

## Social Innovation in Sabae City: As a New Type of Industrial Movement in Japan

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**Abstract**--This paper describes one case of regional manufacturing SMEs (Small and Medium Enterprises) in Sabae, a small local city in Japan. Their conventional business field was an old-fashioned, low-tech, craft industry. However, the entrepreneur challenged to develop their original material/process technologies based on their conventional tacit knowledge. As a result, their newly developed contemporary technologies enabled to be connected with ICT to produce innovative services on meal delivery. There are many similar stories in the same region. Although they were lack of huge capital investment and support by famous universities/laboratories, such as Silicon Valley in USA, the people in Sabae have successfully grown many innovative entrepreneurs/enterprises in region, by utilizing mutual collaboration/trust in regional community as what we call "social capital." The case indicates a new wave of "social innovation" in Japanese local area, regarding vitalization of regional industries.

To clarify the background of the movement in Sabae, historical characteristics on industries, cultures, people, community, and religion are described in advance. The current status on their regional government's policy and their public services regarding Open Data Project is also introduced to characterize the region.

The mutual relationship among regional community, entrepreneurs and business innovation is analyzed, and the role of ICT regarding the movement is also discussed.

### I. INTRODUCTION

In the recent globalization, many manufacturing SMEs are facing with harder competition on cost reduction. To enhance the power of manufacturing SMEs, developing their original technologies or utilizing cutting edge technologies such as IoT (Internet of Things) or ICT (Information and Communication Technology) is urgent. Industry 4.0 in German and Industrial Internet in USA are thought to be ones of those movements. In Japan, one of the issues is how to encourage SMEs for their developing new technologies or how to induce and utilize the cutting edge technologies like IoT/ICT in real operations of manufacturing in SMEs for enhancing their competitive competence. Another issue is how to grow such aggressive and innovative SMEs. For the first issue, many SMEs have a difficulty to find out a concrete idea on how to develop their original technologies and how to utilize new technologies. Of course, it is a kind of technological issue on how to apply some technologies into real business/manufacturing operations. However, it also strongly depends on the mentality/policy of top managers of SMEs for challenging risky trials in business/manufacturing. In that sense, the second issue on growing challenging

entrepreneurs for SMEs is thought to be more urgent and essential for Japanese society.

Unfortunately, there is no Silicon Valley in Japan, in the context of that Silicon Valley is a place with huge capital investments for stimulating lots of J-curve-type (rapidly growing) start-up enterprises with high-tech. capabilities. The scale of investments and numbers of aggressive entrepreneurs in Japan are both smaller than those in USA as symbolized in Silicon Valley. However, even in such regions in Japan, mutual collaboration/trust in regional community are sometimes very strong, and sometimes these intangible assets as what we call "Social Capital" can play an important role for innovation.

This paper describes one typical case of an innovative entrepreneur of a manufacturing SME in Sabae[8], a small local city in Japan. Sabae was a poor village around one hundred years ago, in Meiji period. Gozaemon Masunaga brought a technology of fabricating eyeglasses to establish manufacturing industry in the city. He also established a craft-persons' union for growing entrepreneur and start-ups for forming many component-vendors and industrial integration on manufacturing. It was a kind of eco-system for mutual collaboration among regional enterprises to establish and play a role for producing/promoting entrepreneurship.

Although their main industries were traditional low-tech. industries, such as lacquer ware, eyeglasses and clothes, highly depend on tacit knowledge of craft-persons, they have been developed original material/process technologies utilizing with contemporary engineering technologies. After that, in the case of this research, their new technologies enabled to be connected with ICT to realize electric cooking cart system through IH (Induction Heating) with special dishes they originally developed. These technologies produced novel cooking and meal delivery services for large market including domestic and global ones. As a result, ICT could play an important role in this case. Business revolution with utilizing ICT has also proliferated to regional government in Sabae and they promoted "Open Data Project" based on democratic movement on public services.

The detailed characteristics of technological revolution and management manner of the enterprises in the city are described in the later part of the paper, to be analyzed in the aspect of how to promote innovation in regional society.

