

Paper has been published as:

Semrau, Thorsten / Beier, Michael (2015): How Specialised and Integrated Relationship Management Responsibilities Foster New Ventures' Network Development. *International Journal of Entrepreneurial Venturing* 7(1): 47-64.

<http://www.inderscienceonline.com/doi/abs/10.1504/IJEV.2015.067872>

How specialised and integrated relationship management responsibilities foster new ventures' network development

Thorsten Semrau

Area Corporate Development
Faculty of Management, Economics, and Social Sciences
University of Cologne
Albertus-Magnus-Platz
D-50931 Köln
Germany
Tel.: +49/(0)221/470-2564
Fax: +49/(0)221/470-7883
E-mail: semrau@wiso.uni-koeln.de

Michael Beier

Swiss Institute for Entrepreneurship (SIFE)
University of Applied Sciences, HTW, Chur
Comercialstrasse 22
CH-7000 Chur
Switzerland
E-mail: michael.beier@htwchur.ch

Abstract: Even though developing a new venture's network is recognized as a necessity for successfully developing a new venture, still little is known about how it may be effectively accomplished. Building on prior research, this paper develops and tests three hypotheses about how young ventures' network development may benefit from specialising and integrating relationship management responsibilities. Our results, based on a sample of 117 young ventures, provide strong support for our hypotheses. They show that new ventures' members that apply the basic means of organisation design to their management of external relations develop more new network relationships, dissolve more existing ones, and have larger networks in total.

Key words: Networks, Network Development, Entrepreneurship, New Ventures, Specialisation, Integration

Bibliographical notes:

Thorsten Semrau received his doctorate degree in 2010 and acts as the Ernst & Young Endowed Assistant Professor of Corporate Development at the University of Cologne. His research focuses on entrepreneurship and innovation, as well as networks and their development.

Michael Beier is Senior Researcher at the Swiss Institute for Entrepreneurship (SIFE), University of Applied Sciences, HTW, Chur. He received his doctorate degree in 2011 from the University of Cologne. He works in the field of organisation science and social relationships/networks – especially in the context of entrepreneurship, online/software applications, and knowledge.

1 Introduction

When a new venture is founded, its network is typically made up of entrepreneurs' social ties, comprising their relatives, friends, and acquaintances (Hite and Hesterly, 2001). Even though these relationships are valuable and may lay the groundwork for new venture emergence, evolving resource needs usually necessitate a shift in network relationships to sustain growth in subsequent stages of corporate development (Hite and Hesterly, 2001; Lechner, Dowling, and Welppe, 2006). To meet the changing resource needs, new network ties have to be formed and existing ones have to be dissolved (Elfring and Hulsink, 2007; Hite and Hesterly, 2001).

In view of the fact that adapting a new venture's network is widely recognized as an important task for entrepreneurs, the dearth of research addressing what founders can actively do to enhance this adaptation is astonishing (Hite, 2005; Stuart and Sorensen, 2007). This fact is especially true when considering that adapting a new venture's network is considered to be quite a challenge for entrepreneurs. First of all, new ventures suffer from the liability of newness, resource constraints, and a lack of prior exchange relationships, which limits their pool of potential exchange partners (Delmar and Shane, 2004; Milanov and Fernhaber, 2009). Moreover, previous research suggests that entrepreneurs may suffer from inertial tendencies hindering the development of new network relationships and the dissolution of existing ones (Batjargal, 2006; Elfring and Hulsink, 2007; Maurer and Ebers, 2006).

With that said, the present paper tries to shed more light on what entrepreneurs can do to foster the adaptation of their new ventures' networks. Specifically, we build on prior research conducted by Maurer and Ebers (2006) and Semrau (2012) and develop hypotheses about how specialisation and integration of relationship management responsibilities can foster the adaptation of a new venture's network. We use a sample of 117 new ventures from different industries in Germany to test our hypotheses and find them confirmed. In fact, we find that specialising and integrating relationship management responsibilities is significantly positively

related to the number of new exchange relationships created, the number of network relationships dissolved by entrepreneurs, and the total number of exchange relationships.

Considering these results, the paper at hand contributes to our knowledge of new ventures' network change and development, which has so far been under-investigated (Hite, 2005; Stuart and Sorensen, 2007). Specifically, it highlights the behavioural foundations of a new venture's network characteristics, which have so far been rarely addressed by empirical research (Baron, 2007; O'Donnel et al., 2001). Pointing to a remedy that fosters new-ventures' network development, this study also has clear practical implications.

The rest of the paper is organised as follows: In Section 2, we present our theory and develop our hypotheses. Subsequently, we describe our research method and present the results of our study. Afterwards, we discuss these results, and finally, present our conclusions as well as the limitations of our study.

2 Theory and Hypotheses

As a still growing body of research in the field of entrepreneurship suggests, network relationships are important for founding and developing a new venture (Hoang and Antoncic, 2003; Street and Cameron, 2007). Specifically, prior research indicates that networks—defined as the set of a new venture's exchange relationships that go beyond simple market exchange (Hite and Hesterly, 2001; Lee, Lee, and Pennings, 2001)—are beneficial for new ventures because they provide access to both tangible and intangible resources at much better terms than do traditional market exchanges (Hite and Hesterly, 2001; Larson, 1992).

When new ventures are founded, their networks are typically identical to the networks of their entrepreneurs, comprising family members, friends, and existing business contacts (Larson and Starr, 1993; Lechner, Dowling, and Welpe, 2006; Starr and MacMillan, 1990). Even though these ties are often a most valuable asset for starting a new business, previous research clearly indicates that the relative importance of these social ties decreases over time

(Hite and Hesterly, 2001; Lechner, Dowling, and Welppe, 2006). As new businesses evolve from start-up to early growth, their resource needs change, thus necessitating the development and adaptation of new ventures' networks (Elfring and Hulsink, 2007; Hite and Hesterly, 2001).

