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Diffusion of Innovation in the Food Processing Industry: A Case Study of Meira Food Industry in Manipur, India

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Abstract

Innovation has become an important driver of industrial development and competitiveness, particularly in small-scale and indigenous industries. It is a rapidly growing field of research, particularly on aggregated levels, such as systems of innovation, clusters and various network-theories. Nevertheless, we still know very little about the 'process' of innovation, and we are unable to account for how innovation evolves in practice. This paper is a contribution to unpacking this black box, through its investigation of innovation processes and practices in one small sector of Food Processing Industry in Manipur: Meira Food Industry and its innovative product bamboo shoots pickle. It is an ethnographic case study of the organising of innovation processes, meaning the development and commercialisation through the utilisation of indigenous resources and traditional knowledge systems. The study is theoretically guided by Rogers' Diffusion of Innovation and analyses how innovation adoption is shaped by perceived advantages, communication processes, social interactions, and institutional support mechanisms. Drawing upon narrative accounts, entrepreneurial experiences, and contextual observations documented in the case, the study explores the stages through which entrepreneurial ideas are conceptualised, implemented, and institutionalised. The findings indicate that innovation process in the food processing industry is not solely determined by technological innovation but also by social networks, local knowledge, communication channels, market responsiveness, and adaptive learning processes.

Keywords: Innovation; Food Processing Industry; Diffusion of Innovation; Bamboo Shoots Pickle; Meira Food Industry Manipur.

Introduction

Food Processing Industry in India is viewed as the 'sunrise' industry and is also given 'priority status' by policy makers due to its role in the development of economy and food security. This industry has been considered as important one to generate employment, decrease post harvest losses, increase the income level of farmers, contributes to GDP and also in reducing

the Rural-Urban migration (Sinha & Sinha, 1992). Development in the food processing industries leads to creation of new knowledge, up-gradation of production technology, innovation in this sector. The growth of food industries is related to increase shelf-life, improvement in supply-chains, decrease in production costs, better market links and also development of company brands through various innovations.

Here innovation is an important tool to achieve higher competitiveness in industries and also achieve sustainable development. According to Porter (1990), innovation means an industry will respond to changing markets by finding ways to generate new kinds of value to the economy in an increasingly globalised world. Through the last few decades, the concept of innovation have been considerably widened to contain not just technological change, but also the development of new kinds of production, management and value generation (Nowotny, 2006, 2008; Godin, 2008). Hence, innovation has now become a key issue within many different fields.

Many new ideas have been developed recently, like "Blue Ocean Innovation" (Kim & Mauborgne, 2005), "Frugal Innovation" (Tiwari & Herstatt, 2011), "Organic Innovation" (Moore, 2005), and so on. The NKC report stated that "competition among national and international industries is increasingly being enabled by synergistic combinations of facilitating systems, competent human resources, technology competencies and higher quality products." (NKC, 2007).

Similarly, the World Bank (2007) identifies innovation as a critical driver of productivity, competitiveness, and poverty reduction and emphasises that innovation contributes to higher living standards rather than being an end in itself. Globalisation further presents opportunities for industries to utilise innovation as a strategic tool for knowledge generation and economic development while simultaneously creating pressure to continuously innovate in order to remain competitive (Govindarajan, 2007). In this regard, innovation has become an essential component of industrial success, and the Indian food processing industry is no exception. However, existing literature suggests that food processing remains a relatively under-researched sector in innovation studies despite its growing importance (Christensen et al., 1996; Garcia & Calantone, 2002).

Research Context: Food Processing Industry in Manipur

Manipur as a state has favourable agro-climatic environment which enables it to produce different types of fruit, vegetable, spices, cereals etc. appropriate for manufacturing and has enough strength to sell abroad. Difficult condition, no proper structural facilities and constantly changing climate conditions makes the state vulnerable for the establishment of industries in comparison to other states in India. Recalling the contemporary trend of industrialisation and contemporary situation of the state and in relation with industrial policy of Government of India, the state government of Manipur in its policy document of 1996, has resolve to concentrate on the development on the

small enterprises and agriculture based industries in addition to encouraging the medium and large scale industries (Economic Survey of Manipur 2008-09). In this context, the FPI is a rapidly growing sector in Manipur. Since 1991, the Department of Commerce & Industries, Manipur took the charge as the State Nodal Agency of the Ministry of FPI, Government of India, and numerous plans and schemes were introduced with the help of government. Schemes like Technology Mission for Integrated Development of Horticulture with the goal to enhance manufacture and output of agricultural crops by controlling the capacity of the state craft this area a feasible choice for commerce and market (Department of Commerce and Industries, Government of Manipur, 2001). The government of Manipur identified bamboo shoot processing as a major thrust area and it becomes flourishing sector in Manipur FPI.

