

# **On the locality of virtual networks: Informal learning in the San Francisco Bay Area**

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## **Abstract**

Since the 1990s, informal and personal networks have gained increasing attention as repositories of learning and innovation. Social network analyses so far largely concentrate on the impact of network structures on innovation processes. The role of social network dynamics and the interrelation of structure and agency in these processes however need to be more intensively analyzed. This research concentrates on learning dynamics in personal online business networks of communication and computing industry professionals based in the San Francisco Bay Area. The technological potential for online global multi-connectivity of the studied LinkedIn networks showed limited realization due to the users' stickiness to their physical practice communities and localities. Physical social interaction served as the prime motor of network formation and maintenance.

**Keywords:** Innovation, personal online networks, physical space, qualitative social network analysis

## **1. Learning dynamics of informal and personal networks**

The academic debates on innovation, up until the late 1980s, have rather strongly been molded by a linear construal of innovation. The linear model of innovation perceives innovation as a process that follows a predetermined sequence of stages that begins with (1) scientific research which leads to (2) product and process development, (3) production and eventually ends with (4) diffusion and marketing (Malecki 1991). The exclusive site of knowledge production is the research department either in the firm or in dedicated research institutions (Malecki 1979, 1980; Freeman 1982<sup>2</sup>). This model has been criticized for its deterministic and uni-linear perception of innovation. Moreover, it completely neglects the crucial role of feedback and the continuous interaction between actors in the earlier and later stages of development.

This critique culminated in the formulation of the interactive concept of innovation (Kline and Rosenberg 1986; Aoki and Rosenberg 1987). Like the linear model, it defines innovation as a social process (Schumpeter 1943). The scope of actors and the conditions that influence the innovation process is however widened. The firm (and its R&D unit, more specifically) is not acting in isolation, but a continuous stream of information and feedback from a diverse range of actors is seen as providing an essential input in learning and innovation processes. The generation and diffusion of innovation perceived in this interactive logic depends on the wider context in which a firm is embedded. A firm interacts with other organizations and is influenced by institutional constraints and incentives for innovation (laws, technical standards, etc.), as well as cultural and social norms. This understanding of innovation as a context-dependent process provided a highly versatile template for the conceptualization of ‘national systems of innovation’ (Lundvall 1992; Nelson 1993), ‘regional systems of innovation’ (Cooke 1992, 1998), as well as ‘sectoral systems of innovation’ (Breschi and Malerba 1997; Malerba 2001).

In a similar vein, though somewhat later, observers diagnosed a shift of the locus of knowledge production from the traditional (science-pushed) institutional framework (mode I) to knowledge production in the “context of its application” (mode II) (Gibbons et al. 1994: 6). Each particular context of application implies its particular set of theories, analytical strategies and learning practices, which defy any straightforward classification into established disciplinary categories. Trans-disciplinarity, heterogeneity, and transience are quintessential organizational features associated with this mode of knowledge production that essentially takes place in the fluid organizational context of temporary projects (Goodman and Goodman 1976; Lundin and Söderholm 1995; Sydow and Windeler 1999).

Despite of this crucial conceptual reorientation from the linear model to an interactive understanding of innovation occurring in the context of application, the debate until the early 1990s focused on knowledge production and learning in *formal organizational* arrangements. The prime focus, in other words, was on firms, their ties with clients and suppliers. During the 1990s, however, this focus was extended and interest increasingly shifted to *informal* and *personal* networks as effective vehicles for producing, storing, and disseminating knowledge. The debate on “communities of practice” (Lave and Wenger 1991; Brown and Duguid 1991, 1998, 2000, 2001; Wenger 1998; Wenger and Snyder 2000) epitomizes this shift towards informal and personal networks as means for interactive learning most prominently.

According to the non-linear conception, activity in the innovative context is not necessarily goal oriented and immediately creative. Innovations would emerge from the interaction of persons characterized by diverse specializations, skills, and experiences. The actors' involvement could include phases of intense and less intense including peripheral influence, as well as intentional and unintentional participation. Focusing on the interactional aspect of innovation draws the attention to the relationships of actors involved in the innovation process.