2.1 *Barriers to new ventures' network adaptation*

Developing and adapting their new ventures' networks is not an easy task for entrepreneurs. First of all, new ventures suffer from the liability of newness, resource constraints, and a lack partnership histories; these problems limit their ability to attract new exchange partners (Delmar and Shane, 2004; Milanov and Fernhaber, 2009). Moreover, insights from qualitative studies in the field suggest that change in young ventures' networks is hindered by several inertial tendencies. Based on comparative case-study analysis, Maurer and Ebers (2006) point to the fact that entrepreneurs have difficulties when trying to adapt their networks to the new challenges they face because they are typically locked in prior relations. First, they tend to stick to the cognitive schemes and frames of reference valid in their former professional life, even when confronted with the challenges of developing a new venture, and thus do not have the ability to effectively interact with potential new network partners. Second, entrepreneurs also seem relationally constrained in adapting their new ventures' networks, as obligations and commitments to pre-existing social ties that were helpful in the stage of new venture emergence deters them from cutting these ties and developing new ones.

Although these detailed results have been generated in a specific field, that is, among biotechnology start-ups founded by former scientists, additional evidence indicates that the same barriers may also exist for entrepreneurs in other industries. Specifically, Elfring and Hulsink (2007) provide empirical evidence for the notion that entrepreneurs in the IT industry may also be deterred in their network development because they are cognitively and relationally locked-in. Moreover, a study conducted by Batjargal (2006) shows that, because of relational

constraints imposed by existing network relationships, adapting and developing new ventures' networks is also rather difficult for entrepreneurs in a broad range of industries in Russia.

Based on these observations, we will subsequently develop hypotheses about how specialising and integrating relationship management responsibilities may help entrepreneurs in developing new exchange relationships for their new ventures, dissolve existing ties, and increase the size of the exchange network that they are able to manage.

2.2 *Specialisation and integration of relationship management*

Specialisation and integration are the two basic means of organisation design. Specialisation indicates that individuals within an organisation are assigned to deal with specific tasks (Jones, 2001). As organisational theorists propose, specialisation may be beneficial, as it leads to a greater accumulation of expertise and thus enhances individuals' ability to fulfil the tasks they are assigned to deal with (Burns and Stalker, 1961; Lawrence and Lorsch, 1967a). However, organisation theory also recognizes that specialisation may lead to certain problems, as it fosters the development of different and narrowed mind-sets and perspectives among organisational actors. Thus, specialisation makes it more difficult for individuals and organisational subunits with different specialisations to act in a joint and coordinated way. As a consequence, specialisation may even jeopardize an organisation's ability to effectively cope with its external environment (Lawrence and Lorsch, 1967a; Lawrence and Lorsch, 1967b). To counter this negative effect, organisations that rely on specialisation typically also set up impersonal or personal modes for integration, such as pre-established plans and control systems, cross-functional teams, and regular meetings, which increase the mutual understanding and joint effort of specialised individuals and organisational subunits (Lawrence and Lorsch, 1967a; Van de Ven and Delbecq, 1976).

Based on these general descriptions of the effects of specialisation and integration, we will subsequently develop detailed hypotheses about how applying these two basic means of

organisation design to relationship management responsibilities may foster network adaptation and enhance entrepreneurs' ability to manage a larger network. In doing so, we follow previous research conducted by Maurer and Ebers (2006) as well as Semrau (2012) and refer to specialisation of relationship management responsibilities, when different organisational members are assigned to deal with specific types of network partners, such as outside investors or business partners. Similarly, and alluding to the most widely recognized mode for integration on a team level (Griffin and Hauser, 1992; Kahn and McDonough Iii, 1997; Moenaert et al., 1994), we refer to integration of relationship management, when the new ventures' members involved in network management discuss network-related issues on a regular basis.

2.2.1 Specialisation and integration of relationship management and new tie development

As described above, new ventures are expected to face severe difficulties when trying to develop new exchange ties. Based on this observation, we propose that specialising and integrating the management of external relations may be beneficial for entrepreneurs, as it helps to overcome barriers to new relationship development.

As indicated above, specialising in performing specific tasks leads to a greater accumulation of expertise and enhances individuals' ability to fulfil the specific tasks they are assigned to deal with (Burns and Stalker, 1961; Lawrence and Lorsch, 1967a). Consequently, we expect entrepreneurs assigned to interact with specific types of network partners to develop a deeper understanding of these partners' goals and mind-sets and to develop the skills needed to connect with potential partners relevant for developing a new business (Chunyan, 2005). Being specialised in dealing with (potential) investors, entrepreneurs should, for example, develop greater expertise on what information and data are needed to impress and convince them to enter into an exchange relationship with the new venture than their non-specialised counterparts.

However, following the general rationale that coordinated action requires integration when specialised work roles are applied (Galbraith, 1973), we suggest that establishing specialised relationship management responsibilities may not be sufficient for fostering the development of new exchange relationships. Consider a situation in which an entrepreneur tries to attract a new investor. In such a situation, being specialised in the management of investor relationships may help the entrepreneur to better understand the potential exchange partner's needs and interests, for example, the investor's preference for having a detailed business plan with a forecast of the new venture's financial performance. In order to establish a business plan which meets the potential investor's expectations and requirements, however, the knowledge bases and perspectives of additional members of a new venture may have to be considered. Supporting this line of reasoning, previous research has shown that boundary-spanners' performance in dealing with exchange partners is significantly driven by the support they receive from their organisations (Stan, Landry, and Evans, 2004). Additionally, it has been observed that service-team members perform significantly better in interacting with customers when there is a high level of communication within the team (de Jong, De Ruyter, and Lemmink, 2005; Jong, Ruyter, and Lemmink, 2004).

