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Innovation in Indian Small Scale Industries: Case Study of Cosmetics Small Scale Industry in Mumbai

Abstract

This paper presents five case studies of innovation practices by MSME entrepreneurs in cosmetics industry in India. In an industry highly conscious of brand, five enterprises selected for the study are shown to have successfully adopted the products, interfaced with the government labs for product testing, marketed the products through Internet, and have operated successfully with informed users of these products such as beauty parlors and the like. The cases highlight the problems and possibilities of innovative behavior in MSMEs.

Introduction

The Small scale sector constitutes a critical part of the Indian economy. Its contribution to the national GDP, to creation of employment opportunities, especially for low/ semi skilled workers and producing low cost goods and services, are crucial for a developing economy like India. By identifying and making use of small niches and opportunities for independent work the sector also helps in reducing regional imbalances. Hence, the small scale sector remains high on the agenda of government, academics and policy makers.

Globalization and resultant socio-cultural and economic changes have created enormous opportunities for small scale industries. To avail these emergent opportunities, however, small scale industries need to be innovative. Given the crucial importance of innovation for industrial growth and competitiveness, government policies need to enhance the innovative capacity of industries in developing countries such as India, (Lall, 2000).

Existing literature unequivocally demonstrates that small firms contribute significantly in terms of innovations, though the situation may differ from country to country or industry to industry (Lall, 1992; Rothwell, 1991). Nonetheless, studies on innovation tend to concentrate on high-tech industries such as computers, software, and engineering industries (Brenner,

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1987), and there is a relative neglect of innovation issues in the small scale sector (Hausman, 2005). Despite the rising number of innovation studies, there are only a few firm specific innovation studies, particularly in the small scale sector.

Today cosmetics industry has emerged as one of the most profitable industries worldwide (Geoffrey, 2006). The recent significant shift in the cosmetics sector has been the movement and growth of the market from Western countries to developing regions in South America, Eastern Europe, and Asia, especially China and India (Kumar et al., 2006). Indian cosmetics industry too has been witnessing steady growth. The Indian cosmetics Industry grew at a CAGR of around 7.5% between 2006 and 2008 and it is projected to grow at a CAGR of around 7% during the forecast period (2009–2012), according to a recent research report by RNCOS eServices Pvt Ltd.

The cosmetics industry is dynamic, lucrative, innovative and fast paced. With shorter life cycles of cosmetics products, varying climatic conditions, and rapidly changing attributes of fashion compel manufacturer to keep pace with changing market demand (Kumar, et. al. 2006; Geoffrey, 2006). Manufacturers need to be innovative not only in the manufacture of products but also in presentation and marketing of the products. There are very few studies on innovation in the small scale cosmetics sector. Given the gaps in the empirical and theoretical understanding of innovation in this sector, this paper is exploratory in nature.

The paper has the following two objectives:

- Exploring the innovation processes in cosmetic MSMEs in Mumbai,
- Understanding the problems faced by cosmetic MSMEs in attempting to be innovative.

This paper presents the study of the socio-economic and cultural background of small scale cosmetic entrepreneurs. The paper presents with a brief review of the literature, focusing on innovation in small-scale industries and the cosmetics industry in India. Building on the earlier literature, it advances a theoretical framework. The study presents case studies of five micro cosmetic industries in Mumbai. The nature of innovation in cosmetics MSMEs, and the implications of the findings for our understanding of innovation processes are discussed towards the end of the paper.

Innovation in MSMEs: Theory and Trends

Innovation is one of the most widely discussed concepts in economics literature. Economists have studied both macro and microeconomic determinants and aspects of innovation, whereas the managerial studies usually tends to focus on variables specific to innovative firms (Fagerberg and Verspagen, 2009; Gopalakrishnan and Damanpour, 1994). Most of the economic and business studies on innovation subscribe to a linear model of innovation. According to this model, basic research originates in universities, research institutes and research laboratories which are then transferred to industries and from there to the market (Godin, 2006).

Innovation is creating something new by the combination of currently existing inputs Schumpeter (1934). This usually goes together with a loss of old products and processes; Schumpeter calls this process 'creative destruction'. Lall (1992) proposed that innovation includes all efforts toward technological mastery, and adds that it also means adaptation or improvement of the technology to suit to new conditions. According to an OECD definition,

innovation characterizes the implementation of a significant new product or new production process. This definition is widely known as technological product and process (TPP) innovation (OECD, 1996). Many see innovation as a continuous process instead of static activity. According to Dosi (1988) "innovation concerns the search for the discovery, experimentation, development, imitation, and adoption of new products, new production processes and new organizational set-ups.". Innovation is a practical application of creative ideas to achieve tangible results (Amabile, 1988) that ideas may pertain to a product, process, marketing, service, technology, or system.

