. Thereby, their (individual) social capital contributes to the organizational capability of enacting critical resources for different projects.

(3) Contingencies of project development require stable constellations of actors (along collaborative paths) who maintain 'network-based control' by co-defining which resources are (and become) critical for successful project accomplishment. Yet, redundant ties need to be maintained and enacted *on demand* according to field-wide rules to get projects done. As a result, uncertainty can be reduced *while* creative contingency is allowed to promote (channelled) innovation (see also March 1991).

In more general terms, the study demonstrated ways of looking at the 'temporary-permanent dilemma' of project organizing. However, the recursive interplay of field-wide practices, sets of project-based relationships and collaborative paths still lacks understanding. In this respect, the rules according to which resource dependencies come about and are eventually managed must be further examined. This, again, raises the question about the degree of strategic (or: reflexive) agency in such networks and the capability of actors to respond to (changing) institutional demands (see also Oliver 1991). Finally, different methodologies must be employed to study resource dependencies in project networks *beyond* the TV industry which promises to capture a widely relevant economic phenomenon.

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