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# The Impact of Knowledge Hoarding on Micro-Firm Learning Network Exchange

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## 1.1. Introduction

This chapter documents the knowledge exchange dynamic in a micro-firm learning network environment over a four year period, and explores the impact of knowledge hoarding on micro-firm learning network exchange.

The chapter reflects on the ideal knowledge exchange scenario as presented in the micro-firm learning network literature and compares this with the studied environment, where micro-firms were found, at times, to compete rather than collaborate to the detriment of the exchange benefits relating to open knowledge transfer. Specifically, guarded and/or self-serving knowledge interactions resulted in the hoarding of knowledge by individual members. This activity limited the potential to expand an individual micro-firm's intellectual resources, ultimately devaluing learning network membership.

When knowledge release occurred, information flow commenced and trust between engaged members increased

over time. The resultant shared experience provided exchange benefits, which, in turn, leveraged knowledge value and enhanced the strategic advantage of network membership.

The remainder of the chapter is structured as follows: the chapter begins with a review of the micro-firm learning network literature, discussed from the knowledge exchange perspective. Then we go on to describe the longitudinal interpretive case methodology employed in this research and subsequently the results of this study are presented. Finally, in the concluding section, observations are drawn on the theoretical and empirical contributions of this study.

## **1.2. Micro-firm learning networks and the pursuit of competitive advantage**

Micro-firms are defined as those commercial entities with no more than 10 full-time employees [EUR 05], for the purposes of this study. These firms are encouraged to engage in knowledge exchange to enhance their business capabilities, access resources, and/or improve their competitive position [KEA 14, REI 10]. This ethos promotes a structured approach to micro-firm knowledge transfer and integration, which, in turn, gives rise to the learning network philosophy [MÄK 02, REI 10, TEL 00].

If we define a network as a socially constructed set of relationships [JOH 95] and a learning network as one that is “formally set up for the primary purpose of increasing knowledge” [BES 01, p. 88], then we can assume that relationships can only be developed if the members involved engage in exchange behaviors [CHE 00]. Thus, taking into account the literature on knowledge exchange in a micro-firm learning network environment [KEL 09, REI 10], the aim of this chapter is to “explore the impact of knowledge hoarding on micro-firm learning network exchange”.

Within the micro-firm literature, it has been acknowledged that learning networks act as a source of reliable information and a viable method of knowledge creation and transfer, which, in turn, can leverage resources to create and sustain competitive advantage [CHE 00, MÄK 02, REI 10, KEA 14]. By embedding the promotion of cooperative norms, facilitated through cohesion, the process of knowledge exchange can be encouraged or indeed enhanced through these networks.

Thus, the network is a unique learning environment in which knowledge is captured through discourse and exchange [REI 10, TEL 00]. This perspective assumes open exchange via informal sharing of know-how and reciprocal action once trust has been established among network members [MCE 99, JOH 02, MAC 04, HUG 00]. In this forum, “being connected to many interconnected people confers an information advantage” [TAN 11, p. 280] and it is assumed that members build a repertoire of contacts, which in turn provide access to new information [TAN 11, MCE 99].

Of note is Granovetter’s argument [GRA 85] which states that strong ties offer richer, more detailed and accurate information and thus offer superior informational advantage [MCE 99]. Uzzi [UZZ 97] and Hansen [HAN 99] reinforce this view and argue for strong ties when transferring complex, tacit knowledge as relationships embedded with trust may encourage network members to share valuable knowledge, while simultaneously accepting the possibility that this knowledge may be attained by competitors [DYE 98].

### **1.3. Building trust in a micro-firm learning network: the role of the knowledge facilitator**

The trust relationship built through ongoing network connectivity allows for contributory and reciprocal action

which, in turn, facilitates mutual understanding. As trust is an enabling factor in accessing resources and facilitating mutual problem-solving, this cooperative behavior is the basis for knowledge transfer and learning across network boundaries [UZZ 97]. This dynamic may even create a challenge in the medium term where members may need to “cope with an incessant production of coincidences which may be turned into opportunities” [JOH 07, p. 10], such that numerous choices need to be made to convert access to knowledge into competitive value.

For network members to exchange such valuable information, they must first comprehend that “cooperation and knowledge sharing can enhance their competitive position” [INK 05, p. 157]. Therefore, notwithstanding the importance of interpersonal relations [REJ 11, REA 03], the promotion of cooperative norms should aid the process of sustainable knowledge exchange in the micro-firm environment [REI 14].

