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2011

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citation for published version (APA)

Bahlmann, M. D. (2011). *Buzzing across boundaries: An inquiry into the Amsterdam IT and new media-cluster from a knowledge-based perspective*. VU University Amsterdam.

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Ch. 5

Bridging the geographical divide: An inquiry into organizing visions as facilitative mechanism for cross-cluster knowledge exchange

Abstract

This chapter engages with the recent skeptical turn towards the knowledge-based theory of clusters, which is criticized for over-emphasizing the role of geographical proximity in facilitating knowledge dynamics among entrepreneurs. In particular, this study aims at the role of so-called organizing visions as facilitating cross-cluster knowledge exchange. Building on a proximity framework, this study finds both qualitative and quantitative evidence for the facilitative function of organizing visions. Interestingly, organizing visions are promulgated through non-local buzz interactions, allowing entrepreneurs to engage in cross-cluster knowledge exchange. The findings of this study lead us to fundamentally reconsider the knowledge-based theory of clusters.

5.1 | Introduction

The knowledge-based theory of clusters has gained significant attention in the last couple of decades, adding a new perspective to an already rich body of literature on the knowledge potential of regional clusters. The knowledge-based theory of clusters, which started out as a critique of orthodoxy by explicitly linking the concepts of tacit knowledge and local learning to the spatial clustering of business activity (Bahlmann

& Huysman, 2008), now appears to be the subject of severe and fundamental critique itself. Recent contributions have questioned the dominance of geographical space in facilitating local knowledge dynamics and innovation, resulting in a call for a more systematic, critical, and comprehensive approach to the theory's main claims (Boschma, 2005).

On the one hand, it is argued that the empirics supposed to support the knowledge-based theory of clusters are lacking (Oinas, 1999). On the other hand, the theory is said to fail in explaining the occurrence of tacit knowledge flows successfully *crossing* cluster boundaries (Saxenian, 2006; Owen-Smith & Powell, 2004). This has resulted in various contributions ranging from the pipeline-thesis (Bathelt, Malmberg & Maskell, 2004), to Boschma's (2005) call for a more comprehensive understanding of the role of geographical proximity in facilitating knowledge flows, and Amin & Roberts' case for a more precise knowledge vocabulary for understanding such issues (2008). Efforts like these signify that the role of geographical clusters appears overstated, to say the least, in much of the literature situated in the domain of the knowledge-based theory of clusters. The geographical proclivity of tacit knowledge, and the exchange thereof, appears to be based on assumptions rather than on robust empirical data (Oinas, 1999).

A tentative review of our data presented in this chapter appears to support the above described line of critique. Based on a sample of 418 ego-alter knowledge exchange relationships gathered among entrepreneurs active in the Amsterdam IT and new media-cluster, we found only 187 of these relationships to be cluster-based (or 45%), whereas 231 ego-alter knowledge exchange relationships proved to cross cluster boundaries (or 55%), of which a significant part represented relationships across national boundaries (81/418, or 19%). Focusing on a subset of our data, namely buzz-interactions only, we also found a larger than anticipated share of cross-cluster interactions (45% of 190 ego-alter buzz-relationships). This surprised us, especially since buzz interactions are heralded as the "hallmark characteristic of clusters" (Gertler & Wolfe, 2006: 218) and represent a pivotal element of the knowledge-based theory of clusters.³⁴ The more than significant presence of cross-

³⁴ Bathelt *et al.* (2004) purposefully group this form of interaction under the heading of 'local buzz'.

cluster knowledge exchange relationships in our randomly generated data seems to denote an overemphasis of the facilitative role of the concept of geographical proximity indeed. Or, as one entrepreneur questioned on this issue, put it:

“In our line of business it is quite commonplace to have contacts abroad. I know people in Silicon Valley, Hong Kong, the UK, et cetera. (...) Look, in my field of interest the Anglo-Saxon world is leading, especially when it comes down to service design. They are ahead of the market, they determine the market frontier, so to speak. As a Dutch entrepreneur, you must tune into the developments going on over there, learn about what they are doing, how they are doing it, and why they do what they do. (...) Having contacts over there is the best and quickest way of staying informed.” (R38)

Thus far, this critical turn in cluster literature appears to draw mainly on the strength of ties-thesis (Granovetter, 1973; 1983), with Saxenian (2006) as one of its main proponents. The view that social networks function as enablers of knowledge exchange across cluster boundaries, complemented with the effects of relational proximity (Boschma, 2005), finds fertile soil indeed. However, a recent study conducted by Bahlmann *et al.* (2010) advances the critique of orthodoxy referred to above by suggesting an additional form of proximity to matter in this respect, namely epistemic proximity.³⁵ Epistemic proximity can be defined as the extent to which the knowledge seeker and knowledge source share a similar world view, thus allowing them to draw on similar interpretative schemas in the exchange of knowledge. Although convincingly demonstrating the significant role of epistemic proximity as facilitator of knowledge exchange among IT-based entrepreneurs, the study by Bahlmann *et al.* (2010) fails however to empirically demonstrate and explain how epistemic proximity exactly matters. Put differently, *why* is epistemic proximity so important, *how* does it facilitate inter-cluster knowledge exchange among

³⁵ By simultaneously modelling the effects of geographical, relational, cognitive, and epistemic proximity on interactive learning and ease of knowledge transfer, this study showed a limited role for geographical proximity on the one hand, and was able to establish a more profound effect of both relational, epistemic, and cognitive proximity on the other.

entrepreneurs, and how does it contribute to the relational view of cross-cluster knowledge exchange as proposed by Saxenian?

By drawing on interview data generated among entrepreneurs in the Amsterdam IT and new media-cluster, we find the concept of organizing visions, forwarded by Swanson & Ramiller (1997), very applicable. In particular, our industry of interest appears to be very much ideologically inclined. Grand visions revolving around web 2.0 related matters not only determine the direction in which the industry advances (Benkler, 2006), but also represent an epistemological context that surpasses the boundaries of the cluster. As such, we find epistemic proximity to contribute to a de-regionalization of the knowledge exchange process, mainly by facilitating interactions among entrepreneurs across large distances.

