Networks and Strategic Options for Innovative Performance in KBEs

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Abstract
This paper explores patterns of network participation and usage by young knowledge-intensive small and medium sized enterprises (SMEs) that exhibit innovative performance. Despite the wealth of literature on industry network activity, demonstrated connections between network participation and firm growth are relatively rare, especially for SMEs. To begin filling this gap, this paper seeks to find distinct trends and options in network usage exhibited by the most innovative knowledge-intensive SMEs. The paper’s thesis is based on data from a survey of 4,004 new European businesses. The analysis demonstrates a disproportionate use by the firms in question of technology, licensing, and R&D partnerships for the purposes of developing new products, contacting customers, and finding distribution channels. These preliminary findings differed from results that included non-technology based firms and firms that have not introduced new products, implying that there are specific network activities that distinctively assist newly-established knowledge intensive companies in functions related to bringing new products to market.
1. Introduction

With developed countries suffering from stagnant growth, increased attention has been turned to small businesses and start-ups to provide innovation and jobs. Over the past few decades, strong linkages have been shown between high-tech firms and network activity (Hagedoorn 2000). Moreover, significant research has gone to show that smaller firms have incentives to participate in networks to improve their innovative capacity. SMEs are frequently recognized as engines for “open innovation,” and high-growth SMEs are generally shown to have characteristics of innovation, market linkages, and networks (OECD 2002, 47-52; Zeng et al. 2010), leading to a focus on use of networks to encourage SME growth. Even more specifically relating to technology-based firms, Tether (2002) found that firms who perform at a higher level innovation were more likely to participate in collaborative agreements. Still, there has been no consistent, direct link between network participation and growth (Clifton et al. 2010). The question remains: which specific network activities are the catalysts toward real growth for technology-based SMEs? This paper posits that small, knowledge-based firms successfully introducing new products participate more often than average in R&D agreements, technical cooperation, and licensing agreements in order to accomplish stated goals related to researching and developing new products and securing distribution channels for these new goods.

While it is difficult to determine causal direction between network participation and introduction of innovations (Tether 2002, 954), it is possible to correlate between firms’ stated needs and purposes in participating in these networks, and the degree to which they participate in the types of arrangements that tend to be used disproportionately by successfully innovating firms. Much of the research on SMEs and networks has focused on correlations between firms’
broad needs and incentives, and network participation. In order to determine the place that networks hold in SMEs’ overall growth strategy, this paper respectively correlates firms’ stated uses for networks and competitive priorities, looking for effects on participation in the networks that are used more by firms introducing new products.

2. Literature Review

2.1 Networks and Their Uses

Collaborative networks have been shown by numerous studies to provide mutually beneficial relationships for those involved. Many types of relationships fall under the umbrella of “network;” participation in networks is simply the informal or formal partnership between two or more firms to share information or resources. There are a number of motivations for businesses of all kinds to engage in these collaborative arrangements, including cost sharing, benefitting from the skills of a partner, and access to investment or knowledge of new opportunities (Vonortas and Zirulia 2010). For SMEs, which often suffer from limited resources for research, funding, or market access compared to their larger partners, networks can serve as a way to increase core competencies in innovation and take on more risk by partnering with complementary firms (Diez 2002, Liefner et al. 2006). It has been noted by Brunetto and Farr-Wharton (2007) increased levels of trust will lead to higher levels of network participation – ranging from attending meetings to hear about new opportunities, all the way to joint ventures. But they concluded that real benefits do not accrue until a high level of trust and commitment is reached, motivating a firm to engage in more official types agreements, meaning that it may be harder to draw connections between informal network types and growth.
Overall, conclusions have been mixed when the studies turn to relationships between firm size and network participation. While these networks have been shown to be mutually beneficial regardless of firm size, the motivations for participation by small and medium enterprises (SMEs) may be different from that of large firms. These differences become even more common when technology-based firms are concerned. Just like relationships between people, these network relationships can be motivated by a number of factors.

For technology-based firms in general, these motives have been summarized by Vonortas and Zirulia (2010) as: Access to product and financial markets, cost-sharing in large investments, access to partner firm’s skills, resources, technologies, and research synergies, benefit from more rapid diffusion of assets and return on investment, benefit from economies of scale, discovering and making use of new investment options, and defeating competition by co-opting it. Other factors found to have a positive relationship with participation in networks are size, previous experience in networks, and how knowledge-intensive a firm is (Vonortas and Zirulia 2010). But when the scope of these studies is narrowed to SMEs only, the positive relationship with size is not as strong. High-tech SMEs, especially those who introduce new products, participate in networks more overall than other SMEs (Tether 2002). Simply put, it has been shown that it is hard for firms to innovate on their own, which makes successful innovation and growth incredibly dependent upon optimal usage of networks (De Jong and Freel 2010).