### II. LITERATURE REVIEW

Needless to say, to enhance the power of manufacturing

SMEs, entrepreneurship of top managers is very important, because it is essential for producing competitive competence of enterprises particularly for their developing original product/technology, or for developing effective business model/domain. As Schumpeter pointed out, entrepreneurs' personal passion and activities are driving force for innovating industries and changing economical situation of society. Westlund [9] pointed out that entrepreneurship can be divided in six different spheres such as, economic entrepreneurship, social entrepreneurship, civil entrepreneurship, political entrepreneurship, academic entrepreneurship, and innovative entrepreneurship, and that these spheres interact and mutually affect each other. It is inferred that entrepreneurs' motivations for their actions on economic aim and social/civil aim are mutually affected and related to each other. In this context, the consciousness of entrepreneurs on regional society is one important factor to grow innovative entrepreneurs.

Westlund, Larsson and Olsson [10] also pointed that social capital has an impact on entrepreneurship through a network of supporters, or mobilized support community, where social capital is defined as social networks and the norms and values distributed within and between these networks. This also suggests us that mutual affection between society and entrepreneurs will produce positive effects on both sides. To accumulate social capitals in regional community or society is itself important to grow entrepreneur and make a positive circulation between society/community and entrepreneur.

The affection of social capital to entrepreneur has been pointed out by many researchers such as Davisson and Honig [3], Liao and Welsch [5], Bauernschuster, Falck and Heblch [1], Doh nad Zolnik [4] and Westlund, Larsson and Olsson [10] particularly focused on growing process of entrepreneur. These discussions imply mutual affection between society and entrepreneur and positive circulation between them could produce effective innovation in industry/ society.

In this paper, one Japanese entrepreneur of a regional SME with innovative mind to develop new technologies and new business model/domain will be introduced.

Their business effort particularly focused on how to utilize cutting edge technologies or ICT will be described in detail. The relationship with other regional enterprises, regional universities and regional community, and the linkage of their businesses and social capital in region will be also described and discussed.

### III. FRAMEWORK OF RESEARCH

#### A. Research Questions

The research questions of this paper are as follows.

- a) What is the condition for manufacturing SMEs to utilize cutting edge technologies including IoT/ICT effectively?
- b) What is the condition of society to grow entrepreneurs and innovative enterprises?
- c) In particular, the object of this research is a Japanese

regional manufacturing SME with a strong power in business by utilizing cutting edge technologies including IoT/ICT for developing new business model/domain. What is the key factor of their success?

#### B. Hypothesis

A research hypothesis is that some kinds of social capital of region play an important role in growing such an entrepreneur/enterprise. And the relationship between SMEs and regional community will be one of significant elements for enhancing power of SMEs. Some kinds of culture, in region/enterprise, on generosity for challenging and entrepreneurship will also be significant.

#### C. Evaluation methodology

The hypothesis will be evaluated by studying one concrete case through interviewing to the top manager of the enterprise. In addition, regarding the regional cultural background, interviewing to the mayor of the regional government office, some citizens of community, and some other top managers of regional SMEs will be also done for characterizing the region. To describe the details of case and analyze the relationship between enterprises and society, empirical qualitative study methods were thought to be relevant for researching.

The concrete major interviewee are Mr. Hyakuo Makino, mayor of Sabae city, Mr. Akio Shimomura, president of Shimomura Shikki Corporation, and Mr. Kazumi Komatsubara, president of Boston Club Corporation. The interviews were done in Sabae city, as their home ground, in September 7<sup>th</sup> and 8<sup>th</sup> in 2015.

For collecting some additional information, the informal documentations provided by them and the websites of the enterprises and the public office were useful. But the most important information on the motivation of developing technologies and how to come up with the ideas of new business models could be collected only through interviewing. Direct interviewing to the entrepreneurs was so important and effective in this research.

### IV. CHARACTERISTICS OF SABAE CITY [8]

The enterprise named Shimomura Shikki Corporation, introduced in this paper, is tightly linked to regional community of Sabe city. In this section, the characteristics and history of Sabae itself are studied to clarify the relationship between regional SMEs and regional community, in advance.