There is a substantial research claiming the significance of innovation for small firms in achieving competitiveness, sustainability and growth in the globalized world (Subrahmanya, 2005; Edwards et al. 2005; Gopalakrishnan and Damanpour, 1994).

Small Scale Industries in India

In India the definition of small scale sector has been changing since the 1950s. The official definition for this sector is provided by the MSME Act 2006. As per the Act, industries are defined in terms of investment, employment or output, or a combination of these three variables.

Small scale sector is a significant contributor in the growth of the Indian economy. There are nearly 4.5 million MSMEs in India (MSME Third Census (2001–02). Employment in the registered MSME sector was estimated to be 6.16 million indicating an average employment of 4.48 persons per unit (Ministry of MSME, 2010). It contributes about eight per cent of the GDP of the country, about 45 per cent of manufactured output and about 40 per cent of exports (Economic Survey Report, 2009–2010). There are over 6,000 products ranging from traditional to high-tech items, which are being manufactured by MSMEs in India. These include food products, beverage, cotton textiles and wool, silk, synthetic products, jute and jute products, wood and wood products, furniture and fixtures, paper and paper products, printing, publishing etc. Since the 1990s this sector has also seen a large growth of service industries (Annual Report, 2008–2009, Ministry of MSME). MSMEs in India are slowly changing from low technology orientation to users of modern technology; however, the sector continues to be characterized by a large diversity in technology base.

Innovation in Small Scale Industries

Innovation process in small scale industries is not a linear process of technological development. Many socio-cultural factors mediate the process of technology generation. As small firms are embedded in their social environment, most of their innovative behaviour and processes are guided by their social relations (Cooke and Wills, 1999; Murphy, 2002). Innovation in small firms is rarely targeted towards acquiring knowledge from research and advanced technology producers. It basically involves identifying existing gaps in the market; assimilating available knowledge and fitting it to the specific requirement of the market (Subrahmanya, 2005, Edwards et al 2005).

Studies on innovation in small scale industries have explored various dimensions of innovation, such as the relationship between firm performance and innovation (Verhees, 2005); innovation and social environment of the small firm (Subrahmanya, 2005; Rothwell, 1991); and, social networks and small firms (Murphy, 2002; Freel, 2005; Cooke and Wills, 1999). It is observed

that in general MSMEs do not innovate formally, learning by doing being a more common style of innovation. Hence, scholars have studied innovation in MSME as informal processes of innovation (Abereijo et al. 2009). Innovation in MSMEs has also been studied as an attribute of the entrepreneur, deriving from the vision and motivation of entrepreneur (Kristiansen, 2003).

The major reasons for innovations in small firms are to reduce costs, improve quality, improve product shapes/dimensions, increase the range of products, and to respond to market challenges. Hence incremental innovation is more common in small firms than radical innovation (Kharbanda, 2001; Vyas, 2005; Subrahmanya, 2005; Subrahmanya et al., 2002). In small firms only a small proportion of innovation is carried out in formal R&D setup by specialised engineers (Romijn, 1997) whereas most part of the technology development depends on shop-floor problem solving methods, which involve setting up, running, maintaining, repairing and making minor changes to technology in response to local conditions.

An important source of innovation in the MSME sector is the ability of an entrepreneur to create an environment of learning out of the social relations between innovating partners (Harmaakorpi, 2006). Social network of firm impacts the ability of firm to innovate. Kristiansen (2003) reported in his study of small scale businesses in rural Java, that the areas at the forefront in innovative processes possess some common properties such as some kind of specialization, a strong interactive, synergetic atmosphere, internal dynamism, a capacity to exploit external information and resources, a collective learning process, and a strong local identity. All these sources form the innovation system in which social environment of the firm is more important than individual entrepreneur's knowledge.

R&D capacity of the firm is an important variable in studying sources of innovation. R&D activities carried out by small firms are largely in-house (Subrahmanya et al. 2002). Klomp and Van Leeuwen (1999) show that firms which perform R&D on a permanent basis have a significantly higher innovation output than firms not performing R&D on a continuous basis. It is also shown that internal R&D leads to product innovation while acquisition of machinery leads to process innovation.