2.2 SMEs, Networks, and Growth

The OECD (2002) determined that the main characteristics of high-growth SMEs were: innovation, market and technology linkages, organization and management, teamwork, and
networking. This paper is mainly concerned with the first and last growth characteristics: how are innovation and networking used in combination by technology-based SMEs in order to achieve success? There has been a plethora of recent studies on SMEs’ usage of networks, and the correlation between their participation and their success in bringing new products to market, or “innovation performance.”

Inter-firm cooperative networks are the type most strongly correlated with innovation performance for SMEs (Zeng et al 2010; Cooke et al 2000; Diez 2002). This includes both horizontal and vertical arrangements, but it has been shown that for firms of all sizes, much of the networking activity at the highest levels of innovation happens through “vertical cooperation” rather than horizontal (Whitley 2002). Working with suppliers on innovations allows firms to reduce risk, enhance quality, adapt the final product to market, and sometimes control cost (Chung and Kim 2003, Nieto and Santamaría 2007). Supplier relationships are especially valuable when developing a highly specialized product (Tether 2002). Working with customer networks allows firms to ensure that they are producing an innovation that is matched to their market, which is especially important when introducing a particularly novel product (Kaminski et al 2008, Fischer and Varga 2002, Tether 2002). Tether noted, however, that a firm’s small size may cause it to avoid relationships where they lose autonomy over their new good, and some suppliers may hold this threat (2002). This has potential to lead to a potential bias in SMEs to rely heavily on consumer networks.

In general inter-firm relationships, firms of all sizes are found to trust partners with complementary rather than matching competencies, although there must be at least some similarities in order for absorption of knowledge to occur (Nieto and Santamaría 2007). Mowery found an inverted-U relationship between the degree of technological overlap between
two firms and the likelihood of their forming an alliance (1998). Because smaller firms will generally have more concentrated competencies, it can be expected that they will seek firms with more complementarity in order to augment their abilities, rather than finding partners similar to them.

Intermediate organizations such as training and financing organizations, venture capitalists, and other technology transferring actors are the second most correlated to SMEs’ innovative performance (Zeng 2010, Coke et al 2000, Doloreaux 2004). Financing is extremely important for high-tech SMEs especially, but it is unclear through which type of networks it tends to be secured. Technology transfers could come through licensing agreements or technical cooperation, so this paper anticipates seeing a correlation between these networks and successful innovation.

Finally, research organizations have been shown to have a positive and significant correlative relationship with SMEs’ innovative performance, but to a lesser degree than either inter-firm or intermediary institutions (Zeng 2010, Cooke et al 2000, Doloreaux 2004). Collaboration with research institutions is generally used for primary research and R&D. It seems to assist with bringing a product through the primary phase of research up to the point of being patentable, but it does not necessarily assist with the ability to bring this product to market (Zeng et al, 2010). While it seems to be natural for a high-tech SME to prioritize this sort of partnership, it could be that it is duplicative to its original competencies. Another explanation is that smaller firms have difficulty working with large research organizations such as Universities, because of their less standardized systems and methods for innovation (Tether 2002, 956).
2.3 Uses of Networks Specific to SMEs

Fischer and Varga (2002) find that SMEs primarily use networks to tap into markets and discover business opportunities that they would not have otherwise had, as well as using them to share risk and cost (2002). This would indicate a focus on networks as an agent not just for new research, but for moving new inventions to market. This identifies networks as a specific growth tool. But do high-tech SMEs use them for specific purposes that are different from other firms, in order to achieve this growth?

Although one of the motivations for firm to enter into network agreements is to co-opt competition, it is seen that newer firms (which are often smaller firms as well) are less likely to participate when in highly competitive industries, due to lack of trust. When looking at new firms, Colombo et al (2006) found less frequent collaborations in highly competitive sectors, while Eisenhardt and Shooven (1996) found that a higher number of competitors in a sector actually increased partnerships or alliances, perhaps for survival purposes. Tether (2002, 953) notes that in a competitive market, firms will experience different benefits than in a non-competitive market. Namely, firms are expected to come together in a competitive market to define standards, exploit each other’s strengths and weaknesses for mutual gain, and to fix common problems. However, there is little in the literature that suggests a connection between coopting competition and achieving higher levels of growth.