#### A. Characterization and history of the region

Sabae city in Fukui prefecture is a small city with the population of around seventy thousands. In Japan, most of the local cities are facing on the issues of depopulation and aging. However, Sabae is a very precious region of increasing population. According to the current statistical research on the population of Sabae, their population was

always increased for sixty years. It is known that the city government has been making much effort on reforming education system, participation of citizens for self-government, advancing welfare work particularly on supporting younger women, and so forth.

Historically, it is said that Sabae has been a religious region and they had many Sunday schools and meeting halls on religion. They have grown the culture of reciprocal help and mutual respect. Generosity and tenderness for losers and powerless people are also said to be characteristics of the cultures of this region.

One typical example was the activity of Gozaemon Masunaga in Meiji period. As mentioned before, he induced technologies for fabricating eyeglass to encourage regional people and regional economy. The important point is that he not only induced technologies but also established what we call "Eco system" for growing human resources in the region. He established a kind of craft persons' union called as "Chouba-sei," which is an organization to grow craft persons. In the organization, many craft persons were competing their technique to advance their capability, and once a certain craft person reach to a level for independence, the organization support the craft person to initiate his/her own business by establishing his/her own enterprise. This system promoted ecological circulation of regional business by growing entrepreneurs and many SMEs manufacturing components/parts of eyeglass based on division of labor of eyeglass production. That is, Sabae region was formed as a kind of virtual LE (Large Enterprise) on eyeglass. They respected and encouraged entrepreneurship as a regional culture, so that many enterprises and many entrepreneurs were grown in the region. It is said that now they have over one thousand presidents and one thousand SMEs in this small regions. To collaborate with each other by the connection on trust and solidarity, they were generous for losers in business. The culture of transaction not by cash but by trust was produced in the region. The mentality of open mind for strangers or outsiders was also grown. And thus, the region has grown many challenging enterprises such as Shimomura Shikki Corporation, and the basis of inducing cutting edge technologies including IoT/ICT for business innovation in this region also depends on the regional culture and the regional community.

### *B. Mayor and his challenge*

Recently, the city faced on the crisis of autonomy. By the affection of Japanese government's promotion of margining small cities, there was a big argument on merger of Sabae city and Fukui city, a larger city next to Sabae. The former mayor intended the merger of the two cities but many citizens of Sabae were against for merger. There was a serious conflict on the regional government policy and the citizens were divided to two groups, on approval side for merger and against side for it. The recalling movement for the mayor was made and continued for over two years. As a result, the policy for merging was rejected by the citizens and

a new mayor, Hyakuo Makino, was elected. It was a tough period for Sabae citizens, however, throughout the conflict and the citizen movement, the consciousness of citizens on taking part in self-government was much grown and the movement of a kind of direct democracy was generated in the region.

A new mayor, Hyakuo, is a person with strong entrepreneurship and he developed many new projects for direct participation of citizens to public services. He mentioned that among around eight hundreds projects that regional government is involved in, almost three hundreds projects can be handled directly by citizens. Actually, he made around forty projects by outsourcing to citizens. One example is establishing what we call "JK (Joshi-Koukousei) section" in public office. JK means high school female students and the section is based on the voluntary activities of those students. Some students produced a mobile-phone application for knowing arrival time of coming bus, and some others an application for knowing vacancy of seats of public library. There produced many new ideas and projects for citizens' daily lives and these movements were supported by ICT enterprises in the region.

### *C. Inducing ICT for Open Data policy*

To promote direct participation of citizens for public services, ICT is a key technology because it is essential for peoples' sharing information and mutual communication. Fortunately, they have many ICT start-ups in the region and those enterprises willingly supported the citizens' movements. Also some university professors on ICT also kindly supported the movements.

The mayor Hyakuo himself recognized the significance of ICT for the activities of regional government. He initiated his blog in website for sending information from mayor side, and is utilizing SNS very positively. The regional government opened the crowd-funding service on the website of public office to encourage the voluntary projects by citizens. They joined what we call "Open Data Project" which means public office opens many data to utilize them for citizens' daily lives convenience. By sharing the data, many citizens can create some ideas to use them for some kinds of public service by themselves.

