Business Incubation Development in India

Anil K Gupta

The paper provides the experience of setting up first incubator for grassroots innovations in the form of GIAN (Grassroots Innovation Augmentation Network) and make a case for replicating this model elsewhere in the developing world.

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Most developing countries recognise today that in a competitive world, conventional strategy of nurturing a small scale sector by reserving certain products exclusively for this sector they do not work very well. Instead of only product segmentation, the forces of globalisation imply that technological competitiveness be the criteria for survival and growth in market place. It is well known that the employment provided by the small scale sector is much larger in almost any economy than large sector. And yet, the public policy and institutional sectors did not encourage either the indigenous innovations or licensing by the small scale sector of these innovations developed by public sector R&D. It is to overcome these constraints that the concept of business incubation is slowly picking up.

SAGA OF HONEY BEE

Our experience of scouting, spawning and sustaining innovations at grassroots level essentially is based on a decade long exploration of indigenous creativity and innovations at grassroots level. Honey Bee database includes about ten thousand examples of contemporary innovations or a distinctive applications of traditional knowledge in rural areas. Each of these innovations is documented with the name and address of the innovators. Till last year hardly any of these innovations have become a commercially viable product.

CONCEPT OF HONEY BEE

Honey Bee is a metaphor indicating ethical as well as professional values. A honey bee does two things: (i) it collects pollen from the flowers and flowers don't complain, and (ii) it connects flower to flower through pollination. And of course it makes honey. When we collect knowledge of farmers or indigenous people, I am not sure they don't complain. By communicating only in English or a similar global language, there is no way we can enable people to people communication. We have decided to correct both the biases. We make it a matter of principle to always credit whatever knowledge we collect from them and to share, fairly and reasonably, any benefit arising out of the knowledge or value addition in the same. Similarly, we also insist that this knowledge be shared in regional languages so that people to people communication can take place. Honey Bee, in that sense, is like a Knowledge Centre/Network which pools the solutions developed by people across the world in different sectors and links, not just the people, but also the formal and informal science. It is obvious that people cannot find solutions for all problems. At the same time, the solutions they find need not always be optimal. So, there remains a scope for value addition and improvement in efficiency and effectiveness. But it is definite that a strategy of development which does not build upon on what people know and do well cannot be ethically very sound and professionally very accountable or efficient.

[1] Paper presented at the International Conference on Business Incubation in Hong Kong during November 18-20, 1998.

Honey Bee Network and database have been a response to some of these concerns. Questions of these kind arose in our mind and led to the emergence of the Honey Bee network ten years ago, which by now has acquired global presence in about 75 countries.

GENESIS OF GIAN (Gujarat Grassroots Innovation Augmentation Network)

On the eve of the international conference on Creativity and Innovation at Grassroots organised in January 1997 at IIMA (Indian Institute of Management, Ahmedabad), I wrote to the Secretaries of Science and Technology, Rural Development, Industrial Development, etc., in different states of the country. I shared the experience of an innovator who had developed a tilting cart (Fig 1)

Figure 1

and received an order from another state for purchase of this cart through an article published in Honey Bee newsletter. The development of the innovation was supported through a small venture grant by SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions), an NGO providing institutional support to Honey Bee Network. All the problems that Amrutbhai, the innovator faced in developing the innovation and commercialising it first time were narrated in my letter to the policy makers. I made a case for setting up the country's first grassroots green venture promotion fund. The response was very positive from three states, viz., Punjab, Rajasthan and Gujarat. At the time of the conference, we had invited about seventy five innovators from all over the country in addition to more than three hundred academic participants and policy makers from forty countries. Every day we had top level scholars and policy makers rubbing shoulders with outstanding grassroots innovators. In one such session, the Chief Secretary of Gujarat State, Mr.S.K.Shelat listened to the predicament of Honey Bee Network and SRISTI. I asked as to how much more evidence needed to be presented to prove that enormous creativity and innovation exists at grassroots level. I also regretted that despite our having built such a large database, we had not succeeded in converting many innovations into commercially viable market based products. Gujarat Government then announced creation of a corpus fund of Rs.1 crore (250,000 USD) for precisely this purpose and asked me to develop a proposal. Within two months, almost half the support for the purpose was mobilised from various state corporations and on March 1, 1997, GIAN was born. The Board of Directors of GIAN included the state secretary of Agriculture, Industry and Rural Development, Managing Directors of three cash rich corporations, CEO of Gujarat Venture Fund Limited, three professors from IIM and three NGOs including Self-Employed Women Association and SRISTI. GIAN has accomplished within a year and half many outstanding successes which I will briefly explain.