This chapter proceeds as follows. Given the exploratory nature of our study, we start by reporting the qualitative research findings and integrate them with relevant theory. With respect to exploring the role of organizing visions/ epistemic proximity, we focus on both the content of the debate and the mode of interaction/promulgation involved. To verify our qualitative findings, the integrated discussion of interview data and theory results in testable hypotheses. These hypotheses are consequently tested by means of ego-network data. The study's implications come under discussion in the conclusion and discussion section of this chapter.

5.2 | Organizing visions

We used interviews to gain insight into the nature and workings of organizing visions in the context of the AINM-cluster. The interviews, with an average duration of seventy minutes, were aimed at having the respondents reflect on their social network as a source of knowledge, and was set up such that it encouraged respondents to reflect on their personal experiences (Cross & Sproull, 2004). With our research interest in mind, we specifically requested the respondents to reflect on 1) general characteristics of their social network, including spatial network dynamics, 2) specific knowledge relationships, and 3) the role of buzz.

The interviews used semi-structured, in-depth questioning techniques. First, the respondent would be encouraged to reflect on some general characteristics of his or her daily work and the importance of his or her social network in this matter.

Specifically, we asked the respondents to reflect on a) how important their social network was in their daily work as well as in doing business, b) whether they regard themselves as an “active networker”, c) how they built up and maintain their social network, d) what areas of expertise they had access to through their network, and e) to what extent his/ her network spans beyond his or her immediate geographical location.

Phase two of the interview was aimed at eliciting concrete networking experiences from the respondent, and would be initiated with the question ‘For what specific information and knowledge purposes do you draw on your social relations?’ This question encouraged respondents to consider their social relations as sources of information and knowledge. respondents were encouraged to provide specific examples of past knowledge interactions linked to specific situations and, more importantly, particular persons.

In the remaining part of the interview, respondents were asked to reflect on the peculiarities of the industry they are active in (namely IT, new media, or the Internet), and specifically on the role of so-called organizing visions. More specifically, we asked respondents to reflect on the topic of web 2.0 in relation to their knowledge interactions.

In selecting the respondents for the qualitative phase of our study, we made use of the same membership lists referred to above. Given the overwhelming overrepresentation of male entrepreneurs on these membership lists (approx. 85%), we decided to copy this overrepresentation in the selection of the interviewees (twenty-one men, four women). The results of the interview are presented below.

5.2.1 Nature and content

The basic rationale underpinning the knowledge-based theory of clusters is as appealing to many as it is straightforward in its internal logic. Basically, this perspective seeks to explain the existence and performance of clusters based on assumptions with respect to the tacit nature of learning and knowledge interactions among firms and entrepreneurs (Arikan, 2009; Malmberg & Maskell, 2005). Such learning interactions are assumed to be spatially sticky due to their context specific nature, implying that inter-firm and inter-personal knowledge sharing is most

effective when taking place in a similar social context. This social context is assumed to be defined locally (Sole & Edmondson, 2002), resulting in a taken-for-granted acceptance of geographical proximity as main enabler of knowledge interactions. Because of this, entrepreneurs are considered to be constrained geographically in their search for new tacit knowledge (Rosenkopf & Almeida, 2003).

In the process of constructing and verifying the above sketched rationale, a significant amount of studies have investigated IT-based clusters such as Silicon Valley (US) and Baden-Württemberg (Germany). This led scholars and policy-makers alike to conclude that local space still matters, despite ICTs steadily becoming more ubiquitous and pervasive in today's society. Given the popularity of IT-based clusters as context of preference for researchers to approach and verify the claims made under the heading of the knowledge-based theory of clusters, it is rather surprising, to say the least, that the concept of organizing visions has not prominently entered the debate yet (Swanson & Ramiller, 1997). Especially since the concept was developed in the context of the IS-industry and touches upon the issue of constructing reality.

An organizing vision can be defined as a set of grand ideas constructed through an ongoing discourse (Foucault, 1972) by a heterogeneous set of actors (Swanson & Ramiller, 2004). It results in a set of broad guidelines or belief system which aids the process of interpretation, legitimization, and mobilization of specific innovative trajectories, thus advancing it towards an institutionalized status quo (Swanson & Ramiller, 1997). Interestingly, organizing visions are typically heralded by so-called *buzzwords*. For the context in which this research is positioned, typical buzzwords signaling current innovative events or movements are 'web 2.0', 'the semantic web', 'open source', 'open ID', 'social software', *et cetera*. Interviewing our respondents on this matter, the influence of organizing visions soon was to become evident.

"You know, as I see it there are two kinds of creativity. There is market creativity with respect to the Netherlands, I have to do something in the Dutch market you know, versus long-term undercurrents, and those long-term undercurrents stem from bigger markets and people with broader visions, who are involved in those fundamental developments and who spent a lot of time and effort in attending

(...) conferences to invest in things globally, which of course is very inspiring. (...) To me this is important as it helps me to decide in what to invest.” (R17)

Central to the concept of organizing vision, or “long-term undercurrent” according to the respondent above, is the acknowledgement of the idea that organizations and entrepreneurs belong to an elaborate and complex population of organizations, individuals, and stakeholders. Many of these ‘members’ to a varying extent contribute to the ongoing discourse on new technology and its desired effect on society. The technology-discourse is highly ideologically inspired (Benkler, 2006) and future oriented (Faulconbridge, 2006; Swanson & Ramiller, 1997). Contributors to the discourse can be found among tech-bloggers (Davidson & Vaast, 2009), academics, entrepreneurs, consultants (Saxenian, 2006; Swanson & Ramiller, 2004), and IT-practitioners (Ramiller & Swanson, 2003). The influence of an organizing vision is not to be underestimated, as witnessed by the following entrepreneur:

“The gossip is so rich, and so vast. If you know where to tune into, which debate to follow, than it’s hard to miss out on the important stuff. You know, there is so much going on in our field. Really cool, advanced stuff. But the basics are quite simple. (...) It’s like a guidebook, just follow the principles and you’ll get there. Only, in practice, it isn’t that simple of course.” (R19)

A striking example of an ongoing debate that qualifies as an organizing vision takes place under the heading of the semantic web-discourse. The ‘semantic web’ can be regarded an ideal type vision of the future state of the Internet, constructed and structured such that it allows computers to actually reason and understand. This ideal type representation of the Internet might sound somewhat farfetched and idealized, but the debate in question does touch upon the daily practices of entrepreneurs active in the realm of IT, new media, and the Internet. As such, it influences their strategic decisions, what to invest in, *et cetera*. Similar, partially overlapping debates revolve around issues surrounding the ‘openness’ and availability of the Internet and software industry, characterized by catchphrases like web 2.0, open source, social software, *et cetera*. The development of the Linux

operating system can be considered a hallmark symbol for this particular organizing vision. Interestingly, debates like these take place in a global setting, facilitated by tech-blogs and periodical trade fairs and networking events, and are heavily inspired by fundamental ideas about freedom and society, thus going beyond mere technological application or business model issues (Benkler, 2006).

