

Inter-regional Networking as a Platform for the Regional Innovation and Business Continuity Concerning to the Role of Social Capital

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Abstract

The network that connects among various firms and other supporting institutes is widely accepted as a seed bed of innovation. Many researchers have investigated empirically the relationship between the existence of the network and the created innovation, and positive correlations have been shown in general. However, the causality between them nor what kinds of factors motivate participating actors' intention to enhance networking activities has never been clarified. In fact in rural regions where particular industry agglomerates but have get left behind the publicly funding support programs for network establishment, spontaneous networking activity, hopefully beyond the regional boundaries, is essential for regional development. Inter-regional network, which means in this paper network between "regional industrial groups as a unit," also contribute to strengthening regional resiliency against some disasters. The author shed light on the importance of social capital and discusses its self-establishment possibility whether backcasting approach could enhance it or not, through ongoing networking project between two rural regions in Niigata prefecture both in which many manufacturing SMEs agglomerate but formal inter-regional network between hitherto.

Key words : Industrial network, Cluster, Innovation, Inter-firm collaboration, BCP, Social capital

1. Introduction

Innovation is doubtlessly essential for societal and economical evolution. Being different from breakthrough in the scientific and technological research and development, innovation is the result of new combination between intellectual activities, whether completely new idea or not, therefore, information exchange and sharing is fundamentally necessary among various entities in the industrial agglomeration region, not only codified but tacit knowledge or know-how recognized naturally in a specified sector also. Based on such a common understanding, various political efforts have been carried out to get economical advancement in many countries; e.g. forming network among business entities, local governments, intermediary organizations, public research centers, and higher education institutions etc.; or industrial clustering in the particular area to which geographical proximity contributes as an enhancer for interaction and reciprocity between regional actors. In Japan central government implemented some political actions corresponding

these concepts and consequently placed advanced technological industries, higher education institutes, and industrial support organizations in some particular regions, which are Technopolis Act and related legislation since the beginning of 1980s and then after Industrial Cluster Plan by Ministry of Economy, Trade and Industry (METI) and Knowledge Cluster Initiative by Ministry of Education, Culture, Sports, Science and Technology (MEXT) since beginning of 2000s (Takeuchi, 2006; Matsubara, 2012). Although large portion of these policies and related activities including budgetary allocations by the governmental sector ceased after 2009 triggered by change of government, innovation is still more needed than ever in these days because of complicating and widening global problems such as rising price and depletion of natural resources - oil, water, rare earth -, population explosion, global heating and climate change etc.

Industrial agglomeration, which we treat the phrase with the same meaning of cluster in this paper, as a seedbed of innovation takes a very important role in the context that it presents opportunities for frequent, dense and face-to-face communication among actors from business enterprises, publicly founded supporting institutions, local government bodies. However, perhaps historical situation may cast a shadow, we know the possible problem that may be caused by strong ties among actors in the relatively narrow region and then close the doors from the external communities; i.e. so called “lock-in effect.”

By the way very large scaled natural disasters have been occurring globally in a couple of decades. As for in Japan, we experienced some huge earthquakes; typically these are Great Hanshin-Awaji Earthquake 1995, Mid Niigata Prefecture Earthquake in 2004, The Niigataken Chuetsu-oki Earthquake in 2007, and The 2011 off the Pacific Coast of Tohoku Earthquake, frequently called as “3.11,” affecting so wide area. These disasters damaged living infrastructure so heavily and brought many victims. Besides, it is well known that each of these also hit the local industries, then particularly manufacturing SMEs agglomerating in the affected regions were so damaged and stopped or decreased production there spread impact to all over the world via supply chain. Under such situation the importance has been pointed out to establish business continuity plan/management (BCP/BCM), however, achievement to this goal at single SME by itself is uneasy. To overcome this bottleneck some researchers or practitioners have proposed adopting collaboration framework with similar business partners, industrialized regions, or business groups, that usually operate in other region relatively apart each other. By that means the business establishments could avoid simultaneous collapse and help each other even in the aftermath. Niigata prefecture recommends and leads establishing “*otagaisama* BC partnership,” which means “reciprocal help” relation. In Chubu region - Nagoya and its surrounding area - they established “Chubu region disaster prevention forum” where some subregions and organizations participate as actors of BC partnership. The key concept here is that; consider not single firm but the region as a unit, establish inter-regional network as a reciprocal-help partnership between regions each having similar industrial structure, plan to help and share any business resources against disaster occurrence.