Social network analysis has in large parts focused on implications of structural network constellations for innovation and so far less contributed to the understanding of social network dynamics and structure-agency interrelations (Emirbayer and Goodwin 1994; Pescosolido 1992; Kenis and Knoke 2002: 275). Following a social network approach to innovation, Allen (1977), Tushman (1978), and Tushman and Scanlan (1981) found that strategically positioned individuals disseminate information, which can contribute to innovations. Individuals in gatekeeping positions, i.e. disposing of informal contacts outside organizations, were shown to fulfil the important functions of importing novel information and interlinking the organization with its environment (Allen 1977; Katz and Tushman 1981).

Studies focusing on implications of network structure for innovation have moreover analyzed strategic network positions in dense versus sparse networks. Sparse networks implying instances of lacking connections among nodes create opportunity structures for actors occupying positions that allow bridging such structural holes. Sparse networks are associated with an action problem, as dispersed, unconnected people around structural holes are difficult to mobilize and organize (Burt 1995 [1992], 2004). Burt (2004) found no evidence that the good ideas clearly emerging around structural holes are also linked to implementation activity. The initiation of coordinated action is sustained by dense and cohesive networks that are characterized by the related interests and perspectives of actors and uncomplicated mobilization by way of the actors' shared language and trust (Granovetter 2005). However, dense and cohesive networks do not support easy access to non-redundant information bearing innovative potential (Granovetter 1973).

When shifting the focus from network density and position to the character of network ties, previous research has highlighted weak ties as important bridges for information and resources (Granovetter 1973), but not concentrated on the operations of sustaining and

mobilizing weak tie networks. A tie is defined by the interactivity of actors, the exchange or sharing of resources such as goods, services, social support or information. Tie strength is understood as a function of contact frequency, duration of the association, intimacy of the tie, provision of reciprocal services, and kinship (Marsden and Campbell 1984). Friends and co-workers are usually considered to require a higher level of interaction and reciprocity to maintain their relationships than relatives (Gabarro 1990; Walker et al. 1994). Access to resources and the implementation of ideas are associated with tie strength. Pairs defined by strong-tie relations tend to provide access to information circulating in their network and to engage in activities to support their strong-tie contacts (Granovetter 1982; Krackhardt 1992; Lin and Bian 1991). Due to their close association, strong-tie networks tend to have access to a pool of limited resources. Weak ties allow to connect to people and resources outside the strong-tie circle (Granovetter 1973, 1982; McPherson and Smith-Lovin 1987; Burt 1995[1992]). Granovetter showed that it is rather through the weak ties and sporadic contacts that cross and link different coherent social groups that new and useful information becomes available (Granovetter 1973: 1366; see also Constant, Sproull, and Kiesler 1996; Reagans and McEvily 2003). Weak ties can also accommodate greater cognitive distance than homogenous strong ties and thus afford important stimuli for innovation. Innovation, in other words, not only occurs from trustful collaboration, but also from the confrontation with novel and unexpected perspectives (Nooteboom 2000; Grabher 2004: 1495). Weak ties are associated with an action problem due to difficulties to mobilize and organize weak-tie contacts to implement ideas (Burt 1995[1992], 2004).

Analyses of information flow in static social networks however can't account for the active network participation individuals can show to advocate for innovation (Obstfeld 2005: 100-101). Drawing on recent debates on innovation and learning that acknowledge informal and personal networks as places of knowledge production, storage, and dissemination, this paper explores the learning dynamics of informal and personal networks by focusing on the generation, maintenance, and activation of ties in personal networks. I concentrate on weak-tie networks as sites of learning and innovation.

The Internet provides the potential for the connectivity of previously unconnected or rarely connected individuals and associated networks of practice. A rich reservoir for learning and innovation lies in latent social network ties that could be activated by the use of the Internet. Attention has productively shifted to Internet-sustained learning processes (Huysman et al.

2003) and the impact of Internet technology on the development of social network ties (Haythornthwaite 2002; 2005). However, there is a need for further exploration of the dynamic interplay of the use of online communication tools and the differentiation, activation, and governance of weak-tie learning networks. This paper observes learning processes in informal and personal networks that essentially rely on online communications.