Moreover, the speciality offered by bamboo shoot when used as recipe of food items, there is growing interest on the development of traditional modals. Having the prevalence of the fermentation over generations from unpredictable historical date, the traditional bamboo shoot processing has become the oldest and one of the largest food processing undertakings of Manipur. Fresh bamboo shoots are supreme in flavour in comparison to the bamboo shoots available in the canned form. The cutting of the bamboo shoots is done in different ways such as halves, thin slices, and stripped shape and then canned after going through processing units. There is strict procedure to follow to get a good quality product of bamboo shoot. Japanese were the initiator to process and use latest technology for the processing of fresh shoots. In the case of Manipur, it started with the development of FPI. In this regard, the paper aims to investigate the role of Meira Food Industry in the up scaling of the bamboo products. The paper has relied on Roger's (1995) work on 'Diffusion Theory of Innovations'. It would add a new theoretical interpretation to the local context of FPI in Manipur.

Theoretical Framework: Diffusion of Innovation Theory

Diffusion of Innovation Theory deliver a useful framework for understanding how new ideas, practices, and products emerge, spread, and become accepted within a social setting. The concept of diffusion originated during the nineteenth century as scholars attempted to explain how cultural practices and social characteristics spread from one geographical and social setting to another (Winthrop, 1991; Erickson & Murphy, 2008; Harris, 2001). Early diffusion studies emerged primarily within anthropology and cultural geography and challenged linear developmental perspectives by emphasising that

societies often preserve existing customs and practices rather than readily accepting change.

Over time, diffusion studies expanded beyond anthropology and began to influence multiple disciplines including agriculture, business studies, education, political science, communication studies, and rural sociology. It was primarily how individuals and societies acquire innovation, and what may or may not lead to its acceptance or rejection which concerned the papers mentioned (Hugill, 1996). Within all the theories on diffusion, Rogers diffusion of innovation theory is one of the most popular and widely adopted.

In an effort to develop an inclusive model to understand how innovation diffused through social systems Roger, working since 1962 and expanding on his work with numerous editions, drew from several areas of diffusion research (Rogers, 2003). As he defined it, "diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003). The process by which innovation is adopted, as defined by Roger (2003), reveals it is not a singular, instantaneous event, but a process which is characterised by communication, social interaction and environmental circumstances.

The time factor, social system, communication channels, and creativity were specified by Rogers (2003) as four interconnected elements which are involved in the process of diffusion. Rogers described four main components which would influence the spread of innovation and its rate of adoption as the following:

Innovation

Innovation defined as 'an idea, practice, or object that is perceived as new by an individual or other unit of adoption'. The newness is subjective; it's not a matter of whether it's actually new to an individual or system but whether or not they consider it to be so. Generally speaking, innovation adoption involves a series of stages: awareness, persuasion and decision. The rate of adoption depends on what users perceive the features of the innovation to be (Rogers, 2003). There are five perceived characteristics that influence the rate of adoption of innovation; these are: relative advantage, compatibility, complexity, trialability and observability.

Relative advantage is a perceived benefit. The more superior an innovation is compared to what went before, the more rapidly it will be adopted. Relative advantage could be economic, functional, social (prestige, status), or satisfy other needs. Compatibility refers to how an innovation is perceived in relation to existing values, experiences, and needs. The closer an innovation's fit with previous practice and the existing system, the more readily it will be adopted. Complexity is perceived

difficulty of use, it's often said that, 'simpler is faster'. An innovation that is not perceived as too difficult to use or understand will diffuse more readily. Trialability is a measure of how an innovation can be experimented on. With trialability a potential adopter can test out a new technology without any real commitment and hence reduced uncertainty, it allows users to test the usability of an innovation. Observability of the innovation's effect can aid the adoption rate, if the positive effects are easily observed and made public then imitation is likely to occur more readily.