The mayor and the regional government are so positive for challenging new projects like a start-up enterprise. Cutting edge technologies like ICT played an important role in public services in this city.

The cultural background introduced in this section strongly affected to many SMEs in the region in the sense of growing challenging spirits, generosity for failure and open-mind for inducing/utilizing new technologies, as shown in Shimomura Shikki.

## V. CASE OF SHIMOMURA SHIKKI CORPORATION [7]

Shimomura Shikki is a corporation of lacquer ware (Japanese traditional dish craft) manufacturing and its sales.

Even though they are involved in such a traditional industry field, they produced an innovation on dishes by using contemporary engineering technology and made a dramatic change of business model in meal delivery service utilizing ICT.

*A. Business content and history of the enterprise*

The enterprise was founded in 1900 (Meiji Period in Japan) and thus has a long history over one hundred years, maintaining their traditional technique on craft by their mission. Even nowadays, they are continuing their traditional fabrication of lacquer wares as luxury tableware for rich consumers and exclusive restaurants of Japanese traditional dishes. However, they have also enlarged their business area into low-price business ware for hotels, hospitals, ordinary restaurants, and homes. As mentioned later, they are also aiming to enlarge their business in quite different business area like meal delivery service or else. The number of their current employees is only thirteen.

In history, during maintaining their traditional technique and business, they initiated a business of low-price ware for military use in 1944 (during the second world war), by utilizing artificial material of plastic instead of traditional natural material of wood for a base of lacquering. After that, they initiated to handle melanin ware, in 1961 and heat-resistant ware in 1990. In 2004, they started the joint-research with Fukui University, and developed many technologies on lacquering and multi-layer coating technique by researching basic engineering, just as what we call high-tech. companies. Some results of their research were used for coating special electric magnet of acceleration machine, which has contributed the project awarded the Nobel Prize. They joined with many government research projects and awarded some prizes on manufacturing. At the end, they have developed technology for fabricating a special ware for IH (Induction Heater) system, which is a heat cooking system completely controlled by electric signals. That was a technological innovation in ware, because IH system needs metal structure for electric-magnetic operation but metal is not suitable for tableware to touch. Their special ware is not hot for touching, but can be electrically partially heated by IH system by using their special technique for coating. As mentioned later, that enabled us to produce a quite new meal delivery service.

The reason why they have been driven to such tough R&D for new products was that they faced with crisis of the lacquering industry in 1990's, during a serious economical stagnation in Japan. Historically, lacquering ware was a very expensive and luxury craft for rich people because the craft persons of lacquering ware need to spend much time and use specially trained technique. To make lacquer wares is a very troublesome job for a long time. The specially trained craft persons should coat a wooden base with special lacquer made by natural wood material over one hundred times. The fabricated wares are so beautiful that they were selected one of the excellent Japanese traditional crafts. In Edo

period before modernization, lacquer wares were used as special tributes for tycoon (general). Especially the three regions such as Kyoto, Wajima, and Echizen (old name of Sabae region) have been known as the production base of traditional lacquer wares. Kyoto ware is famous as its beauty, Wajima ware as its solidness, and Echizen ware as its popularity. And even after modernization, lacquer ware had been still famous as luxury tableware for use in exclusive restaurants. However, in 1990's, Japanese economical bubble was collapsed and Japanese society went into long stagnation. The number of customers for exclusive restaurants was decreased, and thus the exclusive restaurants became to stop purchasing luxury tableware like lacquer ware. Therefore, the lacquer ware industry itself went into serious stagnation and Shimomura Shikki Corporation also faced with crisis of bankruptcy.