In line with these observations, and the notion that meeting partners' needs is a prerequisite for establishing new exchange relationships (Larson, 1992; Larson and Starr, 1993), we thus believe that not just specialisation, but specialisation and integration of relationship management responsibilities may help entrepreneurs establish more new exchange relationships for their new ventures. We thus propose:

***H1:** Specialisation and integration of relationship management responsibilities is positively related to the number of new network relationships established.*

2.2.2 *Specialisation and integration of relationship management and the dissolution of ties*

As pointed out by several researchers in the field, considerable time and energy has to be invested to maintain network relationships (Ebers and Grandori, 1997; Witt, 2004), which limits the number of relationships manageable by entrepreneurs at a given time (Batjargal, 2006). This fact implies that whereas establishing new exchange relationships may be necessary for entrepreneurs to further develop their venture, it also entails the risk of overloading the network when previously existing relationships are not dissolved (Elfring and Hulsink, 2007). Dissolving existing network relationships, however, is often not easy for entrepreneurs, as social relations are path dependent, and individuals prefer to interact with others who are well known and with whom they have interacted in the past (Gulati, 1995; Podolny, 1994; Tsai, 2000). Based on this reasoning, we argue that a specialised and integrated management of external ties may also help entrepreneurs to more easily dissolve existing exchange ties.

When specialisation is introduced to a new venture's management of external relations, there will be changes in relationship management responsibilities. Several exchange partners will no longer be managed by their original social contact within the venture but instead by someone who is now officially assigned to manage the specific type of relationship. We thus expect that the felt social obligation to keep up a network tie, which is the major reason for being locked in prior relationships (Coleman, 1990; Gargiulo and Benassi, 2000), becomes less relevant when relationship management is specialised and integrated. Additionally, we expect that introducing specialised and integrated relationship management responsibilities also reduces the probability that a new venture becomes locked into exchange relationships that are established afterwards. Due to the expertise accumulated in repeated interactions with a specific type of exchange partner, specialised relationship managers become better able to objectively assess the value of this type of exchange partner than do their non-specialised counterparts. Furthermore, as described by Ring and Van de Ven (1994), an individual's views on what to expect from exchange relationships changes significantly when acting within clearly defined, specialised roles. In particular, individuals that act within an organisational role tend to evaluate

exchange relationships more carefully in order to avoid negative consequences for their companies (Ring and Van De Ven, 1994). As a result, we expect that specialised relationship managers will get less personally attached to the professional exchange relationships they develop and instead assess their value more strategically, which makes it easier to dissolve exchange relationships that present decreased value for the new venture.

Again, however, we propose that when specialised relationship management responsibilities are put into place, integration is also necessary for fostering the dissolution of existing network relationships. Especially when at least one member of the new venture is still socially involved in a particular network relationship, the decision to dissolve an exchange relationship is not an easy one to make. Consequently, and in line with empirical evidence from research on group-decisions (Moscovici and Zavalloni, 1969), we expect that even specialised relationship managers will hesitate to single-handedly dissolve exchange relationships. Conversely, we expect that dissolving exchange relationships is facilitated when there is not only specialisation but also a corresponding level of integration of relationship management activities, by which network managers may get approval and support for making decisions on tie dissolution. Consequently, we propose:

H2: Specialisation and integration of relationship management responsibilities is positively related to the number of relationships dissolved.

2.2.3 Specialisation and integration of relationship management and network size

As we have outlined above, we expect relationship management responsibilities that are specialised and integrated to increase the number of new ventures' new exchange relationships as well as the number of network relationships that will be dissolved. Depending on the relative magnitude of these two effects, the overall result on network size could be positive (that is, result in an increase in network size), but can also be negative (that is, result in a decrease in the total size of a new venture's network).

Acknowledging that both of these options are possible in general, we propose that the overall effect of specialising and integrating network management activities on the size of a new venture's network will be positive. In doing so, we take into account that entrepreneurs should usually be willing to establish a larger network in order to enlarge the external resource base they may access (Elfring and Hulsink, 2007; Schutjens and Stam, 2003). Based on this notion, we expect entrepreneurs' limited network management capacity to restrict the size of a new venture's network and propose that specialised and integrated relationship management responsibilities will help them to manage more network relationships at the same time.

As explained above, specialising in the management of certain types of external relations should enable a new venture's members to accumulate greater expertise on the needs, preferences, and mind-sets of those types of partners they are assigned to deal with. This expertise, in turn, should enhance network managers' ability to avoid controversies and conflicts within existing exchange partners (Hammer and Champy, 1993; Westerlund, Rajala, and Leminen, 2008). Ultimately, this should help entrepreneurs to manage exchange relationships more effectively and efficiently, thus enabling them to manage more network relationships at once.

However, we do not expect specialisation relationship management alone to increase the total number of exchange relationships manageable at the same time. Meeting exchange partners' needs is not only a prerequisite for initially developing an exchange relationship, but also for maintaining one (Ariño and de la Torre, 1998; Madhok and Tallman, 1998). In view of this fact, and again taking into account that previous research results indicate that boundary spanners' ability to satisfy exchange partners' needs profits from organisational support and internal communication (de Jong, De Ruyter, and Lemmink, 2005; Jong, Ruyter, and Lemmink, 2004; Stan, Landry, and Evans, 2004), we hypothesise that relationship management responsibilities have to be specialised and integrated to foster the ability to manage more exchange relationships at the same time. We thus propose:

H3: Specialisation and integration of relationship management responsibilities is positively related to the size of a new venture's exchange network.

3 Data and Method

To collect the data for our study, we asked institutions organising business-plan competitions and coordinating start-up funds to grant us access to their alumni. Because of privacy concerns, they refused to provide us with contact information, but instead offered to invite their alumni to take part in our research. We therefore developed an online questionnaire that was accessible only with a username and password that our partner institutions directly sent to the founder alumni.

A total of 575 founders accessed and 221 finished our questionnaire, yielding a completion rate of 38.4%. We then selected our sample population according to some of the criteria commonly used in research on new ventures (Vanderwerf and Brush, 1989). Specifically, we only included companies that were independent, that is, not subsidiaries of parent corporations. Second, we restricted our sample with respect to company age. Consistent with other studies in the field, we excluded all firms less than one year of age (Hansen, 1995; Sorenson, Folker, and Brigham, 2008) and companies established more than ten years ago (Covin, Slevin, and Covin, 1990; Lechner, Dowling, and Welpe, 2006), thus retaining a sample with 181 new ventures. We then excluded all ventures consisting of a single person, since specialisation and integration of relationship management responsibilities is only feasible in companies with at least two people. The resulting subset comprised 117 young ventures.