The combination of these five attributes accounts for differences in diffusion rate. It can be predicted (Rogers, 2003) that innovations which are perceived to be beneficial, compatible with existing systems, less complicated, observable, and trailable will diffuse at a faster rate.

Communication Channels

Communication channels are the second variable in the process of diffusion. Roger notes that diffusion is communication because it is "a process by which an innovation is spread through the process of communication from one individual to another or from one system to another. The term is the process by which knowledge about an innovation is obtained or received from the communication channel, is interpreted, and passed to others. Diffusion is the process that occurs when an individual who has information about an innovation communicating to an individual who does not have the information; hence the communication channels are means of communicating the information of an innovation to the people who know little or nothing about the innovation. The impact of the various communication channels is not uniform across all aspects of diffusion process. For instance, although mass media and formal communication channels might be efficient at gaining innovation awareness, they may be less significant in affecting adoption than interpersonal channels. Direct contact, interpersonal networks and personal experience typically result in greater trust and persuasion than impersonal channels.

Time

Time is another essential dimension of diffusion theory and distinguishes diffusion research from many traditional communication studies. Rogers argues that innovation adoption is a process unfolding over time rather than a single decision-making event. According to Rogers (2003), individuals progress through five stages in the innovation-decision process:

1. **Knowledge** – becoming aware of the innovation and understanding its functions.

2. **Persuasion**– developing positive or negative attitudes toward the innovation.
3. **Decision** – choosing to adopt or reject the innovation.
4. **Implementation**– putting the innovation into practical use.
5. **Confirmation**– reinforcing or reconsidering the adoption decision.

Movement through these stages reflects changing perceptions and interactions with the innovation. Adoption decisions may also be reversed if users encounter contradictory experiences or information during implementation. Time additionally affects diffusion through differences in adoption behaviour among individuals and the overall rate at which innovations spread across a social system.

Social System

The last element in diffusion theory is the social system. “A social system is defined as a set of interrelated units engaged in the process of joint problem-solving to accomplish a common goal. The units that form a social system are the people, groups, organisations, and institutions which interact and influence the innovation outcomes. How a social system is organised, its norms, are key in determining whether innovation is stimulated, adapted, blocked or rejected. In a social system, diffusion is therefore a social and collective rather than a personal behaviour. Social values and practices, communication patterns, and institutional frameworks all affect the acceptance of innovations. Old practices and social values might support new practices or make them more difficult.” Rogers, (2003, page 199). Rogers’ Diffusion of Innovation Theory is a suitable analytical tool to analyse the innovation process in the food processing industry in this context.

The theory enables examination of how product innovation, communication networks, institutional support, and social interactions contribute to the development of Bamboo shoots pickle in Meira Food Industry.

Bamboo Shoots Pickle in Meira Food Industry

Bamboo shoots are also available in cans but fresh shoots and fermented bamboo shoots offer better taste and texture. The shoots are canned whole after processing or after peeling, dicing and slicing thinly. In order to obtain best quality products, important steps in the processing method for canned bamboo shoot have to be applied. Modern technology for processing fresh shoots were developed and first adopted by the Japanese. Over 80 firms worldwide produce about 49 brands of canned shots (Midmore, 1998). In India, there are a

few companies such as Tai Industries Limited, Kolkata, that imports and markets canned bamboo shoots from Bhutan and Thailand.

Canned goods are now a convenient option in several hotels and restaurants, despite the fact that fresh shoots are less expensive. Additionally, they are only available seasonally from May through September. Hotels have been forced to stock canned goods due to situations where fresh shoots are unavailable. Therefore, the key factors that promote canned goods are availability and ease of use (Nirmala & Sharma, 2008). In the case of Manipur, it started with the development of Meira food processing industry. With many Manipuris travelling outside the state, cans of such assorted food are convenient.

