

Supporting Projects, Cannibalizing Firms? Personal Knowledge Networks in Project Ecologies

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Abstract

Recent debates on 'communities of practice' have come to appreciate the role of personal knowledge networks. These informal personal ties, however, mostly are perceived as homogenous and cohesive networks formed around a joint interest. The multiplicity of intentions, motivations and loyalties within personal networks hardly is recognized. Moreover, a functionalist tone seems to prevail in accounts in which personal knowledge networks are seen to compensate for the structural shortcomings of the formal organization. This paper challenges these wide-held assumptions on personal knowledge networks. Against the empirical background of the London advertising and the Munich software ecologies, the paper will firstly venture into the neglected sphere of thin and ephemeral personal knowledge networks by differentiating between *connectivity*, *sociality*, and *communality networks*. Secondly, the paper also explores the tensions between *personal interests*, *project goals* and the *firm's aims* that are induced by these personal knowledge networks.

Key words: knowledge networks, networking, weak ties, communities of practice, project-based organizing

Suggested track: F

1 The N-Thing

The more recent career of networks has been impressive, to say the least. During the early 1980s networks at best have rather grudgingly been taken note of as hybrid mongrels, located somewhere in the diffuse zone between the alleged ideal types of markets and hierarchies. From the early 1990s onwards, however, a variety of network forms increasingly expanded the 'swollen middle' of the governance spectrum (Hennart, 1993). Networks, in fact, turned from the rare exception to literal omnipresence – quite remarkable for a concept that already has been around since Georg Simmel. The roots of the network concept indeed refer back to Simmel's fundamental distinction between 'groups' (defined by some membership criterion) and 'webs of affiliation' (linked through specific types of connections). By alerting to the critical role of the position of actors in networks he had laid the foundations for social network analysis. The pivotal starting point of social network analysis is the "anticategorical imperative" (Emirbayer and Goodwin, 1994, p. 1414) which rejects explanations of "social behavior as the result of individuals' common possession of attributes and norms rather than as the result of their involvement in structural social relations" (Wellmann, 1983, p. 165; see also Scott, 2000).

The enormous upsurge of theoretical interest in networks during the last two decades mainly crystallized around Mark Granovetter's (1985) notion of embeddedness. By stressing "the role of concrete personal relations and structures (or 'networks') of such relations in generating trust and malfeasance", Granovetter (1985, p. 490) altered the analytical perspective on networks. The notion of embeddedness afforded a robust framework to study the institutional mechanisms by which networks are initiated, coordinated, monitored, recombined and terminated. This view on network governance thus shifted the focus from examinations of network structure and position to concerns with particular institutional contexts in which actors are embedded. Largely bypassing the older tradition of social network analysis, economic sociology and organization studies enthusiastically embraced the network governance approach that evolved around Granovetter's embeddedness notion. The Granovetterian reading of embeddedness in fact turned into *the* master-paradigm of the 'new economic sociology' (see Peck, 2004; Grabher and Powell 2004).

1.1 Networks in the New Economic Sociology: the triple bias

The one-dimensionality bias. In the new economic sociology networks have been utilized as an approach to explore above all the realm of inter-organizational ties. By focusing on the inter-organizational level, networks operating at other social scales, like relationships between individual actors, teams, or departments are either ignored or unproblematically subsumed under higher-level networks. Inter-personal trust, symptomatically is confounded with inter-organizational trust. Trapped in such an 'ecological fallacy', analysis presumes a coherence of intentions, motivations and interests thereby ignoring that "at any one point in time individuals engage in multiple networks associated with different rationalities" (Ettlinger, 2003, p. 161).

The strong-tie bias. In general, a "spirit of optimism has been linked to discussions of economic networks. They have been viewed as innovative, adaptive, resilient, open, and regenerative economic forms" (Leitner, Pavlik and Sheppard, 2002, p. 278). More specifically, the new economic sociology still seems to privilege the 'strong tie'-end of Granovetter's (1973) paradigmatic dichotomy and uses networks as a shorthand for enduring, robust and trust-based ties. Networks in this view afford the cohesive and stable social underpinnings that reduce all sorts of transaction costs and, as more recent debates iterate, promote interactive learning and innovation processes.

The functionalism bias. A more recent strand of inquiry that broadens the view and shifts attention from the inter-organizational to the inter-personal level evolves around the notion of the 'communities of practice' (Brown and Duguid, 1991; Lave and Wenger, 1991; Wenger, 1998). Although the community of practice-debate complexified network understandings, they seem to be fixated with their functional attributes. Informal inter-personal ties compensate the structural shortcomings of formal organizational arrangements. The literature on communities of practice in particular "has trumpeted their positive role in organizational innovation" (Swan et al., 2002, p. 480). This celebration of communities obviously glances over that they have 'a life of their own' and indeed might be formed exactly to circumvent formal organizational arrangements and practices.