*B. Entrepreneur and his challenge*

The current president, Akio Sjimomura (Prefix is omitted in the paper), just entered to the enterprise to succeed a family business after his graduation of engineering department in Hosei University in Tokyo. To overcome the crisis of the enterprise or the industry itself, he made up his mind to research traditional lacquer technique by using contemporary engineering technology to develop new products, after his spending twelve years in his enterprise. His capability and education background were so effective for his purpose, and he collaborated with regional university to establish joint-research on coating technology. His intension for research coating technology was to develop a quite new product by using coating technology such as tableware using artificial material of plastic for IH. At that time, the lacquer ware using plastic was popular because of the low price. The plastic wares were sold to family restaurants, so popular at that time. Akio was thinking on how to contribute to society as well as to rebuild the business, and came up with the idea to realize lacquer ware for IH use. Not only for business but also for contributing to society/local-community, lacquer ware for IH will be an innovative product because it is convenient for aged people by automatically cooking dishes controlled by electric program. However, IH system needs metal structures those which are not suitable for human touching as tableware. Low heat conduction material using traditional coating technique should be developed for his purpose.

Historically, traditional craft technique such as lacquer ware was inherited from craft person to craft person based on their tacit knowledge transferring. Nobody tried to research the traditional technique by using contemporary engineering because the craft persons don't like it. But Akio enthusiastically asked the collaboration of the craft persons, and continued the research with researchers in many universities, such as Fukui University, Kyoto University and Nagoya University. His wife, as a pharmacist, was also became a good partner for the research, and finally he and his wife got a doctor's degree as a couple. The enterprise has

now three other doctors in totally thirteen employees as a very unusual thing in this industry. Eventually, the passion and incredible effort of Akio could realize a super high-tech. item in this traditional industry.

### C. *Inducing ICT and business model revolution*

The president, Akio, tried to research traditional craft technique by using cutting edge engineering technologies. He pursued the issue why traditional lacquer ware is so strong for deformation by heat. His scientific analysis produced many multi-layer coating techniques durable for heat change or corrosion. As a result, he developed lacquer ware for IH use finally. But once he developed the ware for IH, he could recognize the new item can enlarge the business model in many aspects.

- 1) The new item enables to cook food by electric signal and serve a hot and fresh cooked meal to inpatients in hospital, aged people in institution, pupil in elementary school, and so on. Particularly, the new item can prevent contamination for meal, such as O157 virus in conventional mass cooking system, so that it is very safe and useful for those facilities.
- 2) By developing electric tray for providing different control signal for different IH ware, different heating recipe can be adopted to each ware. It means that, in one tray, each ware provide different cooked food, such as boiled rice, soup, steamed egg, and so on. That means the tray can be a tool of automated cooking. If a cart can provide many electric controlled trays, hot and fresh meal of a variety of recipe/menu can be provided to each person through tray system. A quite innovative meal delivery service can be established by using this system, particularly for many aged or handicapped persons. If they focus on service, not selling products, the somewhat higher price of the IH ware does not matter for actual business.

To realize those ideas, they are now collaborating with many large enterprises of service industries to enlarge their business and also aiming to contribute to care aged people in regional community. Basically, Akio, president of Shimomura Shikki Corporation, wanted to contribute regional society and his passion to contribute to society was a strong motivation for promoting this business innovation. He felt a strong mission for encouraging lacquer ware industry itself for regional community, and that was one of the KFS (key factors for success) of his business.

## VI. ANALYSIS AND DISCUSSION

There are some important elements in the case of Shimomura Shikki Corporation, summarized as follows.

- 1) There was an affection of historically-made regional culture of generosity for challenging and mutual collaboration with other organizations. And a top manager and the employees in this enterprise were feeling

a responsibility/mission for contributing regional society.

- 2) The enterprise has once faced with a serious crisis of industry/enterprise and thus consciousness for crisis and spirit for overcoming it were produced in the top manager and the employees. As a result, the enterprise promoted the culture of respecting challenging and generosity for failure.
- 3) To overcome the crisis, the enterprise challenged to develop their original technologies by utilizing cutting edge engineering/ICT technology, even though their conventional business field was an old fashioned, traditional craft industry. In particular, they utilized the accumulated tacit knowledge to establish explicit one by using contemporary engineering technologies.
- 4) They were challenged not only for developing new technology, but also for establishing new business model or developing new market domain with their strong entrepreneurship. Especially, they produced an innovative service business by combining their technology and ICT.
- 5) They positively collaborated with outside power or network such as universities, other regional SMEs, or regional community itself.