Another example of this “innovation-process” in the Manipur food processing industry was the creation of a novel product in Meira. Meira Foods Industry was established in 2004 and is situated in Brahmapur Aribam Leikai (Imphal East). The owner is a woman who holds a master’s degree in nutrition and food and is a member of the Association of Food Scientists and Technologists. Additionally, she has completed training in community nutrition and community organisation.

Idea

The idea of starting the business come in the proprietor’s mind when she missed home-made food while staying out of her home during her studies. She also starts comparing with other state. Recalling her days of the past, the proprietor of Meira food said,

“When I was studying in Rajasthan, I asked my mother to send me homemade food products. My mother used to send packaged foods made in Myanmar. I used to ask myself as to why we were unable to produce such packaged food items despite good resources in Manipur, while the Myanmarese are successful in exporting their products to our state. In fact, our children are very fond of food items imported via Moreh and this poor state is throwing away crores of rupees on purchasing Moreh products” (Proprietor Meira, personal communication).

From her college days, she had an urge to do something that would contribute to developing the economic status of the poor state. Manipur is heavily depended on the outside state for its needs. She wanted to save the huge amount of money which the poor state was spending on products manufactured in another country.

Social Interaction

In the year 1990, after 12 years of study she came back home with the hope that she will be working either in government offices or in some institution. She started working with All India Radio Imphal as a programme conductor. That was not enough, as it was contract job. So she joined Waikhom Mani Girls College as a home

science lecturer. That was again not enough because they give her only two days to work with them in a week. Again she joined CVTC (citizen volunteer training centre) as a volunteer. With all these exposures, she got a chance to explore herself, to discover her potential and to interact with many people. In spite of these entire she was not satisfied. She went Chennai for her further studies in the year 1994 and work with International Volunteer Organisation. She narrated her journey as...

".....I had a very good opportunity to work with them and get to know what is the need of people...I was made to know or understand to identify the need of people, where you can focus and what kind of work you should do...they send me to South Africa and to Japan to learn....it was irony for me. Come back home again join CVTC. At that time Tangkhul theological association are looking for a person to take care of training institution as a coordinator to start a developmental related training programme for community base organisation. I join with them; work with them for another 10 years till 2003. That was the decade, a long experience working with volunteer organisation. I work with Church worker, women volunteer, women secretary, gender empowerment projects and lots of rural development programme...side by side I also join Association of Food Scientist and technologist Manipur chapter.. I have the golden opportunity to meet the entire entrepreneur and interact with them" (Proprietor Meira, personal communication).

Also social interaction and social networks play a crucial role when deciding things like whether to start my own business or not. Entrepreneurial action itself is not abrupt but it is in fact interwoven in social network relations, such as network among family, friends, peers etc. While interacting with others and observing others, Entrepreneurs acquire certain knowledge and skills, where to focus and how to find potential customers etc. Interaction play an important role in an entrepreneurial process. In fact social networks inspire and support her to start up ventures, although there are large risks involved when determining which activities to carry out.

Prior Condition

At that time there is problem of marketing their products in every food processing industries. So she thought what other entrepreneur never thought. At that time most of the food industries are producing squash from pineapple, orange, passion fruit etc. So it is really a difficult to convince customers to buy their product rather than frooti, Tropicana and other fruit juice.

"Everybody is saying they started FPI unit but facing lots of problem in marketing their product. About 10 years I am hearing their marketing problem. Thought come in my mind that if their product is problematic in marketing, we can try another new product which raw material are available in

plenty and yet not produce as ready to eat and with the taste of indigenous. Moreover there is lots of people studying, working outside Manipur and outside India. Obviously they also miss the indigenous taste of Manipur" (Proprietor Meira, personal communication).

She believes that if products are indigenous taste our people will like and there will be no marketing problem. She wanted to make the product which the people will miss when they are out of their home.

Entering into the Actual Scene

When she communicates with MSMEs (micro, small, medium enterprises), it becomes real practice. Within the framework of Ministry of MSME, Government of India under the Development Commissioner (MSME) of which are the nation-wide MSME development institutes, the MSMEDO (Micro Small and Medium Enterprises Development Organization), MSME Development Institute, Imphal (Manipur), one of the established and full-fledged MSMEs in North East region, has been actively propagating micro and small industries in the state of Manipur since 1986.