## **2. Research setting and method: Online personal networking with social software**

This research focuses on the impact of social networking software on learning processes in personal networks. Social networking software systematizes the maintenance and extension of personal networks through electronic contact management. Individuals create their own user profiles when using the software and build their online personal networks by linking to other users. While using social networking software, users create repositories of strategic information that contain their individual professional information, display their connection data, and the professional information of their connections. The friend-of-friend principle (i.e. Granovetter's (1985) proverbial "weak ties") enables the user to electronically pave ways through the overall network grown on the social network site to a targeted person who is not in her/ his direct network. Connection chains link the user through the personal network to a targeted person. Communication using social networking software may take place as asynchronous one-to-one interaction, including through relation chains (i.e. the forwarding of requests). This principle of multiconnectivity provides the potential for an activation of latent network ties. Latent network ties are of key importance to learning processes, as they may deliver critical information or support the identification of collaborators (Wittel 2001: 71; Grabher 2004: 1509-1510).

The number of individuals using social networking software grows exponentially since 2002. Social networking software products are usually customized either for professional or private (leisure, friendship, dating) networking purposes. This paper focuses on the business networking software LinkedIn (<http://www.linkedin.com>). Findings are based on 25 semi-structured interviews with LinkedIn users working in computer and communication industries. These interviews with an average duration of one hour were carried out in March 2006 in the San Francisco Bay area. All interviews were taped, transcribed, and analyzed by computer-assisted coding.

### **3. Flexible employment and social networking in the San Francisco Bay area**

This paper focuses on the microlevel of innovation processes in communication and computing industries in the San Francisco Bay area. The San Francisco Bay area is traditionally known for its dynamism and innovative activity building on individualism and entrepreneurship in combination with strong regional networking, cooperation, and competition (Almeida and Kogut 1999). The concentration of venture capitalists, consulting firms, business organizations, and universities allows for the socializing of costs and risks and the pooling of technical expertise and drives new firm formation and collective learning (Angel 2000). The regional tradition of information sharing and social networking moreover promote flexible reactions and innovations of the Bay area's specialist firms and shape industrial developments (Brown and Duguid 2002).

A volatile job market results in high fluctuations of the regional employment structure (Angel 2000). An intra-regional circulation of professionals who associate themselves with different organizations is characteristic for the Bay area. In the course of their careers, they usually switch between multiple professional roles.

As individuals move from firm to firm in Silicon Valley their paths overlap repeatedly: a colleague might become a customer or a competitor, today's boss could be tomorrow's subordinate. Professional respect, loyalties, and friendships transcend this turmoil. These networks defy sectorial barriers [...]. They move from established firms to start-ups (or vice versa) and even to market research or consulting firms, and from consulting firms back into start-ups (Saxenian 1990: 97).

“Beneath most formal ties [...] lies a sea of informal relations (Powell, Koput, and Smith-Doerr 1996: 129)”: Professional activities, shared experiences, and repeated interaction result in the formation of informal network ties. Informal relationships frequently direct careers and inspire and support professional activities in the Bay area.

Although it is no longer true that “everyone knows everyone” in Silicon Valley, executives still regard the density and openness of the region's social and professional networks as a distinct advantage. [...] Technical and market information thus diffuse rapidly among customers, suppliers, and competitors within the region, continually paving the way for new opportunities and enterprises (Saxenian 1990: 97).

Brown and Duguid (2002) stress the dimension of local social network interactions in the development of innovative knowledge, which could not be replaced by digital network

activity. This paper explores, if local social networking can be substituted or enhanced by digital informal networking.

The interviewed communication and computing industry professionals of the San Francisco Bay area face a highly volatile job market. In addition to formal professional communications with individuals holding affiliations with the same or different organizations, they pursue informal networking activities. They integrate the use of LinkedIn in their social networking activities.

I had stopped going to conferences, stopped writing papers, stopped communicating basically with my professional network except for things directly related to what I was doing. As a result, when the company failed, I found myself...[...] I'm very specialized in my skills, but my social network was not in really good shape and so I wasn't able to get a job [...] This is it: I'm tired of not having this network. [...] And LinkedIn is definitely a part of that, because not only it is a place to hang your résumé, I have it online anyway, but it's a way for me to stay connected to all these people and even reconnect with some of them when they join LinkedIn as well (Director Community Strategy, social software company, interview 17 March 2006).