Even in the case of the public office in Sabae city, there are many similarities with above-mentioned five points. Of course, the above-mentioned case is the case of enterprise and the regional government/public-office in Sabae is not an enterprise. However, the common point for both cases is that both organizations once faced to a crisis and overcame the crisis by entrepreneurship and positively utilized ICT. In the case of Sabae city, the mayor is a person with strong entrepreneurship and his leadership in the organization is very similar to that of the entrepreneur of Shimomura Shikki. The basic characteristics of organization are similar in both cases.

The above-mentioned five elements are linked to each other and made a synergy effect as schematically shown in Fig. 1. Therefore, when all of these elements are satisfied at the same time, the synergy will be maximized. That is, the characteristics of regional culture and social capital, such as trust, generosity for challenging, respect for entrepreneurship, mutual collaboration and so on, much affected to organization activities in the case.

As Westlund, Larsson and Olsson [10] pointed, social capital has an impact on entrepreneurship through a network of supporters, and the norms and values distributed within the network. In the cases described in the paper indicate that mutual affection between society and entrepreneurs will produce positive effects on both sides. Therefore, to accumulate social capitals in regional community or society is itself important to grow entrepreneur and make a positive circulation between society/community and entrepreneur.

In this sense, management of regional society is important not only for daily lives of citizens but also for activities of regional enterprises and status of regional industries.

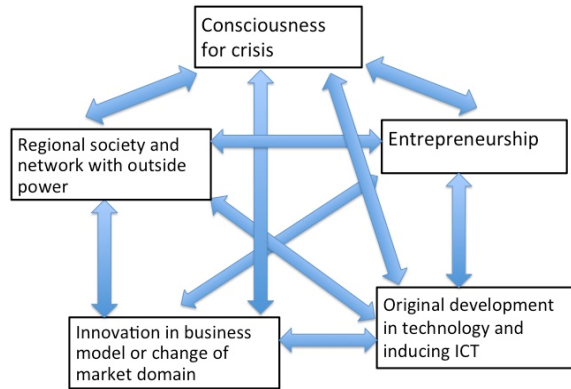


Fig. 1. Schematic view of the synergy effect among the five elements

One additional evidence regarding interaction between social capital and industry is shown in the case of Boston Club Corporation [2], an eyeglass enterprise in Sabae. The president of the enterprise, Kazumi Komatsubara, mentioned about the support for his business by regional community, through the interview. When he was young and intended to establish a start-up enterprise to produce originally designed eyeglass, even though he had no capital, no factory and no fabrication tool for eyeglass production, his regional friends and many regional enterprises supported him to establish his own eyeglass start-up. By utilizing network in region, he could establish his enterprise and could enlarge the business, he emphasized.

So far, the implications to the research questions of this paper are summarized as follows.

- a) To develop original technologies utilize cutting edge technologies including ICT or IoT effectively in manufacturing SMEs, strong entrepreneurship, based on consciousness for crisis, and networking with regional community and many outside powers like universities or other enterprises would be essential.
- b) To grow entrepreneurs and innovative enterprises in region, regional community itself should be open-minded and generous for challenging and have a spirit of mutual collaboration/ trust.

As for a research hypothesis, at least in the range of observing the case in this paper, social capital of region play an important role in producing innovative entrepreneur/enterprise and the interaction between such innovative SME and regional community is one of significant elements for enhancing power of SMEs.

The cases infer the significance of social innovation to produce social capital for producing innovative enterprises, as in the same context of “Innovate America: Thriving in a World of Challenges and Change,” by Palmisano [6]. As he mentioned, in order to encourage enterprises and industries, the characteristics of society should also be advanced for producing innovation.

Different from Silicon Valley in the USA, the situations in

many regions in many countries are not suitable for dramatic industrial revolution. The power of investors is not so strong in Japan, therefore, to grow start-ups and encourage SMEs, the power of regional society is more important in Japan. The industry revolution model observed in Sabae gave us many implications. Sometimes, ICT or other cutting edge technologies can produce incredible change of business model/domain even for SMEs in region. However, to merely induce the technologies to SMEs without sufficient management conditions mentioned before will not be effective. To arrange the sufficient management conditions and to make a synergy to each other are very important for advancement of manufacturing SMEs.