There are certain common patterns visible in MSMEs, for instance, they are mostly managed by owners / entrepreneurs, and hence are less bureaucratic and more flexible in organizational and decision making matters. The information system is relatively simple and most of the innovations are owing to the efforts of the entrepreneur. Entrepreneurs in small scale firms are generally not very qualified persons (technocrats are an exception) (Hausman, 2005), they do not have much legal expertise and often this obstructs their way of acquiring patents for innovations. Long term planning is almost absent in this sector of the economy (Clancy, 2001). Lack of awareness of existing technologies (Tewari and Pandey, 2010), and market mechanisms (Subrahmanya, 2005), weak management skills (Clancy, 2001), collateral problem in acquiring finances are some of the stumbling blocks for MSMEs (Freel, 2005; Kharbanda, 2001). These factors explain why MSMEs usually engage in incremental innovation

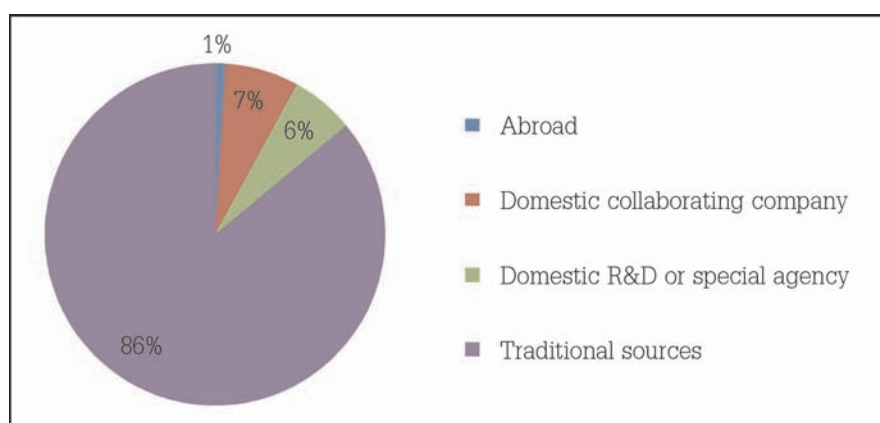
Innovation in Indian Small Scale Industries

There is no dearth of innovations in Indian small scale sector. The electrical and electronic sector has more number of R&D units with comparatively low expenditure in relation to total

sales. MSMEs in sectors such transportation, sugar, vegetable oil, cements and fertilizer have very few R&D activities, and hence low levels of innovation (Morris, et al. 2001).

There is a paucity of studies on innovation in MSMEs in India. Available studies are mostly on issues pertaining to technological product development, determinants of product innovation (Subrahmanya, et al. 2002), technology transfer, R&D, number of new products or services introduced into the market, firm's adaptation of new production processes, and patent counts (Clancy, 2001). Indian MSMEs mostly follow the process of 'learning by doing', which is central to incremental innovation and technological change and most of the R&D or technological development activities in these small scale industries are of an informal nature (Kharbanda, 2001; Subrahmanya et al. 2002).

Figure 1: **Technology Sources for MSMEs in India**



Source: MSME Third Census (2001–2002)

Figure 1 shows the important sources of innovations for Indian small firms. MSMEs in India usually rely on traditional sources for knowledge generation. These sources include their personal and professional networks from both input and output sides of the business. This includes traders or crafts-persons or wholesalers, intermediaries and consumers, who provide inputs on design, shapes, characteristics of products etc. Import of technology from abroad is very limited in case of small firms. There are a few small firms (only 7%) collaborating with other domestic firms for knowledge generation. With research institutes also the collaboration is nominal.

Cosmetics Industry

Broadly the cosmetics industry includes products and processes applied to the human body to keep it clean and make it look attractive. Today both toiletries – to make body clean – and cosmetics – to make it attractive – are part of cosmetics industry. A fundamental contrast has appeared between the traditional uses of cosmetic products – those used by the elites of society and the modern society in which changing socio-economic dynamics have resulted in cosmetics products reaching every section of the society. Emergence of small scale cosmetics firms in Mumbai is also a result of changes in the socio-cultural fabric of Indian society. Increase in working population, especially women, increase in salaries increase in

purchasing power among the people, growing importance to physical appearance, demand for luxury goods, and consumerism, are some of the socio-cultural transformations that have created huge demand for cosmetic products in Indian society. As a result, to fulfill the demand for low cost cosmetic products, many small firms have emerged in Indian cosmetic sector.

Cosmetics products are highly user specific and their consumption depends on socio-psychological state of an individual, current fashion, moods and culture often dictate the demand for cosmetics within a society. Therefore, R&D work is a continuous process in cosmetic industry (Kumar, et al. 2006). Hence innovation seems to become a strategy that the cosmetic firm has to apply for its survival.

