

Sustainable Innovation in Regional Development  
– Implication for Ecological Style of Business Management –

PhD & Prof. Makoto Hirano  
Entrepreneur Engineering Course, Graduate School  
Kochi University of Technology  
185 Miyanokuchi, Tosayamadamachi, Kamishi, Kochi Pref., 782-8502, Japan  
Phone: +81-887-57-2400 Fax: +81-887-57-2124  
E-mail: [hirano.makoto@kochi-tech.ac.jp](mailto:hirano.makoto@kochi-tech.ac.jp)

Abstract

Sustainable innovation is needed in many rural regions. In many rural regions which are lack of conventional business resources, such as capitalization, natural asset, advanced technology, and so forth, regional people need to develop their own business resources by creating new value in some resources apparently valueless in conventional context. That is, they need to recycle useless things surrounding their daily lives, or to develop a new usage of useless garbage by their own device. In addition to that, to support many powerless regions, these kinds of innovation should be produced continuously or successively in the regions for a long time. This paper explored and analyzed three business cases in Japanese rural regions to identify the characteristics of such sustainable innovation and induce effective universal implications for many other powerless regions in current global world.

The first case is a business of selling leaves in mountains, the second case is a business of selling wooden saving garbage and the third case is a business of selling deformed citrus which cannot be sold in commercial market. All the cases are found in mountainous villages in Shikoku-island in Japan. In these cases, the village people have been spending many years for marketing, making much effort in improving commercial items to develop a new business model and create new business resources for completing the shortage of conventional business resources. Moreover, they have activated senior people in mountainous villages those are losing younger generation in depressed industries, and they re-discovered value of senior people in another word.

All of their activities are effective to maintain natural resources and ecological circumstances in the earth and thus sustainable. In that sense, these kinds of innovation are suggestive and adaptable to many other regions in the world.

Keywords: sustainable, innovation, region

## I. Introduction and reviewing related literatures

Regional disparity is one of the most serious social issues in current Japan as well as many other countries. Through globalization, many rural regions in Japan have lost their competitive competence in industries because of the growth of many emerging countries with lower labor cost and spilled-over technologies. Not only in manufacturing industries but also in primary industries such as agriculture, forestry and fishery, many enterprises have lost their competitive competence. In manufacturing industries, some enterprises survived by shifting their production bases to the other emerging/developing countries, however, the same strategy cannot be effective in the primary industries because their production bases are tightly connected their own regions/lands.

How to encourage those economical stagnated/depressed regions and how to develop competitive industries in regions is a significant issue for many regional people and the government in Japan. And the similar situation happened in many other countries through globalization.

Back to the history of economics/management, industrial clustering in regions was proposed as one effective manner to encourage regions. That is, the power of each enterprise in regions was thought to be enabled to enhance by regional clustering. Marshall (1890) pointed out the economical effect of geometrical integration of enterprises, in the viewpoints of cost reduction of production and logistics by factory integration and scale of economy. Many researchers like Anzoff (1965) or Krugman (1980) developed the theory by focusing on synergy effect and cost reduction by clustering. In the decade of 1990's, Porter (1990) pointed out the significance of knowledge integration for regional innovation. His focus was a synergy effect by accumulating, combining and sharing varieties of knowledge which leads us to innovation, like Silicon Valley in the USA. His theory also implicated that sharing tacit knowledge through regional human network is also a key for innovation and competitive core-competence of enterprises, as well as sharing explicit knowledge through information network. The importance of tacit knowledge in innovation was pointed out by Badaracco (1991) and Nonaka (1995). They described that the characteristics of knowledge link/circulation by two kinds of knowledge, explicit one and tacit one, and combining/sharing these two kinds of knowledge in organization are the basis of innovation.

In many depressed regions in the current situation, however, they don't have the basis of competitive industries, such as original advanced technologies like Silicon valley and any other significant business resource as a core for clustering. In

addition to that, to support the depressed regions, mere growth of single enterprise is not enough. They need continuous support and successive encouragement for a long time to produce their original, competitive businesses.

Needless to say, innovation is a change for business creation, which induces a new idea/resource/tool for establishing a better market environment surrounding an enterprise/organization. In many cases, how drastically change market/society was thought to be one of the important factors for evaluating innovation. However, how sustainably change market/society and how sustainably maintain ecological, natural environment are, or should be, the other important factors, particularly in current days.

