CHAPTER - V

"ATIRA was Vikram Sarabhai's first experience in institution building and of innovative change. It was his 'apprenticeship' as well as the beginnings of his emerging identity, not only as a scientist but as an institution builder and as a change agent for social and economic problems."

- Kamla Chowdhry (1972)
5.1 Introduction

In the following two chapters an attempt has been made to understand the impact of leadership actions on institution-building processes vis-a-vis the leadership role played by Vikram Sarabhai in the creation of the two institutions under study, namely, 1. Ahmedabad Textile Industry's Research Association (ATIRA), Ahmedabad, and 2. Physical Research Laboratory (PRL), Ahmedabad.

Ganesh (1978, 1979) developed a General Processual Model (GPM) of institution-building. The GPM has four types of IB processes: 1. Birth processes 2. Development processes 3. Renewal processes, and 4. Institutionalization processes. These four IB processes can be profitably used to formulate a new leadership model based on Sarabhai's IB experiences vis-a-vis ATIRA and PRL.

5.2 Birth Processes

In birth processes two aspects were considered as important in the initial stage of any new institution. They are incubation and inception. Incubation includes the initial stages of a new institution which leads to the inception stage after its formal creation. Birth processes of new institution consists of various aspects like idea origination and nurturance, choice of institutional form and its location, choice of model and early leadership and resources and support mobilizations.

Incubation

Idea origination and nurturance:

The main objective of ATIRA was to modernize the traditional textile industry.
However, it also included to modernize the attitudes and outlook of the industry. In short, the change was expected both in the system as well as in the hardware. It was for the first time in India that an attempt was made to apply scientific research for the modernization of the traditional textile industry.

Initially three parties took initiative in the establishment of ATIRA. They were: 1. The Ahmedabad Millowners’ Association (AMA) 2. Vikram Sarabhai, and 3. The Government of India. It is necessary to understand the context in which ATIRA was born. ATIRA was established in 1947, the year in which India achieved national independence. The Government of India (GOI) was interested in promoting scientific and industrial research. The Ahmedabad Millowners’ Association with its 71 members was interested in modernizing their traditional industries had not been able to do so before 1947 because of Britisher’s policy which was prejudiced against Indian goods. Till the time of independence the Indian Textile Industry had somehow managed to survive.

Many industrialists used to visit U.K. and Europe very often and during these business tours they had realised the benefits of scientific research in the modernization of industry.

Vikram Sarabhai had just completed his Ph.D. in Cosmic Rays from Cambridge University and had returned to India. While studying at Cambridge, he had visited many scientific and industrial research organizations in U.K. and Europe.

In 1944, the Government of India had set up an Industrial Research Planning Committee, under the chairmanship of Sir R.K. Shanmugham Chetty, to encourage industrial research.

The Chetty Committee visited Ahmedabad to make the Ahmedabad textile community aware of the GOI’s interest in promoting industrial research. The Ahmedabad Millowners' Association (AMA) showed its interest in the establishment
of such a research organization on a co-operative basis only if the GOI assured of the necessary financial support.

Shri Kasturbhai Labhali, an eminent industrialist and a millowner had requested Vikram Sarabhai, who was at that time studying at Cambridge, to study the organization structures and constitutions of some industrial research institutions in U.K. and Europe. All these favourable conditions led to the birth of ATIRA.

In short, ATIRA was born due to the timely initiative taken by: 1. AMA, 2. GOI, and 3. Vikram Sarabhai. ATIRA was the first attempt to use scientific research to modernise traditional textile industry.

Choice of institutional form:

ATIRA was registered under the Societies Registration Act of 1860 (21 of 1860) in 1947 as an autonomous and non-profit, co-operative research institution.

Location of the institution:

Location of the new institution plays a very important role in connection with the existing environment and the prevailing social and economic conditions. For ATIRA, Ahmedabad was a most appropriate location because at the time of its birth it had already earned the reputation of being 'Manchester of India' with its flourishing textile industry. Therefore, it was natural that the initiative to establish a textile research institution came from the Ahmedabad Millowners' Association.