“I am currently involved in a project, a sort of a combination of an I-Pod with a mixing panel for DJs. Now that I’m involved, I hear people talk about license-free music, video-user-generated-content, all that kind of stuff. I register all these developments and bring them together in a project like this, but all those influences reach me through all kinds of people. From a guy like Adam [who’s located in San Francisco] to the developers of that device, people I know at record companies, but also activists, investors, and so on.” (R17)

As explained above, organizing visions are deemed important institutional mechanisms through which innovations are created and promulgated (Swanson & Ramiller, 1997). Organizing visions allow for the “application of the same interpretative schemes and mutual understanding of new knowledge and technologies, as well as shared cultural traditions and habits within a particular technology field, which stimulate the establishment of conventions and other institutional arrangements” (Bathelt *et al.*, 2004: 38). As such, we find organizing visions to be powerful sensemaking mechanisms, allowing actors to make sense of complex information and knowledge, and are especially prominent in IT-related branches. Organizing visions such as the ones revolving around the idea of the semantic web, OpenID, and the like, allow a global context to arise that surpasses the assumed contextual boundaries of the cluster.

5.2.2 Mode of interaction

A critical issue in understanding the pervasiveness of organizing visions in directing and promulgating grand ideas revolves around the specific modes of interaction through which this takes place. Questioning the respondents on this issue revealed a

rather extensive pallet of sources through which organizing visions such as the ones mentioned above find their way. One mode of promulgation clearly takes place in the domain of technology blogs³⁶ and research reports³⁷. Another mode of promulgation – and indeed a very prominent one – referred to by the respondents takes place in the sphere of the gossip and rumors-network, and acts as a very powerful mechanism for the adoption of grand ideas concerning the web.

“My network inspires, (...), you get knowledge of things that are hot right now, projects of other parties, trivia about other companies, persons. Things that might come in handy when selling my venture. It’s more like news, gossip.” (R20)

“My network provides me with an incredible amount of information. Especially with hints like ‘take a look at this new service’ or ‘you should talk to that club of people’ or remarks like ‘you should contact them, they do interesting stuff that might be of interest to you’. (...) People just point things out to me, you know. Things I didn’t know about.” (R12)

These accounts are very much fitting the local buzz-thesis put forward by Bathelt *et al.* (2004) who define local buzz as “specific information and continuous updates of this information, intended and unanticipated learning processes in organised and accidental meetings (...)” (*ibid.*: 38). The accidental and unanticipated nature of buzz, that is so typical for this type of knowledge interaction, allows the entrepreneur to quickly absorb and combine different information streams from different parties. It is a form of exchange in which either parties do not necessarily solicit for particular knowledge, but simply find themselves in a context in which exchange takes place.

In essence the concept of local buzz can be thought of as a response to scholarly critique on the assumed value of regional clusters in facilitating knowledge dynamics among firms and entrepreneurs (e.g. Oinas, 1999). The concept of local buzz has been

³⁶ International blogs mentioned during the interviews were, among others, TechCrunch.com, ReadWriteWeb.com, TechEye.net and MacRumors.com. Dutch blogs to be mentioned were Frankwatching.com and Dutchcowboys.nl.

³⁷ For example, the Pew Research Center yearly publishes a report capturing industry experts’ prospects regarding the future of the Internet: <http://pewinternet.org>.

suggested to explain the value of regional clusters, or knowledge hotspots, in the face of increasing globalization and the ever more ubiquitous nature of information and communication technologies (ICTs). As such, the issue of how geographical clustering of business activity enhances local knowledge dynamics despite the inherent influence of globalization and ICTs, remains of central importance to the field of economic geography. Buzz is posited as a distinctly local form of knowledge exchange, complementing *non-local* knowledge transfers supposedly taking place through so-called pipelines (Bathelt *et al.*, 2004; Storper & Venables, 2004). Indeed, local buzz appears to have become the “hallmark characteristic of clusters” (Gertler & Wolfe, 2006: 218).

According to the buzz-rationale, being located in a regional cluster allows entrepreneurs to tap into the buzz, irrespective of their network position or time investment in order to access this information. As Bathelt (2005: 206) notes, actors are “automatically exposed to news reports, gossip, rumours and recommendations about technologies, markets and strategies by just being in the cluster.” Buzz is being posited as a collective asset equally accessible to all firms and entrepreneurs inhabiting a given cluster (Gertler & Wolfe, 2006; Gertler, 1995; Grabher, 2002), and is considered distinctly different from its conceptual complement, i.e. global pipelines. The concept of buzz is, in addition, posited to be a form of exchange especially sensitive to the institutional characteristics of a cluster, for “similar language, technology attitudes, and interpretative schemas” (Bathelt *et al.*, 2004: 39) are hypothesized to develop locally. Hence, the assumed proclivity of buzz to manifest in the local milieu.

Interestingly, respondents (like R5 and R3) report accounts of buzz when being asked about the added value of having contacts abroad, and most notably, in the USA. Moreover, both respondent R5 and R3 (as well as R4, 6, 9, 10, 16, 17, 20, and 23) stress the importance of attending conferences and meetings abroad in order to tap into the buzz over there. In a similar vein, respondent R17 accounts of the added value of being connected to ‘Adam’ (see quote on page 162), a contact whom the respondent indicated to be located outside the AINM-cluster (San Francisco, to be precise) and moreover to be weakly connected with relationally speaking. As such, buzz is considered highly relevant by the entrepreneurs consulted in this study, and

in addition recognized and acknowledged as a relatively quick and easy form of exchange, allowing one to stay informed on both the current *and* future market frontier.