Acknowledging that our sample is one of convenience, we compared it to data from the German Socio-Economic Panel Study (SOEP), a representative household panel survey that is often used for representative research on German entrepreneurs (Caliendo, Fossen, and Kritikos, 2009; Mueller, 2006; Schäfer and Talavera, 2009). Finding a high degree of similarity

between the entrepreneurs within our sample and the self-employed individuals within the SOEP, we are confident that our sample is not seriously biased.

3.1 Measures

As there are no objective data available representing the main exploratory and dependent variables in our study, we relied on tailor-made, self-reported measures. Even though we recognise that this approach has sometimes been questioned (Boyd, Gove, and Hitt, 2005; Podsakoff and Organ, 1986), we are confident that it resulted in valid data in our study. First, previous research gives broad support for the reliability and validity of self-reported measures in the field of entrepreneurship research (Brush and Vanderwerf, 1992; Lechner, Dowling, and Welp, 2006; Peng and Luo, 2000). Second, the main concepts we focus on in our study are concrete attributes, which are perceived and reported more accurately than psychometric properties (Fuchs and Diamantopoulos, 2009). Third, we took several additional steps to further ensure the validity of our data. In particular, a research assistant searched the internet for those ventures that provided their company names when participating in our survey and collected the data provided on firm age, the number of founding team members, and the number of employees. The correlations between the self-reported measures and internet data were all highly significant and ranged from $r = .95$ to $r = .97$. Finally, we also conducted Harman's one-factor test. As no factor emerged that accounts for more than 20% of the variance, common-method bias should not be an issue in our study.

3.1.1 Dependent variables

The dependent variables in our study are all network related. To collect these network data, we first provided our respondents with a definition of the relationships we were interested in. Specifically, we asked our respondents to think about relationships with exchange partners, either organisations or individuals outside the new venture, who provide resources as part of a

relationship that goes beyond a simple market exchange. To give our respondents additional information about the focus of our research, we followed Zhao and Aram (1995) and specifically asked for three different types of partners. In particular, we classified partners according to the resources they offer and asked for partners providing: 1) financial capital; 2) other physical resources, such as facilities, equipment, or manpower; and 3) knowledge and information.

To capture *network size*, we constructed three items corresponding to the three categories and asked our respondents to indicate how many network partners they currently have in each of these three categories. We then generated a measure for network size by adding the three item scores. We generated a measure for the number of *new network partners* by asking how many new relationships providing financial capital, physical resources and knowledge and information they have newly established since founding their venture and then adding the three item scores. Finally, we generated and aggregated three items asking how many network *relationships have been actively dissolved* by new ventures' members since the business was founded.

3.1.2 *Independent variables*

To measure specialisation and integration of network management responsibilities, we relied on two items developed by Semrau (2012) that have been shown to reliably and validly capture both concepts in an entrepreneurial setting. Specifically, we asked our respondents to indicate on a 7-point scale, ranging from “1–strongly disagree” to “7–strongly agree,” whether a) specific company members are responsible for the relationships with specific groups of exchange partners (such as outside investors or business partners), and whether b) network managers meet on a regular basis to exchange information about the network relationships they deal with.

3.1.3 *Controls*

In addition, we included several control variables in our study that might affect the size of a new venture's network, the number of new exchange relationships established, or the number of relationships dissolved by the new venture.

As the size of the network that can be managed by a new venture is affected by the number of people within the venture (Batjargal, 2006), we controlled for both the number of founding team members and the number of people employed by the new business. Because younger firms typically have less of an organisational reputation (Hite and Hesterly, 2001), have a smaller resource base (Stam and Elfring, 2008), and may therefore find it more difficult to attract new partners, we also controlled for firm age.

Recognizing that the development of a new firm's network is at least in part the result of a strategic decision (Koka, Madhavan, and Prescott, 2006), we additionally controlled for two aspects of network development motivation. In the wake of recent research on the development of entrepreneurial networks (Batjargal, 2006), we controlled for the firms' needs for external resources. In addition, we controlled for entrepreneurs' attitudes towards networking (Neergaard and Madsen, 2004).

To take into account that companies operating in industries with different technological environments may differ with respect to their network size as well as changes in their networks over time (Rosenkopf and Schilling, 2007), we also included a dummy variable indicating whether a young venture operates in a high-technology (such as life sciences, IT and communication, engines, and motor vehicles) or a relatively low-technology industry (such as construction, food, financial services, and education).

Finally, when analysing the impact of our independent variables on the number of new relationships established and the number of relationships dissolved, we included the number of ties that already existed when the new venture was founded. We did so for two reasons: First, as the value of initially held relationships tends to decrease in the course of corporate

development (Hite and Hesterly, 2001), the number of relationships dissolved will probably be positively affected by the number of network partners a new venture had at the time it was founded. Second, as described above in detail, and indicated by Batjargal (2006), the number of pre-existing partners may have a negative effect on the number of new relationships established by a new venture. With the number of pre-existing relationships that are still active being a subset of the new venture's actual network, however, we decided not to include this control variable when addressing network size as a dependent variable.

3.2 Analytical Approach

We tested our hypotheses by means of moderated regression analysis (Jaccard, Teitel, and Turrisi, 2003). As recommended by Aiken and West (1991) and Frazier, Tix and Barron (2004), we mean-centred and standardised our control variables as well as our independent variables to account for different measurement scales. We formed the interaction term by multiplying our measures for specialisation and integration.

Computing our regression, we first entered the control variables, then included our independent variables in the second step, and finally tested our hypotheses by entering the interaction terms in the third. For all of the models, we computed several regression diagnostics and checked the variance inflation factors (VIF) to exclude multicollinearity.