1.2 Taking up the challenge: exploring networks in project ecologies

This paper takes up this three-fold bias of prevailing network imaginations in the new economic sociology. This excursion into the neglected dimensions of networks seeks to combine eminent concepts of the network governance approach with less familiar notions of the social network approach. The empirical context for this attempt to de-homogenize networks is the increasing transience of organizational arrangements. The 'project' and the 'temp' are the emblematic organizational manifestations of this secular shift in organizational practices (see Barley and Kunda, 2004); and *networking* signifies the mantra in project-based organizing (see Wittel, 2001). Networks in fact tie the loose ends of temporary assignments, fixed-term contracts and transient organizational arrangements together--at least that is what is expected from them.

Into White's mess: multiple identities. Since employment, careers and training in project ecologies are increasingly decoupled from the (long-term) affiliation with a firm, personal networks provide the 'career capital' (Arthur, Inkson and Pringle, 1999) to navigate through the fluid ecologies (Eikhof and Haunschild, 2004). Formal organizational agreements thus increasingly interpenetrate with informal personal communities and gatherings into polymorphous relational spaces that adhere to different social logics. In engaging with White (1992, p. 198) the paper wishes to portray the identity of actors in these transient contexts not as an unquestioned 'atom' but rather as 'rickety ensembles' that only temporarily crystallize at the intersection between different organizational and personal networks. More specifically, this paper will elucidate how project members are simultaneously embedded in the webs of obligation and loyalty to the *project team*, the *firm* and to their role as *entrepreneur* of their own human capital.

Towards Granovetter's other side: weak-tie networks. Projects by their very definition are 'temporary systems' with 'institutionalized termination' (Lundin and Söderholm, 1995). Deadlines in fact are the distinct feature of projects. In the fluid and ephemeral organizational arrangements of projects the evolution of this sense of coherence, familiarity and trust that radiates through the economic geographic accounts is limited. Projects presuppose trust, yet their transience restricts their generation (see also Meyerson, Weick and Kramer, 1995). Projects, in other words, also operate in weak-tie milieus. By appreciating Granovetter's (1973) elegantly simple 'strength of weak ties', the paper

ventures into this rather neglected sphere of thin and ephemeral relationships by extending the spectrum of personal networking modes from *communality* to *sociality* and *connectivity*.

Strategizing with Burt: ambiguity and conflict. In project ecologies the multidimensional networks entwine various social logics and anchor in different link-pins of identity and loyalty. These intermingling organizational and personal networks neither are related in a static and hierarchical sense of unequivocal subordination nor do they complement each other in a neat fashion. Rather, relations between these partially overlapping, partially competing networks are highly ambiguous. For the individual project worker, being 'betwixt and between' (Garsten, 1999), ambiguity increases risks but also creates opportunities (Alvesson, 2000; Tempest and Starkey, 2004). Bridging the 'structural holes' (Burt, 1992) between different relational spaces becomes a strategic asset since it creates room for tactical maneuver, for arbitrage and opportunistic strategic games (see also Padgett and Ansell, 1993). The paper wishes to appreciate Burt's view on networks as a means to *produce* competition (as opposed to the economic understanding of networks as a vehicle to *curb* competition) and seeks to elucidate how the different network types contribute to the *coherence* but also trigger *conflicts* within the multidimensional ecologies.

2 Research setting and method

Empirically, the paper draws on research that systematically examines the particular organizational and institutional architectures of different types of project ecologies (Grabher, 2002, 2004; Ibert 2004).¹ Project ecologies, in their more obvious dimension, are built around *organizational* networks between project teams, firms, clients and suppliers for the duration of a particular project. These temporary organizational networks embody the 'pipes' (see also Podolny, 2001) of the project ecology through which resources are conveyed for the completion of the specific project. Beyond the organizational 'plumbing', project ecologies also unfold more enduring *personal* networks that endure and stretch out beyond the manifest pattern of actual project ties.

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In taking up the triple bias of the prevailing network construal, the paper focuses on these latent and more diffuse personal networks. By comparing the Munich software ecology with the Hamburg advertising ecology the paper seeks to unfold a broad spectrum of networking practices. Whereas the Munich software industry exemplifies a more firm-based, strong-tie ecology that economizes on continuity and complementarity, the Hamburg advertising ecology represents an entrepreneurial and more conflictual weak-tie ecology. The Munich ecology evolves around (both types of) Granovetter-networks, the Hamburg ecology thrives on Burt-ties.

The comparative study of these two ecologies is based on 61 semi-structured qualitative interviews (with an average duration of 90 minutes) with representatives of software firms in Munich (mostly with project managers and key management personnel) and advertising agencies in Hamburg (in the majority of cases with art directors and account managers) and with free-lancers and job brokers conducted during 2003 and the first half of 2004. All interviews were taped and transcribed verbatim. First-hand information was complemented by a variety of secondary sources including data from industry reports, trade press, annual business reports, and press releases.