"After leaving my job in 2003 I share my thought with MSME. Collaboration with MSME we started training. At that time there are 30 trainees. Among these 30 trainees 3 women trainees are coming with me after a month long training. That's how I started my FPI in January 2004" (Proprietor Meira, personal communication).

"At starting there was no need for machinery. I started with what I have in my own kitchen. As January is the time of amla season I started with amla salty and Kabok (Manipuri snacks made my rice). Kabok was already there in Manipur market but I tried it with adding curry patta. That was something unique and people started liking" (Proprietor Meira, personal communication).

First Market Exposure

From the beginning she wanted to do something different. So people started liking the taste of kabok and amla. With the help of MSME her product expose for the first time in market in the year 2004. Before they hire the hawkers, and use to sell their product door to door of the customer.

"We go door to door of the customer and request them to taste our products and give their comments and feedbacks. At the first trial lots of people express their liking and do buy at the very first time. Some give their comments and dislike. According to their comments we improve and change according to their suggestion. At Vendors day MSME give me the opportunity to advertise my product. That was first exposure of my product in the market in May 2004 and my products gone off within hours" (Proprietor Meira, personal communication).

So people somehow started to know the Meira foods. It gives confidence also to target something bigger. The idea of making pickle evolved after a week and she started with her worker making pickle of king chilli, fruits and vegetables.

Enrolments of Other Actor

In these processes she needed more workers, money and machinery. She started relation with bank, financial institution, hawkers. As in Manipur there is no facilities of machinery, she has to purchase machinery from outside Manipur. Thus Meira started link with outside company and employed more workers.

"I was really happy to know that people want my products. It gave me confidence that I can also expand market. That was the time; I had no fear to borrow money from other people or to take loan from banks to invest. Thus by borrowing money I started expanding my business. Hawkers started coming to my unit and gradually demand increased. At that time packaging of Rs. 3000 was very difficult because all of my system were manual. So, I have to purchase new packaging machine from Guwahati and Calcutta and employed more workers" (Proprietor Meira, personal communication).

Great jobs are in the food industry and employees and supervisors ought to work in it. Employees ought to have a full understanding of team development and of teamwork, and managers ought to know how to keep employees informed. Employees ought to be given adequate resources by their supervisor to excel at their job. In spite of differing agendas, teamwork will be the only driving force forward.

"As we are at the initial stage and profit base industry we cannot fulfilled some of the workers expectation and thus, they left the industry. We had a very difficult time too. We had big problems with mould, and so we had to work a lot on procedures, both to keep the product clean, and to change things, in order to manage the product, we discuss with food technologist and took their suggestion" (Proprietor Meira, personal communication).

Thus food technologists get enrolled in the process bringing in their own knowledge and perspectives and technically advanced ways. The Proprietor already been working on food and nutrition and hence understand more about how any food can keep long time, and various preservation methods. The products manufactured in this unit are pickles, dry fruits, other consumer foods, etc. The number of total products is twenty five.

"I increase my products yearly 5-10-15-20 and so on. There was a time when I have above 40 varieties, but seeing customer response and marketability I reduce it. Right now I have 25 products" (Proprietor Meira, personal communication).

Technologies

For over 5 decades now, the food processing sector has changed significantly from traditional manual processes to being scientific and technical. Mechanical, physical, and chemical processes gradually replace the conventional procedures and result in quality of food, safety standards, efficiency and nutritional value (Gould, 1920). Due to the rapid technological development it is possible for the food industries to gain more production optimization, reduction in faults and defect rate, productivity enhancement, and a quick response to customer needs, therefore continuous adopting and modification of technology becomes unavoidable for industrial viability and competitiveness.

As illustrated, Meira Food industry is an example of such transformations. Majority of food processing activities like cutting, washing and cleaning were done manually but it adopted semi-automated machines especially in sealing and packaging processes. Packaging is an essential part in the whole food processing industry, the reasons behind are: food product protection, food quality preservation and hygiene maintenance, and the attractiveness to consumers. Proper packaging will guarantee not to contaminates the product and extend its shelf life. The primary objectives for packaging were: protection, preservation and promotion of the product (Gould, 2013).