4 Results

Descriptive statistics and correlations are provided in Table 1. The average venture in our study has been in business for four years, was founded by two people, and has eight employees. On average, the new ventures' networks in our sample comprised five exchange relationships, out of which almost four had been developed after the new venture was founded, and one exchange relationship had been dissolved in the course of the new ventures' development.

Insert Table 1 about here

As also shown in Table 1, some of the variables in our study turned out to be significantly interrelated. These include the total number of partners and the number of new relationships established ($r = .842, p < .05$), as well as the number of new partners and the number of relationships dissolved ($r = .503, p < .05$). The independent variables are also significantly positively correlated ($r = .353, p < .05$), indicating that young ventures realizing specialisation in the management of their external relations also tend to integrate their relationship management activities.

Table 2 shows the results of our regression analysis. With respect to our control variables, regression results reveal that the two variables capturing network motivation have a positive significant effect on our dependent variables. Additionally, our results show that network size and the number of new network relationships established are also affected by whether a new venture is operating in a high- or a low-tech industry.

Insert Table 2 about here

When including our measures for specialisation and integration of relationship management responsibilities into the regressions, we observe that both variables alone have, with exception of the marginal significant positive effect of specialisation on network size ($\beta = 1.049, p < .10$), no significant impact on our dependent variables.

In contrast, entering the interaction terms—which represent the degree to which relationship management responsibilities are specialised and integrated—leads to a different picture. Specifically, regression results show a significant positive relationship between the interaction term and the number of new network relationships developed ($\beta = 1.195, p < .05$, Model 3), and indicate that including the interaction term into the regression significantly

increases the amount of variance explained ($\Delta R^2 = .038, p < .05$, Model 3). Our first hypothesis is thus confirmed by our data.

Similarly, our second hypothesis stating a positive relationship between specialisation and integration of relationship management responsibilities and the number of network relationships dissolved is also confirmed. In fact, Model 6 reveals that the interaction term representing specialisation and integration is positively related to the number of relationships dissolved ($\beta = .526, p < .05$) and that including the interaction term into the regression significantly increases the amount of variance explained ($\Delta R^2 = .039, p < .05$).

Finally, our third hypothesis stating that the overall effect of specialised and integrated relationship management responsibilities on network size should be positive is also supported. In particular, Model 9 shows a significant positive association between the interaction of specialisation and integration and the size of a new venture's exchange network ($\beta = 1.411, p < .05$), as well as a significant increase in ΔR^2 that results from entering the interaction term into the equation ($\Delta R^2 = .042, p < .05$).

5 Discussion

The aim of this study was to shed more light on how entrepreneurs may facilitate the adaptation and development of their new ventures' networks, thus extending our knowledge of a still under-investigated topic (Hite, 2005; Stuart and Sorensen, 2007).

Based on the widely recognized notion that entrepreneurs have to adapt their new ventures' networks in order to meet the demands of evolving resource needs in the course of their venture's development (Hite and Hesterly, 2001; Lechner, Dowling, and Welpe, 2006), we developed and tested three hypotheses about how network adaptation may be facilitated and network management capacity may be increased when specialised and integrated relationship management responsibilities are put into place. Confirming our theoretical reasoning, our empirical analyses showed that assigning the members of a new venture to interact with specific

types of network partners, and—at the same time—coordinating network management activities by means of integration, enables entrepreneurs to: a) establish more new network relationships, b) more easily dissolve existing exchange ties, and c) maintain a larger exchange network in total.

With these insights, our study complements and extends previous research on the effects of specialising and integrating relationship management responsibilities. By comparatively analysing the cases of new ventures in the biotech industry, Maurer and Ebers (2006) concluded that specialising and integrating network management activities may be a crucial success factor for new ventures in biotech. In fact, the authors observed that entrepreneurs setting up specialised and integrated relationship management roles were better able to overcome inertial tendencies hindering the development of their new ventures' networks and thus realise superior performance in terms of patenting rate and growth. This observation was confirmed by Semrau (2012), who showed that new ventures' financial performance in different industry settings may indeed profit from specialised and integrated relationship management responsibilities, as it enables new ventures to acquire more information and knowledge, as well as other needed resources through their network ties.

In view of these previous findings, our study extends our knowledge of how applying the basic means of organisation design may have positive implications. Specifically, our results suggest that the positive effect of specialised and integrated relationship management responsibilities on new ventures' resource access and performance may be based on the fact that applying these means improves entrepreneurs' capabilities to develop and adjust the composition of their new ventures' networks according to evolving resource needs. This outcome in turn may—in line with our theoretical reasoning and the insights generated in the field of organisation design—be based on the fact that specialising and integrating relationship management responsibilities helps entrepreneurs to better adapt to the needs, perspectives, and

mind-sets of potential and existing exchange partners, dissolve relations that are no longer valuable, and thus enable them to manage their networks more effectively and efficiently.

6 Limitations and Conclusion

Before concluding, we have to note some additional limitations of our study. Besides the limitation that may potentially come with relying on self-reports, which we already discussed in the methods section, we have to acknowledge limitations that may result from the cross-sectional design of our study. Because of this design, we cannot rule out the possibility that a potential recall bias may have affected our results. In particular, there is a possibility that not all our respondents were able to correctly recall the number of network relationships that they established or dissolved after the new venture was founded. Additionally, the cross-sectional design of our study may raise a causality issue. One could reverse the interpretation of the pertinent results and say that an increasing degree of network change and a greater number of network relationships is not a consequence of specialised and integrated relationship management responsibilities, but its cause. However, this reverse interpretation would not necessarily make our arguments less substantive. Even when young companies apply the basic means of organisation design to their network management as a reaction to a growing network with a more rapidly changing network composition, this result would still imply that doing so seems to be a proper remedy for dealing with this challenge. Moreover, the design of our study prevents us from controlling for potentially unobserved heterogeneity or survivor bias. Thus, we cannot rule out the possibility that certain skills or capabilities may be required for realising specialisation and integration of relationship management responsibilities. Acknowledging these limitations, we encourage further research to shed more light on this question by applying a longitudinal research design.