3 White in the project ecology: Multiple identities

By focusing on the more diffuse realm of personal networks, this study leaves the realm of (inter-)organizational networks and puts the individual actor center stage of the analysis. In the fluid organizational context of project ecologies, individual actors appear as 'rickety ensembles' (White 1992) that only temporarily crystallize by relating themselves to competing sources of identity and loyalty (see Alvesson, 2000; Alvesson and Willmott, 2002; Swart et al., 2003). Individuals acting within a project ecology are at the same time member of a *project team*, employees of a *firm* and *entrepreneurs* of their human capital (see table 1).

Project identity. Symptomatically, projects evolve into "organisations with bounds of trust and authority similar to, or even stronger than, a firm" (Gann and Salter, 2000, p. 966). Projects typically are organized around a unique, demanding and often fascinating task that

triggers enthusiasm, at least absorbs considerable commitment (Lindgren and Packendorff, 2003, p. 18). Particularly in knowledge intense fields, professional identification with the challenging project task and the expertise-based and motivated project team is stronger than with the more bureaucratic organizational procedures and the hierarchical structures of the firm (Alvesson 2000: 1102). Dedication to the project is also enhanced by the prospect that the temporary assignment ends with the achievement of the project goals (Turner and Müller, 2003; Lundin and Söderholm, 1995). Moreover, the radical task-orientation, the tight sequences of milestones and deadlines and the pressures of a small and highly interdependent project team typically claim priority vis-à-vis the more mundane and recurring firm-related administrative activities.

Table 1: Multiple identities in the software and advertising ecology

	project identity	firm identity	entrepreneurial identity
dominant in	<i>software and advertising</i>	<i>software</i>	<i>advertising</i>
goal orientation	project mission	organizational survival	individual employability
time horizon	deadline	episode	biography

Firm identity. Whereas projects are devoted to a clearly defined mission, firms pursue rather general aims that, at the very minimum, ensure the organization's long-term survival. As long as individuals are employed with a firm they are forced to subordinate their personal career plans to a considerable extent to their employer's general aims. The time horizon of employment is longer than in a project, though not un-limited. Although contracts are normally open ended the affiliation with a particular firm constitutes an episode in the employee's biography and only rarely covers life tenure (see, for example, Eikhof and Haunschild, 2004, p. 17).

In the advertising ecology, the identification with the firm remains comparatively weak since the ethos of creativity, flexibility and mobility encourages short-term assignments. In the Munich software ecology in contrast, assignments with firms cover significantly longer periods since professional socialization is a lengthy and highly firm-specific process. Moreover the software ecology is driven by the imperative of modularization since the costs

of reusing software in subsequent or related projects is marginal relative to the creation of new code (see Lehrer, 2000). This cumulative learning mode prevailing in the software ecology values long-term experience with the reuse and modification of firm-specific software products and components. Since such idiosyncratic knowledge can only partially be traded in external labor markets, employment contracts are relatively robust in the software ecology.

Entrepreneurial identity. The third relevant source of social identity is the self-conception of the individual actor as entrepreneur of her own human capital (see Eikhof and Haunschild, 2004). The chief goal of an individual as a self-entrepreneur is to build up individual "career capital" (Arthur et al., 1999) that maintains or enhances her long-term "employability" or to "remain marketable" (Mahaney and Lederer, 2003, p. 6). To the extent the identification with the firm vanishes into the background, the key individual career issue becomes knowing "how to get from one learning opportunity to the next" (Tempest and Starkey, 2004, p. 513). The entrepreneurial identity embraces the longest time horizon and spans the entire occupational biography.

Whereas in the software ecology the maxim of employability is primarily oriented towards the *internal* labor and project market, in the advertising ecology this essential imperative is geared towards the *external* project and labor market. The emblematic fixation with 'freshness' and the relentless reshuffling of project teams translates into high turn-over external labor markets. A quite representative agency, for example, "has a fluctuation rate of approximately 30%, every three years the company is all new ... and all these people, they need opportunities to somehow spin around, they want to fluctuate. If you impede this ... you will make them feel miserable" (General Manager 22).² In contrast to the cumulative learning mode in the software ecology, skill formation in the originality driven advertising ecology evolves much more around occupation-specific qualifications that can easily be traded in external labor markets. Of course, employability and the ability to navigate through these rapidly shifting labor markets depends also on the social capital of the know-whom. The project members in the advertising ecology thus are stronger driven by self-entrepreneurial calculation whereas members of the software ecology are more comparatively stronger motivated by the loyalty to the firm.

² All quotations are translated.

Loyalty in both ecologies, quite obviously, is a contested issue. In project ecologies, the traditional psychological contract between worker and firm wherein career development are offered in return for long service is increasingly challenged by new 'transactional' psychological contracts (Inksen et al. 2001, p. 261): "[T]emporariness, calculative involvement, and an emphasis on monetary compensation for narrow and well-specified worker contributions" are the thrust of these transient relationships. The emblematic 'organizational man' who offers unshakable loyalty in exchange for security is being replaced by 'contractual (wo)man' with shifting link pins of loyalty and strategic involvement.