#### **4. Online personal networking as strategic behavior**

The interviewed LinkedIn users interpreted their social environment and identified key actors and activities. They pursued a structuration of their social reality by building and maintaining personal networks. They allocated human and material resources to those relationships, which seemed to possess considerable generative potential. Fostering generative relationships promises to open up sources of value that cannot be foreseen in advance (modification of concept of Lane and Maxfield 1996: 215, 225). This strategic approach thus allows to “include provisions for actively monitoring the world to discover unexpected consequences, as well as mechanisms for adjusting projected action plans in response to what turns up (Lane and Maxfield 1996: 226).” Ego's control of positioning her-/himself in a fluid social environment is largely dependent on access and use of flexible knowledge and resources available in the personal network.

##### **4.1 Business networking software as structuration device: Information search and network filter**

The interviewees most intensively used LinkedIn's monitoring and search functionalities: people name search and company name search. The users highlighted the easy and time-

efficient access to the company and people database grown in LinkedIn. The monitoring of people's professional development was pursued through the LinkedIn users' profiles. The careers of individuals can be followed through their user profiles that contain résumés, express their networking interests, and frequently contain endorsements by other LinkedIn users. LinkedIn was moreover employed as a means to infer information about contacts of the own network contacts. The monitoring person was not necessarily familiar with these second degree contacts.

The use of LinkedIn peaked in periods of increased employment insecurity and actual search phases for employment, consulting opportunities, business partners, or clients. Moreover, LinkedIn was frequently used for recruitment. For these purposes, LinkedIn users utilized the search tools for companies and people. The software automatically ranks search results by connection degree. In order to further evaluate the search results, the users contacted their network for more information. When for instance intending to apply for a job or consulting opportunity that had been announced in the LinkedIn job postings, users frequently contacted a direct or indirect network member working at the targeted company for further information. Or they contacted a person at a targeted company, in order to identify future project opportunities, contact persons, or by way of conversing creating a reminder of their own qualifications in the contact person's memory, in case consulting or employment opportunities would come up in the future.

So: "I just need to talk to you for ten minutes to learn more about the television over the Internet, because I'm really interested in that." [...] Because actually I just want information. He may tell me information about different vendors, different products and I'm thinking: Oh, maybe I should [...] research this company. So actually it's a great way, it's part of social networking. So that's the way to get more information towards looking for a job. Now, maybe he might say: "Hey, I know someone, by the way, if you are looking for a job, I know someone, I could put your name in." I mean, that happens once in a while, but you don't count on that. You make it trying to get more information about other companies like: "Oh yeah, so vendor so and so is selling, he's got this big contract with AT&T." Oh, then maybe there's some opportunity there (Video Engineer, telecommunications company, interview 12 March 2006).

When seeking to inquire about a potential business partner, client, or employee, LinkedIn users frequently contacted someone working at the same company who could comment on the



professional performance of the respective person. Tribute could be paid to network contacts at the same time.

To kind of massage [your contacts], that's the networking kind of lifestyle. [...] I actually make that person a favor, you know, it's like giving a token of appreciation. But then, maybe you become unemployed, it's a good kind of brainstorm list [...]. It's like reengaging in dialogue with those interested in whatever I wanna do next (Director Community and Retention, mobile communications company, interview 14 March 2006).

Interviewees reported many instances of productive social network filtering ranging from the hiring of very qualified and well-connected candidates, the establishment of connections to partners of subsequently founded start-ups, to the entry in new consulting and employment situations. The social networking software LinkedIn served as device for information retrieval, structuration, and filtering. Action with respect to the identified opportunities expressed the professional circumstances of LinkedIn users, i.e. their employment situations, demands for employees or business partners, and interests in competitor projects and industry trends. Most importantly, the interviewed LinkedIn users maintained their personal networks as “security nets” to reduce the risks of unemployment.