Considering that our research focuses on the link between network management and the structural characteristics of new ventures' networks, we also want to encourage further research

to shed more light on the relationship between the basic means of organisation design and other characteristics of new ventures' networks. Specifically, we consider it valuable to address the potential consequences of specialisation and integration of relationship management responsibilities on the different dimensions of tie strength (Granovetter, 1973), to further extend our knowledge of how applying the fundamental premises of organisation design to the management of external relations may affect entrepreneurs' effectiveness and efficiency in developing and managing their networks.

Even when considering these limitations and open questions, we think that the present study makes several contributions. First of all, it provides theoretical arguments and empirical evidence about how applying the basic means of organisation design to the management of external relations affects change in new ventures' network composition and their network management capacity. Our study thus contributes to our knowledge of new ventures' network change and development, a topic that is still under-developed (Hite, 2005; Stuart and Sorensen, 2007). Additionally, our study points to the behavioural foundations of a new venture's network characteristics, which have so far been rarely addressed by empirical research (Baron, 2007; O'Donnel et al., 2001). Considering the latter point, the insights generated in the study at hand certainly also bear practical implications. They point to the fact that entrepreneurs should try to introduce specialised and integrated relationship management responsibilities if they need to more easily and successfully develop their new venture's network and increase network management capacity.

References

- Aiken, L. S., & West, S. G. (1991) *Multiple regression: Testing and interpreting interactions*, London, SAGE.
- Ariño, A., & de la Torre, J. (1998) Learning from failure: Towards an evolutionary model of collaborative ventures, *Organization Science*, Vol. 9, No. 3, pp.306-325.
- Baron, R. A. (2007) Behavioral and cognitive factors in entrepreneurship: Entrepreneurs as the active element in new venture creation, *Strategic Entrepreneurship Journal*, Vol. 1, No. 1-2, pp.167-182.
- Batjargal, B. (2006) The dynamics of entrepreneurs' networks in a transitioning economy: The case of russia, *Entrepreneurship & Regional Development*, Vol. 18, No. 4, pp.305-320.
- Boyd, B. K., Gove, S., & Hitt, M. A. (2005) Consequences of measurement problems in strategic management research: The case of amihud and lev, *Strategic Management Journal*, Vol. 26, No. 4, pp.367-375.
- Brush, C. G., & Vanderwerf, P. A. (1992) A comparison of methods and sources for obtaining estimates of new venture performance, *Journal of Business Venturing*, Vol. 7, No. 2, pp.157-171.
- Burns, T., & Stalker, G. M. (1961) *Management of innovation*, London, Routledge Kegan & Paul.
- Caliendo, M., Fossen, F., & Kritikos, A. (2009) Risk attitudes of nascent entrepreneurs—new evidence from an experimentally validated survey, *Small Business Economics*, Vol. 32, No. 2, pp.153-167.
- Chunyan, J. (2005) The impact of entrepreneur's social capital on knowledge transfer in chinese high-tech firms: The mediating effects of absorptive capacity and guanxi development, *International Journal of Entrepreneurship & Innovation Management*, Vol. 5, No. 3/4, pp.269-283.
- Coleman, J. S. (1990) Social capital, In J. S. Coleman (Ed.), *Foundations of social theory*, 2. Auflage ed., 300-321, Cambridge, Belknap Press.
- Covin, J. G., Slevin, D. P., & Covin, T. J. (1990) Content and performance of growth-seeking strategies: A comparison of small firms in high-and low-technology industries, *Journal of Business Venturing*, Vol. 5, No. 6, pp.391-402.
- de Jong, A., De Ruyter, K., & Lemmink, J. (2005) Service climate in self-managing teams: Mapping the linkage of team member perceptions and service performance outcomes in a business-to-business setting, *Journal of Management Studies*, Vol. 42, No. 8, pp.1593-1620.

- Delmar, F., & Shane, S. (2004) Legitimizing first: Organizing activities and the survival of new ventures, *Journal of Business Venturing*, Vol. 19, No. 3, pp.385-410.
- Ebers, M., & Grandori, A. (1997) The forms, costs, and development dynamics of inter-organizational networking, In M. Ebers (Ed.), *The formation of inter-organizational networks*, 265-286, Oxford, Oxford University Press.
- Elfring, T., & Hulsink, W. (2007) Networking by entrepreneurs: Patterns of tie formation in emerging organizations, *Organization Studies*, Vol. 28, No. 12, pp.1849-1872.
- Frazier, P. A., Tix, A. P., & Barron, K. E. (2004) Testing moderator and mediator effects in counseling psychology research, *Journal of Counseling Psychology*, Vol. 51, No. 1, pp.115-134.
- Fuchs, C., & Diamantopoulos, A. (2009) Using single-item measures for construct measurement in management research, *Die Betriebswirtschaft*, Vol. 69, No., pp.195-210.
- Galbraith, J. R. (1973) *Designing complex organizations*, Reading, MA, Addison-Wesley.
- Gargiulo, M., & Benassi, M. (2000) Trapped in your own net? Network cohesion, structural holes, and the adaptations of social capital, *Organization Science*, Vol. 11, No. 2, pp.183-196.
- Granovetter, M. S. (1973) The strength of weak ties, *The American Journal of Sociology*, Vol. 78, No. 6, pp.1360-1380.
- Griffin, A., & Hauser, J. R. (1992) Patterns of communication among marketing, engineering and manufacturing--a comparison between two new product teams, *Management Science*, Vol. 38, No. 3, pp.360-373.
- Gulati, R. (1995) Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances, *Academy of Management Journal*, Vol. 38, No. 1, pp.85-112.
- Hammer, M., & Champy, J. (1993) *Reengineering the cooperation: A manifesto for business revolution* (3rd ed.), New York, Harper Collings.
- Hansen, E. L. (1995) Entrepreneurial networks and new organization growth, *Entrepreneurship: Theory & Practice*, Vol. 19, No. 4, pp.7-19.
- Hite, J. M. (2005) Evolutionary processes and paths of relationally embedded network ties in emerging entrepreneurial firms, *Entrepreneurship Theory & Practice*, Vol. 29, No. 1, pp.113-144.
- Hite, J. M., & Hesterly, W. S. (2001) The evolution of firm networks: From emergence to early growth of the firm, *Strategic Management Journal*, Vol. 22, No. 3, pp.275-286.
- Hoang, H., & Antoncic, B. (2003) Network-based research in entrepreneurship: A critical review, *Journal of Business Venturing*, Vol. 18, No. 2, pp.165-187.