Interestingly, those kinds of sustainable-type innovation are sometimes found in some successful rural regions. Because many rural regions are actually lack of conventional business resources, such as capitalization, natural asset, advanced technology, and so forth, many rural people NEED to develop their own business resources by utilizing, recycling, value-adding, or value-finding on something surrounding their daily lives.

This paper explores and analyzes three business cases in Japanese rural regions to identify the characteristics of sustainable innovation and induce effective universal implications for creating new business model and finding methodology for innovation in current global world.

## II. Case 1: Selling leaves

The first case is a business of selling-leaves in mountains by Irodori Corporation, in Shikoku-island, Japan. Kamikatsu-cho is a remote mountainous village in Shikoku-island, with the population of about two thousands. Over a half of the people is senior generation over sixty five years old.

More than twenty years ago, typhoon damaged their orange farms which were the main industry of the village, and the village people were at a loss in losing their business resource. Mr. Yokoishi, a member of the village agriculture union (a branch of Japanese Agriculture Union), came up the idea of selling leaves in mountains to urban luxurious Japanese cuisine restaurants, at that time. Because the chefs of those restaurants are usually using natural leaves as decorations of luxurious traditional Japanese dishes, he though the village people could sell their leaves in mountains as commercial items.

The first time when they initiated the business of selling leaves, most of the village people did not believe that it could be a real business to earn money. As a matter of fact, no body purchased their leaves at that time. However, Mr. Yokoishi did not give

up and spent over ten years for marketing on how to make their leaves commercial items. As well as the common commercial items, there were specifications by users for leaves, for example, users had the specific demands on features, colors, qualities, sizes, thickness of leaves and also a demand for delivery timing. Mr. Yokoishi has been visiting many luxurious, expensive restaurants as a customer by spending much personal money to research suitable specifications of leaves for the target restaurants. After long time effort of his personal marketing, finally he established the know-how on how to sell leaves in mountains as commercial items. And he also established relevant supply-chain-management system using broad-band-service Internet technology.

Nowadays, the village people earn totally around three hundred million yen (equivalent to around three million US dollars) a year by selling leaves, and a certain old lady over eighty years old can earn over ten million yen a year only by selling leaves. An interesting story is that, nowadays, they can earn larger money by selling leaves of one persimmon tree than selling fruits of the same one tree.

This success story became very famous even overseas, and Mr. Yokoishi was evaluated one of the most successful social entrepreneurs in the world by an American journal.

The point of this story is that they could establish business by effectively utilizing the existent natural resources and the existent human resources, even though both resources were not thought to be so useful. Their business style is sustainable and ecological. They utilized existent resources without damaging natural environments. This case implicates a new style of innovation/business for us to survive in the current century.

### III. Case 2: Selling wooden shaving garbage

The second case is a business of selling wooden shaving garbage by Shimanto-drama Corporation in Kochi prefecture also in Shikoku-island.

Shimanto-river is one the most beautiful, clear stream, called as one of the three big, beautiful, clear streams in Japan. The length of the river is about two hundred kilometers and many villages are located along the river. Shimanto-drama Corporation was established sixteen years ago by the collaboration of tree villages along the river. Taisho village, Towa village and Nishitosa village invested eight billion yen by each to establish this company to support the village people's lives. In the next year, some persons purchased this corporation to privatize it completely. Mr. Azechi, who was a member of the agriculture union, entered in this company and spent his

whole life after that for establishing a business of Shimanto-drama. At the initial stage, the number of the whole employees of this company was only three, but nowadays they have twenty employees and around three hundred million yen of annual sales.

Their main business is selling agricultural and fishing products which are harvested and caught in the villages. They also produced original processed foods with collaborating with many village people and operated their own shop of foods and souvenirs, named Michi-no-eki Towa by utilizing the government support. Their shop was much successful even though it's location was remote and thought to be bad for business. One of the reasons of their success was they were producing many unique and attractive process foods and making many devices in the shop to attract consumers.

One very unique and interesting item is a package of wooden shaving garbage. There are lots of forests in the villages and the village people are selling woods of forests. Particularly, Hinoki woods have a good smell and they are popular for Japanese people particularly as a material of making a wooden bath-tab. Therefore, Hinoki woods can be sold in good price in Japan. In wood industry, there produced many shaving garbage in the process of commercialization of woods. Then, Shimanto-drama came up the idea to sell the wooden shaving garbage as a kind of scent bags to be used in bath. Because in the big cities and metropolitan areas common people cannot use expensive Hinoki bath-tab, they thought that the urban people can enjoy the smell of Hinoki by purchasing their Hinoki shaving garbage package. They have been selling one package of the garbage with eight hundred yen in their shop and it became very popular. Now they are selling the garbage through many other souvenir shop channels.