As strong internal support and commitment helps sustain network activity [HUM 00], a knowledge facilitator (KF) may be valuable in the context. Furthermore, in acting as a catalyst for knowledge transfer, the KF can help identify and develop network resources [KEL 09] which “result from the informational advantages [of] participation in inter-firm networks that channel valuable information” [GUL 99, p. 399].

#### **1.4. The pursuit of shared knowledge across network boundaries**

As noted earlier, one of the key benefits of engaging with micro-firm learning networks is to leverage knowledge through shared experience [MÄK 02, REI 14]. Interacting with critically-minded individuals in this way can “help foster an environment in which knowledge can be created



and shared and, most importantly, used to improve effectiveness, efficiency, and innovation” [LES 01, p. 46]. Thus, the network provides a means for micro-firm members to leverage information and access resources that would otherwise be unavailable to them [WIT 04], creating an impetus for a sustainable future.

Returning to Johannisson’s [JOH 07] posit that network members may struggle to cope with “an incessant production of coincidences”, it is worth considering the view that each member’s prior knowledge confers a capacity to acquire, assimilate, transform and exploit external knowledge [TAN 11, ZAH 02 in REJ 11]. Thus, while a significant pool of knowledge may already be present in the micro-firm learning network, external impulses are sometimes required to trigger internal development and their absence can diminish the value of the network over time. Specifically, network activities should include moving knowledge in and out of the network, creating connections and bringing information and ideas back to the wider group [REI 14].

Essentially, the art of knowledge transfer improves with greater interaction as the absorptive capacity of external knowledge increases. However, knowledge creation may be constrained only if trusted firms can enter knowledge-sharing spaces [LEC 03], ultimately reducing the network knowledge value via a “locked in” effect [UZZ 97]. Furthermore, if the network is such that there is a high similarity among members, knowledge redundancy can occur ultimately creating a barrier to capability enhancement [REJ 11].

### **1.5. Challenging the knowledge exchange assumption**

It is often assumed that micro-firm learning network membership begets knowledge access. What if this basic assumption is incorrect? What if knowledge exchange is not

a foregone conclusion in a micro-firm learning network [INK 05, TAN 11] and barriers to exchange restrict the principles of knowledge creation and transfer [LUC 06, MCE 99]? Let us assume for a moment that network membership does not automatically guarantee effective knowledge exchange and that success is dependent on a number of influencing factors, which, collectively, contribute to the building of trust within the network over time.

If we step back from the core assumption of open knowledge transfer and instead consider the competitive dynamic that likely exists in micro-firm interactions, it may help us to explain the relatively low levels of sustainable interaction found in these networks [REI 10]. For example, fear that the member receiving such knowledge may use it against the person who provided it can create a barrier to exchange [INK 05]. Thus, for network members to exchange such valuable information, they must first comprehend that “cooperation and knowledge sharing can enhance their competitive position” [INK 05, p. 157].

### **1.6. Knowledge hoarding and its impact on network exchange**

Knowledge hoarding may be more logical than it first appears, even in a learning network setting. If network members perceive that there is no benefit being offered in return for their own contribution [KOC 06, MAL 05], the rational choice may be to not engage in knowledge exchange activities [LUC 06, DYE 98]. In such instances, knowledge exchange may be sacrificed to the detriment of enhanced intellectual resources and, ultimately, to the micro-firm’s competitive benefit.

Increased competition or the potential for increased competition between micro-firms in the same network is another reason why network members may avoid exchanging

knowledge [REA 03]. This challenge is amplified in a micro-firm environment where the potential for ideas to leak to competitor firms is heightened and the potential to hoard information may ultimately stunt the emergence of new ideas [KEA 14]. In this case, a micro-firm has the power to affect knowledge transfer internally while impeding knowledge transfer externally [ARG 00]. This can, in turn, affect the firm's competitive capabilities as this would hinder its capacity to access useful information through its networks [MCE 99, TAN 11].

When contemplating knowledge hoarding, it is worth noting that network members are more likely to cooperate with each other for reputational benefits when strong third-party ties are in existence [REA 03] and when uncooperative behavior results in other members limiting future interactions with such individuals.

### **1.7. Observing knowledge exchange activity in action**

Taking into account the literature on knowledge exchange in a micro-firm learning network environment, the research aim is "to explore the impact of knowledge hoarding on micro-firm learning network exchange". The associated objectives are to investigate the factors that affect knowledge exchange; identify the inhibitors and facilitators of member interaction in this context; and consider the impact of knowledge barriers, and their subsequent release on learning network exchange.