Inception

Choice of model

This aspect includes various issues such as the type of the institution, whether it is to be modelled on a similar institution in the country or outside the country.
and the role of the institution-professional or academic.

Vikram Sarabhai, as a member of the Sub-Committee appointed by the AMA drafted the constitution of ATIRA. This constitution had three important features:

1. a co-operative organization structure;
2. inclusion of scientists as co-opted members in the Council of Administration; and
3. majority control did not rest with the AMA.

The objectives of ATIRA were mentioned as:

i) to apply the scientific method to the problem of industry;

ii) to conduct operational, applied and fundamental research to improve understanding of men, materials and processes in industry;

iii) to implement results of scientific research and technological developments.

With these objectives ATIRA was registered in 1947 as a co-operative textile research institution and the constitution was drafted in such a way that it remained as an autonomous co-operative body.

Choice of early leadership:

A very important aspect of any new institution is the choice of early leadership. The beginning of any new institution is very crucial and the early leadership is largely responsible for the creation of an appropriate operating culture and identifying appropriate individuals for the formulation of its core research programme centered around its original mission. The Council of Administration (COA) of ATIRA requested Vikram Sarabhai, an elected member of COA, to shoulder the responsibility of Directorship till a full-time individual was identified. Sarabhai continued as the honorary and part-time Director till 1956, when a full-time Director was appointed.
Inspite of multifarious commitments Vikram Sarabhai was able to provide a strong leadership in the initial stage of ATIRA's growth.

While Sarabhai continued to shoulder the responsibility as a Director, Kasturbhai Lalbhai continued as Chairman of the Council of ATIRA. Kasturbhai's wisdom and Sarabhai's vision helped the earlier growth of ATIRA.

A search to identify a full-time Director for ATIRA continued for almost 9 years. A number of candidates were either rejected or were not available for short term assignments. Finally an American, who had a considerable textile research experience and was well qualified showed interest and the ATIRA Council also thought that he was suitable for ATIRA's Directorship. Before a final appointment order was issued to him; Sarabhai wrote to one of his close colleagues to meet him personally and find out his understanding of human beings. Only after receiving a favourable reply from his colleague; Dr. Helmut Wakeham of Princeton University was appointed as Director of ATIRA under the U.S. Technical Assistance Programme. Dr. Wakeham was the Director of the Textile Research Laboratory in Princeton and he had come to ATIRA for a two years' assignment. When Dr. Wakeham joined as Director; Dr. T.S. Subramaniam also joined as Director-designate. After a period of one year Dr. Wakeham was to work as consultant to Dr. Subramaniam and Dr. Subramaniam was to take over as Director. Thus Sarabhai was meticulous in his search for the first full-time Director of ATIRA. He was also responsible for identifying next two Directors who were trained under him during the early days of ATIRA and had worked as members of the early research group.

Resource mobilization and support mobilization:

These are two very important aspects of the birth of any new institution. Vikram Sarabhai strongly believed that a new institution for social change;
it is necessary to first identify appropriate individuals around whom the
institution is built and then to seek resources.

As mentioned earlier, Kasturbhai Lalbhai, an eminent industrialist and Chairman
of ATIRA Council supported Sarabhai whenever he came with a novel idea.
Kasturbhai as an elderly figure fully trusted Sarbhai. His admiration for Sarabhai
prompted him to describe him as an 'institution for social change'. He used
his own networks in mobilization of resources from the industrialists as well
as from the GOI for ATIRA.

Kasturbhai Lalbhai had a close relationship with eminent personalities like
Jawaharlal Nehru, the then Prime Minister, Sardar Patel, the Deputy Prime
Minister, Krishnamachari, the Minister for Commerce and Industry,
Dr. S.S. Bhatnagar, Director General, the Council of Scientific and Industrial
Research and Dr. K.S. Krishnan, Director, National Physical Laboratory, who
held high positions at the Government of India level and also in the scientific
community. All these personalities were politically very influential. Due to
Kasturbhai Lalbhai's relationship at different levels both locally and at the
nationally it was not difficult for Vikram Sarabhai to mobilise financial resources
from the GOI and the AMA. The AMA contributed Rs. 5 million, the GOI
contributed Rs. 1.9 million and also promised to bear half the recurring
expenditure upto a maximum of Rs. 0.15 million in any particular year (Chowdhry;