“In my profession, everything that happens in the US is relevant, also because they are still ahead of us (...). So I have to keep a close eye on them and therefore it’s very useful to have contacts over there to discuss new developments with, what developments are important over there and could become important over here.” (R5)

“Developments are going fast, you know. We do not have the luxury of awaiting the next statistical or industry reports to inform our actions. (...) I find myself constantly monitoring my environment, talking to people in Amsterdam but also in the States. (...) Look, if you’re into semantic web and stuff, you simply cannot afford to ignore this debate. Best is to tap into it, to emerge yourself in this stream of ideas, so to speak.” (R23)

These interview findings do not correspond with the current perception of the function of buzz. To date, the local buzz-thesis still follows the traditional rationale in economic geography, namely that the costs of coordinating and transferring knowledge rises with the degree of tacitness involved (Moodysson, 2008; Lorenzen, 2005) due to the fact that “global coordination and transfer lacks the shared cognitive institutions that local firms (e.g. in clusters) may draw upon” (Lorenzen, 2005: 402). Buzz, in this sense, is regarded a highly tacit form of knowledge exchange, and hence considered to be confined locally.

Adopting the concept of buzz as explanation for the spatial configuration of knowledge exchange is not without controversy indeed. Although not explicitly referring to the spatial insensitivity of buzz, Asheim, Coenen & Vang (2007) conclude that buzz is likely to take place through virtual interaction in addition to face-to-face encounters. As such, the necessity of face-to-face contact for the exchange of buzz to which Storper & Venables (2004) and Bathelt *et al.* (2004) refer, is contested. In addition, the effects of geographical proximity are likely to be mitigated by the social

fabric spanning cluster boundaries (Saxenian, 2006), meaning that relational proximity is likely to interfere with or even diminish the role of geographical boundaries in the process of knowledge exchange and learning (e.g. Faulconbridge, 2007; 2006). As such, the assumed geographical stickiness of buzz is not accepted *a priori*. This present study adds yet another fundamental point of critique to the hallmark characteristic of clusters, suggesting that buzz actually aids the development of an epistemological context surpassing that of the level of the cluster.

5.3 | Towards a conceptual model

5.3.1 *Organizing visions as mechanism for cross cluster knowledge exchange*

Based on the qualitative data and theoretical framework outlined above, there are robust reasons to further inquire the role of organizing visions as facilitator of knowledge exchange among entrepreneurs both within and across cluster boundaries. The interview accounts provided above illuminate the potential value of organizing visions in facilitating knowledge exchange across cluster boundaries. By providing an epistemological context that surpasses that of any given IT-cluster, organizing visions allow entrepreneurs to draw on shared interpretative schemas while engaged in cross-cluster knowledge exchange.

Based on the interview accounts these organizing visions, and thus the epistemological context that facilitates cross-cluster knowledge exchange and learning, appear for a significant part to be promulgated through the industry's buzz. This mode of communication, which has been considered a strictly local form of exchange thus far (e.g. Bathelt *et al.*, 2004), appears to allow the entire industry to reach an epistemological state that eases the process of knowledge exchange both within and across cluster boundaries. The relative importance of organizing visions as facilitators of knowledge exchange among IT-entrepreneurs has yet to be established, though.

This step is necessary for two reasons. First of all, a distinct body of literature has criticized the knowledge-based theory of clusters from a relational point of view. As mentioned before, Saxenian (2006) can be considered a main proponent of this approach. In her study, Saxenian vividly accounts of immigrant entrepreneurs – which she terms new Argonauts – who have received their education in Silicon Valley

but developed themselves as entrepreneurs in their country of origin, and while doing so, build and maintain communication ties across large geographical distances. She found this class of entrepreneurs very able at exchanging tacit knowledge *across* cluster boundaries, benefiting from both the local as well as the non-local context. The added value of geographical proximity in facilitating tacit knowledge flows appears limited when considering her account. One explanation offered by Saxenian refers to the power of informal ties, as she considers the social fabric that connects geographical clusters to be a powerful, efficient, and effective transmitter of knowledge and information. Translating this to a proximity-vocabulary at the dyadic level of analysis, relational proximity is likely to be a prominent enabler of ego-alter knowledge exchange across cluster boundaries. Notwithstanding the robustness of this finding, the effect of relational proximity on knowledge exchange among entrepreneurs needs to be assessed in conjunction with the potential effect of organizing visions. This will allow for a better appreciation for the value of both relational and epistemic proximity.

Second, the qualitative data suggest a prominent role for so-called buzz interactions in facilitating inter-cluster knowledge exchange. Buzz interactions represent a relatively understudied phenomena, especially at the dyadic level of analysis. Whereas some indication is available on the relative importance of epistemic proximity in general knowledge exchange and learning interactions (Bahlmann *et al.*, 2010; Boschma, 2005), no such analysis has been done specifically in the context of buzz interactions only. We need to assess the relative importance of epistemic proximity, or organizing visions, in facilitating knowledge exchange through buzz interactions, by taking into account the relative effects of geographical and relational proximity as well.

5.3.2 Hypotheses

In order to verify or falsify current beliefs on the role of epistemic proximity and its assumed role in facilitating knowledge exchange through buzz relationships (Bahlmann *et al.*, 2010; Swanson & Ramiller, 2004; 1997), we need to assess its relative role of geographical proximity when taking into account the respective roles of relational proximity (Saxenian, 2006; Boschma, 2005) and geographical proximity

as well (Boschma, 2005). In devising the hypotheses for the construction of our conceptual model, we will proceed with discussing relational proximity first, followed by epistemic and geographical proximity respectfully. The proposed dependent variable is *buzz exchange*. This will allow for a better appreciation of the exact effects that either types of proximity has on the exchange of knowledge among entrepreneurs.