But before that I should share the conceptual framework in which the journey of an idea or an innovation from grassroots level to a product took place.

GOLDEN TRIANGLE FOR REWARDING CREATIVITY AND INNOVATION (Fig 2)

The real challenge we have realised is in linking Innovation, Investment and Enterprise. It is very seldom that the same person will have all the three attributes. Theoretically it is possible that an investor in Hong Kong may source an innovation in India and set up an enterprise in say, Bangladesh. This can happen only if a Knowledge Network exists which can bring together potentially investors and entrepreneurs in touch with innovators. Since most innovators may or may note like to become entrepreneur themselves, the art of negotiation, licensing and developing commercial contracts has to be learnt by various actors.

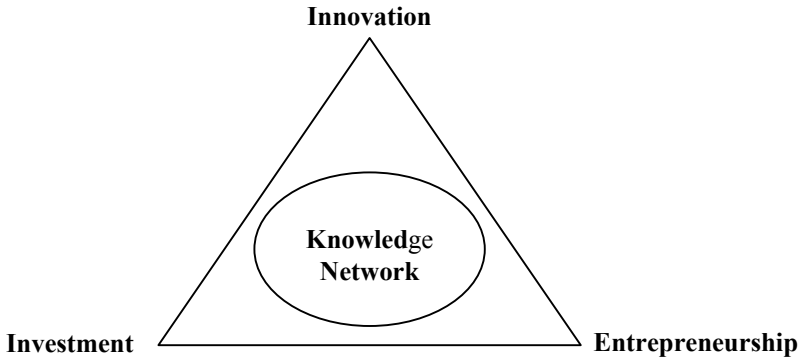


Figure 2

During this process of triangulation of an innovation, need for technical and management improvements may be felt. And at that stage, the linkage with R & D systems becomes crucial.

BUILDING BRIDGES BETWEEN FORMAL AND INFORMAL R&D

Many innovators are not very `good ` clients for institutional scientists. The innovators often are very confident of their designs, start competing rather than cooperating with external designers and in a few cases accepts suggestions with great reluctance. In a particular case of cotton stripper (Fig 3). The innovator had developed a very interesting machine for separating cotton from its shell in a variety in which the ball did not open after maturity. In hybrid cotton, one can easily suck the cotton through the vacuum

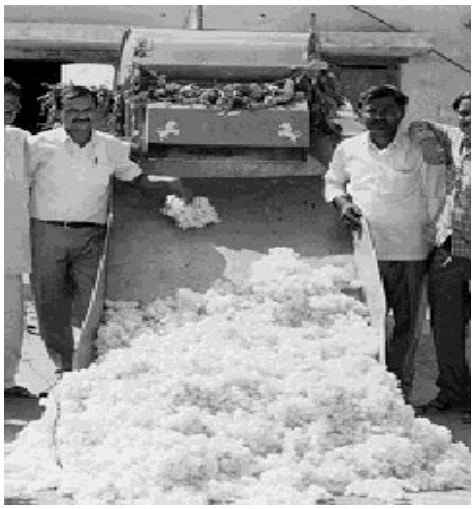


Figure 3

harvesters but in this particular variety of rainfed cotton the cotton had to be pulled out from the shells manually by women and children. This is a very hard task and certainly not the one in which childhood should be engaged. Manshukbhai developed seven different models of this machine. Initially, lot of farmers and their associations took enormous interest and voluntarily contributed the price of more than fifty such machines in advance. However, when Manshukbhai gave the machine to first few clients, they observed that a particular drum got worn out very fast. Manshukbhai took back the machines, returned the money of all the investors and went back to his workshop to improve the design. Without much formal education but through encouragement of few of his friends, he continued trying new ideas. When he developed a few prototype which worked reasonably well, we brought an expert from IIT (Indian Institute of Technology) Bombay to visit and suggest changes in the design. Subsequently, a German student working with National Institute of Design spent about eight weeks in developing alternative designs to overcome various constraints. After a while, Manshukbhai seemed very restless. For some reason, it seemed very awkward to Manshukbhai to work through the drawings and that too developed by a young outside student. He had never drawn any drawing on paper before developing a machine. The drawing was in his mind. He then started working on yet another design, different in scope and efficiency. He is still developing that machine for which GIAN is mobilising financial support from various programmes of Department of Scientific and Industrial Research. It is not always very easy for formal financial or R & D institutions to support an untrained rustic artisan or innovator whose only claim to the proficiency is through the performance and prototype.