- Jaccard, J., Teitel, L., & Turrisi, R. (2003) *Interaction effects in multiple regression* (2nd ed.), London, SAGE.
- Jones, G. R. (2001) *Organizational theory: Texts and cases* (3rd ed.), Upper Saddle River, Prentice Hall.
- Jong, A. d., Ruyter, K. d., & Lemmink, J. (2004) Antecedents and consequences of the service climate in boundary-spanning self-managing service teams, *Journal of Marketing*, Vol. 68, No. 2, pp.18-35.
- Kahn, K. B., & McDonough Iii, E. F. (1997) An empirical study of the relationships among co-location, integration, performance, and satisfaction, *Journal of Product Innovation Management*, Vol. 14, No. 3, pp.161-178.
- Koka, B. R., Madhavan, R., & Prescott, J. E. (2006) The evolution of interfirm networks: Environmental effects on patterns of network change, *Academy of Management Review*, Vol. 31, No. 3, pp.721-737.
- Larson, A. (1992) Network dyads in entrepreneurial settings: A study of the governance of exchange relationships, *Administrative Science Quarterly*, Vol. 37, No. 1, pp.76-104.
- Larson, A., & Starr, J. A. (1993) A network model of organization formation, *Entrepreneurship: Theory & Practice*, Vol. 17, No. 2, pp.5-15.
- Lawrence, P. R., & Lorsch, J. W. (1967a) Differentiation and integration in complex organizations, *Administrative Science Quarterly*, Vol. 12, No. 1, pp.1-47.
- Lawrence, P. R., & Lorsch, J. W. (1967b) *Organization and environment*, Cambridge, MA, Harvard University Press.
- Lechner, C., Dowling, M., & Welpe, I. (2006) Firm networks and firm development: The role of the relational mix, *Journal of Business Venturing*, Vol. 21, No. 4, pp.514-540.
- Lee, C., Lee, K., & Pennings, J. M. (2001) Internal capabilities, external networks, and performance: A study on technology-based ventures, *Strategic Management Journal*, Vol. 22, No. 6-7, pp.615-640.
- Madhok, A., & Tallman, S. B. (1998) Resources, transactions and rents: Managing value through interfirm collaborative relationships, *Organization Science*, Vol. 9, No. 3, pp.326-339.
- Maurer, I., & Ebers, M. (2006) Dynamics of social capital and their performance implications: Lessons from biotechnology start-ups, *Administrative Science Quarterly*, Vol. 51, No. 2, pp.262-292.
- Milanov, H., & Fernhaber, S. A. (2009) The impact of early imprinting on the evolution of new venture networks, *Journal of Business Venturing*, Vol. 24, No. 1, pp.46-61.

- Moenaert, R. K., Souder, W. E., De Meyer, A., & Deschoolmeester, D. (1994) R&d-marketing integration mechanisms, communication flows, and innovation success, *Journal of Product Innovation Management*, Vol. 11, No. 1, pp.31-45.
- Moscovici, S., & Zavalloni, M. (1969) The group as a polarizer of attitudes, *Journal of Personality and Social Psychology*, Vol. 12, No. 2, pp.125-135.
- Mueller, P. (2006) Entrepreneurship in the region: Breeding ground for nascent entrepreneurs?, *Small Business Economics*, Vol. 27, No. 1, pp.41-58.
- Neergaard, H., & Madsen, H. (2004) Knowledge intensive entrepreneurship in a social capital perspective, *Journal of Enterprising Culture*, Vol. 12, No. 2, pp.105-125.
- O'Donnel, A., Gilmore, A., Cummins, D., & Carson, D. (2001) The network construct in entrepreneurship research: A review and critique, *Management Decision*, Vol. 39, No. 9, pp.749-760.
- Peng, M. W., & Luo, Y. (2000) Managerial ties and firm performance in a transition economy: The nature of a micro-macro link, *Academy of Management Journal*, Vol. 43, No. 3, pp.486-501.
- Podolny, J. M. (1994) Market uncertainty and the social character of economic exchange, *Administrative Science Quarterly*, Vol. 39, No. 3, pp.458-483.
- Podsakoff, P. M., & Organ, D. W. (1986) Self-reports in organizational research: Problems and prospects, *Journal of Management*, Vol. 12, No. 4, pp.531-544.
- Ring, P. S., & Van De Ven, A. H. (1994) Developmental processes of cooperative interorganizational relationships, *Academy of Management Review*, Vol. 19, No. 1, pp.90-118.
- Rosenkopf, L., & Schilling, M. A. (2007) Comparing alliance network structure across industries: Observations and explanations, *Strategic Entrepreneurship Journal*, Vol. 1, No. 3-4, pp.191-209.
- Schäfer, D., & Talavera, O. (2009) Small business survival and inheritance: Evidence from germany, *Small Business Economics*, Vol. 32, No. 1, pp.95-109.
- Schutjens, V., & Stam, E. (2003) The evolution and nature of young firm networks: A longitudinal perspective, *Small Business Economics*, Vol. 21, No. 2, pp.115-134.
- Semrau, T. (2012) Specialization and integration of relationship management responsibilities, access to network resources, and new venture growth: A mediated moderation analysis, *SSRN eLibrary*.