Relational proximity: Relational proximity or tie strength matters in the exchange of knowledge and information (Granovetter, 1983; 1973). By acknowledging that both human *and* economic behavior cannot be viewed and understood without taking into consideration the social environment in which it is embedded, the exchange of knowledge is likely to be dependent on some characteristics of the tie that serves as its carrier. A prominent debate in this specific line of inquiry revolves around the question whether and how tie strength affects the exchange of (new) knowledge. A seminal contribution in this respect can be found in the works of Granovetter, and specifically his thesis on the strength of so-called weak ties (*ibid*). In Granovetter's view, both strong (high relational proximity) and weak ties (low relational proximity) have informational benefits (see also Burt, 1992). Weak ties are more likely to provide new knowledge and information, while strong ties are generally more willing to help and more easily available. Strong ties in particular have been found well equipped for the transmission of tacit forms of knowledge (Hansen, 1999; Uzzi, 1997; 1996). A higher frequency of contact is likely to foster the development of relation-specific heuristics (Reagans & McEvily, 2008). In addition, ties characterized by higher relational proximity are likely to involve more trust, implying that both parties are confident that the information or knowledge exchanged will not be applied inappropriately (*ibid.*). Based on this, we expect relational proximity to have a positive effect on buzz exchange.

Hypothesis 1: relational proximity is positively and linearly related to buzz exchange.

Epistemic proximity: Thus far, the concept of epistemic proximity has received surprisingly little attention in relation to knowledge or buzz exchange within and between clusters, especially when contrasted to its relational counterpart discussed above. Nonetheless, its significance in facilitating knowledge exchange among entrepreneurs is not to be underestimated. Following earlier contributions on organizing visions (Swanson & Ramiller, 1997) epistemic proximity has the potential of seriously mitigating the roles of both geographical and relational proximity in explaining what facilitates knowledge or buzz exchange among entrepreneurs (Bahlmann *et al.*, 2010).

The concept of epistemic proximity must be viewed upon as the dyadic translation of the concept of organizing vision. Epistemic proximity can bridge potential contextual and cultural gaps associated with interacting across large geographical distances. One's epistemic take on reality might be understood as an ideal type representation of the future by building shared ideologies. Analogue to the rationale behind organizing visions, the concept of epistemic proximity recognizes debates of which the underlying rationale is heavily inspired by ideologies revolving around freedom of speech, freedom of content, freedom of information, freedom of software usage, *et cetera* (Benkler, 2006). Entrepreneurs active in the field of IT, the Internet and new media are regularly confronted with novel technological developments associated with these philosophies, necessitating the entrepreneur to (re-)consider his/her position in this matter. Differences in attitude or opinion towards developments related to, for instance, the semantic web-debate or -movement imply a difference in world view or belief system.

With respect to our specific case, epistemic proximity can be thought of to facilitate knowledge exchange between ego and alter in two distinct ways. First, epistemic proximity implies a shared and mutual loyalty to a particular problem or ambition (see also Clarke, 1991; Amin & Roberts, 2008). The mechanism of creating mutual loyalty could serve as a powerful instrument in overcoming any geographical, cultural, or contextual friction. Second, epistemic proximity can contribute to buzz exchange, for both the knowledge seeker and knowledge source needn't negotiate a shared world view in the case of institutional and contextual differences that might arise across large geographical distances. Thus, we hypothesize the following.

Hypothesis 2: epistemic proximity is positively and linearly related to buzz exchange.

Geographical proximity: Having discussed both the concepts of relational and epistemic proximity in facilitating buzz exchange within and across cluster boundaries, the issue of geographical proximity remains.

Recapitulating the main claim of the knowledge-based view of clusters, the evidence for knowledge flows bound to specific geographical concentrations of firms appears persuasive (Owen-Smith & Powell, 2004). The rationale for linking knowledge to the cluster phenomenon is derived from the assumption that knowledge inherently holds certain tacit qualities that are essentially context-bound (Brown & Duguid, 2000). As mentioned before (see introduction), adherents of this perspective maintain that knowledge appealing to Polanyi's tacit dimension is "person-embodied, context-dependent, *spatially sticky* and socially accessible only through direct physical interaction" (Morgan, 2001: 15, emphasis added). Or, as Amin & Cohendet (2004: 90) put it, "learning and innovation are cast as regional properties, with spatial proximity and local belonging read as the vital economic asset for learning-based competitiveness." It is the tacit nature of knowledge that is argued to be conducive to cluster formation. A certain degree of geographical proximity thus is argued to foster these tacit knowledge flows, for geographical proximity fosters social contacts (Sorenson, 2003a/b). Geographical proximity hence is believed to foster relational proximity by limiting the "costs" of maintaining relationships. Since knowledge transfer is considered to be a social process primarily, geographical proximity therefore might influence the extent to which intra-cluster knowledge relations occur. As such, the knowledge-based theory of cluster not only posits that entrepreneurs are to a large extent geographically constrained in their search for knowledge, but also in creating and maintaining such ties.

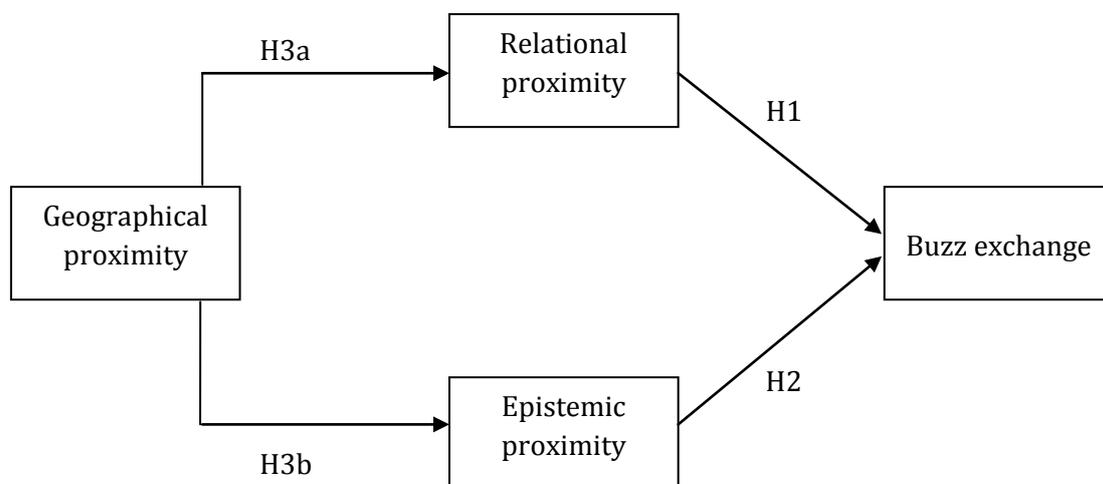
The exact role of geographical proximity in facilitating knowledge dynamics remains the issue of dispute, though. Especially when taking into consideration the latest contributions to the 'local buzz global pipelines'-debate referred to above. The question remains what role geographical proximity actually plays, given the already discussed role of relational and epistemic proximity in facilitating knowledge