Since the firm no longer constitutes the exclusive learning arena, individual practices necessarily draw on the personal relational space that extends far beyond the current firm. The ambiguity of identities, however, almost unavoidably inflicts tensions within the personal networks when they might be instrumentalized either for achieving the project goal, contributing to the aims of the firm or advancing the own career (Alvesson and Willmott, 2002; Hatch and Schultz, 2002). Enduring personal networks, in other words, not only neatly compensate the deficiencies of temporal organizational arrangements such as their deficient development of skills and sedimentation of experience. As amalgams of multiple social logics, personal networks also distract, cause tensions, trigger off conflicts, exploit. The paper now ventures into these 'untidy' relational space (Ettlinger 2003) by subsequently differentiating the various personal network logics and then exploring their role in contributing to coherence and causing conflicts within project ecologies.

4 Multiple Personal Networks

In contrast to the (inter-)organizational networks that are fit together for the duration of a specific venture, personal networks evolve gradually over a multitude of project cycles. Personal networks engender lasting and latent ties in the background of the manifest and temporary plumbing of organizational relations. Although the latent personal ties can be activated to solve specific problems in the actual project they more typically remain in the project background (see also Starkey et al., 2000). In both ecologies project members seem to rely on personal networks that differ with respect to their governance principle and their architectures.

The proposed differentiation of network types reflects, on a most general level, different degrees of social embeddedness (Granovetter, 1985) as indicated by the multiplexity of ties (see Wassermann and Faust, 1994; Uzzi, 1997; Uzzi and Gillespie, 2002). While network communality intricately interweaves private with professional dimensions of social exchange (high multiplexity) and network sociality is dominated by professional agendas that merely are underpinned by private aspects, network connectivity is almost exclusively professionally oriented (low multiplexity). These network types, of course, neither signify ‘arithmomorphic’ concepts with sharp boundaries nor do they remain unchanged over several project cycles. In fact, they typically alter their character over time, i.e. gain or lose multiplexity in the course of repeated collaboration. Nevertheless this classifications is employed as an intellectual strategy to direct further theoretical imaginations to de-homogenize networks and, most importantly, venture into the largely neglected weak-tie realm of networks.

Table 2: Personal networks

	Connectivity	Sociality	Communality
dominant in	<i>software</i>	<i>advertising</i>	<i>software</i>
nature of ties	ephemeral, weak	ephemeral, intense	lasting, intense
basis of ties	common interest	professional complementarity	common history
social realm	professional	professional cum private	private cum professional
governance	professional ethos	networked reputation	trust
focus	task-oriented	career-oriented	relationship-oriented

4.1 Communality: Granovetter-ties, as we know them

The notion of communality denotes robust and thick ties that are firmly rooted in personal familiarity and social coherence (see table 2). Relations are based on mutual experience and common history. Although communality is present in both ecologies, it appears of markedly higher relevance in the software ecology. The continuity-oriented knowledge practices in the software ecology translate into comparatively long affiliations with firms which in turn reduce the likelihood that network ties with former colleagues from school,

university or with long-term work-mates are disrupted by inter-firm and inter-regional mobility.

The duration of 'linear time' (Sennett, 1998) in the social realm of communality engenders the evolution of personalized experience-based trust as the chief governance principle. Communality, suggestive of the classical notion of *Gemeinschaft* (Tönnies, 1979) is built around a robust architecture based on common personal experience that limits the number of relationships (see also Granovetter, 1985; Uzzi, 1997), characteristically to between three and six ties in the Munich ecology. The strength of personal ties in communality, of course, does not necessarily imply high frequency of interactions, as a Freelancer (33) explains: "I believe, if you met a person recently, then it's more like 'Let's go again and have a drink together' in order to deepen the contact. But with someone, whom I know since 1983, it won't be necessary to go for a beer. You don't lose this kind of contacts". Rather to the contrary, these networks typically can remain dormant over long periods of time and can be reactivated without much social effort.

Coherence in communality. Since communality is rooted in common history rather than in professional identity, access to and extension of these networks is rather limited. Consequently, the congruence between personal empathy and professional usefulness of ties is rather coincidental. And yet communality occasionally turns out to be instrumental to cope with professional matters in the project ecology. For the individual project member communality rather than specific information primarily conveys personal experience beyond the day-to-day project frenzy. Project workers use their communality networks to reflect quite general problems in interpersonal relationships with their project partners. Communality networks thus afford a sounding board for frustrations and tensions which cannot be discussed openly with colleagues, supervisors or project partners.

Communality might also deepen the identification of the individual with his firm. Within the Munich software ecology communality networks sometimes dwell within the boundaries of a single firm. This phenomenon is most pronounced in firms that retained their core personnel since the start-up phase. This function of communality as a proven sounding board for confidential issues, of course, is also valued in the context of entrepreneurial ambitions. Deliberations about job offers from competing firms or about career leaps within the firm are restricted to the handful of trusted friends. In these instances, communality not

necessarily provides critical specific pieces of information or industry insider knowledge. Communality though might convey useful advice somewhere between the rather close perspective of the most intimate personal relationships on the one hand, strategically-molded information of potential competitors on the other hand.