In the initial stages, the food industry utilized traditional methods of manual packaging: product was packed in plastic film and then sealed using candle heat, but as customer requirements grew and the market broadened it began to invest in improved packaging processes and adapted to bottle packaging for a better product outlook, product quality, and higher productivity.

The proprietor comments that,

"Packaging is the main area where we have invested a lot in last two to three years because we have received comments from our customers and our marketing related sources that packaging must be improved. We acquired new machinery for packaging from outside Manipur. Thus look wise, our products have improved a lot. We have seen people's confidence increasing in our products, in these last few years" (Proprietor Meira, personal communication).

Packing materials are the new inventions in Meira food industry. Here we can see the role of packaging. Its attract enough to tempt the onlooker to try it and customer as another actor for innovation. The packaging material made of such size as is convenient and suits the consumer needs. Packing was done manually earlier and subsequently it has been replaced by machines.

"The use of machines for packaging in Meira increases productivity in terms of quantity of products packed in less

time. Moreover, packaging done with machines looks better than manual packaging” (Proprietor Meira, personal communication).

It also protects the goods from breakage, spoilage, leakage and theft as they are being moved from the place of production to the consumer. It also keeps the goods clean. The protection it provides against bad weather increases the shelf-life of products such as fruits and vegetables which are highly perishable. Labeling and 1977 Weights and Measures (Packing Commodities) Rules are the laws that govern packaging (Gould, 2013).

Food Labels and Labeling

Reading the labelling and using the information can be most helpful to all consumers (Ali & Kapoor, 2009). The customer should read the label in terms of brands and grade differences that may be displayed (Gould, 2013). Though Meira start the bamboo shoot pickle, there are other industries which make the bamboo shoots pickle. *Soibum achar* (Bamboo shoots pickle), local name of the product also written in the middle of the bottle. The ingredients of the products are also written as information to the customers. More emphasis has been given to the word Meira and Bamboo shoots. Meira taken from the word Meira Paibi (women torchbearers), the name of women movement which was came in the year 1980. This organisation was established to combat the evils existing in the society of Manipur (Brahmacharimayum, 2009). According to Thangjom (2013) “Meira Paibis are women united by a common goal and purpose to enact social change through various forms of social action and advocacy”.

Second Market Exposure

This unit sells its products mainly in the local market. However, the proprietor of Meira Foods comments that, “We do marketing locally, but wherever our people or Manipuris or the people of North East India travel all over India and all over the world, they take our products as gifts from their home. Potential wise it has big prospects, but our production capacity is very small because most of its process is manual, that is, we do mainly manual based operations and we are not having capacity of producing for a very large market. We have to employ more people and more machinery has to be installed for that purpose. We are still in the initial stage” (Proprietor Meira, personal communication).

The product of Meira also spread when the people of Manipur travel all over the world.

Collaboration with Other Food Industry

To boost Meira products after she started production in the factory, she has been to a number of fairs. The Meira Foods’ products are sold in 50 local shops located in

the districts of Manipur i.e. Imphal East, Imphal West, Thoubal, Churachandpur, and Ukhrul. As a part of her objectives to enlarge the scope of market, the Meira Foods’ products are sent in Kohima, Dimapur, Guwahati and Mizoram. The marketing aspect in her sector involves commission-based direct marketing in different hawkers. With growing level of product development, Meira has been able to capture for the last 20 years.

Case Analysis: Meira Food Industry through the Lens of Diffusion of Innovation Theory

Innovation: Transforming Indigenous Resources into Marketable Products

According to Rogers (2003), innovation refers to an idea, practice, or object perceived as new by individuals or social groups. In the case of Meira Food Industry, innovation did not originate from the invention of an entirely new product but from transforming traditional and locally familiar food products into processed and market-oriented commodities. The absence of packaged traditional food products and the dependence on imported processed food encouraged reflection on how local resources could be better utilised. Meira didn’t want to bring out very industrialized products that were already there in the market, but products of food which is closely related to the habits and character of the locality. This was a continuous process of innovation in terms of making experiments and modifying the product. First of all, many product categories were launched; however the market acceptability helped to streamline and choose products from various categories. Hence, it can be said that the product development was a continuous process.