exchanges. Most likely, geographical proximity is to influence knowledge exchange indirectly, by strengthening relational proximity (Boschma, 2005). Specifically, this would mean the geographical proximity plays a role in facilitating the creation and maintenance of informal ties (e.g. Audretsch & Stephan, 1996). Based on the interview findings and theoretical considerations expressed above, as well as the empirical findings by Bahlmann *et al.* (2010), it doesn't make sense to expect geographical proximity to influence epistemic proximity. However, in mainstream cluster literature the dominant view remains that being located in the same cluster aids the development of a shared world view between ego and alter. In order to test this claim, we therefore also hypothesize geographical proximity to have a positive effect on epistemic proximity.

Hypothesis 3: geographical proximity positively and linearly effects the degree of relational (H3a) and epistemic proximity (H3b).

Figure 5.3.2 provides a schematic representation of hypotheses 1 to 3, and functions as base model for the empirical inquiry.

Figure 5.3.2: Conceptual model



5.4 | Methods

With the theoretical considerations expressed above in mind, we set out to explore this part of the study departing from the IT and new media-cluster based in Amsterdam and the greater Amsterdam area. We chose to focus on entrepreneurs for they are identified as important transmitters of knowledge and information across social networks and geographical boundaries (Saxenian, 2006).

Following Cross & Sproull, a dyadic model of knowledge support should take into consideration “characteristics of the knowledge seeker, the knowledge source, and the relationship between the seeker and the source” (2004: 452). Given that this study incorporates three forms of proximity, it is necessary to establish each form of proximity for both the knowledge seeker and knowledge source. The purpose of this study, thus, is to simultaneously model geographical, relational, and epistemic characteristics of the dyad tying the seeker and the source for in the face of buzz exchange. This will allow for a better assessment of the relative importance of epistemic proximity.

5.4.1 Survey design and measures

Given the dyadic level of analysis, the survey would begin by generating relevant social contacts from the ego-respondents by means of four distinct name generator questions. We constructed four such questions in order to generate ego networks containing both strong and weak ties, which is important for establishing the role of relational proximity. The final two name generator questions (NG3 & 4) were specifically constructed to generate so-called weak ties, for respondents are notoriously known for not mentioning contacts they are weakly connected with (Wasserman & Faust, 1994).

The second stage of the survey was aimed at gaining more information about the dyads generated through the name generator questions. Specifically, this section served the purpose of establishing the degree of geographical, relational, and epistemic proximity characterizing the generated dyads or ego-alter relationships. In the course of establishing the degree of geographical proximity, the respondent was asked to indicate his/her own geographical business location as well as the geographical business location of each of his/her contacts. Afterwards, these data

were reorganized into three distinct categories: 1) dyads spanning cluster boundaries as well as national boundaries (e.g. ego is situated in Amsterdam, alter in Silicon Valley), 2) dyads spanning cluster boundaries yet confined by national boundaries (e.g. ego is situated in Amsterdam, alter in Rotterdam), and 3) dyads confined to cluster boundaries (e.g. ego and alter both situated in Amsterdam) (Tallman & Phene, 2007).

Relational proximity was measured by having the respondent indicate both the duration of contact and the degree of emotional closeness for every relationship in his/her network. Both items were measured using four item scales (Perry-Smith, 2006; Burt, 1997). Epistemic proximity was operationalized by linking the concept to a number of key developments taking place in the domain of new media and the Internet at the time of data gathering. These developments take place under the heading of the popularized phrase 'web2.0' (Davidson & Vaast, 2009), and typically are accompanied by buzzwords such as 'open-source', 'openID', 'social communities', *et cetera*. These and other web2.0-related catchphrases are acknowledged as being part of significant and fundamental developments in the domain of new media and the Internet. Respondents were asked to indicate to what extent their position towards web2.0-related developments differed to each of their contacts.

Buzz exchange was measured using a four-items scale. This allowed the respondent to indicate for each of his/her contacts how often he/she turned to each of his/her contacts with an knowledge or information request, and vice versa. The variable was complemented by having the respondent indicate the average value of these knowledge exchange interactions.

Finally, to establish whether the respondent's generated ego-network contained buzz-contacts, the respondent was asked to indicate which of the mentioned alters qualified as someone providing the respondent with information, impressions, rumors, and news concerning his/her industry. The contacts indicated by respondent to qualify for this category are regarded so-called buzz-contacts. To verify that these contacts do not represent any other type of knowledge interaction (i.e. are multiplex), we also established whether these contacts would qualify as innovation, advice, or buy-in contacts (Rodan & Galunic, 2004). Table 5.4.1 (see appendix section) provides a complete account of the survey measures applied.

5.4.2 Sample and data

To test the conceptual model introduced above (figure 5.3.2), we collected ego-network data among entrepreneurs located in the Amsterdam IT and new media-cluster, from May – August 2009. Beforehand, a list of 339 entrepreneurs was created, containing names, contact information, and business location. In constructing this list, we drew on membership data of two Amsterdam-based network clubs, known for having many IT and new media entrepreneurs among their members. The list was completed by adding names generated through LinkedIN, a well-known and popular social network tool among our target population. This last procedure was done to ensure that the list would be a good representation of the diversity of disciplines active in this cluster as well as ensuring a good geographical fit, thus preventing sample bias. The disciplines represented in the list vary from IT, Internet, gaming, e-marketing, new media, software, *et cetera*.