Conflicts within communality. The intermingling of the 'communicative logic' in communality networks and the 'strategic rationality' (see Habermas, 1981) of the project business obviously do not necessarily dissolve into a smooth *mélange* but rather can add up to a delicate brew. This is not to fall back on tired dichotomies which consider emotions taboo in the economy and "supposed to be left at home" (Ettlinger, 2004, p. 37). Rather this is to suggest that communality networks, although perhaps incubated in the project ecology, develop a life of their own that defy any straightforward instrumentalization.

For the individual as a project member, the strong bonds of mutual loyalty within network communality can easily get in conflict with maxims of project management. Whereas the management text book demands to assemble project teams according to the specific ability of members, strong communality ties might privilege established and familiar team constellations, regardless of their match with the project task. Since in the software ecology skill profiles are broader and teams thus are more adaptable to a variety of tasks this tension seems less acute than in the advertising ecology where, as a General Manager (19) explains, "we try to sustain a professional distance. We don't want any fiddles. We want the client to know that we boot out a sub-contractor anytime, even if we like him a lot. ... That wouldn't work, if there is a too strong personal relationship. Than you say, 'Ah, Thomas is a nice guy, come on let's give the job to him'. I don't want that. By no means". This statement also graphically illustrates why the thick communality networks are less prevailing in the advertising ecology.

The gradual amalgamation of strong personal ties and the identification with the firm at the same time restrains entrepreneurial ambitions. The resonance between communality and employee loyalty engenders a vague though deep sense of belonging, much more binding than a functional and bureaucratic firm affiliation, as the wording in the subsequent statement vividly illustrates: "My wife always asks me when I come home late in the evening: 'What has been up in your [firm's name]-*family*?' " (Chief Development Engineer 22, emphasis added). In such a strong-tie context, leaving the firm and founding an own

company risks to damage the loyalty to the 'firm-family' and the 'best friends'—and who would risk long-standing friendship for mundane commercial reasons? This appears even the more unlikely in an ecology like Munich in which even long-established competitors are generally referred to as "befriended firms".

4.2 Sociality: the Burt ties

In contrast to the thick and lasting relations in communality, the notion of sociality emphasizes ephemeral, yet intense networking (see table 2). Sociality is primarily driven by long-term professional motivations but unfolds in private forms of interaction and casual encounter (see Wittel, 2001, p. 51). Although sociality very much pervades both ecologies, it is the archetypal form of networking in the advertising ecology. The disruptive knowledge practice of learning by switching (teams, agencies, suppliers, clients) here renders an ongoing re-wiring of relationships. Sociality is driven by the canonical compulsion of freshness, mobility and flexibility.

While communality networks focus on maintaining and deepening relationships, sociality networks are much more strategically career-oriented. Communication within sociality can hardly rely on virtual means. Rather sociality, quite literally, is all about keeping in *touch* and rubbing shoulders, that is re-activating ties through ongoing face-to-face encounters. The emblematic incarnation of sociality is the advertiser, hanging out in the urban noise of clubs and bars. Although the private facets of sociality (such as personal sympathy, affinity to certain hobbies or joint acquaintances) typically remains superficial, they are instrumental for easing professional agendas. Work here "appears to supplant, indeed hijack, the realm of the social" (McRobbie, 2002, p. 99). In fact, the more strategic approach towards relationships is suggestive of an outright commodification of networks (Wittel, 2001, p. 56): contacts with blue-chip clients or in-vogue creatives are 'stored', 'exchanged' and, as trade parlance reveals, even 'stolen'.

The logic of this commodification of ties is professional complementarity. It usually comprises relationships with practitioners who, potentially, *could* complement a project team in a future project. Since these professional complementarities are built around a sort of 'strategic friendship' sociality networks are more extensive than communality and typically involve several dozen to a few hundred ties. The short project cycles hardly leave

time to develop personalized trust based on shared experience, familiarity or social coherence. Instead, sociality essentially relies on 'networked reputation' (Glückler and Armbruster, 2003). In the absence of personal experience with a particular person or firm, project members rely on word-of-mouth judgments of friends or trusted collaborators.

Coherence in sociality. In the disruptive learning regime of the advertising ecology, sociality fulfils indispensable functions by providing critical information about job opportunities for the nomadic project worker as well as rumors about pending accounts, forthcoming pitches and available cooperation partners (see also DeFillippi and Arthur, 1998; Ekinsmyth, 2002). In this sense, sociality is focused on 'catching up' (see also Kotamraju, 2002). Sociality allows to accumulate 'know-whom' which indeed embodies a critical component of the 'tacit knowledge' that is imperative to navigate through a fluid project ecology (Gann and Salter, 2000, p. 969). And this know-whom is tacit, quite literally: it's definitely not to be found in the Yellow Pages, rather it's in the buddy-list on the mobile.