Much of the literature on high-tech SMEs specifically stresses the importance of R&D collaboration, both for the obvious reason that high-tech SMEs usually require frequent innovative discoveries for continued growth, and also because the very nature of R&D activities and funding encourages a joint effort between smaller firms (Gilsing et al., 2008; De Jong and Freel, 2010). Collaborating these results, Tether (2002, 956) found that an increased level of
R&D was positively correlated with cooperative agreements. This focus on networks as a way for smaller business to increase their R&D activities undoubtedly has merit, but begs the question of whether R&D activities have a linear relationship with growth. Nunes et al. (2011) takes on this question, concluding that there is a U-shaped relationship with R&D levels for high-tech SMEs. High-intensity R&D actually slows or restricts growth for non-high-tech SMEs, but contributes to growth for high-tech SMEs if participated in at a high level. At a low level, this high-intensity R&D will actually slow growth.

![Figure 1: Demonstration of u-shaped relationship between R&D activity and growth for high-tech SMEs (Nunes, 2011).](image)

This paper hypothesizes that high-tech SMEs without newly introduced products will have participated in R&D agreements less often than the group of firms with better innovative performance. That is to say, there will be a positive correlation between high-tech SME growth and networks that fulfill a function of R&D collaboration. Of course, R&D may not be the only
important activity that is used more by successfully growing high-tech SMEs, which will be discussed later.

Related to the intensity of the need for R&D for high-tech SMEs is the need for financing. Tether found that those firms who stated they had difficulty with financing were both higher in innovation level and also showed a positive correlation with participation in networks (2002). Nunes (2011) also found that financing was more critical to high-tech SMEs in connection to R&D activities, but did not attempt to correlate this to network participation. Seeking more funding does not necessarily mean that it will be done through networks, or that this sort of network activity will relate directly to growth -- growth using networks probably has a stronger connection to how those funds are used, such as effective R&D or discovery of market opportunities. This paper expects to see a higher correlation between R&D networks and high-tech SME growth than with networks used to facilitate funding opportunities.

3. Data: AEGIS Survey

3.1 Objectives

The success of firms who participate in networks is dependent upon a number of variables, including their ability to select good partners, the structures of their networks, and the types of projects they partner into. And success of a cooperative partnership will depend upon technical and market conditions, as well as trust, and technical capabilities (Mowery 1995, Vonortas 1994). Because of the limits of available information, this paper will not address the specific results or causes of network participation, but instead will examine what place networks occupy in SMEs’ overall growth strategies. Finding the variables that link to networks most
strongly related to innovative performance will allow analysis of how small firms can use networks to enable taking on more risk and high-potential projects.

Through analysis of answers from firms who responded to a 2010 AEGIS survey of European small businesses, this paper will seek to identify the goals of firms involved in networks that most directly correlate to the growth characteristics identified by existing literature (Aegis 2010). As a framework, this paper will first determine which types of networks are uniquely correlated with bringing new innovations to market – and from there, look at the correlation of network uses and competitive priorities with participation in these types of networks (see Figure 2). While determining statistical significance is beyond the scope of this paper, the analysis should still reveal interesting trends in the correlations between these variables, indicating opportunities for further investigation.

![Figure 2: Graphic representation of analysis framework used to determine how successfully innovating high-tech SMEs differentiate in utilization of network activity.](image)

**3.2 Population and Definitions**

The standards for what constitutes a Small or Medium Sized Enterprize (SME) vary internationally, thus the term is worth defining here. In the United States, the definition varies
by ownership type and in some instances can include companies with up to 1500 employees, although it is usually capped at 500 (U.S. Small Business Association, 2011). European countries have historically used measurements ranging from maximums of 100 to 250 full-time employees. Given that much of the primary data analyzed here uses responses to a survey conducted in the European Union, this paper will utilize the European Commission standard of equal or less than 250 employees (European Commission, 2011).

The analysis in subsequent sections refers to the 2010 AEGIS survey of new businesses in Europe, to which there were 4,004 respondents. The AEGIS survey specifically targeted knowledge-intensive entrepreneurial companies, making its results specially qualified to help answer questions regarding activities that are connected to growth for technology-based SMEs.