Rogers lists five attributes that affect innovation adoption, and all these attributes can be found in the Meira case. Relative Advantage could be seen as the perception of consumers towards convenience, ease, emotional appeal and belonging to local identity of packed indigenous food. Compatibility was found because the product was in accordance with consumers’ current food habits and consumption culture, which was that of a Manipuri customer. Complexity was low as consumers do not have to acquire new ways of consuming. Trialability was provided through product tasting by customer and exhibition in market. Observability was observed through rising consumers’ demand and market popularity. It seems the successful Meira case reflects that the new innovation can easily be accepted if it is in conjunction to the previous habits and practices.

Communication Channels: Building Innovation through Interaction

Communication channels provide the second building block of Rogers’ theory and account for the generation

and transfer of knowledge of innovation. It can be seen that the development of innovation in the case of Meira did not involve marketing tools, but was rather based on interpersonal communication. In fact, the proprietor acquired knowledge through training in school, participation in NGOs and professional training, and consultation with various people before starting the production stage. Professional networks played a role in improving the product idea and convincing oneself of having the ability to begin the production. Involvement in long-term development organisations and food institutions provided him with insight into existing problems and solutions in local food system and communication was vital through collaboration with MSME. Involvement with MSME afforded the proprietor learning in practical experience, opportunity for training and acquaintance with people concerned in the food processing industry. Unlike innovation based on single, isolated action, production activities did not result from the action of a single person but from group learning, especially communication with consumers.

One of the main features of the Meira case was the face to face customer interaction. New products were launched through house to house calls and customers were asked to taste and give feedback on the products. Customer's feedback on taste, quality, packaging and acceptances of the product turned into a critical point for product development. Instead of like large industries where customer communication channels are normally conducted through structured surveys, in the Meira case customer's response could turn to be the determinant for the production decision process. Other channels of customer communication were through exhibitions, vendor programs, marketing partnerships and the non-formal distribution network, suggesting that communication channels not only convey information on innovation, but influence it as well.

Time Dimension: Innovation as a Progressive Process

Rogers regards time as an important aspect because the process of adoption occurs through certain stages. This has been illustrated by the progression through different time phases in the emergence of Meira Food Industry. In the first phase of knowledge, this occurred through the experiences of the proprietor outside Manipur and then through subsequent work in educational and development organisations, which gave insights about the market strengths and weaknesses of local food industries. Persuasion became evident during the second phase when increased observations led to increased certainty about marketability of local food products. The third phase of decision occurred when, through MSME, the proposal was implemented and the production phase began officially in 2004. The process

in implementation (the fourth phase) involved market introduction of products, designing of packaging, purchasing of equipment, enhancement of labor and increased production of food products. Confirmation (the fifth stage) occurred during constant modification and revision of products with successive consumer acceptances. Time as a variable clearly demonstrates that the whole innovation occurred through experimentation, learning and changes made throughout the time span.

Social System: Innovation Embedded in Local Relationships

Lastly the last part of the diffusion theory refers to social systems. In Meira's case the production cannot be analysed outside of the context, the decision of the owner is conditioned by various relations with family experiences, educational institutes, volunteering organizations, training institutes, workers, clients, market, and so on. Various agents of innovation participate to its realization; food technicians, banks, suppliers, hawkers, customers, local producers of agricultural raw materials, introducing their type of knowledge and support to the production system. The case illustrates the fact that production of innovation is not individualistic but collective.

Conclusion

In case of Meira Food Industry innovation in food processing sector does not necessarily imply a straight forward path led by technology or the enlargement of the market. However, innovation developed from combination of personal experience, local resources, institutional help, network of people, communication processes and the shifting trend of consumer. The case reveals the change of the local food tradition to business enterprise via diffusion process. Diffusion theory indicates numerous factors responsible for adoption of Meira Bamboo shoot pickle. The features namely; relative advantage, compatibility, complexity, trialability, and observability are the key variables causing its successful adoption. Finding and evaluating all these variables helps in understanding the adoption process. Rogers' diffusion model is an important tool for explaining the diffusion of bamboo shoot pickle among Manipuris.

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