This exploratory study, commenced in 2008 and ended in 2012, focuses on a micro-firm learning network in Ireland. Considering the level and depth of researcher involvement in the studied program, the interpretive case method was deemed most appropriate [REI 14], while the research question promotes a longitudinal study, wherein the observed environment was studied for four years.

The researchers interacted with seven micro-firms, incorporating a number of techniques, including *in situ* observational methods, reflective logs (maintained by the researchers throughout the study) and face-to-face in-depth interviews. The researchers carried out on-site interviews and observed internal interactions at each firm's place of business. The researchers also observed these firms at network meetings and at an industrial conferences in order to consider peer dynamics, group interaction and network engagement, and whether these activities resulted in open knowledge exchange within the network.

A total of 600 mins of data was collected, transcribed and collated, representing seven separate firms in interaction with their learning network. Interview and observational protocols were followed in each case, which helped establish a systematic data collection process. Individual firm narratives were written up to provide a description comprising details of the organizational history, its business environment, its learning network involvement and its core knowledge exchange activities. All gathered data, including the personal observations of the researchers, the reflective log entries and the interview transcriptions were incorporated in the narratives, while direct quotations from interviewees and network event attendees were used to illustrate important findings where appropriate.

Each micro-firm was treated as an independent entity in the first instance and only then was cross analysis considered. By approaching the individual research sites in this manner, cross-analysis, when initiated, sought to counteract the potential tendency to jump to conclusions. The ultimate goal was to provide a rich description of inter-firm interaction within the learning network and, in particular, knowledge exchange activities.

### **1.8. Micro-firm learning network: member interaction**

The observed network includes members who have known each other for a long time on an informal basis, as well as from a formal business perspective. These members have interacted over a number of years at varying levels within the network as an aspect of their network role(s), and resultant relationships have become rooted in the network's social structure. Thus, a situation had arisen where a lot of the networking was "informal" and depended on members' "personal contacts".

Primarily, the network was of a semi-formal to informal nature [MAC 04] and thus lacked a formal governance structure. These practices had become institutionalized into the fabric of the observed network resulting in "old sects" being prevalent in context.

### **1.9. Barriers to knowledge exchange**

A persistent theme throughout this research study was the sharing of information and the consequences of this. The fear of sharing information [INK 05], underlined by the fear that this information would not be reciprocated, was an issue in the observed network. This was manifested in a number of separate, yet common, concerns.

First, there was a concern that if information was shared between network partners that those members privy to the information could then use it as a power advantage in their mutual undertakings, a finding duplicated in Inkpen's research [INK 05]. In one of the examples given, the participants, because of their fear of losing perceived competitive advantage, were reluctant to share information

which may have aided all parties if they had cooperated, a core network value alluded to in the study by [JOH 95].

Securing government funding was also revealed as a catalyst for competition among certain micro-firms. Specifically, there was an underlying nuance that by hoarding information it would give that firm an advantage [ARG 00], particularly with regard to being successful in the pursuit of funding. As a result, it appeared that preventing competitors gaining access to information was more important than building trust and commitment and engaging in knowledge sharing behaviors.

Concern was echoed throughout the findings that “parish politics” and “infringing on territory” could create exchange barriers, and that member communication was often guarded as a result. This was reflected in the low levels of interaction and widespread uncertainty about the intentions of others that existed between the micro-firms. This, in turn, restricted informal sharing of know-how [MAC 04, HUG 00].

### **1.10. Initial knowledge release**

While there was substantial emphasis on information flow throughout the learning network, “dissemination of information is very important”, much of this was superficial in nature. The knowledge being exchanged was on an “information needs” basis and did not seem to be of a sensitive nature.

On closer analysis, it was apparent that explicit knowledge was commonly being exchanged in the observed learning network during frequent online interaction. This interaction was based on “opportunities, market knowledge and facilitating something” and amounted to “statistics and reports” for the industry. In this regard, the type of

knowledge being created and transferred corresponded to the type of relationships being maintained. Thus, the findings partially support the contention that networks are a reliable source of information for the participants [MCE 99], even though relatively low trust and commitment were restricting more strategic knowledge exchange among some members [JOH 02].

This type of surface knowledge sharing, while important for network development [JOH 02], does not require the same level of trust and commitment that the sharing of tacit knowledge does [UZZ 97]. Tacit knowledge transfer requires greater levels of trust and commitment, more commonly associated with strongly embedded relationships, as network actors learn from each other and interpret tacit information in a holistic manner [UZZ 97].