Other examples of R & D linkage with the informal innovation is the case of bullock cart, ground nut variety, pulley, ten horse power tractor, etc. In each case, the story is different and so varies the experience. In the case of ten horse power tractor, (Fig 4) Bhanjibhai, a farmer having a

Figure 4

workshop at his farm had put together parts of jeep, oil engine and other such old and new components to develop the device. It was easy to assemble, repair and replace. A student of IIT, Bombay took up a project on improving the design of the tractor. During his study he went to meet the Head of the Department of automobile testing in a vehicle research institute. The Professor there asked the student to abandon the project because the innovator had used a stationary type of engine for a mobile vehicle. The text book did not permit it. But Bhanjibhai had made nine such tractors till he was caught and reprimanded by Regional Transport Officer (RTO) for having developed a tractor without certification. The Professor did not change the text book and the RTO did not ban the rules. The result, the innovation got stuck. GIAN and SRISTI pursed the matter with the Central and State Governments to get the tractor certified for which the only institute in the country demanded a huge amount as the fees. For them the fees for a small innovator or a large corporation had to be same. The Secretary, Ministry of Agriculture was very helpful but did not have any discretionary fund to pay this fee. The policy framework had not yet tuned itself to recognise the needs of certification costs of small innovators.

In the case of pulley, the design had remained unchanged for more than thousand years. Women who used pulley to draw water had to spend so much energy both in pulling water and also holding the bucket while gasping for breath. Amrutbhai who had designed the tilting cart also designed the pulley with a simple improvement (Fig. 5). He designed a stopper on the

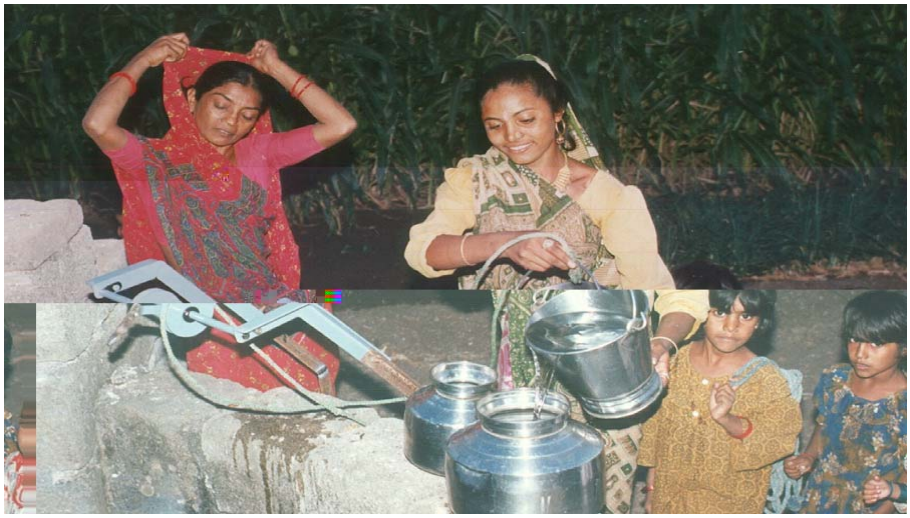


Figure 5

existing pulley to permit movement of rope one way. In the other direction it was stopped by a stopper. In an earlier design, he had used a ratchet which was not necessary as he realised later. The second roller pulley was little more sophisticated but still quite cheap. The question was how to organise decentralised production of the pulley, its installation in thousands of wells in each district and taking care of the maintenance problems if any. Mobilising even small private investment for a common property asset (since many drinking water wells are common property wells), is not always easy and generating resources for design, manufacture, installation and maintenance requires lot of effort. For social purposes of this kind, diffusion of certain technologies will have to be organised and managed by the community innovation diffusion fund. Unfortunately the incubators world over have not attended to the innovations for which individual demand is difficult to create but for which social space and niche exist.