This paper utilizes a sample of 2,696 responses (67 percent of the original population) from SMEs that have self-identified as technology-based. Therefore, the correlations herein make use only of answers from businesses that identified themselves in Question 1 of the AEGIS survey questionnaire as having 250 or fewer full-time employees which, since the survey targeted new businesses, meant utilization of 92 percent of the total responses. The sample was then narrowed to those respondents that rated the importance of “Technical/engineering knowledge in the field” in formation of their firm (Question 13) as a 4 or 5 – 5 being “extremely important”. Where the data is further limited to analysis of those respondents who have introduced new products to market or to the world in the past three years (Question 28), the analyzed sample size is 1,784.
4. Analysis

4.1 Network Types

We start by looking at which types of networks are most commonly entered into by smaller businesses. In the AEGIS survey, there were particular collaborative agreements that received the highest scores of 4 or 5 from knowledge-based SMEs – a response of “5” being an indication that the firm participates in this type of networks “very often.” The most used, by this measurement, were Subcontracting, Strategic Alliances, and Technical Cooperation Agreements. The least used networks by knowledge-based SMEs were Marketing/Export assistance, and Research Contract-Out. This in itself is a somewhat surprising finding, as small, knowledge-based entrepreneurships often have strengths in technology but not in marketing or other skills (Forrest 1990). “Strategic Alliances” are broad and can incorporate a great deal of collaboration; the neglect of the more specific “Marketing/Export Promotion” partnerships could be attributed to the fact that SMEs have less to bring to the table in collaborative activity, and so they may opt to simply contract out these services. An alternative explanation is that technology based SMEs’ competitive advantage depends more upon their research or funding and so they focus more on these types of agreements.

As per the analysis framework, these responses were further broken down by whether the firm had introduced a new or significantly improved good or service to their market or to the world in the past three years. This demonstrated a positive correlation between successful introduction of new-to-market or new-to-firm products, and usage of networks in general.
Figure 3: SME Network Participation, by new or significantly improved goods or services introduced to their market or world in last three years (Aegis Survey 2010, Q26 and Q28). No new G&S n=912, with new G&S n=1,784.

For both groups, the most commonly used networks are subcontracting, strategic alliances, and technical cooperation agreements, but the more high-performing group has an average participation rate that is 6.4 basis points higher than the low-performing group, for all network types – the averaged difference between participation on the part of low-innovation firms and high-innovation firms is 46.1 per cent. This difference in usage patterns between the two groups of firms is seen most significantly in R&D Agreements, to which firms with new goods or services introductions were 112.3 per cent more likely to give a participation rating of 4 or 5. Immediately following R&D Agreements were Licensing Agreements (a difference of
49 per cent) and Technical Cooperation Agreements (40.8 per cent). Table 1 provides detailed findings.

The implications of these findings, on their own, are largely ambiguous; it could easily be that small firms naturally increase their participation in these types of agreements during the process of the deployment of a new good or service, and that participation in these networks are not causal of success. It is not addressed in the survey whether these networks were engaged early on in a product’s development or only in later stages, leaving it open whether these participation rates are the result of or the cause of introduction of a new product.

<table>
<thead>
<tr>
<th>Type of Network</th>
<th>Percentage of SMEs with at least one new-to-market or new-to-world G&amp;S who participate &quot;often&quot; or &quot;very often&quot;</th>
<th>Percentage of SMEs with no new-to-market or new-to-world G&amp;S who participate &quot;often&quot; or &quot;very often&quot;</th>
<th>Increased participation of SMEs with new G&amp;S introductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D Agreement</td>
<td>19.5%</td>
<td>9.2%</td>
<td>112.3%</td>
</tr>
<tr>
<td>Licensing Agreement</td>
<td>18.8%</td>
<td>12.6%</td>
<td>49.0%</td>
</tr>
<tr>
<td>Technical Cooperation Agreement</td>
<td>26.5%</td>
<td>18.8%</td>
<td>40.8%</td>
</tr>
<tr>
<td>Strategic Alliance</td>
<td>27.4%</td>
<td>19.6%</td>
<td>39.9%</td>
</tr>
<tr>
<td>Subcontracting</td>
<td>35.5%</td>
<td>27.5%</td>
<td>29.1%</td>
</tr>
<tr>
<td>Marketing/Export Promotion</td>
<td>16.0%</td>
<td>12.6%</td>
<td>27.4%</td>
</tr>
<tr>
<td>Research Contract-out</td>
<td>7.3%</td>
<td>5.9%</td>
<td>24.2%</td>
</tr>
</tbody>
</table>

Table 1: High participation by network type, compared between firms with high innovation performance and low innovation performance (Aegis Survey 2010, Q26 and Q28). No new G&S n=912, with new G&S n=1,784.