#### **4.2 Multiconnectivity in online personal networks**

The introduction of a new technical medium can provide communication opportunities for previously unconnected persons and lay a technological infrastructure of latent ties (Constant et al. 1996; Culnan and Markus 1987; Feldmann 1987; Pickering and King 1995; Wellman et al. 1996). The activation of latent ties may lead to the development or extension of weak-tie networks. Moreover, a new medium can serve as an additional channel for strong-tie communications. It can contribute to the robustness of strong-tie networks by supporting the communication needs and tasks of interaction partners and add to resilience under conditions of change (Lind and Zmud 1995; McKenney et al. 1992; Rice 1992; Rice and Case 1983; Rice and Shook 1990; Sproull and Kiesler 1991; Wellman et al. 1996). Communication path redundancy secures network ties including in a situation of a migration to other media.

Computer-mediated communication facilitates interaction of distributed persons and allows for data transmission in real time. This allows the user to access a wider set of contacts (Constant et al. 1996; Feldman 1987; Huber 1990; Rice 1987, 1992, 1999; Turkle 1995). The reduced social cues provided by computer-mediated communication have a positive impact on the generation of weak ties by reducing the social reservations of contacting unknown

others, including across hierarchical, geographical, and organizational boundaries (Sproull and Kiesler 1986, 1991; Constant et al. 1996; Feldman 1987; Pickering and King 1995).

The medium used by the target group of this research, the social software LinkedIn, allows for multiconnectivity, the multiple linking both directly and through chains of intermediaries. This section comments on the LinkedIn users' realizations of multiconnectivity: The interviewed users composed their LinkedIn networks as professional networks, they added new contacts after evaluating the professional relevance of the respective person. This selective behavior resulted in personal LinkedIn networks that were defined by contacts working in the same or related industries. Friends and family members not professionally relevant for the user were usually not added to the LinkedIn networks.

“[S]ome of those people are my friends as well, but the reason that they are in there is not because they are friends, but because they are professionally interesting. (User Experience Manager, software company, Interview 16 March 2006).”

“[W]hen I look at the LinkedIn website, I think ‘professional’ and that’s the way I like it (Video Engineer, telecommunications company, interview 12 March 2006).”

With increasing familiarity with professional networking software, users tended to select contacts based on the quality of the tie and deprecated the pure accumulation of contacts. They expressed caution to link to people who presumably would not act in professionally advantageous ways within the personal network. They were especially wary of large connectors (500 plus network contacts), in order to avoid to get contacted by people who were not of professional interest or spammed with irrelevant requests.

If I add a friend that person is going to have to service as gate-keeper for me, whether it’s people getting to me or me going to meet other people, so there is social capital at risk (CEO, social software company, interview 22 March 2006).

Moreover, as LinkedIn’s search features rank results by proximity in degree, irrelevant network contacts in the direct or indirect personal network blur the value of searching and monitoring the wider professional network.

A common criterion preceding the addition of a person to the LinkedIn network was previous face-to-face contact. The dominant group of members of the interviewees’ personal networks was professional acquaintances of the individual biographies. These were especially co-workers, with an emphasis on former over present co-workers.

Certainly, if they are people in my day-to-day, week-to-week working network, personal network, I like to have them on LinkedIn as well. [...] In addition to that LinkedIn is good for contacts that I don't interact with on a regular basis, for keeping track of people that I may see once a year, or not, for staying in touch with them (Consultant, computer networking industry, interview 17 March 2006).

Large percentages of personal networks were people of the professional biographies the user had lost sight of and reconnected to on LinkedIn. These were persons of professional relevance who the user had known in her/his academic or practical professional development, as former fellow students, project colleagues or co-workers. A large percentage of these contacts were based at different geographical locations.

You know, these are strategic thinkers who are looking for the connections, who [...] are analyzing and making sense of their world, in order to both gain benefit for themselves, but also deliver benefit and who believe, I think at some level, that other humans can either help them or they can help (Senior Research Scientist, social computing corporate research center, interview 15 March 2006).