SUMMING UP

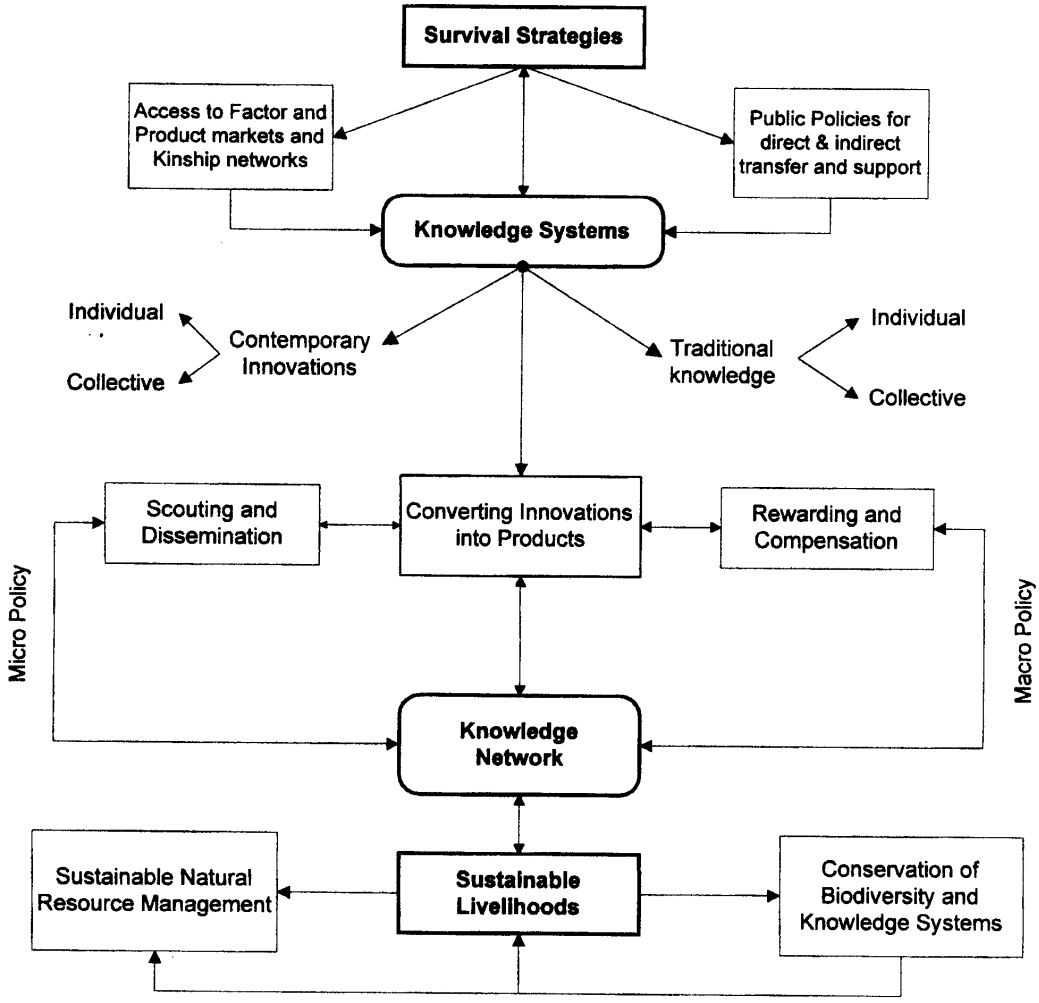
The business incubation experience in developing countries cannot be entirely along the same line as in developed countries. The information network in the informal sector are quite weak and interface with the formal sector is also not very strong. We need to therefore, take a multi pronged approach including several steps such as:

a. Creating knowledge networks which connect innovators, scientists, investors and entrepreneurs across language, region and sectors.
b. To provide funds for incubating common property innovations for which individual demand in the short run may not be possible.
c. To set up grassroots innovation augmentation network which are venture promotion funds aimed at mobilising technologies, generating demand, developing media and product promotion strategy and eventually helping in the protection of intellectual property rights and fair contracts for commercialisation.
d. There is a need for innovation patents system which provides protection for lesser duration for innovations that may have lower inventive threshold and cost less to protect. Such patents are likely to be licensed by the small entrepreneurs much more than others.
e. Recognising the limits of what public sector can do, need for involving voluntary organisation and other civil society structures for performing honey bee function must be recognised.
f. The whole frame work of SRISTI as detailed in Figure 6 is to :