It is intuitive that all small, technology-based businesses would prioritize R&D partnerships, as they often do not have the resources necessary to keep abreast of all of the advances being made in the industry. Having a partner with more primary research abilities would seem to be beneficial. However, successfully innovating firms seem to prioritize R&D partnerships much more highly than other technology based SMEs, indicating that either R&D
partnerships are too limited in scope for many technology based firms’ purposes, or that Nunes’ (2011) findings regarding the U-shaped relationship between R&D and growth holds true.

As defined above, R&D Agreements, Licensing Agreements, and Technical Cooperation Agreements are the network types with the highest differentiation in use; they appear to be the three network types most uniquely correlated with new products or services being brought to market, and therefore with SME growth. Despite the aforementioned data limitations, the remainder of this analysis will cross tabulate other variables only against participation in these three network types. Simply addressing participation in the networks that are the most commonly used overall would only serve to highlight the common needs of all technology-based SMEs, while this paper attempts to specifically explore how networks used by firms who are most successful in innovation and growth.

4.2 Competitive Priorities

Examining a specific firm’s competitive environment and determining which capabilities or strengths will help to maintain and increase market share is central to determining growth strategy. As discussed in the literature review, technology-based SMEs may have a unique set of needs for growth. Only when the central objectives of these firms are known can it be understood how networks are used as a part of a firm’s growth strategy.
Figure 4: Contribution of factors in creating and sustaining the competitive advantage of the company (Aegis Survey 2010, Q19). N=2,696.

The responses from the 2,696 firms that fit the criteria for SMEs and technology-based firms ranked the ability to adapt products to customer needs highest, followed by introduction of novel products, ability to offer high quality products, ability to offer expected products at low cost, marketing and promotion, R&D activities, and inter-firm alliances and partnerships.

Figure 5: Correlation between high-tech SMEs’ self-identified business success factors and R&D Agreement network participation (Aegis Survey 2010, Q19 and Q26), n=2,696.
Networking with scientific research organizations have the least assigned impact on the firm’s success.

It is interesting to note that these results differ, though only slightly, from the full survey results including non-tech based firms: Ability to introduce novel products or services moves from a rank of 3 to 2 (above offering high quality products), and R&D activities advance from a rank of 7 to 6 (outranking alliances with other firms). In order to see how these SME needs are met within networks, it will be useful to find patterns in which success factor correlates most strongly with each of the three defined network types.

Participation in R&D Agreements was most positively correlated with a priority on networking with scientific research organizations, and with importance placed on R&D activities (see Figure 5). Both findings are intuitive: as firms focused on research, whether internal or with intermediary firms, their networking activities are likely to follow the same priority. However, it should be noted that the coefficients of determination here are still under 0.2, meaning that the relationship accounts for less than 20 per cent of the variation. But this should not be surprising, given that only 11 per cent of our sample firms indicated that they participated in R&D agreements “often” or “very often.”

In the case of Technical Cooperation Agreements, correlations are even weaker, but highlight alignment with the competitive priorities of alliances/partnerships with other firms, and networking with scientific research organizations. Again, these results are intuitive, pointing to technical cooperation with other firms through alliances or partnerships, and liaising with research organizations to augment this technical development. Here there is a lesser emphasis on the firm’s independent R&D activities, and a higher emphasis on inter-firm
For licensing agreements, there were only extremely weak correlations. The highest, though barely accounting for more than 3 or 4 percent of variation, were with inter-firm alliances and R&D activities. This was also the only network type examined that showed any calculable correlation whatsoever with a priority on offering low cost products, although this correlation is so weak it is unlikely to provide significant results.
As can be seen in Figure 8, all three of the network types that seem to be uniquely valued by highly innovative firms share the highest positive correlations, albeit all relatively weak, correlation with firms’ priorities on inter-firm alliances, R&D activities, and networking with scientific research orgs. This reinforces the unique nature of these three network types for highly innovative firms, as these competitive priorities are the least valued by technology-based SMEs overall.