- Sorenson, R. L., Folker, C. A., & Brigham, K. H. (2008) The collaborative network orientation: Achieving business success through collaborative relationships, *Entrepreneurship: Theory & Practice*, Vol. 32, No. 4, pp.615-634.
- Stam, W., & Elfring, T. (2008) Entrepreneurial orientation and new venture performance: The moderation role of intra- and extraindustry social capital, *Academy of Management Journal*, Vol. 51, No. 1, pp.97-111.
- Stan, S., Landry, T. D., & Evans, K. R. (2004) Boundary spanners' satisfaction with organizational support services: An internal communications perspective, *Journal of Relationship Marketing*, Vol. 3, No. 2/3, pp.43-63.
- Starr, J. A., & MacMillan, I. C. (1990) Resource cooptation via social contracting: Resource acquisition strategies for new ventures, *Strategic Management Journal*, Vol. 11, No. 4, pp.79-92.
- Street, C. T., & Cameron, A.-F. (2007) External relationships and the small business: A review of small business alliance and network research, *Journal of Small Business Management*, Vol. 45, No. 2, pp.239-266.
- Stuart, T. E., & Sorensen, O. (2007) Strategic networks and entrepreneurial ventures, *Strategic Entrepreneurship Journal*, Vol. 1, No., pp.211-227.
- Tsai, W. (2000) Social capital, strategic relatedness and the formation of intraorganizational linkages, *Strategic Management Journal*, Vol. 21, No. 9, pp.925-939.
- Van de Ven, A. H., & Delbecq, A. L. (1976) Determinants of coordination modes within organizations, *American Sociological Review*, Vol. 41, No. 2, pp.322-338.
- Vanderwerf, P. A., & Brush, C. G. (1989) Achieving empirical progress in an undefined field, *Entrepreneurship: Theory & Practice*, Vol. 14, No. 2, pp.45-58.
- Westerlund, M., Rajala, R., & Leminen, S. (2008) Sme business models in global competition: A network perspective, *International Journal of Globalisation and Small Business*, Vol. 2, No. 3, pp.342-358.
- Witt, P. (2004) Entrepreneurs' networks and the success of start-ups, *Entrepreneurship & Regional Development*, Vol. 16, No. 5, pp.391-412.
- Zhao, L., & Aram, J. D. (1995) Networking and growth of young technology-intensive ventures in china, *Journal of Business Venturing*, Vol. 10, No. 5, pp.349-370.

Table 1 Means, Standard Deviations and Correlations

N= 117	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Network Size	4.75	6.23	1.000	.842*	.444*	.264*	.231*	-.019	.019	.000	.251*	.279*	-.162	.461*
2. New Relationships	3.62	5.55		1.000	.503*	.164	.174	.023	-.034	.016	.219*	.260*	-.178	-0.90
3. Relationships dissolved	1.10	2.40			1.000	.012	-.053	-.021	-.073	.004	.078	.229*	-.046	-.008
4. Specialisation	4.21	2.08				1.000	.353*	.008	.242*	.196*	.259*	.167	-.055	.217*
5. Integration	3.28	2.29					1.000	-.199*	.183*	.005	.471*	.124	-.055	.141
6. Firm Age	4.15	2.77						1.000	-.163	.163	-.261*	-.219*	.197*	-.072
7. Number of Founders	2.19	1.10							1.000	.173	.230*	.212*	.106	.091
8. Number of Employees	7.59	22.48								1.000	.047	-.044	.108	-.025
9. Attitude Networking	5.07	2.00									1.000	.342*	.036	.104
10. Resource Needs	3.25	1.53										1.000	-.046	.088
11. High-Tech Industry	.61	.49											1.000	-.006
12. Pre-existing Relationships	1.12	3.37												1.000

* p < .05

Table 2 Results of Hierarchical Regression Analyses

<i>N</i> = 117	New Relationships			Relationships Dissolved			Network Size		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	3.988** (1.045)	3.973** (1.048)	3.493** (1.051)	1.127* (.476)	1.159** (.481)	.948+□ (.517)	5.035** (1.158)	4.959** (1.146)	4.350** (1.149)
Firm Age	.288 (.193)	.278 (.195)	.305 (.191)	.017 (.088)	.011 (.089)	.023 (.088)	.260 (.247)	.234 (.216)	.268 (.212)
Number of Employees	.141 (.503)	.066 (.510)	.052 (.501)	.087 (.229)	.079 (.234)	.073 (.230)	.050 (.567)	-.096 (0.566)	-.106 (.554)
Number of Founders	-.465 (.533)	-.603 (.541)	-.592 (.530)	-.321 (.243)	-.306 (.248)	-.301 (.244)	-.275 (.600)	-.531 (.601)	-.521 (.588)
Attitude Networking	1.168* (.536)	.816 (.594)	1.076+ (.594)	.065 (.244)	.161 (.272)	.276 (.273)	1.352* (.603)	.814 (.660)	1.122+ (.658)
Resource Needs	1.317* (.528)	1.320* (.531)	1.355* (.521)	.607* (.240)	.589* (.244)	.604* (.240)	1.433* (.595)	1.398* (0.590)	1.437* (.578)
High-Technology Industry	-2.241* (1.028)	-2.039+ (1.035)	-2.064* (1.015)	-.143 (.468)	-.169 (.475)	-.180 (.467)	-2.265+ (1.158)	-1.920+ (1.150)	-1.955+ (1.125)
Pre-existing Relationships	-.190 (.146)	-.234 (.149)	-.261+□ (.147)	-.014 (.066)	-.009 (.068)	-.021+ (.067)			
Specialisation		.529 (.559)	.257 (.562)		.027 (.257)	-.093 (.258)		1.049+ (.612)	.705 (.615)
Integration		.545 (.583)	.862 (.589)		-.255 (.267)	-.086 (.271)		.685 (.647)	1.054 (.651)
Specialisation *Integration			1.195* (.529)			.526* (.243)			1.411* (.130)
<i>R</i> ²	.161	.179	.217	.071	.077	.116	.145	.187	.229
<i>ΔR</i> ²	.161**	.018	.038*	.071	.006	.039*	.145*	.041+	.042*
<i>adjusted R</i> ²	.107	.110	.143	.012	.000	.033	.099	.127	.164

Standard errors in parentheses; + *p* < .10; * *p* < .05; ** *p* < .01