In administering the survey, we ensured randomization by putting the entrepreneurs' names and contact details in random order. Subsequently, we would contact every third entrepreneur on the list, until we had generated fifty fully filled-in questionnaires. After excluding collegial relationships³⁸ from the fifty generated ego-networks, 418 dyadic relationships remained. From these 418 dyads, we selected all dyads characterized as buzz contacts (190 in total). After verifying that none of these dyads would provide buzz exchange only, 120 dyads remained. These dyads form the unit of analysis for this study (i.e., N=120). This procedure was done in order to ensure that the knowledge exchanged in these dyads represents buzz only.

5.4.3 Accounting for the clustering of the survey design

Although the data-analysis takes place at the level of the dyad, the actual data were generated at the ego-level. The fifty ego's consulted for this study therefore must be considered the primary sampling units (PSU), meaning that the dyadic data are, in fact clustered at the ego-level. Cluster sampling typically results in larger sample-to-sample variability compared to sampling individuals (or dyads in this case) directly. This increase in variability must be taken into account in standard error estimates,

³⁸ This was done because collegial relationships reflect intra-organizational processes, which fall outside the scope of this study.

hypothesis testing, and other forms of inferences. This was done through a cluster procedure available in Stata11.

5.5 | Results

5.5.1 Towards an empirical model

Table 5.5.1 exhibits the means, standard deviations, and correlations for the variables employed in this study.

Table 5.5.1: Means, standard deviations, and correlations

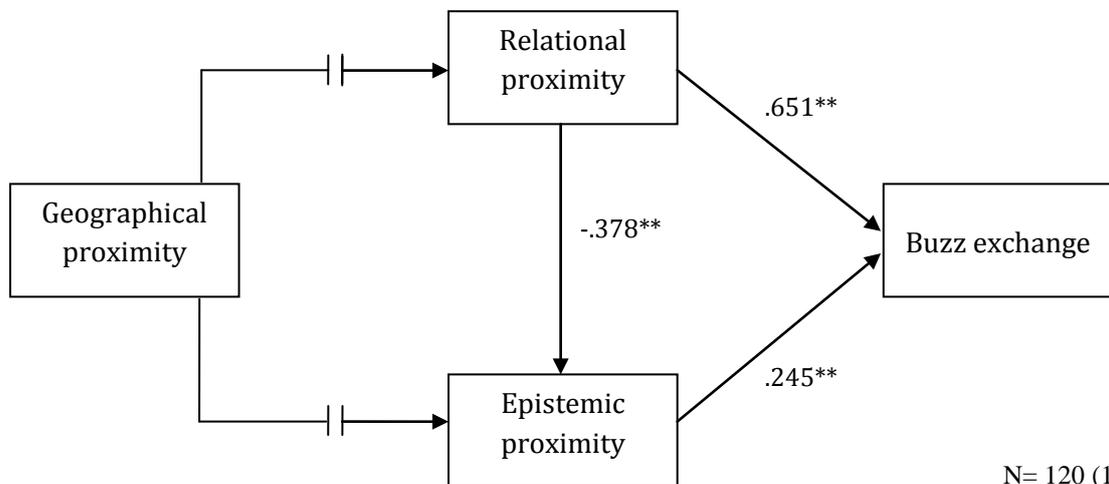
	Mean	S.D.	1	2	3	4
1. Relational proximity	4.015	1.957	1.000			
2. Epistemic proximity	3.33	.680	-.379**	1.000		
3. Geographic proximity	2.41	.692	.060	.070	1.000	
4. Buzz exchange	9.533	6.864	.651**	.244**	.034	1.000

N = 120 (N=118 for epistemic proximity due to missing values)

** correlation is significant at the 0.01-level

The conceptual model (see figure 5.3.2) was tested using Stata11 in order to account for the clustering of the data. Figure 5.5.1 shows the empirical model containing the results of the regression analyses, after accounting for the clustering effect at the PSU-level.

Figure 5.5.1: Empirical model



N= 120 (118)
 ** p < 0.01

All values corrected for clustering at PSU-level

Given the empirical model presented above, we can suffice by stating that the role of geographical proximity as facilitator knowledge exchange is non-existent in buzz-interactions, meaning that hypothesis 3a/b receives no support. The effects of both relational and epistemic proximity appear more pervasive, as they both facilitate knowledge exchange among entrepreneurs, with a very prominent role for relational proximity. This means that hypotheses H1 and H2 are accepted. In addition, and analogue to the empirical model presented in the previous chapter, relational proximity exerts a negative influence on epistemic proximity.

5.6 | Conclusion and discussion

In this study we chose to focus our research efforts on inquiring the role of organizing visions qualitatively by means of interview data, and quantitatively by means of an inquiry into the role of epistemic proximity. A secondary objective of study evolved out of the initial qualitative findings and focused on the buzz-theorem, which has been described as the “hallmark characteristic of clusters” (Gertler & Wolfe, 2006: 218). The concept of buzz interactions can be regarded pivotal to the thesis that cluster-based entrepreneurs enjoy exclusive informational benefits by tapping into cluster specific knowledge and information flows. The findings of this study hold a

In essence, the findings suggest to strongly reconsider the role of geographical proximity

number of interesting implications for the knowledge-based theory in general, and for the buzz-theorem forwarded by Bathelt *et al.* (2004) and Owen-Smith & Powell (2004) specifically. In essence, the findings suggest to strongly reconsider the role of geographical proximity as

main facilitator of knowledge exchange through buzz relationships. In addition, the study finds both relational proximity and epistemic proximity prominent facilitators of buzz exchange among entrepreneurs. The role of organizing visions appears more pervasive than initially expected.

Main contributions

This study was conducted in line with a recent study by Bahlmann *et al.* (2010) (see previous chapter), which suggested the concept of epistemic proximity to become

more prominently present in the current debate concerning the spatiality of knowledge exchange. As such, the concept of epistemic proximity was scrutinized in relation to its facilitative role towards buzz exchange. We found the concept of epistemic proximity, which is the dyadic translation of the concept of organizing visions, to have a distinctly facilitative role in relation to buzz exchange. The concept of relational proximity proves dominant in facilitating the exchange of buzz as well. The buzz-theorem, which can be regarded a critical component of the knowledge-based theory of clusters, appears to overemphasize the geographical dimension, given the absence of the geographical proximity-variable in the empirical model (figure 5.5.1) (Saxenian, 2006; Oinas, 1999). Finally, the statistical results allow for a better appreciation of the role of both relational and epistemic proximity, as we have examined their effects on different components of knowledge exchange.