This is also slightly surprising, given that this data analyzed only SMEs, who are often considered to be lacking in resources for some of the more common competitive priorities, such as marketing and promotion. This could mean that there are other types of networks that are used for the more commonly valued success factors, or it could mean that many networks are uniquely fitted to meet R&D and scientific research needs.
4.3 Network Uses

The previous sections analyzed what firms consider necessary for competitive advantage and growth, and tabulated these responses with participation in particular networks associated with successfully innovating firms. There is another angle to view network participation through, and that is firms’ actual reported uses of firms.

Overall, the surveyed tech-based SMEs reported uses of networks that matched their overall competitive priorities: adapting to customer needs was listed highest in priorities, and now contacting customers is listed highest in network use.

![Bar chart showing the average rating by tech-based SMEs](image)

Figure 9: Contribution of Network Participation to Company Operations for high-tech SMEs (Aegis 2010, Q25), n=2,696.

But this ranking again changed when this data was cross-tabulated with participation in R&D Networks, Technical Cooperation, and Licensing Agreements, and again these networks were shown to have a highly specialized use, not correlating with tech-based SMEs’ overall priorities. These results, in terms of $R^2$, are weaker than the correlation results for competitive priorities, but share an emphasis on R&D (“Developing new products/services” in this measure, and networking with research organization / R&D activities in the measure of competitive...
priorities). This correlation chart also shows a new emphasis here on accessing distribution channels, presumably for the newly developed products.

![Figure 10: Stacked Correlations between Network Type and Network Uses by high-tech SMEs, n=2,696.](image)

The most notable result here is that these networks correlated with successful introduction of new products appear to be used most for contacting customers and clients, which aligns with Whitley’s findings that vertical networking with customers and suppliers is more valuable for innovation than horizontal (2002). This is in conflict with the relative lack of correlation between the competitive priority of “adapting products to customer/market needs” and the network types in question. This disparity begs further research into use of networks for adaptation of products to customer needs, and whether these networking activities lead to real growth.
5. Conclusions

Consistent with Nunes et al.’s (2011) findings that R&D intensity does not help small tech-based firms at low levels, but increases growth at high levels, a disproportionate use of R&D agreements was found for surveyed firms that have been able to introduce new-to-market or new-to-world goods and services versus those that have not. A corresponding increase in the use of Technical Cooperation and Licensing Agreements was also indicated.

Participation in these types of networks was found to be correlated with competitive priorities focused on R&D activities, alliances and partnerships with other firms, and networking with scientific research organizations – again demonstrating the high-level focus on R&D that Nunes et al. (2011) have found high-performing innovative firms to have, as well as aligning with findings by Zeng et al. (2010), Cooke et al. (2000), and Diez (2002) that inter-firm relationships are the most valuable to SMEs’ innovative performance.

Reported network usage, when correlated with the three network types in question, was extremely weak, but relative to each other, exhibit interesting differences. The results continued to indicate use of these networks for development of new products, but also indicated some contribution of these networks during the stage of moving an innovation from invention to market, such as contacting customers, or finding distribution or export channels. This concurs with Whitley’s (2002) assessment that vertical relationships with customers are crucial to SMEs’ success.

This paper focused on three network types that showed differentiated use by successfully innovating firms. As we found that the networks most associated with successful innovation are used for purposes on the bottom half of the competitive priority list, there is an opportunity for further empirical research to determine the other success factors’ relationship
with growth, and how they are accomplished through other network activities not addressed here. It would also be useful to compare growth correlations with networking activities focused on funding, versus correlations with networking activities in search of R&D collaboration. These two activities are inextricably linked in a high-tech SME’s survival, and it would be useful to know what intervention point (whether at funding, or R&D collaboration, or a combination thereof) would most encourage further innovation. Finally, a more thorough econometric analysis of the preliminary correlations included in this paper could reveal links between the competitive priorities and the uses for networks that were found here to be respectively linked to high-growth network types.

The two groups of knowledge-intensive SMEs in our sample – those that were effective in introducing new products, and those that were not – had a small but noted difference in which networks they participated in and how much. The implication is that out of all of the network activities available, there are just a few that uniquely assist with bringing new products to market. These activities were found to relate to R&D of new products and technology transfer, and implementation of these products through distribution channels and contacting customers. As this was the only notable differentiation in network use between the two groups, policy makers and investors would do well to consider support of these network types as a catalyst for further high-tech SME growth.
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