### **1.11. Information flow and the cycle of shared experience**

Resource sharing was seen as a catalyst for increased collaboration [CHE 00, MÄK 02, REI 10, KEA 14] "... today's conference ... came from the fact that [named network member] said last year why are we holding two conferences ... why don't we come together?". This cooperative behavior is the basis for knowledge transfer and learning across network boundaries [UZZ 97], although the observed network had some way to go as knowledge exchange was not seen as optimized by some members: "they [network members] are very disparate and they work in a very insular manner" which has left the network "...disjointed and people don't have the information".

Member insights highlighted the need for "sharing" and that this should be "both ways" rather than merely a "knowledge transfer" exercise, suggesting a need for reciprocal action for knowledge exchange to naturally occur

[MCE 99, JOH 02, MAC 04, HUG 00]. The findings point to a cyclical action where sharing gave way to relationship building, and showed evidence of an evolutionary trust environment [INK 05, REI 14] wherein “the more informed conversation you have each time ... the more trust you can develop”. There was also recognition that “relationships are built over time”.

This perspective was echoed by those adopting a more proactive approach to knowledge exchange as they identified that tacit knowledge transfer occurred in their network: “... sometimes you don’t even know what you need to ask so when you spend time with someone you kind of subconsciously are drinking it [in]”. It was through this forging of close relationships that these individuals were able to absorb more tacit information from their peers [TAN 11, GUL 99], as “access to new sources of knowledge is one of the most important direct benefits” [INK 05, p. 146] of this type of engagement.

Thus, tacit knowledge transfer was an important indicator of the degree of closeness of these relationships. This helped identify those individuals who had the capacity to transfer information that reduces uncertainty and promotes trust between network members [TAN 11, MCE 99], as these individuals realized that “... by interacting you are learning because sometimes it’s not on that occasion but something else occurs afterwards and you kind of have a vague recollection of them doing something and then you kind of connect [it]”. This is clearly indicative of Granovetter’s argument [GRA 85], which mentions that strong ties offer richer, more detailed and accurate information and thus offer superior informational advantage [MCE 99].



### **1.12. Seeking knowledge beyond the network boundary**

Although engaged members were willing to share knowledge both within and outside the learning network “We should be talking to each other [otherwise] – where are the ideas supposed to come from?” and recognized that “we need to know what’s best practice internationally”, others were less inclined to seek out external sources of knowledge such as national and international databases, local authorities, industry support agencies and, importantly, other members of the broader business network. These members believed “we have everybody involved that needs to be involved” ultimately risking a “locked in” environment [UZZ 97] that could hinder exchange benefits leading to curtailed capability enhancement.

There was a strong sentiment among members with regard to revealing information to those beyond the network for fear it would not be reciprocated [KOC 06, MAL 05]. One member acknowledged that if “... people are confident enough in their knowledge they have no problem sharing it”. However, this outlook appears to be in the minority as even this member recognized that this “sharing mindset” is not currently visible within the network and that a change needs to happen to facilitate knowledge sharing beyond the network boundaries.

### **1.13. The role of the knowledge facilitator**

One of the more important findings from this study relates to members willing to selflessly share information, titled KFs by the researchers. These central members sought to disseminate knowledge throughout the network in a fair and equitable manner and to develop close relations built upon the principles of trust, commitment, cooperation and reciprocity [in line with KOC 06, MAL 05] which would in

turn encourage closer, more cohesive ties to be made. As a result, the KF may ultimately aid the tacit knowledge transfer process, which would reduce uncertainty and promote trust between network members [TAN 11].