Although sociality evolves through the frenzied 'catching up' on a personal basis, it of course also provides instrumental information for assembling project teams. Particularly in the short cyclical advertising ecology, extended and reliable sociality networks that can be activated on a short notice to complement a team are key. Whenever sociality conveys information about lucrative business opportunities the personal engagement in sociality potentially contributes to the firm's aim to acquire new accounts. Sociality at a quite early stage indicates potential business opportunities by circulating speculations about an unsatisfied client or insider information about a staff change in the marketing department of a potential client (which typically leads to a reshuffling of ties with advertising agencies). Sociality thus provides a social means to detect the dynamic spots within the market and thus opens up rare opportunities for an agency to expand its customer portfolio. According to a survey among German advertising agencies, personal recommendations are the most promising ways for acquiring new clients (see also Burrack and NB Advice 2004).

Sociality networks in fact also underpin individual entrepreneurial attitudes and the essential ingredients for tinkering with the occupational biography. The informal know whom conveyed through sociality networks is much more critical for career advancement than formalized degrees and certificates. "In my whole life I have sent only two official applications," exemplifies a Software Freelancer (33), "but I never got a job this way. All the

projects and all the engagements I ever got, were opportunities that came up within the circle of my friends". Conversely, employers owe critical information and indications in their relentless search for talent to sociality networks, as an art director (13) illustrates: "When you recognize that this ship ... is wavering ... perhaps there is an opportunity to get people, you normally couldn't get". Sociality is the ears and the eyes on the informal market for jobs, projects, relationships. Being permanently exposing to this noise of rumors, signals and misinterpretations fuels the entrepreneurial dynamism within a advertising ecology.

Conflict through sociality. The obvious benefits of sociality come at an expense that is unevenly distributed in the project ecology. Establishing and maintaining sociality networks demands a continuous investment of time, attention and money (see Eikhof and Haunschild, 2004), resources that are routinely scarce in projects. New media workers, as one of the rare empirical accounts on this issue reports (Christopherson 2001: 18), for example, spend an estimated 6 hours per week looking out for new opportunities. Hanging out in sociality networks which is imperative to monitor the labor and project market thus incurs hidden though considerable transaction costs that somehow cloud the bright image of the hyper-efficient project portrayed in project management textbooks.

The central dilemma in sociality, though, typically crystallizes around the personal contacts with clients (Blyler and Coff, 2003, p. 680; Swart et al., 2003, p. 8). Agency-client ties typically are firmly rooted in lasting personal relationships between the account manager on the agency side and the marketing director on the client side (see Grabher, 2002b, p. 250). On the one hand, these robust personal ties are in line with the firm's aim to 'lock in' the client through trustful personal relations. On the other hand, however, these strong personal ties with the client contribute heavily to the career capital of the project member. The ambiguity of these personal ties to the client in fact widens the scope for entrepreneurial ambitions and for tactical maneuver. In particular in constellations in which the project member can monopolize the bridging relation between the firm and the client he can derive the arbitrage benefits of the *tertius gaudens* (Burt, 1992, p. 76).

In order to enhance this particular career capital, project members might be tempted to misemploy resources of the firm in order to advance their personal reputation vis-à-vis their client. As an exemplary practice, Alvesson (2000, p. 1110) for example, refers to a project team that underreported their actual hours of working time since they did not want the client

to pay for work that, in their view, was inefficiently carried out. Service-mindedness in such instances obviously turns from a business asset to a commercial threat. With the increasing intensity of personal ties, loyalty thus indeed may shift from the firm to the client. Moreover, the robust personal tie to a client frequently provides the springboard for a career move (Blyler and Coff, 2003, p. 680). The firm might seriously suffer when the sociality tie with a client leverages an exit to a competing agency or the establishment of an agency which quite typically evolves around the 'founding client'. In both cases, the firm provides the organizational incubator for the personal tie with the client but ultimately loses this tie because, in the vivid formulation of a General Manager (2), the "client does not see me as [agency] but as 'Mrs. Müller, who had done so much for me'".

4.3 Connectivity: Granovetter's neglected side

The concept of connectivity denotes the socially thinnest and culturally most neutral, in a sense, the most weakly embedded mode of networking (see table 2). Whereas communality intermingles friendship and professional issues, and sociality more strategically supports business agendas with private facets, communication in connectivity is relatively distant from the personal realm and most succinctly focuses on the specific subject matter of a project. Social relations are almost purely informational. As much as caused by as resulting from the low level of social embeddedness, connectivity primarily unfolds in virtual forms of interaction. Connectivity plays only a minor role in the advertising ecology in which the convention of face-to-face interaction and a 'people business'-culture preponderates. In addition, despite the availability of increasing bandwidth in virtual communication, the color tone in the proofs like the sensual quality of the paper for the brochure have to be checked through *physical* inspection. The software ecology in contrast, and hardly surprisingly, displays a strong affinity to virtual forms of interaction such as online forums or mailing lists owing to the cultural neutrality and asynchronicity of these media.

