

Innovations for reviving small-scale industries

Anil K Gupta

Abstract

Given the economic distress worldwide, the micro, small and medium scale enterprises (MSME) had been hit hard. Large numbers of workers have been laid off because of depressed demand, piled up inventory, pending retrievables and squeezed credit market. A sector which provides maximum employment cannot be left to fend for itself without a major transformation led by the entrepreneurs, policy makers and also other support organizations. There are several innovative options that one can try at four different levels such as (a) stimulating demand, (b) upgrading technology and skills, (c) promoting innovations for developing new products and services and (d) forging new partnerships among the entrepreneurs and also with the R&D institutions, grassroots innovation networks and the technology students.

Some of the urgent steps required are: (a) technology audit of MSMEs by formal R&D institutions, (b) Creation of National Innovation and R&D Fund for MSMEs, dedicated for replacing age old materials, technologies and production processes, (c) awards for innovations by and for MSMEs, particularly, engaging youth as attempted by Karnataka Council of Science and Technology and Indian Institute of Science, Bangalore and (d) dedicated R&D centres for various industrial clusters.

This is a painful time for the MSMEs and the workers being laid off. A bipartition approach is required among the major political parties to put forward a revitalization plan. Millions of workers and small entrepreneurs will anyway soon vote on the vision of the parties in taking country out of the current stressful situation.

Innovations for reviving small-scale industries

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Given the economic distress worldwide, the micro, small and medium scale enterprises (MSME) had been hit hard. Large numbers of workers have been laid off because of depressed demand, piled up inventory, pending retrievables and squeezed credit market. A sector which provides maximum employment cannot be left to fend for itself without a major transformation led by the entrepreneurs, policy makers and also other support organizations. There are several innovative options that one can try at four different levels such as (a) stimulating demand, (b) upgrading technology and skills, (c) promoting innovations for developing new products and services and (d) forging new partnerships among the entrepreneurs and also with the R&D institutions, grassroots innovation networks and the technology students.

1. Stimulating demand

The demand in different group of industries will have to be stimulated using different instruments and channels. For instance, for stimulating demand in diamond jewelry which is facing a serious problem, with more than 1 lac workers out of job, one could offer a consumer loan to the employees in organized sector with significantly discounted price of jewelry. However, unless market for resale is created, demand may not stimulate. Similarly, for stimulating demand in solar energy or other energy conservation products, incentives can be given to the employees. For agro processing products in the unorganized sector, similar tie-ups can be made with the consumer association. Basically, one is using credit as an instrument to overcome the resistance for consumption among those segments, which have regular income. It has to be done in a manner that the industries are encouraged to find more innovative ways of reducing cost and improving quality. Some of the ways of reducing cost are:

- a. *Pooling the under utilized manufacturing/fabrication capacity:* Distributed manufacturing by pooling the under utilized capacity of those whose cost is less than the lead manufactures after taking into account the cost of logistics and transportation, offers one possibility. This will require new kinds of portals listing capacities, specifications, turnaround time of an order, proportion of the order value required as advance, etc. Commercial banks having data of such enterprises in different branches may join hands in creating knowledge network among the SSIs.
- b. *Dematerialising the economy:* Doing an energy and material audit of the current unit to identify the redundancy, inappropriate shop floor design, sourcing and procurement procedures, waste reutilization processes, technological bottlenecks, etc. Students of engineering colleges can be given crash course in the subject. As I mentioned recently at NIT, Trichy, the students could organize Shodh Yatras in the small-scale industry clusters.

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For NIT, such a cluster is located just across the road. Three thousand students trained for three to five days can map and make a spreadsheet for each unit.

- c. *Creating industrial symbiosis:* Treating clusters as eco systems and trying to find uses of waste of one unit in another for which it becomes an input. Erkman and others had saved enormous cost in Tirupur by finding entrepreneurs to harness the heat and recycle the hot waste water after processing as input for other units. Tanker load of water was coming everyday. Similar opportunities exist in every cluster and this is the time to implement them on emergency basis. Many MSME entrepreneurs may not realize that every time one saved the energy, one also became more competitive. Since this *competitiveness* in the market place will emerge through *cooperation* in knowledge, energy and resource space, one would develop new models of working together – an imperative at present. With the help of students from engineering and management colleges, a countrywide campaign can be undertaken to identify redundancy, inappropriate shop floor design, sourcing procedures, waste re-utilization processes, use of obsolete technologies, etc. Industrial symbiosis can be created by treating clusters as eco systems so that waste of one unit becomes input for another. Saving of energy inevitably leads to higher competitiveness. Cooperation in knowledge, energy and resource space will enhance competitiveness in market place.