Now we notice that the inter-regional network for BC framework and the network as a foundation for innovation are two sides of the same coin. Kourakata (2011; 2014) proposes the reciprocal assistance partnership between regions as a counter measure against disasters both in which small and medium manufacturing firms concentrate, and this relationship with appropriate partner would function as an innovation network simultaneously. Olcott and Oliver (2014) raises a question; although many firms recognize effectiveness and efficiency of innovation network under the right condition, “why should alliances not extend to business continuity planning?” As stated above, we can say that two concepts of BC network and innovation network or business alliance is homogeneous, however, so little discussion that mentioned relationship between these can be found to date except for theirs.

In this research participant observation method is adopted; the author has been carrying out “networking project”

and takes a role of a facilitator between two regions explained later. Through the project we discuss and analyze what kind of factors contribute to the propensity of establishing and promoting inter-regional network, whether it is based on the concept of BC partnership or enhancing innovation capacity, where networking activity had not been done at least systematically in the past, with emphasis upon relationship between social capital formation and networking ability. In what follows observed behavior and consciousness to the networking activity by actors involved in the project are mentioned.

2. Some observed facts concerning to industrial networking or clustering

We do not discuss its appropriateness, however, the policies implemented by Japanese government that aimed to form clusters did select some regions with specific technological themes and allocated a great deal of budget to each cluster. While well supported clusters are there, other industrial agglomerated regions locating apart from metropolitan or other large urban area without clustering supports by central government still have insufficient functions to support and promote or intermediate local industries as foundation. Even if no public funding support, an industrial community where actors are connected by strong ties in the region can be seen as a pseudo cluster. Also inter-cluster linkages can be expected, if intermediary organizations that mediate relations between actors coordinate partnerships beyond the regional boundaries. However, a pseudo cluster may likely be caught by aforementioned lock-in effect unless sufficient mediating capacity.

The objective of this research is to discuss the possibility of network establishment between two industrial communities in different regions; Tsubame City and Ojiya City. Both cities are located in an area called mid Niigata prefecture and small, medium and also micro sized manufacturing firms agglomerate, large portion of which are involved in metalwork, precision machining and mechanical industries. The epicenter of Mid Niigata Prefecture Earthquake is just next to Ojiya City and then manufacturing firms there received great damage, but recovered very rapidly. Kourakata (2011) reported that mutual assistance nature in the regional community contributed their quick resumptions of businesses from the disruptive disaster. On the other hand it is well known that “drawings once dropped into somewhere Tsubame, go around in the city, and then comes back with finished goods.” More precisely saying, a certain enterprise as a gateway arranges temporary manufacturing process, sometime lasts relatively long term perhaps, according to the order received involving other firms that operate single process respectively, as if there is a single factory. This means there are spontaneous industrial network already. Both cities do not have a common administrative boundary though, distance between city centers is not as much as 50 km and the Hokuriku express way makes traveling time one hour or less by automobiles. In spite of such circumstances, systematic networks between two industrial communities in both regions have been seldom observed, except for some trades between individual firms.

Niigata prefecture started *otagaisama* BC partnership program in 2010 triggered by two earthquakes in 2004 and 2007, and 134 enterprises in Niigata, which shows their intention to respond to call for help by struck region, were registered on the list for the program just after 3.11. According to an interview to a person in charge of the program, however, almost not any actions like emergent OEM production or giving business resource to the damaged enterprises have been confirmed. Niigata prefecture, chamber for commerce and industry in each region, the author also have continued encouragement for establishing inter-regional networks that enhances mutual assistance framework especially between regions where manufacturing SMEs agglomerate, including Ojiya and Tsubame. However, we have merely observed cases that led to the agreement. Some local governments and institutions answered to our proposal that

they did not estimate any benefit from BC partnership at all. In fact BCP establishment rate even at the individual enterprises are also still very low in 2013, in spite of rising interest in importance of BCP and enlightenment activities by governmental sector distributing guidelines or brochures (MRI, Inc., 2014). We may understand that executives and managers at private companies hope to avoid spending business resources for counter measures against “black-swan” incidents, which perhaps never affect to them. Besides, business entities often expressed their concerns that could arise from reciprocal assistance. That is; had linked firms different production techniques or customers, they will be complementary each other, however, common customers and markets of them or almost same business category makes them competitors each other. Hence, in latter situation, they do not hope to disclose the specific information for manufacturing or to agree with alternative production, even when disruptive incident occurs. Additionally a company’s president pointed out the lack of faith complaining that once he accepted a request of alternative production from a collapsed manufacturing firm at 3.11 earthquake, with that no usual trade nor collaboration he had, and then completed preparation but it was suddenly canceled without any compensation.

Needless to say, linkage to other external industrial communities is an essential factor to enhancing innovation capacity, therefore, establishment of inter-regional network must be one recommended answer for regional innovation and to decrease lock-in tendency also. Simultaneously such network can strengthen resiliency of industry as a whole in each region. Now and here we have a question; what kind of differences are there between spontaneous intra-regional network and inter-regional one that hardly form even with support and encouragement from outside of the region.