It was the institution-building philosophy of Vikram Sarabhai which helped him
in creation of ATIRA by identifying a figure-head like Kasturbhai Lalbhai.
It is very important to clarify this point here to avoid any misunderstanding.
Kasturbhai's role as the figure-head of ATIRA was in no way the outcome
of any strategy. It was, in fact, a personal and a unique relationship between
Kasturbhai and Sarabhai, that resulted in creation of not only ATIRA but of
a number of institutions in Ahmedabad.

The success of ATIRA was largely dependent on the full-fledged support from the AkA. And the recognition, from the millowners in terms of the utilization of ATIRA's research to modernise textile industry, was the most important aspect to establish ATIRA's identity as a textile research institution (Ganesh and Joshi, 1983, p.21). For this purpose, during early years, Vikram Sarabhai used to arrange informal meetings with the young managing agents of local textile mills who could understand the scientific viewpoint due to their formal training, to convince them of the role of scientific research in the modernisation of traditional textile industry.

5.3 Development Processes

The next important aspect of institution building is development processes. The development processes consist of culture creation and boundary management.

In respect of culture creation, a number of sub-processes will be included, they are recruitment, enculturation, decision-making, structure and leadership style.

Recruitment:

Sarabhai's approach of institution-building was centered around a concept called institution-around-men. He considered this concept as very effective in creation of new institutions for innovation and social change. He was advocating institution-around-men concept as against a traditionally used one in which first an organization chart is drawn and subsequently all the available posts are filled. This was the experience of the Council of Scientific and Industrial Research (CSIR), Delhi, which he believed was not appropriate in Indian conditions.
Therefore, Vikram Sarabhai adopted a different approach of institution-around-men. Initially he appointed four researchers for ATIRA - a physical chemist, a mathematical statistician, a social psychologist and a high polymer chemist. These early recruited researchers had just received their Ph.D.s, had neither background in textile nor any previous work experience. They were young, fresh researchers and all of them were in their 30s. These researchers had their training in scientific methodology and faith in it for the solution of problems.

It was Sarabhai's belief that "the application of the scientific method by fresh and trained young minds would be able to produce better results in the textile industry than the application of 'previous experience' gained in industry. According to Sarabhai early experience seemed to indicate that traditionally preconceived job requirements and predetermined hiring procedures were unlikely to yield results when they were related to new institutions intended to perform new roles. Since the research workers had neither knowledge nor experience of textiles, each was apprenticed to periods varying from 6 months to a year to a textile mill with the object of learning about the technology and the problems of the textile industry". (Chowdhry, 1970, p.137-138).

Enculturation:

Another very important aspect of Sarabhai's institution building philosophy was creation of an appropriate operating culture. Selznick (1957, p.5, 40, 134-135) discussed the culture creation and the role of an organizational leader in an institution:

"The term 'organization' thus suggests a certain bareness, a lean, no-nonsense system of consciously coordinated activities. It refers to an expendable tool, a rational instrument engineered to do a job. An
"institution", on the other hand, is more nearly a natural product of social needs and pressures - a responsive, adaptive organism. The terms institution, organizational character, and distinctive competence all refer to the same basic process - the transformation of an engineered, technical arrangement of building blocks into a social organism. Organizations become institutions as they are infused with values. The infusion produces a distinct identity. Where institutionalization is well advanced, distinctive outlooks, habits and other commitments are unified, coloring all aspects of organizational life and landing it a social integration that goes well beyond formal coordination and command. It is easy to agree to the abstract proposition that the function of an executive is to find a happy joinder of means and ends. It is harder to take that idea seriously. There is a strong tendency in administrative life to divorce means and ends by overemphasis on one or the other. The cult of efficiency in two ways - by fixing attention on maintaining the smooth-running machine or by stressing the techniques of organization. Efficiency as an operating ideal presumes goals are settled and resources available.