- To support people-to-people learning through networking among innovators
- To document, analyse and disseminate the innovations developed by people themselves to create greater space in polity for building upon civil society initiatives and innovations from below
- To pursue protection of the intellectual property rights of grassroots innovators through Honey Bee
- INSTAR (International Network for Sustainable Technology Application and Registration) registration system and policy and institutional changes at national and global levels.
- To undertake action research to generate incentive models for recognising, respecting and rewarding grassroots creativity.
- To validate and add value to local innovations through experiments(on-farm and on-station) and laboratory research
- To embed the insights learned from grassroots innovations informal educational systems in order to expand the conceptual and cognitive space available to these innovations.

In the absence of such a framework one will have to assume that innovators can reach the incubators on their own. our experience is to the contrary. The incubators have to reach the innovators and not vice versa.

We hope that Honey Bee philosophy combining six Es (Ethics, Excellence, Equity, Efficiency, Environment and Education - Fig 7) provide the frame work for business incubation to become the incubation of ethical and environmentally just business.



Framework for understanding SRISTI's strategy

Figure 6

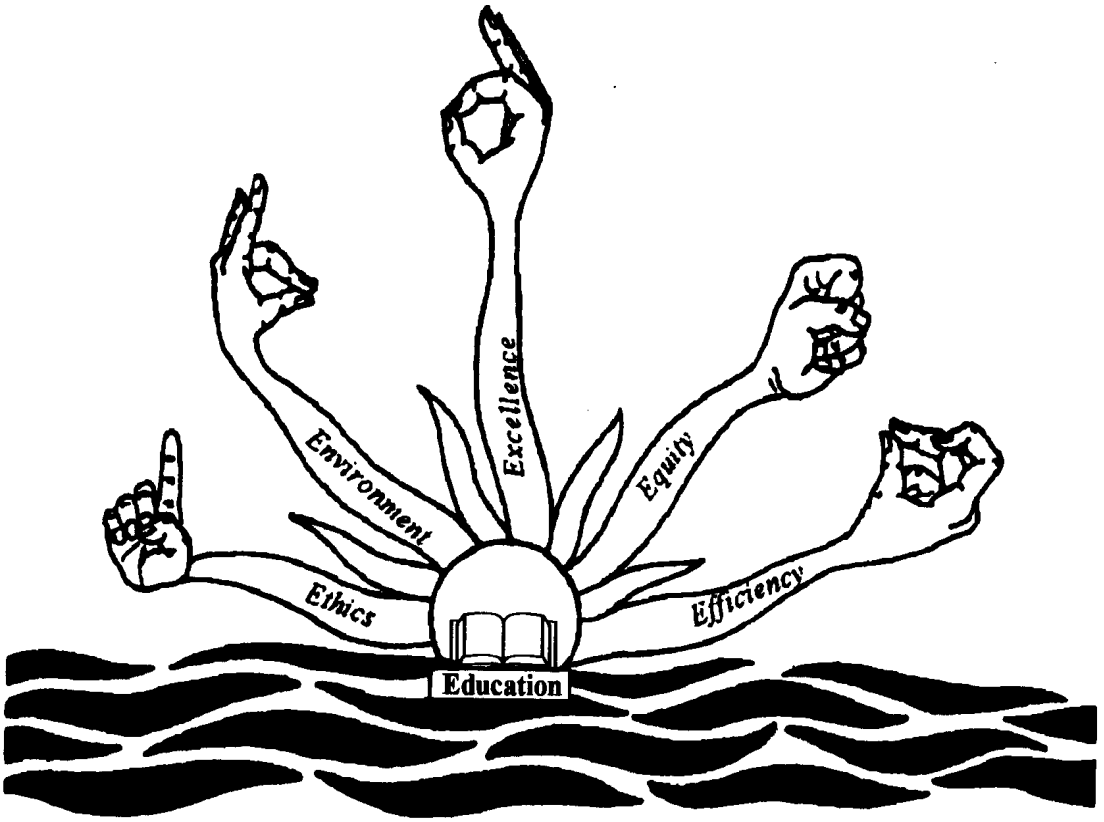

Excellence
Environment
Equity
Ethics
Efficiency
Education

Figure 7