3. Establishing inter-regional network: hypothesis and its implementation

3.1 Extraction of factors enhancing continuous networking activities

As we frequently see at existing innovation or networking programs supported by governmental sector, if promoting formation of inter-regional network exogenously is considered, establishing intermediary organizations, public research institutions, and higher education institutes as foundation, deploying coordinators, giving kinds of seminars, etc. are rational measures. However, these are accompanied with great deal of expenditure. Under severe fiscal condition in Japan, it is hard to expect receiving public fund for establishing inter-regional networks. Meanwhile, Cooke and Wills (1985) reported that private companies which participated in publicly funded networking programs and received any benefits showed tendency of intention to expand and enhance industrial networks also after the programs finished, even if necessary cost must be absorbed by themselves. Seeing the aspect from another side, we would expect the possibility that recognition of benefit available from the network could make “assumed” actors establish the network linkage spontaneously with minimum cost, perhaps costless, even if public funding or support is not presented.

So what is the benefit available from network?

As mentioned in preceding chapters, these are generally exchange and sharing of not only codified but also tacit knowledge through rich communication, improvement of technological skills of actors, and then innovation as a final fruits. But more intrinsic value is fostering mutual understanding and trust among actors caused by mainly face-to-face communication, i.e., formation of social capital among the actors as a seedbed for innovation which enables them to talk “just between you and I.”

In other words, we can draw a hypothesis; *if social capital could be formed between or within “assumed” regions based on any factors and a feeling of mutual trust among actors were fostered, an inter-regional network then*

would be endogenously constructed overcoming geographical distance, with minimum cost or costless perhaps, that would lead both to regional innovation and resiliency. But the most important issue for policy makers and its practitioners is how they establish this preferable situation in the regions. As Gronum et. al. (2012) reported in their research, there is doubtless possibility that networks raise economical performance at involved firms and organizations, however, some cost, even though minimum, should be occurred to maintain and expand it. Besides, it will take long period until their effort returns as a result, often more than a few years, and further is of stochastic. Therefore, showing and understanding the objectives or incentives that may be gained from networking is so hard that, a network once established frequently decrease or dismiss because of its nature before getting results.

To verify the rationality of the hypothesis, the author planed to and began to apply following strategy while he takes a role of networking facilitator assuring that actors well understand the importance and effectiveness of inter-regional network as beneficiaries, establish network linkages by themselves, maintain it and bring in new actors from various sectors as needed, and expand it spontaneously.

a) Neither publicly funded supporting program nor top-down approach should be applied.

Bottom-up approach is very important especially at the beginning period of networking. Network should be formed based on actors' autonomy, which means that actors should not be only beneficiaries but also facilitators simultaneously, where they would recognize give-and-take relationship that makes free riders feel uncomfortable. External supports by governmental sectors are helpful of course, however, it sometimes reflects administrator's intention or political situation, and then sudden political change may cause discontinuity to networking activity. Above all, human in general are more likely to keep and maintain something created by themselves than ones presented by some others.

b) A few persons are retrieved as influencers in each region, who are relatively younger top managers or successors at firms. They are expected as gateways or hubs in the intra- and inter-Regional networks and the first generation actors.

Both in Ojiya and Tsubame Cities it is rationale to consider that intra-regional network have been established as social capital. In such societies there must be leaders of existing communities and they also must take a role of information hub. So called word-of-mouth communication endorsed by mutual trust in local community often spread faster with higher influence than published matters. The trusted and respected community leaders could be gateway also to the outside of it. Top managers or successors at core firms will be acceptable being community leaders where SMEs agglomerating regions. Historically Ojiya and Tsubame have flourished with manufacturing industry more than a hundred years, so many firm founders are there. However, they are hardly considered as gateways, because we frequently observe them, who are rather craftsmen than business executives, not to be affirmative about interaction with outsiders. Whereas younger managers or successors seem to be social and willing to link new business partners, thus they can be more appropriate as a networking trigger, and also as an enhancer, than their ancestors.

c) Reciprocal visit between regional industries periodically

To keep opportunity for close and face-to-face communication reciprocal visit must be effective. While face-to-face communication fosters the sense of affinity, direct interaction could induce awareness of difference on the other hand. Interaction with unusual community generates exchange and sharing of unexpected knowledge and information that

leads to innovation. Besides, knowing differences between different communities means knowing themselves objectively. When shortage or lack of knowledge, skill, or information is acknowledged, further interaction can help to learn something new in a give-and-take manner. However, this sense of mutual-aid partnership that allows information disclosure to the extent even which does not disturb informer's own business absolutely needs establishment of reciprocal trust. Perhaps the last phrase may be most important and difficult issue to be inter-regional network sustainable.