According to Sarabhai one of the basic requirements of an institutional leadership is to establish an appropriate operating culture and this would be created by the attitudes and assumptions of the men in it rather than by the formal organizational structure.

Sarabhai's approach of creating a new institution focused on institution around men, as mentioned earlier. Two most important aspects are considered as very significant in starting a new institution. They are:

1. core research programmes; and
2. an appropriate culture which Sarabhai called "an operating culture".
According to the IB philosophy of Vikram Sarabhai, institution-around-men approach was more effective and very appropriate to the Indian situation. This means both core research programme and an appropriate operating culture of ATIRA were developed around the first group of researchers.

The environment created at ATIRA by Sarabhai consisted freedom of work, trust and horizontal control through discussions, and was largely responsible in the creation of an internal culture. While the culture was developed by the first group of researchers, the original mission of ATIRA was always kept in the center. The researchers developed the core research programme of ATIRA and the same group created the culture as per the need to help develop and implement the core research programme. So creation of an appropriate culture by the same group, which was also responsible for envisaging ATIRA's core research programme, helped achieving institutionality in a short period.

Sarabhai believed that controls are contained in professional commitments. So he created an administrative set-up which ignored a structure supporting vertical control.

In short, Sarabhai had adopted an open system approach in which the mission of an institution is in center surrounded with individuals for its implementation. For him, in starting a new institution, men and mission were more important than a pre-conceived organization chart of a planning officer of the Council of Scientific and Industrial Research.

As Mehta (1972, p.60) mentioned:

"He was careful to see that with a growing organization, administrative red tape did not increase and scientific effort was not strait-jacketed in a rigid framework of rules and regulations."
Another most important aspect of Sarabhai's institution-building philosophy was creating interacting clusters of individuals with whom he interacted and through whom he interacted with others. Boissevain (1974) also discussed his concept of networks which is similar to Sarabhai's interacting clusters concept.

There were three such interacting clusters identified which played a very important role in the institution-building process of ATIRA.

The First Cluster (Policy making body)

The first cluster consisted of Shri Kasturbhai Lalbhai, Chairman of ATIRA's Council, Dr. S.S. Bhatnagar, Dr. K.S. Krishnan and Dr. Vikram Sarabhai. Dr. Bhatnagar was Director-General, Council of Scientific and Industrial Research, Dr. Krishnan was Director, National Physical Laboratory and Sarabhai Director, ATIRA. All these four individuals were elected members of ATIRA's Council and they represented three major segments of society:


The close relationship between Kasturbhai and Sarabhai provided a unique leadership to the initial growth of ATIRA.

In the words of Chowdhry (1970, p. 43):

"The relationship of Kasturbhai and Sarabhai was much more than that of a Chairman with a Director. Kasturbhai and Sarabhai represented a combination of science and practice, the aspirations of the two generations, of leadership styles significant to their respective groups - a combination of age, skills and experience, which strengthened and enhanced the leadership of ATIRA."

There were three segments in the council: 1. elected group; 2. co-opted
group; and 3. government nominated group. In each segment there was an eminent scientist. These scientist members were well-known both in the government as well as in the scientific community. These scientist members, namely, Bhatnagar, Krishnan and Sarabhai, knew each other since years, participated in various scientific meetings together and therefore, they had developed a mutual understanding, trust and close relationship with each other.

As Chowdhry (1970, p.143) mentioned:

"Through their personal and professional bonds, they linked the three segments of the Council and bridged the 'Cultural gaps' between industry, government and science."

Another very important aspect also helped to strengthen the relationships between the members of the policy making body or the first cluster, was that each member of this policy making body was engaged in an important project on institution building and they were also members of the council of each one's institution building project. Kasturbhai was the Chairman of the Council of the Physical Research Laboratory, Ahmedabad, Bhatnagar and Krishnan were members of PRL Council and Sarabhai the founder member. Kasturbhai and Krishnan were on the Board of the Council of Scientific and Industrial Research, Sarabhai was on its Scientific Committee and Bhatnagar was the Director General of the CSIR. Similarly, Kasturbhai, Bhatnagar and Sarabhai were members of the National Research Development Committee. In short, all these members were engaged in creating national scientific research institutions.