Indian cosmetics sector can be broadly classified into bodycare, skincare, eyecare, color cosmetics, haircare and makeup. Cosmetics sector is regulated by Schedule M-II of Drugs and Cosmetics Act 1940, Drugs and Cosmetic Rules 1945, and Indian Standards issued by Bureau of Indian Standards, Current Good Manufacturing Practices (CGMP) guidelines of US Food and Drug Administration (USFDA) as well as guidelines of Cosmetic, Toiletries and Fragrance Association (CTFA), International Fragrance Association (IFRA) and similar bodies.

Table 1: **Statistics of Cosmetics and Toiletries in India (Year 2007)**

Total No. of Units in Cosmetics and Toiletries	7413
No. of Units in Organized sector	1057
No. of Units in Small Scale sector	6356
Concentration of Units in India	Most of the units are located in metropolitan cities such as Mumbai, Calcutta, Chennai, Bangalore and Delhi.

Source: <http://www.indiandata.com>

From Table 1 we can see that out of a total 7413 industries in the cosmetic and toiletries sector, 6356, i.e. more than 80% are in small scale sector. Today small scale sector constitutes the major share in the cosmetics manufacturing sector in India.

Cosmetics Micro, Small and Medium Enterprises (MSME) in Mumbai

With a view to understanding the nature and process of innovation in cosmetics MSMEs in India, a qualitative study of five small scale cosmetics firms in Mumbai was undertaken. The five micro industries were located in the western suburbs of Mumbai and members of the cluster of herbal and cosmetics industries. Clusters are part of an effort by the government to bring all cosmetic industries under one roof to improve co-ordination among cosmetic MSMEs, which would result in increased growth of this sector. About 90 units are functioning in this cluster, which manufacture a variety of cosmetic products with a turnover of about Rs.175 crores including Rs. 20 crores of exports, employing about 1,500 persons directly and 5,000 indirectly (Diagnostic study report by SISI, Mumbai, 2006). Cosmetics MSMEs in Mumbai are located in the areas of Virar, Vasai, Bhayandar, Dahisar, Kandivali, Malad, Goregaon, Jogeshwari, Andheri, Vile Parle, Santacruz and Parel. These places have better transportation

and connectivity through western railways and the western express highways (Diagnostic study report by SISI, Mumbai, 2006).

Table 2: **Investment-wise Distributions of Cosmetics MSME Units**

<i>Investment in Plant & Machinery</i>	<i>No. of Units</i>
Less than Rs.5 Lakhs	25
Rs. 5 Lakh to Rs. 25 Lakhs	63
Rs. 25 Lakhs – Rs. 500 Lakhs	02
Total	90

Source: Diagnostic study report by SISI, Mumbai, 2006

Table 3: **Employment-wise Distributions of Cosmetic MSME Units**

<i>Range</i>	<i>No. of Units</i>
0-10 person	25
10- 50 person	63
More than 50	02
Total	90

Source: Diagnostic study report by SISI, Mumbai, 2006

Researching the Cosmetics MSMEs in Mumbai

The main purpose of this study was to understand the nature and process of innovation in cosmetic MSMEs in Mumbai. A key objective was to observe and comprehend innovation processes and obstacles to innovation in this sector. Hence the aim of adopting a case study methodology is to expand existing theorization. The case study approach is useful in studying complex, multifaceted social phenomenon and helpful in getting firsthand experience of unexplored areas (Yin, 1994). Being exploratory in nature, it was important to select appropriate cases, so that valid and relevant generalizations could be made. The case study method also allowed us to research all aspects of innovation in the MSME cosmetics sector in a comprehensive way. The purpose of selecting five firms for case studies was to get an in-depth understanding of entrepreneurs' perspectives on business contexts and innovation dynamics in the small scale sector.

Using a semi-structured interview schedule, survey was carried out with five micro cosmetics industry entrepreneurs. Detailed informal discussions were also held with the owners and employees of these firms. In addition data was also gathered from other sources that included family members of the entrepreneurs, knowledge suppliers, and beauty parlors that use and sell the products of these enterprises.

Sampling criteria is consistent with other similar studies where issue of information richness is fundamental to deciding on the cases themselves and the number of cases (Kristiansen, 2003; Yin 1994). The cases were selected after multiple visits to some of the cosmetics MSMEs in Mumbai and having detailed discussion with officials at Small Industries Service Institute, Mumbai, who have been involved in government initiatives for cosmetic and herbal cosmetic cluster formations. The ‘innovation capacity’ of these firms, as pointed out by the officials, was instrumental in their selection for this study.

The five cosmetics micro enterprises were drawn from a list of 90 enterprises. All the five cases belong to the category of ₹ 5 lakh to 25 lakh investment in machinery (characterized as micro units). This is the largest group of 63 units. With respect to employee category all five belonged to the 10-20 person category. These firms are engaged in manufacturing color cosmetic used for make-up, toiletry items, aroma products and herbal cosmetics.