These virtual forms of exchange hardly seem to engender personalized trust nor do they unfold the dynamics of networked reputation (see also English-Lueck et al. 2002). Nevertheless, online forums depend on a sort of generalized reciprocity to preserve virtual sources, like collective knowledge on software, from an imbalance between too little nourishing and over-utilization (Kollock, 1999). Under conditions of (close to) anonymous

exchange, connectivity seems to be governed by the professional ethos prevailing in the software ecology. Reflecting the general affinity towards reusing knowledge, the software ecology is strongly molded by an ethos of *collaborative* problem-solving and mutual backing (see also Orlikowski, 2002, p. 264; Brenner, 2003). Despite the vast extension of connectivity comprising up to several hundreds and a few thousands of ties, participation is bound to a certain level of expertise, which allows to meaningfully interact with other participants.

Coherence in connectivity. As project members individual actors benefit from the wide range of connectivity into a rich knowledge pool. The organizational logic of the composition of the project team is the complementarity of skill profiles. The comparative efficiency of the lean organizational form of projects in fact depends on minimizing overlaps and redundancies of competencies. Consequently, individual project members have to rely on connectivity that stretches far beyond the project teams when they search for specific problem solutions amongst their professional colleagues. A Development Engineer (31) exemplifies the vast extension of connectivity networks that are loosely tied together by a range of indirect ties: "At a first level I have my direct contact persons, about 100 or 150. And then at a second level, there are about 1.400 persons, but ... who do not have a problem, if someone calls them or consults them. It would not be a problem if someone gives me a call and says 'I got your number from XYZ ... and can we talk about this topic'. Sure we can".

In the software ecology connectivity yields essential continuing learning processes related to the substance matter of software projects that is coding. Connectivity, in other words, provides a virtual construction site where code is updated, modified and repaired, that is a place where software developers do the actual programming work. As connectivity contributes to the on-the-spot problem solving capacity of the individual project member it indirectly also strengthens his position as employee of a firm. Beyond task specific support, connectivity however also affords a most effectual vehicle for the continuous up-grading and reformatting of the individual skill portfolio (see Kotamraju, 2002, p. 16-18). Reflecting the comparatively stronger emphasis on broad skill portfolios and flexibility in software than in advertising, a Department Manager (17) is spot on: "The really good ones are the multifunctionals".

Connectivity however obviously also supports the individual actor's entrepreneurial interest in maintaining employability. Individual members frequently are organizationally decoupled or spatially separated from knowledge exchange and casual shop-talking with their peer groups. Problems of an outright 'isolation' of specialists within mixed project teams occur particularly in assignments to the 'front-line' of performing long-term project tasks *within* the client organization (Lam, 2004, p. 19). In this organizational context, the continuous upgrading of skills through reciprocal problem-solving within connectivity is a welcome opportunity to spend time on (self-)education and 'hanging out' with the peers, at least virtually if not in the cafeteria (see also Brenner, 2003).

Conflicts through connectivity. The sharing of experience through connectivity, of course, not unequivocally just benefits all layers of an ecology but also incurs costs. Most obviously, though not manifest in schedules and budgets, the up-dating of the individual knowledge base diverts project resources, that is attention, time, money, for the sake of personal employability. New media workers, for example, spend about 13.5 hours per week in 'unpaid' learning (Christopherson, 2001, p. 18). This continuous up-dating and broadening of the personal skill base compete with the indisputable priority of project tasks. "Instead of working on the Visual Basic application they are supposed to be building, they spend time learning Java Script. They ... want to remain marketable" (Software Project Manager, in: Mahaney and Lederer, 2003, p. 6; see also Perlow, 1999).

The professional ethos of collaborative problem solving and mutual backing generates a sense of general reciprocity in the connectivity networks of the software ecology. The very same professional ethos of an open sharing of experience in fact might easily come into conflict with the vital interests of the firm and thus might challenge the loyalty to the employer. The ethos of open communication within a group of professional peers clashes with requirements of industrial secrecy and protecting the core competencies of the firm, both of which are essential ingredients of the individual's identity as an employee of the firm. The resulting "conflict in communication norms" (Lam, 2004, p. 24) constricts the range and depth of information exchange in connectivity networks: projects members permanently have to consider "what they can say and what they can't say" (ibid.). In particular if individual project members primarily seek to enhance their reputation amongst their peers by sharing critical firm-specific information, connectivity might undermine core competencies of the firm.

In the absence of means to monitor the reciprocity of information sharing in close to anonymous exchange, the professional ethos of collaborative problem solving constrains free-riding in connectivity networks. The collaborative software ethos, phrased differently, eludes the 'tragedy of the (virtual) commons'. The power of this collaborative ethos is demonstrated in the evolution of open source software, most prominently Linux of course (O'Mahony, 2003), in which private appropriation of knowledge is tabooed. The communicative norms in connectivity thus are at odds with entrepreneurial aspirations which would call for an individual appropriation of the virtual commons of the collective knowledge pool. Although the collaborative ethos in connectivity does not constitute a principal barrier to entrepreneurship it presumably is a source of ongoing personal conflicts about how much and what to share with peers, a conflict that is definitely less pronounced in the much more entrepreneurial 'Burt' ecology of advertising.