## VII. CONCLUSION

One Japanese innovative manufacturing SME utilizing cutting edge technologies including ICT were introduced for getting implications on how to enhance the power of manufacturing SMEs. The historically made regional characteristics of the enterprise were also described and analyzed in the view point of interaction between regional community and regional SMEs.

Shimomura Shikki Corporation is a regional manufacturing SME, in traditional craft industry of lacquer ware. The enterprise realized dramatic change of business model or market domain by using their originally developed technology. The important points in this case were summarized as follows.

- 1) Affection by regional culture on generosity for challenging and respect for entrepreneurship through interaction between regional community and SMEs.
- 2) Experience of organization/industry crisis and strong entrepreneurship in a leader and organization members.
- 3) Developing original technology by utilization of cutting-edged engineering technology including ICT.
- 4) Creation of new business model or new market domain by utilizing technologies.
- 5) Positive collaboration with outside entities such as universities and other enterprises.

Additionally, the regional government organization (public office) of the region has the similar tendency in their activities. It is inferred that the mutual affection between regional society and regional SMEs is so important in the case and a regional community encouraging innovative entrepreneurs/enterprises is essential for vitalizing regional industries and advancing regional economy. In such a sense, to grow social capital on generosity for challenging and mutual trust is a precious treasure for advancing regional industries. Inducing cutting edged technologies including ICT to SMEs will be much more effective if these additional management conditions are satisfied at the same time.

A kind of industry revolution produced in Sabae city can be one benchmark for regional social innovation and advancement of manufacturing SMEs in Japan, or any other

country.

To encourage industries and produce innovation, huge capital investment for hopeful start-ups or SMEs is one effective way as shown in Silicon Valley in the USA. However, this manner cannot be adopted in many regions in many countries because lack of capital asset. For many powerless regions in many countries, some other manners for vitalizing regional industries will be needed. To encourage such SMEs in powerless regions, mutual collaboration and networking among regional SMEs based on social capital of trust, solidarity, mutual respect, and strong linkage can be another effective manner. It is inferred through the cases in this paper that accumulating such social capital may be essential for advancing both society and industry.

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#### REFERENCES

- [1] Bauernschuster, S., O. Falck and S. Hebllich; "Social capital access and entrepreneurship," in *Journal of Economic Behavior & Organization*. V. 76: 821-833, 2010.
- [2] Boston Club, Retrieved 10/26/15 World Wide Web, in <http://www.bostonclub.co.jp/index.php>
- [3] Davidsson, P. and B. Honing; "The role of social and human capital among nascent entrepreneurs," in *Journal of Business Venturing*. V. 18: 301-331, 2003.
- [4] Doh, S. and E. J. Zolnik; "Social capital and entrepreneurship: An exploratory analysis," in *African Journal of Business Management*. V. 5 (12): 4961-4975, 2011.
- [5] Liao, J. and H. Welsch; "Roles of Social Capital in Venture Creation: Key Dimensions and Research Implications," in *Journal of Small Business Management*. V. 43 (4): 345-362, 2005.
- [6] Palmisano, S. J.; "Innovate America : Thriving in a World of Challenges and Change," 2004, Retrieved 10/26/15 World Wide Web, in [http://www.compete.org/pdf/NII\\_Final\\_Report.pdf](http://www.compete.org/pdf/NII_Final_Report.pdf)
- [7] Shimomura Shikki, Retrieved 10/26/15 World Wide Web, in <http://www.shimomurashikki.co.jp>
- [8] Saba city, Retrieved 10/26/15 World Wide Web, in <http://www.city.sabae.fukui.jp>
- [9] Westlund, H.; "Multidimensional entrepreneurship: theoretical considerations and Swedish empirics," in *Proc. of the 50<sup>th</sup> Anniversary Congress of the European Regional science Association*, Sweden, Aug. 2010.
- [10] Westlund, H., J. P. Larsson and A. R. Olsson; "Start-ups and Local Entrepreneurial Social Capital in the Municipalities of Sweden," in *Regional Studies*, V. 48, (6): 974-994, 2014.