Table 4: **Profile of the Five Cosmetics MSMEs**

<i>Name of firm</i>	<i>Year – Established</i>	<i>Status of firm</i>	<i>No. of employees</i>	<i>Sex of entrepreneur</i>	<i>Age of entrepreneur</i>
Firm A	2001	Registered/ Proprietary	20	M	48
Firm B	2007	Registered/ Proprietary	10	M	42
Firm C	1974	Registered/ Proprietary	10	M	74
Firm D	1998	Registered/ Proprietary	10	F	60
Firm E	1992	Registered/ Pvt.Ltd.	15	F	52

In this paper, innovation process is understood as acts of technology development of small firms, the entrepreneur’s technological capabilities, and efforts for technology development. A vast body of literature confirms the relation between R&D process of the firm, firm’s technological capabilities (knowledge sources, education, experience, and training) and innovation (Lall, 1992, Kharbanda, 2001; Wang and Costello, 2009; Verhees, 2005). Lall (1992) proposed that innovation can be taken to include all efforts towards technological mastery. Research shows that personal characteristics of the entrepreneur impact innovation (Hausman, 2005). Despite the popularity of neoclassical way of understanding innovation (based on quantitative measuring of innovation), we cannot rule out the importance of qualitative understanding of innovation processes, specifically for small scale sector of economy. Traditionally innovation is studied by examining direct (innovation count) and indirect (R&D and patent) measures of innovation (Jagersma, 2008). In MSMEs, R&D efforts are often informal (Romijn, 1997; Verhees, 2005) and patenting is not followed regularly. Hence we need a qualitative understanding of the innovation process in the small scale sector. In Indian context as well, studies on innovation are carried out by taking R&D statistics, innovation counts, and technological capabilities as measures of innovation (Subrahmanya et al. 2002; Jagersma, 2008; Clancy, 2001). The literature confirms that innovation is a complex, diversified activity with many interacting components (OECD, 1996). Therefore it is to be studied in diverse ways. To obtain a more holistic understanding of innovation process in small firms, this paper considered both direct and indirect measures of innovation effort.

Based on a review of existing studies, consultation with officials in small industry promotion organizations, and field visits, major dimensions of innovations in MSMEs were identified. Accordingly the following themes and sub themes were formulated to explore innovation processes in cosmetics MSMEs.

- a) Firm's technological capabilities - knowledge sources, education, experience, training
- b) Firm's Research and Development (R&D) processes – R&D lab, finance, personnel, quality control, product testing
- c) Products, processes, and marketing
- d) Problems in the innovation process

Nature and Process of Innovation in Cosmetics Micro Firms in Mumbai

A. Firm's Technological Capabilities

Lall (1992) equates innovation with technology change and argues that technological change is an outcome of a process that includes accumulation of skills and knowledge, and the creation of required knowledge for technology development. Knowledge generation occurs from both internal and external sources.

Table 5: **Knowledgebase and Sources of Information of Cosmetics MSME in Mumbai**

<i>Firms</i>	<i>Education</i>	<i>Experience</i>	<i>Sources of information</i>
Firm A	M.Sc.	Business- non-cosmetics field	Seminars, conferences, clusters meetings, trade magazines, personal networks
Firm B	10 th	Business- cosmetics field.	Seminars, conferences in same field, Internet, relatives, friends.
Firm C	M.Sc.	Business- non- cosmetics field	Seminars, conferences, clusters meetings, trade magazines
Firm D	B.A - Economics	Homemaker- no experience	Seminars, conferences, consumers, relatives
Firm E	B.COM.	Service- cosmetics field	Trade magazines, conferences, government workshops, internet, relatives

The five cosmetics MSMEs do not resort to formal mechanism for knowledge generation. Hence, their adoption of new technologies and generation of new products or process innovation to survive in the highly competitive cosmetics market depends on their own education, personal experiences and informal knowledge sources. It is observed that out of five entrepreneurs two had technical education (chemistry) useful in understanding cosmetic formulations (Table 5). Owners of firm B and E do not have technical qualification, but they have prior work experience in cosmetics manufacturing. Firm D's owner had formal qualification in Ayurvedic and alternative medicine. Thus, all five entrepreneurs had basic understanding of cosmetics manufacturing and in addition had practical knowledge.