The interview results offer insight in the workings and significance of so-called organizing visions (Swanson & Ramiller, 2004). The interview data show the pervasiveness of organizing visions in the field of IT, new media, and Internet in particular. As such, these data enrich our understanding of the concept of epistemic proximity in relation to buzz exchange among entrepreneurs.

Interestingly, the field of IT, new media, and the Internet is ideologically inclined, as web 2.0 related buzzwords hum about. Many of the entrepreneurs interviewed have witnessed the rise of more open models of innovation and product and service development, and consider themselves both influenced and inspired by this movement. The pervasiveness and fundamentality of such organizing visions is striking. In accordance with Benkler (2006), we find the interviewees to be witnessing fundamental shifts in the production of innovations and services. Grand ideas concerning the desired openness and availability of software, the Internet, and new media are finding fertile soil indeed (*ibid.*).

Additionally, the results of this study, both qualitative and quantitative, suggest a different role for the concept of buzz. Thus far, the idea of buzz has been applied in order to emphasize the assumed knowledge value of regional clusters, qualifying such clusters as knowledge hotspots and buzz as a distinctly local form of exchange. Contrary to mainstream conviction, however, we find buzz interactions as measured through dyadic interactions to be insensitive to the effects of geographical proximity.

This result implies a radically different role for the buzz phenomenon. Instead of viewing buzz as a strictly local phenomenon or hallmark characteristic of clusters, we argue that buzz interactions, at least in our case, signify developments taking place at a much larger scale as well, surpassing the level of the region.

A prominent contribution of this chapter, thus, lies in the examination of the spatial characteristics of buzz interactions. However, the implications of this study extend beyond the mere issue of the spatiality of buzz. As mentioned in the theory section of this chapter, the concept of buzz is posited as a form of exchange especially sensitive to the institutional characteristics of a cluster, for “similar language, technology attitudes, and interpretative schemas” (Bathelt *et al.*, 2004: 39) are proposed to develop locally. The exchange of buzz proves highly sensitive to institutional characteristics indeed, given the effect of epistemic proximity on buzz exchange in the empirical model. These institutional characteristics, however, are globally constructed in the form of so-called organizing visions. The buzz seems to denote the interconnectedness of regional clusters worldwide in terms of epistemological and institutional foundations, rather than setting them apart. It fosters and facilitates the development of similar language, technology attitudes, and interpretative schemas globally, rather than locally.

In accordance with Swanson & Ramiller (1997) we found evidence in the interview data for organizing visions functioning as a set of broad guidelines or belief system aiding the process of interpretation, legitimization, and mobilization of specific innovative trajectories, thus advancing it towards an institutionalized status quo. The buzz is utilized to tap into discourses about new web 2.0 related technologies and their societal implications (Davidson & Vaast, 2009). Tying the concept of buzz to the concept of organizing visions, and empirically verifying this conceptual connection, might be viewed upon as the second major contribution of this chapter.

Finally, by distinguishing buzz interactions from non-buzz interactions or general knowledge interactions, we would also like to draw attention to the tendency in much of the literature on the knowledge-based theory of cluster, to apply the concept of tacit knowledge exchange as a general form of exchange. When considering the results from an earlier study by Bahlmann *et al.* (2010), this chapter shows that we need a better understanding of what people tend to provide or generate in terms of

knowledge exchange, thus to forward a de-homogenization of tacit knowledge dynamics or interactions among entrepreneurs. If an umbrella term such as tacit knowledge interaction is to be maintained in the framework of the knowledge-based theory of clusters, at the very least we should stimulate efforts to name its various types and, possibly, associated spatial dynamics.

Non-hypothesized finding

Reflecting on the empirical model presented in figure 5.5.1, one particular relationship appears that was not hypothesized in the conceptual framework of this chapter. Relational proximity was found to negatively and linearly effect the concept of epistemic proximity ($b = -.378$; $p < .01$). Both the quantitative and qualitative data do not allow us to explain this negative impact empirically. We suspect that this negative relationship expresses the tendency of an ego and alter to differ on epistemic details or nuances as a stronger relationship allows them to assess each other's epistemic position better.

Limitations and future research directions

Our choice of methods and research context imply that the results of this study are limited in terms of generalizability and interpretation. First, our choice for the Amsterdam IT and new media-cluster as point of departure (with a distinct focus on entrepreneurs) limits the findings' implications to that of service-based clusters particularly (Nordenflycht, 2010). This means that when replicated in the context of, for instance, a high-tech or science-based cluster (Owen-Smith & Powell, 2004), the survey applied for this study could produce different results. Second, this study does not take into account the effects of competition, monitoring and labor market economies. In this respect, the knowledge-based theory of clusters may still be valid. Third, this study does not explicitly take into account the effects of computer mediated communication, for instance through blogs (Davidson & Vaast, 2009). Fourth and final, this study is cross sectional of nature, thus not measuring the effects of geographical proximity on relational and epistemic proximity over time (Boschma, 2005).

These limitations offer interesting opportunities for future research. In particular, we would like to stress the importance of studying more service-based research contexts to replicate our findings, as cluster-based research has traditionally been biased towards product-, high-tech, and science-based type of industries. In addition, we call for research assessing to what extent other industries are characterized by the presence of organizing visions as well, thus to establish the generalizability of the role of epistemic proximity. Industries less ideologically inclined may demonstrate other roles for both geographical and epistemic proximity in facilitating knowledge exchange among entrepreneurs.

Notwithstanding these considerations, we strongly urge for a more profound appreciation of the effects of epistemic proximity for its ability to mitigate the effects of geographical proximity. The presence of organizing visions, which translates to a certain degree of epistemic proximity at the dyadic level, clearly cannot be discarded from future inquiry.

5.7 | References

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