Sympathy for network contacts or traits of their character was predominantly irrelevant to the interviewed LinkedIn users. What counted were company affiliation, professional position, as well as a respectable professional performance. The only personal characteristic mentioned as being a reason not to link to a contact was knowledge of an obtrusive mentality, which could lead to an annoying behavior targeting the user her-/himself or members of the personal network. For protectionist reasons with regard to the personal networks, the interviewed LinkedIn users tried not to include similar individuals in their networks. Awareness of potential annoyance of the network also motivated users to be careful when adding recruiters to their networks, who are frequently encountered and very active in LinkedIn due to the social networks' composition as a talent pool. LinkedIn users didn't take the mutual personal relationships between network contacts into account when growing their personal networks.

The business networking software LinkedIn technologically enables the multiconnectivity of globally distributed users. This research showed the local clustering of the LinkedIn network in the San Francisco Bay area. It results from the dense local communicative structures of professionals in the Bay area, which are associated with the imitation of peer practices including technology adoption, here in the form of the usage of the same social software

product. The potential for multiconnectivity on a global scale sustained by the software was realized in the personal LinkedIn networks with respect to first the reconnection to persons who shared the users' professional histories and were based at different geographical locations. Mostly, these colleagues or former fellow students or co-workers were based in communication and computing industry centers in the United States, Canada, and Europe. Second, the Bay Area LinkedIn users linked to cooperation partners based at communication and computing industry locations that are acknowledged centers of industrial cooperation, for instance Mumbai and Delhi. However, connectivity with persons who the Bay area communication and computing industry workers were not associated with by way of their personal histories and who were based at locations that are not established centers of professional cooperation were usually refused. The realization of the multiconnectivity theoretically enabled by the professional networking software was in practice restricted by the individual professional interests and peer practices of the Bay area LinkedIn users.

### **4.3 Network governance**

Your network is only as good as you are, in your own interest you behave as a trustworthy contact (Director Community and Retention, mobile communications company, interview 14 March 2006).

LinkedIn users acknowledged the key value of supporting network contacts' projects, which they perceive as reasonable. They examined the quality of a suggested project before approving it. The personal interest in a project and the wish for it to succeed was a relevant criterion to support a request. LinkedIn users practiced a fast and complete processing of requests originating from their first degree connections or forwarded by their first degree network. They considered it as an honor to contribute to a respected person's professional activities. Sympathy for a person was also mentioned as a driving factor for supporting the contact, however, LinkedIn users stated appreciation for the professional achievement of a network contact as the prime motivation for supporting a project. Also, the insight that the professional achievement of close network contacts could be very beneficial to them was stressed.

When contacting their network in the name of others, LinkedIn users evaluated various factors, in order to shield their network from spam. This was first an examination of the credibility of the source originating a request, meaning that the requesting person would act in

an appropriate manner and not overburden the targeted person with too extensive demands. They also ensured that contact person and request would be of interest to the targeted individual's professional activities.

Those interested in talking to me, I always respond out of courtesy. [...] [If they] want me to connect to somebody in my network, then I start screening to see who are those and who is this person. Would it benefit or be disadvantageous for me to connect them, right. [...] If I know that one person is a big talker, the other person is a good quality mind, then he would come back to me and say: "Why would I need to talk to this guy, only talking or..." So it's the careful kind of measurement of reading the person that you have in your network that others aspire to connect to. So it is like facilitating a healthy relationship based on trust and not abuse the connection (Director Community and Retention, mobile communications company, interview 14 March 2006).

These practices express the professional ethos of the interviewed professionals as one governance mechanism of their personal network activity. Some interviewees mentioned their networking approach would not constitute an explicit strategy, but rather describe their way to live their professional lives. Participating in the field of their professional interests including the support of others' projects would constitute sources of learning about approaches in their field and lead to the unintended opening up of professional opportunities for themselves.

However, LinkedIn users clearly acknowledged to be equally motivated by the expectance of their own future benefits, when supporting network members' requests and protecting their network from overexerting requests. These practices, they experience, set the fundamentals for a fair mechanism of reciprocity in personal networks of trusted contacts.

With respect to the formulation of own requests, LinkedIn users were careful not to overload individual contacts with too many requests. This was realized by taking turns in sending out requests if possible. LinkedIn users also tended to exclusively ask for favors they could not realize easily otherwise.