Studies focusing on R&D as a measure and source of innovation often ignore the contribution of informal sources in the process of innovation (Edwards et al., 2005). The major source of information for these firms is seminars and conferences, mostly at the national level. Vendor development programs organized by MSME office at Mumbai has been attended by owners of firm B, D and E. The entrepreneur of firm E narrated her experiences of obtaining clients in the process of attending seminars and conferences. She said that an opportunity to introduce her product of multipurpose crème to a marketer of personal care products during a national conference resulted in gaining access to new markets for her products. In a similar way firm B got to know about the product - marine spa - in an international exhibition he visited. Small industries' physical proximity to the actual market is always a positive attribute for business development and innovation of small scale sector as compared to large industries (Gupta, 1995). In this case as well consumers formed an important source of information for all five firms. The owner of firm D adopted the strategy of personally meeting her clients and consumers, and eliciting their opinion about her products, with a view to improvising the product line. Other sources of information include trade magazines and internet. Firms usually do not carry out formal survey of the market. Informal gathering of information is done through intermediaries, beauty parlors, and sales agents. All five entrepreneurs use their personal networks for knowledge generation. Entrepreneur from firm E stated that she made use of her husband's knowledge of the economy in the business. And, also went to relatives for any help on matters such as smell of creams, lotions, favorite color of nail polish."

As manufacturing of cosmetics products require an understanding of chemicals and formulations, training is a must for workers in this industry. Hence in-house training or training through daily work is the preferred method by these firms.

B. Firm's R&D Processes

The Frascati Manual (2002) defines R&D as "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". R&D expenditures capture both the quantity and quality of R&D inputs. As small firms often conduct their R&D informally, and don't have separate R&D laboratories, they most likely under-report their R&D expenditures (Kleinknecht, 1987).

Table 6: **R&D Activities in Cosmetic MSME Firms**

<i>Firms</i>	<i>R&D Lab</i>	<i>R&D - budget</i>	<i>R&D is done by</i>	<i>Quality - control</i>	<i>Product testing</i>
Firm A	Yes	No	Entrepreneur only	No	By government labs
Firm B	Yes	No	Consultant	No	By government & private labs
Firm C	Yes	No	Entrepreneur	No	By government labs
Firm D	Yes	No	Entrepreneur	No	By government labs
Firm E	Yes	No	Entrepreneur and consultant	No	Finished products are tested by government labs

It was found that all five firms have their own small R&D labs at their manufacturing establishments. Most of the R&D depends on current fashion trends and customer demands. There is no formal tie up with any government or private lab for technology development. It is observed that there is no separate R&D budget and the work is done on a small scale. These expenses are included in daily expenses of the firm. In four of the firms studied, there is no specially hired R&D people, entrepreneurs themselves do the R&D work. Only in 'firm B' all the R&D work is done by a hired technical person.

C. Innovation in Products, Processes and Marketing

Introduction of new products or processes is often seen as an indicator of innovation. Products or processes can be totally new "radical innovations" or improvements, or substitution of raw materials and changing product designs/shapes/ dimensions i.e. "incremental innovations". In the five firms, it was found that there are product innovations based on in-house R&D, such as 'firm E' which has developed a multipurpose cream for Asian skin with 48 natural ingredients. An extensive study of American, African and Asian skins was done by the entrepreneur to develop this cream which is sold not only as a beauty product, but also as a medicine and as a fairness cream. In a similar way 74 years old entrepreneur of 'firm C' was always engaged in creating something new in aroma therapy. Aroma oils contain natural extracts of plant resources such as roots, leaves, and flowers having aroma content. He developed new products in aroma – chakra therapy – to purify the chakras and zodiac sign based oils which are very much in demand. Some entrepreneurs are also engaged in incremental innovations. 'Firm A' has introduced hot wax. Previously the product was brought from Delhi and was expensive. 'Firm A' started manufacturing this product in Mumbai with less packaging thereby reducing the cost and making it affordable. Due to this initiative he was able to penetrate deep into market. Same is the case with 'firm B's marine spa based on foreign technology as per local requirements. Lower cost for local customers has increased his market share. No firm has taken the patent for any product that has come out of their innovations. They feel that there is no need for it. Entrepreneur from 'firm E' said "we do not have money and knowledge to engage in such activities. We are here only to improve our business". This shows the disinterest towards patenting the innovations among these firms.

The case studies also brought out several process innovations. Entrepreneur from Firm D', for instance, learnt mixing Ayurvedic ingredients in cosmetic products as a response to the increased popularity of Ayurvedic cosmetics; and follows this process for making medicinal and cosmetic products. Her products are very famous among women with problems of acne, skin sensitivity etc. This entrepreneur has also earned many awards, and recognition from government bodies for the innovation.