#### IV. Case 3: Selling deformed citruses

The third case is a business of selling deformed citruses (Yuzu orange) by Umaji-mura agriculture union in Umaji village in also Kochi prefecture in Shikoku -island.

This village is also a small village in mountainous area with the population of only about one thousand. 34 percent of the village people are the senior generation over sixty five years old. In the past, the main industry of the village was selling woods in the forests of the mountains. However, the price of woods was drastically decreased by the appearance of inexpensive Asian woods by globalization. The village people should give up earning money by selling woods to compete with Asian countries.

They were also growing the trees of Yuzu, Japanese citruses like an orange, in the mountains since about fifty years ago, so that they would like to sell Yuzu fruits instead of woods. However, their Yuzu fruits were mostly deformed and not suitable to sell as

a complete natural fruits, because Japanese people don't like to buy deformed fruits.

Then, they came up with the idea of making juice and seasoning by deformed fruits. But the time of launching their business, the situation was so bad that they could not sell their items easily. Mr. Toutani, a leader of the agriculture union, played a leadership role of marketing and promoting the items for over twenty years. He devoted his life to promote the items of Umaji village by nice package design, flyers, and TV campaign. His strategy was to make an image of primitive, peaceful lives in a rural village in mountainous area with natural beauty by promotion, in order to attract urban people to this small village itself. And all of the items such as juice, seasoning and wooden bags made in this village were characterized a part of such peaceful natural lives. By the success of this strategy, their items have been getting popular and got an award in the department exhibition. In addition to the success of their promotion, they have reduced the cost of retails and logistics by utilizing Internet selling and direct delivery of products.

Nowadays, they have over eighty employees for this business and annual sales over 3 billion yen. Currently, they have many tourists of over twenty five thousand people a year and the village people have been getting strongly proud of themselves and their remote village.

## V. Analysis and discussion

Three cases have some similarity in the manner of encouraging regions.

### 1) Recycling resources:

In these three cases, all of the village people used the resources useless in the conventional context.

In the past, leaves of trees were not the commercial items to sell. None could sell leaves of mountains. Also, wooden saving garbage was only useless garbage to throw away. The deformed citruses could not be sold as well as the other two cases. However, Mr. Yokoishi of Irodori Corporation had continued making much effort on marketing and researched which kinds of leaves could be sold for over ten years, and finally he became successful to make leaves commercial items. Also, Mr. Azechi of Shimanto-drama Corporation and Mr. Toutani of Umajimura Agriculture Union had been involved in marketing activities for a long time. Those efforts could create a new commercial item as well as the case of Irodori.

In these three cases, they did not damage nature to produce commercial items but they re-used and recycled the garbage things useless in the conventional context. In that sense, their businesses are suitable through ecological maintenance of the

earth.

Actually, the people of Kamikatsucho, Shimanto and Umaji are very much respecting nature itself. Kamikatsucho is also famous on their zero emission movement by aiming complete 100% recycling of all daily-life garbage. All of the three regional people love their life style of getting along with surrounding nature and are enjoying their primitive lives in remote villages.

2) Activating powerless people:

By the success of the businesses, three regional organizations were also successful to activate powerless people in remote areas. In Kamikatsucho, the senior generation in the village was so much encouraged by the success of the business. Usually, senior generation particularly over sixty five years old was not expected as strong labor force because of their physical capability. However, in the business of Irodori, senior generation was the suitable people to find out the leaves fitting for the restaurants' demands because they knew very well about threes and leaves in their hometown mountains. Because leaves are small and light items, even the senior generation without strong physical capability can easily handle. By finding out the enjoyment to earn much money themselves and buy many things for their family by earned money, the senior generation in Kamikatsu village was so much encouraged and activated. As a result, the village was successful in reducing health-care expense for senior generation. As a matter of fact, Kamikatsucho is famous in the point that the health-care expense for senior generation in region was smallest in Japan.