Being most active is not always being the best and that is what I think I discovered over the years. [...] In LinkedIn, I don't have to grow my network desperately or don't have to create the mailing list with all my network to create a social setting, but rather select the opportunity. When I meet them I make sure I go up and say "hi" and don't ask for anything I don't need and, you know, and I don't impose anything they don't wanna know, stuff like that (Director Community and Retention, mobile communications company, interview 14 March 2006).

Burt ([1992] 1995: 18-30; 38-44; 2004: 353) and Obstfeld (2005) observe brokerage activities around structural holes that divide different social networks. Structural holes are associated with innovative potential, which can be exploited by connecting individuals in their function as carriers of information or qualities. The orientation of the *tertius gaudens*, 'the third who enjoys (benefits)', describes a person's prototypical behavior that is strategically directed to connecting alters, or brokering information between them (Simmel ([1923] 1950: 154-162); Burt [1992] 1995: 30-36; 229-236). The *tertius gaudens* envisages the direct and own advantage of these activities and is not halted by playing one alter off against the other (Burt [1992] 1995). *Tertius iungens*, 'the third who joins' connects alters and mediates the information or qualities they have to offer without – in contrast to *tertius gaudens* -- being driven by a direct personal benefit (Obstfeld 2005: 103 conceptualizes the *tertius iungens* in reference to Simmel's non-partisan; Simmel [1923] 1950: 146-147). Nevertheless, *tertius iungens* may also have indirect consequences of his actions in mind, for instance a reciprocal acknowledgement of his mediations at a later moment (Obstfeld 2005: 121). In the language of approaches to knowledge brokerage, the elegant and promising *tertius iungens* attitude best expresses the LinkedIn users' networking strategies towards their direct and wider personal networks. The LinkedIn users acted in accordance with their professional ethos and supported others' reasonable projects in expectance of a future, not direct, reciprocity. They reported that this behavior had resulted in benefits for their careers at a later stage and contributed to a positive social branding.

#### **4.4 Face-to-face communication and tie formation**

The use and impacts of media and the type of social network ties are directly interrelated. The nature and strength of the tie between actors determines the means and expression of communications, and moreover the motivation, needs, and desires for communication. As tie strength increases, so does the motivation to communicate, the number and types of information and resources shared, and the willingness to support alters (Haythornthwaite 2002: 385, 386).

LinkedIn is a tool and it is useful for some things, but it doesn't do everything and it doesn't replace anything else, maybe a Rolodex or it augments an address book, but it doesn't replace human ... you know, personal communication (Consultant, computer networking industry, interview 17 March 2006).

Online relationships including through LinkedIn support offline relationships in the San Francisco Bay area. The formation of social network ties essentially relies on face-to-face

contact. This also applied to the personal network formation in LinkedIn. LinkedIn networks grew through the addition of contacts who shared stages of the users' professional histories in the Bay Area or at other locations and the person had met face-to-face. Users reported they would add people they had not met face-to-face to their LinkedIn networks only as exceptions. In these rare cases, extended online contact and an intense overlap in professional interests and communications formed the basis for the addition of these persons to a LinkedIn network. Professional activities of the communication and computing industries of the Bay area are characterized by dense communicative structures and undertaken in close cooperation of professionals working on related enterprises. In situations of competition, rivalling parties not only observe the activities of their competitors, but also engage in dialogue, in order to extract information on the outcomes of project approaches. Business lunches with professionals working on similar projects and face-to-face meetings at industry events (conferences, trade shows, and parties) underlie a strong local face-to-face culture. Similar professional interests and respect for professional achievement lead to regular face-to-face meetings and the exchanges of experiences of project workers. A strategic collegiality leads to the support of competitor projects. Thereby, an exploration of alternative approaches and their performance takes place.

In addition to an informed awareness of competitor strategies and industry trends, the interviewees illustrated good will by reporting on own experiences, giving advice, and helping out. Keeping up with the peers, knowing industry trends, growing a personal network, and building an advantageous networked reputation lead to subsequent projects and professional affiliations in the highly interconnected Bay area. LinkedIn served as a supplementary layer of professional communications. It did not replace tie formation in the course of face-to-face professional co-work situations and informal face-to-face gatherings including private talk.

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