All the firms have small laptop sized machines, equipped with the latest technologies for experimentation and innovation. Previously most of the innovation and production activities were done by hand, but now all work is done with the help of machines. Commonly used machines include mixers, blenders, fillers, and homogenizers. In terms of raw materials, where these had to be bought separately and customized earlier, now readymade ingredients are available in the markets. Equipment are usually of foreign origin. Processes for innovation, however, are mostly developed in-house. Hence one could argue that most innovation processes are of the incremental type, targeted at fulfilling customer and market specific needs and demands. Marketing and sales agents are a key element in innovation processes for MSME cosmetic firms.

Varied marketing strategies are utilized and deployed by these firms; e.g. business to business, trading seminars, selling products through those seminars, selling to big brands, selling through hospitality chains, spa chains etc. There is no formal arrangement or budget for marketing as such. The entrepreneur himself or herself is solely responsible for marketing, a factor which enables the firm to relate changing customer trends to innovation in processes and products. It needs to be mentioned that these cosmetic MSMEs do not do business in the open market. Their buyers are mostly beauty parlors, wholesalers and other intermediaries, who provide feedback for innovation from changing market trends.

These firms also sell directly to firms which market their products under well known brands. Firms have big brands, spas, beauty salons as their clients. They also export their products. This helps them get better feedback from firms who have better expertise in marketing leaving them free to concentrate on innovation and production, including for niche markets. The use of online interaction as a new marketing channel is growing in the cosmetic industry. 'Firm B' handles most of its exports through network sites. Entrepreneur of 'Firm B' states that in today's globalized world you cannot isolate yourself from the rest of the world. His business of Marine Spa is totally based on imported materials from France and most of his dealings are carried out through Internet sites". This indicates the significance of information and internet technologies in facilitating low cost innovation by MSME firms. However, the use of internet, marketing channels, and informal sources ought to be located in a context where major bottlenecks exist for taking innovation processes to the next level.

D. Problems in the Innovation Process

From the discussions, it was obvious that MSME cosmetic firms are presently facing no major infrastructure problems as they are all located in industrial estates, and have access to all infrastructural facilities. In addition, as mentioned earlier, being located along the western suburbs, they have good access to transportation nodes. Financing, however, is a major problem, especially in cases where firms operate from rental properties. If a unit is set up on rental property like 'firm D', it faces problems in obtaining finance from both government and private sources, as they do not have any collateral to offer. 'Firm D' often has to shift manufacturing unit and due to this face huge loss of business as well.

Another key barrier that emerged from discussions with the entrepreneurs is the lack of awareness regarding various government schemes for MSMEs. Most entrepreneurs are suspicious about the motives of the government. Not enough is done by government agencies to disseminate information about various MSME specific schemes. The entrepreneurs are also not well aware about patenting issues in the cosmetic industry. Problems relating to awareness and the unhelpful attitude of the bureaucracy act as an obstacle in further innovation in this sector.

Though modern equipment for manufacturing is available with the firms, there are problems related to technology upgradation, and access to latest R&D, know-how in operating and maintaining the equipment. Owing to low volume of business, large scale mechanization is not a viable option. This inhibits to some extent their capacity to deploy improved technologies in manufacturing, and to a large extent in making frequent changes in design and formulations of products in response to market demands. Hence, there is a tendency among these units to mostly follow the same product line over a long period of time. The 'firm A' is still

manufacturing the same 'hot wax' with the same old equipment without any improvement in technology since the inception of business. This obstructs the growth potential and limits the scope for business expansion.

Innovation in Cosmetics MSMEs: Key Issues

Increased demand for cosmetics products in modern society propelled by socio-cultural changes unleashed by the forces of globalization is the major catalyst for the emergence of MSME cosmetic firms. There is an increasing tendency among the lower middle classes and the urban poor to patronize cosmetic products. Branded products are too expensive for most groups except for the upper middle classes. In such a scenario, easy availability of raw material and a vast market for finished products in Mumbai and other cities in the region, gave these firms the impetus to grow, innovate, and expand. The major objectives of innovations are quality improvement, cost reduction and satisfaction of changing customer needs. Changing product quality and changing product designs are the prominent features of technological innovations, which enabled them to achieve quality improvement, reduce the rate of rejection and increase output, which together meant higher productivity and quality and therefore, enhanced share of the market. These findings match the results of other studies on the personal care market in India such as that by Kadakia, Nigam and Rao (2009).