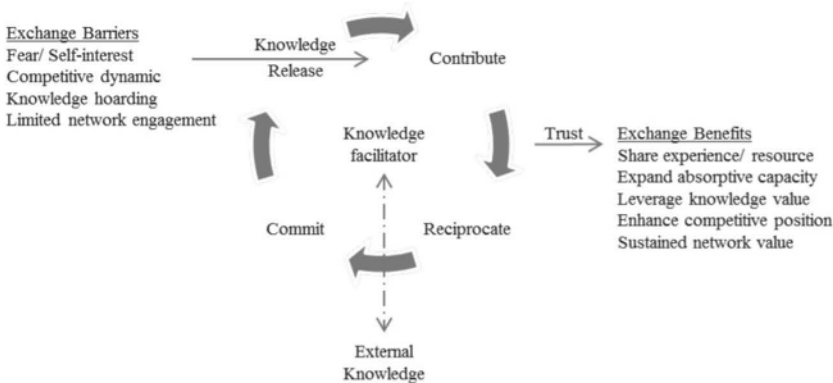
The KF strongly influenced the level of knowledge transfer and the depth of networking activity in the observed network, while also gaining traction in relation to resource access. Hence, this role, and its incumbent responsibilities, may need to be defined and articulated so as to maximize the KF's contribution. Critically, if the KF can encourage an environment where critically-minded individuals can interact, then he/she will "help foster an environment in which knowledge can be created and shared", [LES 01, p.46]. Over time, these interactions should expose differing perspectives and the negotiation of competing viewpoints and ultimately drive sustainable knowledge exchange.

The majority of network members were cautious about revealing information, a rational response based on prior research [LUC 06, DYE 98]. Information was only exchanged where necessary and if beneficial to the person(s) providing it, suggesting a self-serving catalyst for exchange [KEL 09], although this may also be indicative of a lack of "shared history" between the network members. In contrast, those with strong ties to the network had a more strategic view in this regard believing that if information was shared it would benefit everyone in the long term. These members were "confident" in their own knowledge and had arrived at a point in their ethos where they "give more than they receive", echoing a mature exchange perspective [MAC 04].

#### **1.14. Visualizing the knowledge exchange dynamic in a micro-firm learning network**

Based on the literature and subsequent empirical research, a competitive dynamic in a micro-firm learning

network can create barriers to knowledge exchange, which, in turn, restricts sustainable network activity, specifically, fear and/or self-interest, which may act as a catalyst for knowledge hoarding that, in turn, results in limited knowledge exchange by micro-firm members (Figure 1.1).



**Figure 1.1.** *Knowledge release in a micro-firm learning network environment*

By engaging with the learning network as an exchange forum, there is greater potential to release knowledge, particularly when central member(s) take the role of KF. This offers a hub through which on-going communication, resource sharing and regular interaction allow a cycle of contribution, reciprocation and commitment on the part of network members to occur while also offering access to/from interim external knowledge interaction. Shared experience can help alleviate the previously held competitive dynamic and should beget trust over time which, in turn, offers access to the benefits of open knowledge exchange including, but not limited to, expanded absorptive capacity, knowledge value and enhanced competitive position.

### **1.15. Conclusion**

The aim of this chapter is “to explore the impact of knowledge hoarding on micro-firm learning network exchange”, and the underlying study tracked knowledge exchange activity among the observed micro-firms in interaction with their learning network. While open communication, resource sharing and regular interaction were found to increase network activity, findings suggest that establishing a close, collaborative learning network will only be forthcoming when knowledge exchange barriers are released and when there is a perceived balance between contribution and reciprocation in the network. This balance can be partly achieved through the KF, particularly in relation to knowledge exchange, especially in its early stages of network development.

Ideally, knowledge exchange will increase over time as network involvement boosts the confidence of members and they begin to think more strategically about their organizational needs, but only if network boundaries remain open. As the network matures, it may be necessary for the KF to evolve in line with the network, and refinements to the support structure may be required. The catalyst for deeper knowledge exchange is the potential for greater collective resources which could be leveraged and disseminated throughout the network, potentially improving individual micro-firm performance and ultimately creating a positive impact on member success.

This research has contributed to the underdeveloped area of knowledge exchange in the learning network environment. With reference to micro-firm research, it offers insight into the interrelationships between micro-firms and the concerns associated with knowledge sharing and network interaction among this cohort. This study focused not only on the trust element of inter-firm knowledge exchange but also on the context in which it was constructed. This allowed the salient

criteria which promote the type of knowledge exchange to be highlighted [UZZ 97], specifically ongoing communication, resource sharing and regular interaction. Finally, this research sought to inform the readers about the impact of knowledge exchange (or indeed the lack of KE) on micro-firm learning network engagement over time.

From a practical perspective, the current research demonstrated that knowledge exchange cannot be assumed in a micro-firm learning network environment, as this study has identified existing gaps in attitudes, resources and challenges relating to information access. This finding is in contrast with extant literature which presupposes that once trust has been established open exchange of knowledge will occur [MAC 04, JOH 02]. Specifically, the expressed fear of sharing knowledge curtails ongoing communication, resource sharing and open interaction, which ultimately limits the benefit of micro-firm learning network membership.

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