2. Upgrading technology and skills

Any small scale Industries do not rely on competitiveness in the market place and the conservation of energy go hand in hand. Conservation agenda cannot be pursued merely by awareness. One has to also create capacities and make institutional arrangements for appropriate innovation to emerge. For instance, in the recent Shodh Yatra in Champaran, we met Birendara Kumar Sinha who has developed a device to control air as well as sound pollution. Large number of diesel engines, attached with a pollution control device, could generate tremendous environmental advantage for the country. In addition, carbon credit could be obtained reducing the cost of such attachments. Birendara Sinha extracted about 12 kg of carbon from one engine of about 12-15 HP in eight to ten months. One assumes that during the economic downturn, environmental and energy concerns could not become the priority. My contention is that if competitiveness is closely tied to the conservation of energy than the true goals of competitiveness and conservation can converge as described earlier. Other steps required to be taken are:

- a. *Techpedia: A portal of technology projects by students to link industry with young minds.* There are about six lacs technology students who spend at least six months in their final year for doing a project. And yet, nobody knows the fate of these projects. Neither the problems of small and tiny industries are posed to the students nor the good projects of the students get used by the industries. The grassroots innovations already developed in the informal sector also do not get an opportunity for being valorized by these students. Further, the students cannot create a relay or *kho kho* model of project development by building upon each

other's ideas. By creating a *techpedia*, we will solve these problems and also identify the centres of excellence among thousands of B or C level technology institutions [apart from similar hotspots in "A" Class institutions]. Ranking by the peers and by the experts will also generate information about places where inspired teachers have guided innovative projects. Incentives can be given to the students who work in teams within the institutions or across the institutions to address the problems of micro and small enterprises. Similarly, incentives and awards can be given to the students who find low cost process and products options for the industry or add value to grassroots innovations or develop business plans to become entrepreneur based on technologies developed by them or other students. Retired scientists and technopreneurs can be engaged to mentor a country wide half a million small enterprise development mission. This initiative has already been started with the help of student volunteers and the faculty guide from SVNIT, Surat. More than 4500 projects have been collected and 200 colleges have been reached by the students. In addition to all above benefits, this portal will also promote originality. If even one per cent projects become new products, industry would get at least 6000 ideas to invest in and stimulate demand for new products and services. Small-scale industry cannot hire experts and this could become one way for getting their problems solved. A course on industrial benchmarking must be introduced in every engineering college and discipline so that students have to do a project on the subject and at the same help the industry in becoming globally competitive.

3. Stimulating innovations for new products and services and develop new ways of doing business

Recently when Zee Business channel did a programme with shoe making industries in Agra followed by pharma and other sectors, I made a point about developing new ways of doing business. For instance, every shoe user knows that left and right feet are not exactly alike. Similarly, because of posture, gait and other reasons, the uniform shoe number may not exactly fit the people with similar sole length. Customization offers an opportunity for small-scale shoemakers through online portal. This will help customers send a few key dimensions specified on the portal and they would get a customized shoe of the design and hues delivered to them. Customers get better comfort and the industry gets a new business opportunity. Similarly in pharma sector, the small-scale industries can easily enter into nutraceutical business, which has enormous scope worldwide. Treating / preventing diseases through better nutrition is completely compatible with new age lifestyles and increasing consciousness about health food and healthy life. In the process, lot of grains such as minor millets will come in demand because of higher fibre and mineral content. The dryland soils are rich in minerals [which less rains are not able to leach] and thus the crops. Such opportunities will help agricultural and health sectors and at the same time, provide new models of increasing incomes of people in such economically backward regions. Industry can be given incentives for sourcing materials from producers in such regions. Some other ideas are:

- a. *Creating web presence for at least ten million MSMEs in twelve to fifteen months:* Ministry of MSME has taken several very imaginative steps in recent past to increase the web presence. The industrial survey provides some information which can be sanitized and offered to various portals who are willing to provide free of cost service to the MSMEs for one year. It is hoped that once these units start getting orders within the country and outside, they might be able to afford the maintenance of their presence on the web. National Small Scale Industries Corporation (NSIC) has already started pooling orders and distributing the same to MSMEs. It has to be done now at much larger scale and through the involvement of private and civil society sector. We have to trigger new mediations so that transaction costs of buyers can be reduced as also of the suppliers. Large number of MSMEs do not have internet connection and would need to be provided such support through a massive expansion of common as well as individual facilities. BSNL and other providers have to take a proactive step and provide several service cum business centers in every cluster.
- b. *Petrol pumps as business centers:* Every petrol pump in rural and semi urban areas can become a business center for MSMEs and agri business. Chartered Accountants, business analysts and other service providers can visit once a week or fortnight different business centers and provide their services to MSMEs to stimulate their business. Oil companies should take proactive step to provide such facilities at each of their pump on priority within next three months. Various other social business organizations and other groups like Rotary and Lions Clubs should join hands in transforming business information and consultancy support for MSMEs in an unprecedented manner.
- c. *Consulting, contracting and curative services in rural areas for stimulating business and growth:* Way back in 1983, in a national seminar on rural credit policy chaired by then Deputy Governor, Reserve Bank, I had suggested that lot of small farmers and artisans needed services which involve tremendous transaction costs at the individual level. By pooling their demand, newer opportunities for growth could be generated. Nothing much has happened since except in the insurance sector and micro finance. The idea is that if every tractor, thresher or pump set owner has to get their machinery serviced before the season to prevent breakdowns and loss of work and at the same time, save energy through better maintenance, the cost will be much higher. However, if service contracts can be offered through banks which may have financed these units or otherwise, one could reduce the per head cost drastically, improve efficiency and conserve energy. Both sides would gain and the economic growth might further improve. Similarly, for veterinary check up for animals, crop disease and pest surveys for generating non-chemical management solutions, consulting, contracting and curative services can

be promoted through public private partnership. ICTs can play a supportive role in disseminating non-monetary technologies for which private sector has little incentive. Thus, sustainability agenda will also get advanced by bringing low cost or no cost knowledge based solutions to the doorstep of farmers through mobile or other means. Small enterprises run by rural youth or others can fill this major policy and information gap. The current help lines do not provide contextualised, non-material advice to the extent required.

- d. *Converting crisis into opportunity by utilizing skills of millions of industrial workers returning to rural areas:* Such an opportunity may never arise again when because of unfortunate economic depression so many trained and skilled workers would be available in rural areas but without proper use of their skills and industrial attitude. This is the time for major agro industrial and agri business boost by investing at least ten to twenty thousand crores in new small ventures. I had suggested that part of the payment of the Sixth Pay Commission to class I and II employees of Central and State Government could have been mobilized for creating an innovation/knowledge based entrepreneurial revolution in the rural and semi urban areas. This amount could have been given back with tax free interest after three years. This way, the organized sector would have made a historic contribution to the growth of unorganized sector. However, the government did not pay attention. One should still be able to promote new bonds for national reconstruction by offering attractive terms. If invested in new ventures, the crisis could be overcome faster. The returnee workers could become the hub of such reconstruction efforts. Likewise, massive rural sanitation and health education campaigns can be launched on the shoulders of retrained and re-tooled workers. Many of them can become trainers for new ITIs to be opened in every taluka of the country immediately. Within schools, industrial education can be introduced and many of these workers will provide ready trainers.
- e. *Educational innovation for children of laid off workers:* Children of lot of workers have been withdrawn from the urban schools because of large scale lay offs. Many of these children may not be able to adjust to rural school environments immediately. Some may miss their friends and teachers. One should explore multi-pronged strategies for converting urban schools and residential complexes to retain children, opening new schools in rural areas, introducing more facilities to accommodate additional children and in some cases, expanding Navodaya Vidyalayas to accommodate more deserving students on merit. It will be a great pity if these children join the ranks of dropout and thus miss out the learning opportunity because of economic recession.