When we look at these firms from Lall's (1992) FTC (firm technology capabilities) perspective, it could be found that the technological capabilities of small scale cosmetic firms in India are mainly at the level of 'learning by doing'. Investment capabilities, production capabilities and connections within the economy could be labeled as weak. These are weak because the qualities haven't been institutionalized; they are totally dependent on the owner. As innovations are done by a single entrepreneur there is no documentation, hence no diffusion of the knowledge. There is an urgent need to document the innovations and make and dissemination, so that much more utility can be derived from their innovations. Limitations in the ability to import technology have led to innovations in machinery, formulations, and raw materials. These incremental innovation and its processes need wider documentation and recognition from academics, policy makers, and venture capitalists.

In the face of lack of awareness and inability to patent innovations, there seems to be a paucity of trust entrepreneurs, a fear of ideas being stolen obstructs entrepreneurs from sharing the knowledge with others. This is similar to the findings of Kristiansen (2003) in his Java SSI case study. There is dissatisfaction among all five firms about the operation of clusters and regarding cluster membership. This contrasts with the current literature which argues that in the case of MSMEs, interaction with other firms and organizations takes place when they are co-located in the same region (Tewari and Pandey, 2010; Kharbanda, 2001).

Today small scale sector is no longer a totally marginalized sector with outdated machineries and obsolete methods of production. This case study shows that technology in cosmetics small firms is not archaic and outmoded. In fact, they have modern equipment and use latest information technologies. This seems to be a significant shift from earlier scenarios documented by both government (MSME Third Census, 2001-02) and academics (Tewari and Pandey, 2010). The ability to mix and match old and new technologies, old and new forms of knowledge is a key aspect of innovation among cosmetic MSMEs.

These case studies also bring out the importance of human resources in innovation capacity of small firms. The product and process innovations needed for the survival and growth of these small firms do not necessarily depend solely on R&D, instead may include other informal sources of knowledge generation such as conferences and seminars, internet, and personal networks. Hence, increased attention needs to be given to both human resource issues, R&D upgradation, and other inputs for innovation by academics and policy makers, while designing and implementing innovation policies for small firms.

Other issues that need attention are creation of competitive environment, strengthening product and market shares, pursuit of horizontal integration through supply chain improvement and proper training mechanism for the employees to ensure improvement in skills that will result in product's quality maintenance.

These firms are not only similar in term of business structure but also show many similarities in innovation practices. Innovation in these firms is mostly the work of entrepreneurs. It is observed that most of these firms are involved in in-house innovation to come up with low cost products of a diverse range. Their innovative ideas have given them both position and recognition in the brand conscious Indian cosmetic market. All the five firms, except firm B, are more than ten years old. All firms started with a single product line, but now have several product lines. Firm C for example, started the business with only color cosmetics now also included the aroma products and herbal cosmetics. Similarly entrepreneur of 'firm D' has begun with simple hair oils now expanded her business to the manufacturing of various kind of Ayurvedic cosmetics. Firm 'A', 'E' and 'B' have multiple product lines of color cosmetics, toiletries and herbal cosmetics. The firms are engaged in supply to both local and international market. In these firms it is evident that innovation is a continuous process that begins with an idea, leading to information gathering, and then resulting in the introduction of products or processes and marketing strategies. The frequency of introducing products or processes determines the success of their businesses. All five firms have shown innovation capacity, either through the introduction of specific kinds of products or processes, or through new marketing strategies. Thereby they are able to sustain in a highly competitive cosmetic market.

These firms differ from each other when it comes to marketing strategies. Firms who have prior experience in the cosmetic field such as firm B, C and E have a better idea of the field and more networks to explore, and hence marketed their products more widely, and in a better way. Firm B and E have linkages with international markets, and hence also engage in exports. Firm A, and D do not have any prior contacts with people from this field, and hence find it difficult at the initial stage to penetrate the market, and are still struggling as regards marketing their products. As such these two firms do not have big brands or spa houses as their clients, unlike the other firms. They sell their products mostly through beauty parlors, distributors, and in exhibitions. Here we see the importance of social network that are visible in exploiting the fruits of innovation for small scale industries.

Conclusion

The small scale sector in cosmetics industry in Mumbai is shaped by entrepreneurs who figured out ways to relate technological advances to the human desire to be attractive. Application of technical knowledge in fulfilling the aspirations of lower middle class sections

of society has provided these firms' identity in a brand conscious cosmetic industry. This paper has shown that despite several barriers and hurdles, cosmetic MSMEs do engage in innovative activities. The development of innovative responses starts with the identification of a problem or opportunity (Atherton and Hannon, 1999) by these smaller businesses - in this case identification of local customers' needs and desire for quality products at affordable prices. The analysis and implications of technological innovations studied with reference to the cosmetics small scale firms indicate that if small firms have to survive and grow, they need not always resort to radical technological innovations. Even incremental innovations can contribute to their competitiveness. The most important advantage of these firms is their ability to provide what the market demands.

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