5 Neutrality, coherence, conflict or cannibalism?

The paper set out to expand prevailing economic sociological imaginations of networks. The dominant construal of networks is largely shaped by the governance tradition that evolved around the notion of embeddedness, the master paradigm of the new economic sociology. This strand of research reifies a perception of networks as enduring (inter-)organizational ties. And, without a trace of doubt, networks are 'good'. They reduce transaction costs, afford social capital, convey tacit knowledge, underpin interactive learning... and are fair on top of it all (see also critically Leitner, Pavlik and Sheppard, 2002, p. 278-9). This paper aimed at problematizing this rather one-dimensional and functionalist notion of networks by exploring project ecologies along a conceptual path that tried to link the governance and the social network approach.

Project ecologies intricately interweave organizational relations with a range of personal networks that adhere to diverse social logics and that unfold different relational architectures. Project ecologies indeed also rely on the (all too) familiar strong-tie networks of communality that are firmly rooted in common history. However, beyond these iconic *Gemeinschaft*-ties, project ecologies also unfold ephemeral yet intense sociality networks as well as the thin and culturally neutral wide-ranging webs of connectivity. These different personal network logics do not constitute sharply demarcated sections of social reality but rather amalgamate into a diffuse relational space. The neat tie-and-node cartographies of

relational networks here indeed dissolve into untidy and messy combinations of social logics and fluid relational constellations. In this gel-like relational space, in which actors maneuver across different social contexts, personal identity is fluid. Each “I”, White (1992: 198) maintains, “is a more or less rickety ensemble; it is firm and whole only temporarily as a facet of one particular constituent discipline energized in some situation and style“. Persons, then, are not necessarily the governors of network relations, but are nodes of story condensation and identity that occur at the interface between multiple networks and strings of social relations.

In the fluid context of project ecologies, the identity of individual actors shifts between at least three different strings of loyalty that guide behavior in their personal networks (see Alvesson, 2000; Alvesson and Willmott, 2002; Swart et al., 2003). Project members have to contribute to the specific *project* whose unique, often fascinating task typically mobilizes commitment far beyond the dedication to routine activities. At the same time project members, of course, have to adhere to the long-term goals of their *firm*. More and more, project members are also *entrepreneurs* of their own human capital driven by the imperative to maintain ‘employability’ and to remain ‘marketable’ in a highly volatile organizational ecology.

The diverging imperatives associated with these different identities might be aligned and synchronized through the personal networks. Personal networks, phrased differently, might thus further the coherence of project ecologies. Conversely, the multidimensionality of personal networks might also induce conflicts and tensions between the different identities of the individual actor. The fundamental ambiguity of personal networks hence affords room for strategic maneuvering and arbitrage *à la* Burt and for ‘robust action’ (Padgett and Ansell, 1993) in which a single action can be moves in many different games at once. By appreciating strategic maneuver, the paper deliberately seeks to balance the functionalist construal of ‘communities of practice’. In the prevailing perspectives these personal communities are praised for compensating structural shortcomings of hierarchical firms and fluid projects alike (critically, see Swan et al., 2002, p. 480). This study has demonstrated that all three types of personal networks can contribute to the coherence of project ecologies as well as induce conflicts and tensions.

In a comparative perspective, however, *communality* might offer the weakest direct support and, conversely, induce the least severe tensions and conflicts. The thick and trust-based ties of communality mainly function as sounding board for contemplating personal decisions beyond the day-to-day frenzy. Taken together, the role of communality in project ecology tends to be close to *neutrality*, at least with regard to ongoing project work. Collaborative problem solving and mutual backing in the extended and virtual webs of *connectivity* might get in conflict with firm-related requirements of confidentiality. On the whole, though, the potential threats of this exchange in professional communities seem outweighed by its simultaneous benefits for projects, firms, and individual entrepreneurial attitudes. Connectivity, overall, primarily seems to support the individual actor in aligning the imperatives of the different identities and thus furthers *coherence* of the ecology.

By blending professional agendas with casual and quasi-private encounters, *sociality* grants access to sources of know whom which are critical in transient project ecologies. The sort of 'strategic friendships' in sociality embodies considerable potential to support the individual actor in all three identities: knowing the right partner for upcoming ventures is equally valuable for the individual as project member, employee and self-entrepreneur. Sociality though presumably also offers the widest room for strategic maneuver when, for example, entrepreneurial attitudes are prioritized vis-à-vis the requirements of the project and the firm. The strategic friendships in sociality, which I regard as the quintessential form of personal networking in project ecologies, afford the social means for an outright *cannibalization* of projects. This, to be sure, is not a threat to project ecologies. However, it incurs costs that might be overlooked by functionalist accounts that all too neatly fit projects, firms and networks together.

6 References

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