The experience of working together and sharing common national tasks helped in developing mutual respect and trust towards each other. This first cluster
or policy making body continued for many years and their experience of working together ultimately helped the ATIRA in evolving "the basic style of discussions and decision-making". Kasturbhai continued as Chairman of ATIRA's Council for 15 years, Bhatnagar as member for 7 years, Krishnan for 13 years and Sarabhai as an elected member and Director for 9 years.

Thus, the first cluster or the policy making group at ATIRA Council was largely responsible for the mobilisation of resources and support through its members. The scientists envisaged the core scientific research programme of ATIRA. The members of the policy making group also helped establish necessary norms and administrative practices at ATIRA which ignored vertical hierarchical organization structures.

The Second Cluster (The first research group)

As mentioned earlier, the first group of young researchers recruited at ATIRA also shared with Sarabhai training in scientific methodology, same age-group and lack of background and work-experience in textile industry. The members of this group of researchers were young and they were in their 30's.

In the beginning attempts were made to recruit people through advertisements which appeared both in Indian and foreign scientific journals. Individuals who had done significant scientific research were expected to apply. Attempts were also made to identify such individuals through personal contacts with scientists in scientific community. But the response was not very satisfactory. Finally, Sarabhai decided to recruit fresh young Indian scientists and he deliberately ignored the requirement of previous work-experience. This was because of his assumption that fresh and young scientists with the knowledge of scientific methodology would be able to achieve better results in industry. However, a few individuals protested against such a novel approach.
As Mehta (1972, p. 60) observed:

Dr. Sarabhai strongly believed that "the selection of scientists must be strictly on merit and on an all-India basis. Occasionally, an isolated voice could be heard that a research institute in Ahmedabad should offer opportunities to the scientists from this region. This point of view was firmly resisted by Dr. Sarabhai and the majority of ATIRA's Council of Administration. This all-India basis for selection of scientists and technologists continues even today and makes ATIRA a truly National Institute, staffed with the best available talent from the country in various disciplines."

This shows the role of the Council as a team to achieve ATIRA's mission and Kasturbhai as Chairman of the Council in supporting Sarabhai's institution-building philosophy to make ATIRA the best institution of its kind.

When the first young researchers were recruited; ATIRA used to work in three rented rooms. At that time there was neither a library nor a laboratory. Therefore, the young researchers spent their first year in local textile mills learning and identifying their areas of research. During this one year apprenticeship in local textile mills, these young researchers had on-the-job training and learning experience which ultimately helped them study the textile technology, the people and their problems. In other words, for the researchers it was the time to learn and receive and the industry to teach and give.

The local mills selected by the group of young researchers were owned by the members of ATIRA Council or the members of ATIRA as a co-operative body. So the entry of this group into these mills was not difficult. There already had been some links between ATIRA and the mills.

Another important thing that happened was that by jointly exploring and
identifying, learning and receiving, the members of this group could foster team spirit. In other words, this group was slowly evolving a holistic type of organization structure or management system as well as an internal structure in which everyone was jointly working to achieve a common mission. This working together approach helped them to avoid a hierarchical system or an authoritative structure.

Sarabhai gave freedom of work and trust to these young researchers which, as Director, he also received from Kastrubhai, the Chairman of Council. This transfer of trust and freedom of work from one group to another helped the emergence of a new type of relationship based on mutual confidence.

As Chowdhry (1970; p.148) observed:

"Sarabhai's role in relation to the research workers was to nourish their developing capacities, to permit them to move in directions that made sense to each, and helped them to find an appropriate 'socio-technical' role in relation to the industry."

The Third Cluster (Young Managing Agents)

The third cluster consisted of young Managing Agents of local textile mills who also indirectly formed a clientel group for ATIRA. These young managing agents had just completed their higher education abroad and were ready to enter their family business. Sarabhai also was a member of this third cluster as a young managing agent at Calico Mills.

Before we go into the details of the role played by the members of the third cluster, it is necessary to understand the context in which the textile industry was run during that period.