4. Creating new partnership within the small sector and large sector, public and private sector R&D institutions and with the grassroots innovators

It is ironical but true that there is no S&T policy for MSMEs focusing on their problems and emerging challenges in the current economically depressed times. Ministry of MSME is seriously considering ideas about innovation and R&D promotion fund to stimulate the growth in MSME sector. We need several urgent interventions for revitalizing MSMEs:

- a. *Technology audit by formal R&D institutions:* All the major labs of CSIR, DST, DBT, petroleum, coal and other sectors including ICAR should be asked to take up *technology audit* of the MSMEs in their command areas by constituting special teams comprising retired scientists. This will not disrupt their ongoing research programmes and at the same time, life long wisdom of the senior scientists and technologists would be available to the MSMEs.
- b. *National Innovation and R&D Fund for MSMEs:* Specific research projects emerging from such audits should be supported within a month of submission through a dedicated fund called as National Innovation and R&D Fund for MSMEs earmarked for the purpose. Large number of MSMEs are using age-old materials and technologies in often ill-designed working conditions. Without improving the technological status, the chance of their recovery is very low. And thus the jobs will also not be revived. This Innovation Fund should also support the technologies developed in MSMEs and at grassroots level. If there are student projects designed to solve the MSMEs problems, these could also be supported.
- c. *Awards for Innovations by/for MSMEs:* Karnataka Council for Science and Technology and Indian Institute of Science, Bangalore have one of the most outstanding programme for mentoring promising student projects. Every year, large number of IISc Professors personally scrutinize the best projects supported under the scheme and give awards. There is a need to replicate this programme in every state with a sharper focus on industrial and rural applications.
- d. *Dedicated R&D Centres for various industrial clusters:* There is a need for focused R&D centers, say for ceramics, herbal drugs, auto parts, etc., devoted to address MSME problems. Additionally, existing facilities in public, private and civil society sectors should be expanded to provide time bound dedicated support.

There are large number of other ideas that need to be tried in close consultation with MSME Associations and other knowledge networks. It is unlikely that any idea would work perfectly or comprehensively. At times like these, we have to start imperfectly and

improve the ideas through constant feedback and learning by and by. The cost of inertia is enormous. I hope that innovation and initiatives for policy and institutional reform would turnaround the situation faster than anyone can imagine. India should also consider the difficulties of other developing countries and not use protective policies to prevent small-scale industries in those countries to be adversely affected. In the process, we would have taken the leadership that many western countries through protective policies are unwilling to take. It will also make our MSMEs more efficient and globally integrated. A G²G (Grassroots to Global) perspective developed by the Honey Bee Network can provide a viable platform for linking creativity and innovation in the unorganized sector as well as MSMEs with the global markets. The experience of National Innovation Foundation (NIF) can be drawn upon and synergy can be built among different sub-systems of innovation in the near term.

In a large number of agricultural commodities, India continues to be an exporter of raw materials. In commodities like psyllium, castor and many others in which India has dominant market share, much of the value is added abroad. We must encourage innovations and support them with IPRs where necessary so that this unfortunate trend is reversed. In fact, we should use the current crisis to make innovation as the key driver of change and rejuvenation of the entire economic growth process. Another advantage of polycentric growth is that it creates and sustains democracy in the most accountable and accessible manner. While large corporations must also become more innovative and may need support, the need of MSMEs is critical and crucial. We can ignore it only to invite disaster.

In addition to the innovations in the technology, business method innovations will also have to play a major role in revitalizing the economy. If public sector employees can be given loans to buy goods produced by MSMEs at reduced prices, one could stimulate demand and create domestic spur for growth.

I hope that MSME Associations will see the writing on wall, and trigger cooperative, collaborative, creative, and compassionate innovations for their own survival but also for better conservation of environment and improved life of workers either laid off or under the threat of the same. At stake is social peace and stability. I am sure all political parties will converge their agendas on the issue of revitalizing economy through grassroots innovations in unorganized sector as well as MSMEs.