Also, the people related Shimanto-drama and the people in Umaji Village were also much encouraged by the success of their business and recovered their self-confidence. Shimanto-dram has established a membership club named "River" and has been issuing a seasonal journal to describe the enjoyment of the life along Shimanto-river. They also published the book titled "A book of Water" with many articles regarding water or the lives in river-side by many famous, eminent artists, writers, and novelists. They themselves love their natural lives along Shimanto river and proud of such a life style. In Umaji village, the people have the same feeling and now they intentionally use regional dialect even when talking with the outside people.

As a result, in these three cases, we can say that the businesses are effective in ecological maintenance for human being as one of natural resources. In that sense, in these three cases, the businesses created not only a new value of business resources but also a new value of people itself.

### 3) Creating sustainable innovation

These three cases can be called innovation because they created a new business model by using a new manner of utilizing natural and human resources. These kinds of innovation cannot produce huge market and huge profit like a J-curve high-tech venturing. Their main target is a niche small market and there are not aiming mass production. They don't damage any natural circumstance and they don't fire senior or powerless people. Because of this, their business can continue for a long time essentially. Their growth of revenue is not increasing drastically or dramatically, but is stable and sustainable. In that sense, these kinds of innovation can be called as "sustainable innovation."

The sustainable innovation described in this paper is not only valuable for powerless rural regions/people but also suggestive for many large enterprises and their employees in the world. One reason is that ecological maintenance of the earth is so important for all people and enterprises over the world. Another reason is that sustainable growth with maintain employment and resources is important for many countries, particularly for advanced countries. The business models proposed in three cases has some implications for many enterprises and many countries in that sense.

## VI. Conclusion and remained issue

Three business cases in rural mountainous regions in Japan were described and analyzed. The first case was the business of selling-leaves by Irodori Corporation, in Shikoku Island, Japan. The second case was the business of selling wooden shaving garbage by Shimanto-drama Corporation in Kochi prefecture also in Shikoku-island. The third case was the business of selling deformed citruses (Yuzu orange) by Umaji-mura agriculture union in Umaji village in also Kochi prefecture in Shikoku-island.

Three cases have some similarity in the manner of encouraging regions.

- 1) In these three cases, all of the village people used the resources useless in the conventional context.
- 2) By the success of the businesses, three regional organizations were successful to activate powerless people in remote areas.
- 3) These kinds of innovation cannot produce huge market and huge profit like a J-curve high-tech venturing, because their main target is a niche small market and there are not aiming mass production. However, they don't damage any natural

circumstance and they don't fire senior or powerless people. Because of this, their business can continue for a long time essentially. Their growth of revenue is not increasing drastically or dramatically, but is stable and sustainable. In that sense, these kinds of innovation can be called as "sustainable innovation."

As a result, in these three cases, they created not only a new value of business resources but also a new value of people itself. The sustainable innovation described in this paper is not only valuable for powerless rural regions/people but also suggestive for many large enterprises and their employees in the world.

#### Acknowledgement

The author appreciated Mr. T. Yokoishi, Mr. F. Azechi, Mr. M. Toutani as a regional business leaders and many village people for their kind corporation on interviewing. Thanks are also due to the colleague researchers in Kochi University of Technology for their fruitful suggestions and discussions on regional issues.

#### References

- 1) Anzoff, H. I. (1965), *Corporate Strategy*, McGraw-Hill
- 2) Badaracco, J. L., Jr. (1991) *The Knowledge Link*, Harvard Business School Press.
- 3) Inkpen, A. C. (1993) "Learning and knowledge Acquisition through International Strategic Alliances," *The Academy of Management Executive*, Vol.12, No4, pp.69-80.
- 4) Krugman, P. (1991), *Geography and Trade*, The MIT Press.
- 5) Feng Liu, Makoto Hirano, and Peiqian Liu, "Regional Development Through Autonomy Establishment in China and Japan---A Comparative Viewpoint Based on Cases of Chengdu Five Golden Flowers (FGF) and Tokushima Kamikatsu-chou," *Multimedia Information Academy Association Journal* Vol. 62, No.11 (2008)
- 6) Marshall, A. (1890) *Principals of Economics*, Macmillan.
- 7) Mishina, K. (2004), *The Logic of Incomplete Strategy*, Toyo-Keizai Shinpou-shya.
- 8) Nonaka, I., H. Takeuchi, (1995), *The Knowledge-Creating Company*, Oxford University Press.
- 9) Porter, M.E. (1990) *The Competitive Advantage of Nations*, The Free Press.
- 10) Saxenian, A (1994) *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Harvard University Press.