The textile industry was run by the millowners through managing agency
The industry was run mainly by two groups. The owners' family members headed the top positions. They were largely responsible for managing the whole unit. The production and process departments were totally looked after by the technicians or engineers. Rarely family members of the owners group looked after either production or process departments, similarly technicians or engineers were asked to look after the management. This was an unwritten business tradition prevailing in the managing agency system in those days. Because of this, it was difficult for the young managing agents to identify their responsibilities. In short, the textile industry was internally divided between technicians heading production and process area at one end and policy-makers in managerial positions at the other. This created almost a difficult situation for this group of the young managing agents to work in. The question was how to identify meaningful roles for this group? It was the members of the second cluster, the young researchers at ATIRA who while doing their apprenticeship at the local textile mills, identified the specific responsibilities of the managing agents.

The chemist and the physicist of the research group had identified the need of chemical and physical testing laboratories, the statistician the need of quality control departments and the psychologist the need of supervisory training and personnel functions.

The managing agents shouldered the responsibility of organizing these new areas identified by the researchers of ATIRA. This was possible because of their common training in scientific methodology and their common understanding of the need of such new areas due to their common scientific background. The managing agents not only identified their new roles as managing agents in textile mills but also helped the researchers in identifying the role of ATIRA in modernising the traditional textile industry and thus became
the link between the millowners group and the researchers of ATIRA. This was possible also because some of them had family and social relationship with Sarabhai and with ATIRA's researchers and had studied with some of the researchers abroad in the same universities.

In this way, the group of young managing agents who were also members of the third cluster played a significant role in the institutional growth of ATIRA. This is how context plays a pivotal role in institution-building process.

In other words, creating interacting clusters helped Vikram Sarabhai in the institution-building of ATIRA. It is also necessary to mention that one of the most important aspects that helped ATIRA in its early growth was Vikram Sarabhai's common membership in all the three clusters and his position in Ahmedabad.

Chowdhry (1970; p.150) mentioned:

"Through Kasturbhai Lalbhai and his own family's position he had the millowners' support; by virtue of his scientific background he shared a membership with the research workers; and because of his age and upbringing he shared a membership with the young managing agents. There were family, social and work relationships which reinforced the flow of confidence and communication from one group to another."

**Decision-making and structure**

The Council was largely responsible for decision-making in which Director played a significant role. As mentioned earlier, Sarabhai was requested by the Council to shoulder the responsibility as Director till a suitable individual - a full time director was identified. Sarabhai worked as Director for almost 9 years. In Council, Sarabhai had full support from Kasturbhai, the Chairman
of the Council and was also an elderly person respected by the members. So in ATIRA, during the initial years, Sarabhai was involved in policy-making as an elected member of the Council and in implementation as Director. Kasturbhai had tremendous faith and trust in Vikram Sarabhai who was a visionary scientist.

At ATIRA, Vikram Sarabhai had recruited the first group of young scientists who were responsible for the formulation of the core research programme of ATIRA. He believed in the institution-around-men approach which encouraged creativity in a researcher. This philosophy was a unique combination of idealism and pragmatism.

His decision-making style was largely based on participation. A number of discussions used to take place before a final decision was made and even when an initiative came from him, he used to explain and convince everyone before any decision arrived at. This is how he exemplified his principle of horizontal control in which even the responsibility of a decision was shared by all. An organic structure emerged out of common experiences of team work in which administration played the role of support and services.

Vikram Sarabhai created an appropriate management system for an innovative institution like ATIRA. The first group of researchers was given freedom in such a way that they implemented the core research programme, developed their own areas of research centered around the original mission. These researchers were largely helpful to Sarabhai in creating an appropriate management system with a holistic approach. It was, in other words, an open system which maintained a mission-oriented approach. This holistic approach helped in building and nurturing a need-based management system at ATIRA due to two reasons: 1. A holistic approach was adopted at the researchers' level. That means, while working together on a common mission
these researchers developed trust, confidence and a kind of mutual understanding which brought them close to each other; although their specialisations were in different disciplines. An organizational structure was developed under the guidance of Sarabhai by these researchers to implement the mission. Therefore, this structure was expected to help the researchers to achieve the mission with holistic approach. In other words, various units of the total organization structure were evolved out of their needs to achieve the mission.