3.2 Common objective and cooperation as inter-regional ties

Whether endogenous or exogenous, networking program that involves various participants frequently develops a particularly new goods, services, or technologies in collaboration as a milestone. Such a way is appropriate and recommended if almost all the participants share a mutual interest and can expect final revenue with rationale estimation. But according to observation and experience by the author so far, not a few program give greater priority to DOING collaborative R&D project with insufficient market and profitability research, then non-core members who lose interests withdraw from the project, networking activity stagnates, and finally whole the networking program fails. Exceptional case that does not considers direct economic effect may be adopted as a "symbol" of the network, however, building consensus to the project among every participant paying some costs is absolutely necessary.

We find many examples in the publicly funded networking programs whose "results" were measured by numbers of patents applied or registered, contraction based collaborative researches, newly developed and released products or services, and so on. Evaluation of the program by these "proxy variables (Yokura, 2009)" is understandable to some extent. Intrinsically innovation can be evaluated only after increase of firm's profit and employment, deployment of highly competitive new products or services, and customer's satisfaction, however, as Yokura mentioned also, it takes long period of time until firm's economic performance reflects networking activity and collaborative R&D project, and especially for academic researchers and policy evaluation officials, it is not easy to grasp causality between the networking and revenue variation at SMEs, many of which are privately held companies.

Based on such background, we adopt in this research the backcasting approach and scenario analysis (Dreborg, 1996; Robinson, 2003) as a tool to trigger, maintain, and enhance inter-regional networking, instead of considering specific R&D theme. In general, we can say, existing or expected technology is conditional to received publicly funding support for R&D or innovation enhancement, and then the project shall form "technology push" style naturally. Making a blueprint based on the existing technology that they have in the region, the combination based project that can lead to innovation likely narrow technological area, because they may tend to "choose" from their existing knowledge. This means that all the actors in the region who hope to participate in the R&D project do not have appropriate knowledge, technology or skill, and then some actors are left behind the project. In other words, the forecasting approach adopted in networking effort could make the region or the community be locked in than ever in a case. Backcasting approach, which is more suitable to longer-term issue, sees the end point, the ideal goal, first of all, then considers what is needed to get the goal. At the next the applicable technologies they have are specified. If they do not have the necessary elements, availability of these are investigated; availability from outside of them, possibility of development, etc. Through such a pathway, i.e. learning and discovery in collaboration with the partner region, social capital between networked regions would be established, effectiveness and efficiency of the network are enhanced, and finally innovation would be induced and regional resiliency also would be strengthened.

4. Present attainment and research perspectives

The kick-off meeting to start this networking project was held in July 2014 with seven persons from both regions: six are presidents or top managers of SMEs and one is from chamber of commerce and industry who is assigned to promote SMEs' BC partnership. In spite of the very first opportunity to meet with each other, they had so lively discussion and exchanged their respective information and knowledge that led to some interesting issues as followings. In Ojiya the industrial association, which consists of more than 60 manufacturing SMEs, executes a certain skill training program for technicians at the members' factories. The participants from Tsubame was stimulated by this activity and pointed out it could be industrial competitiveness, however, Ojiya's business persons seemed to be unconscious of their own strong point caused by the program. In other words the information exchange between two regions made them be aware of their relative strong and weak points, and then subsidiarity also, only by linked outsider's eyes. The author could observe more concrete example that two companies from each region noticed they both are involved in the same ODA-related project currently in progress at the very first conversation. As a result, these two participants agreed to meet again after the kick-off for making discussion seeking possibility of further collaboration. All the participants also showed their intention to continue the networking project, to broaden area and members, and to seek collaborative business opportunity adopting backcasting approach even if they must share some costs by themselves. Such a smooth advancement of the networking project may ascribe to geographical proximity between two regions and both belong to the same prefecture and then relaxed atmosphere was quickly created. The cases constructing network between far-distant regions should be examined in future.

What is interesting is that the almost every participant in this project hopes to join being based on their own spontaneity not any public frameworks like clustering program operated by intermediary organization or governmental sector. It is perhaps only because they do not like and thus hope to avoid any enforcement factors that may restrict their free thinking. If the network activity continues and increases without intermediary organization, this implies the possibility of constructing "hubless" model, however, it is unclear considering that they have scarcely leverage the services provided by such an organization. Although the hubless network is very interesting, therefore, we will observe it carefully as the research proceeds, while investigating how social capital, geographical distance, and industrially structural proximity between linked regions effect on the participant's decision for their investment in constructing, maintain, and enhance inter-regional network and its evolvability to *otagaisama* BC partnership.

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