This helped Sarabhai to avoid a hierarchical control system which would have created compartmentalisation in ATiRA and ultimately would have encouraged a red-tape based bureaucratic structure instead of a need-based holistic system.

Leadership

It will be interesting to understand what Sarabhai thought of leadership. In Sarabhai's (1974, p.172-173) words:

"There is no leader and there is no led. A leader, if one choses to identify one, has to be a cultivator rather than a manufacturer. He has to provide the soil and the overall climate and the environment in which the seed can grow. One wants permissive individuals who do not have a compelling need to reassure themselves that they are leaders through issuing instructions to others; rather they set an example through their own creativity, love of nature and dedication to what one may call the 'scientific method'. These are the leaders we need in the field of education and research."

Sarabhai was very particular in the selection of institutional leadership. "He strongly believed that an institution based on caring for people gave assurance to individuals to innovate and to respond to situations creatively" (Ganesh and Joshi, 1983, p.29).
Sarabhai was exposed to vertical control and often wrote and spoke against any controls and always advocated horizontal control through discussions. He believed that controls are contained in commitment.

Sarabhai shouldered the responsibility as a part-time Director of ATIRA—ill a full-time individual was identified after 9 years. Therefore, routine administrative tasks were left to the researchers. The researchers were given freedom of work and trust which at long run helped develop both individuals and institution. They used to plan their own tasks and accordingly prepare budgets and implemented their plans. In this way horizontal controls were more in operation. (Chowdhry, 1970; p.147).

For Sarabhai, trust was the most important aspect for individual as well as institutional development. In ATIRA, Sarabhai received absolute trust from Kasturbhai, Chairman of the Council; similarly he gave absolute trust to the researchers who were responsible for both identifying and implementing the core research programme of ATIRA. And because of this trust, he was able to enthuse the young researchers to experiment new ideas.

Sarabhai’s style was to develop individuals systematically. This is why he decided to recruit young individuals and provide them with suitable opportunities for development at ATIRA.

Divatia (1972, p.19) observed:

"He used to frequently say that he could judge a man from the spark in his eyes. On looking at a person even once and talking to him for a few minutes, he could take a decision about his capability. He believed in systematically developing people. Once he was convinced that the man was capable of taking risks and responsibilities, he would go out of the way to give him the full opportunity of developing himself."
Another aspect he considered important for a leader was his accessibility. As Sondhi (1980: p.143) mentioned:

"Vikram became attracted to communication theory and systems not for their own sake, but because he realised that through their use, an organizational framework could be developed which would make work more efficient, creative and meaningful. In his own organizations he "managed" this feedback personally and entirely on his own. He was at all times as accessible to the world's greatest personality as to the most humble servant or worker."

He strongly believed that young scientists, engineers, technicians should return to India after completion of their study or formal training abroad. That is why whenever he went abroad he used to meet Indians studying there and convince them to come back to India after their studies were completed. While abroad during his many visits he used to take time off for meeting with young Indian professionals. Bhavsar (1972, p.21-22) mentioned:

"One meeting used to be enough for inspiring that young man to return to the homeland to do his bit of work."

Identity building

Identity building for ATIRA was not an easy task; because ATIRA was the first planned effort to apply scientific research in a traditional textile industry. However, the early initiative to establish such a textile research institution was wholeheartedly supported by the Ahmedabad Millowners' Association. And the members of the AMA had agreed to have a cooperative research association with the support from the Government of India.

Vikram Sarabhai, as mentioned earlier, was also a young managing agent at Calico Mills and Director of ATIRA; had professional, social and family
relationship with other managing agents of local textile mills. He convinced other managing agents about the role of scientific research in modernising a traditional textile industry. Between 1949 and 1957, ATIRA undertook 17 research projects and 71 consultancy projects. He also successfully attracted 23 new members.

Several meetings were organized in which Sarabhai emphasized the role of ATIRA to modernize traditional textile industry. In the following sections, a brief review of how such a meeting was organized has been made.

22 Managing Agents of local textile mills participated in the meeting held on 23rd September, 1952.

"Dr. Vikram Sarabhai pointed out that due to the appreciation by Ahmedabad Mill Agents of the value of the scientific method and its application to industry, ATIRA had come into existence. If the mills are to take the fullest advantage of the scientific developments that are taking place in the world today and use this immense knowledge for the improvement of their units, it would be necessary for them to create in their organizations a skeleton staff which could not only receive but implement the results of scientific work. Everyone today would be surprised if there was a textile mill without a chief engineer or an accountant or a spinning master or a weaving master. That is because it is considered commonsense that specialized work that arise in the running of a mill. If the Ahmedabad Mills are to keep abreast of technological and scientific development connected with the textile industry, it would be necessary to add to the staff of the mills the following specialists:

1. A physicist and/or a chemist to look after the Testing Laboratory of the mills and to tackle the mill problems in so far as they relate to Physics and Chemistry.
2. A statistician who could regularise the collection of data at all stages and interpret them in order that technicians and management can take corrective action.

3. A psychologist who could deal with all problems relating to the human factor in industry. This would include training, workloads, personnel selection, incentives and improvement of morale.

Dr. Sarabhai said that for mills to make the most effective use of ATIRA and the scientific knowledge of the world which would be passed on by ATIRA to the industry through ATIRA Abstracts, meetings and discussions, it should be necessary for every unit or a group of units to create the above mentioned posts.

The growth of ATIRA during 1949-1956, the period when Sarabhai was responsible in the earlier development of ATIRA, can be inferred from the following table:

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<th>1949-50</th>
<th>1956-57</th>
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<td>Membership</td>
<td>71</td>
<td>94</td>
</tr>
<tr>
<td>Revenue budget (in lakhs)</td>
<td>Rs.1.00</td>
<td>Rs.10.00</td>
</tr>
<tr>
<td>Scientific, Administrative and other staff</td>
<td>30</td>
<td>206</td>
</tr>
<tr>
<td>Publications</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Consulting Reports</td>
<td>-</td>
<td>71</td>
</tr>
<tr>
<td>Research Projects in operation</td>
<td>10</td>
<td>17</td>
</tr>
</tbody>
</table>

*Source: Chowdhry (1970, p.140)*
Finally, in the words of Sarabhai at the inauguration of ATIRA building by Shri Jawaharlal Nehru in April 1954:

"With the completion of the first five year period, ATIRA enters a new phase. The buildings have been completed and the major equipment, including the pilot mill machinery, has been put into operation. An organizational structure, designed for efficient conduct of research and providing effective services to industry has been set up. A comprehensive programme of operational, applied and fundamental research has been drawn up, and consideration given to the requirements of facilities and of personnel to undertake the work. In view of the complexity of modern technology a group approach in research has been planned which involves the collaboration of specialists in diverse but inter-related fields. Through international organizations, such as the UNESCO and the ILO, and through Technical Assistance Programmes, such as administered by the U.S. Technical Co-operation Administration, ATIRA arranges exchange of scientific personnel which enables it to keep itself in the forefront of scientific progress. ATIRA's scope of activities now extends to the whole country and provision has been made to serve adequately even those units which are situated at greater distance from the main laboratory. With increasing support from Industry and Government, ATIRA is now well on the way to play a significant part in the progress of India's largest industry."

5.4 Conclusion

This shows that even in its first five years ATIRA had built an identity which was directed towards achieving its mission of modernising traditional textile industry. (see Annexure-2).
As mentioned earlier, Sarabhai was responsible in creating the earlier spadework which comprised of funds, faculty, facilities and identity building of ATIRA. Thus, in the above chapter an attempt has been made to describe in detail two institution-building processes: 1. Birth Processes and 2. Development Processes, in which Sarabhai's major contribution in establishing ATIRA has been amply covered. It may be recalled that he was active at ATIRA during its first decade (1947-1957). After that Dr. Wakeham took over as the first full-time Director from Sarabhai. Therefore, it was felt appropriate to concentrate only on the first two institution-building processes.