A DECADE OF SPECTACULAR PROGRESS FOR M.I.T., MANIPAL - THE FIRST SELF FINANCED ENGINEERING COLLEGE IN INDIA.

* *Prof. Alladi Prabhakar*

When one talks about the progress and development of a self financing institution, one has naturally to recount the life and work of Dr. T. M. A. Pai, the great visionary, educationist, and doctor, who was responsible for the starting of several Educational Institutions in the district of South Canara. Dr. Pai was the first man in the country to conceive of a self-financing Medical College, and he started the Kasturba Medical College at Manipal with money contributed by the parents of prospective students. The K. M. C. as this college came to be wellknown later brought professional medical education. to the door step of the South Canara District, whose citizens had hitherto to go all the way to Madras to pursue medical education. Dr. Pai found during his life that it was very difficult to start a private college funded by public charity. He experienced lot of difficulties going out with a begging bowl to collect funds for starting a degree college. An idea struck him that it would be far better to fund a self financing college with the help of parents of prospective students, and it was this idea that paved the way for the first self financing Medical College in the entire country. The tremendous success of the KMC prompted Dr. Pai to start a professional Engineering College in 1957. Thus M. I. T., Manipal can rightly be called the first self financed engineering college in the country.

What started as a single department college with a handful of teachers in that year, has now blossomed into a full fledged Institute of Technology, with seven departments, ten specializations at the degree level, and seven post groduate courses with a faculty strength of two hundred and seventy, and students enrolment crossing the three thousand two hundred mark. This article outlines the development of the Manipal Institute of Technology during the last few years, into an era of spectacular growth for the institute due to the enlightened policy of the Management, the dedication of the teaching staff, and co-operation and enthusiasm of the students.

The Manipal Institute of Technology celebrated its Silver Jubilee Year 1981 - 82. All through these twenty five years the Institute concentrated on undergraduate teaching and strove very hard to achive excellence on this front. In the later half of the eighties it was decided to expand M.I.T.'s horizons and for the first time the authorities spelt out their goals, which were placed before the Governing body and aproved.

AIMS AND OBJECTIVES OF THE MIT.

1. To make the Institute a centre of excellance in undergraduate education in various disciplines of Engineering.

* PRINCIPAL, M.I.T. MANIPAL

2. To introduce in a phased manner Postgraduate courses in Engineering and Technology which have special relevance to the need of Dakshina Kannada District and Karnataka State. It is only by developing P. G. courses at the Institute that a strong Research base will be created and will attract the best faculty to its fold.

3. The Institute shall develop a cllop a close liasion with Industry in the country by adopting the following measures.

   a) The students of the undergraduate and graduate level will be assigned meaningful projects from Industry for doing their dissertation work in the final semester of their respective courses.

   b) Visiting and Adjunct Professors from industry will be invited for specific periods to lecture and demonstrate on real world problems in their specific areas of interest. These lectures and demonstrations will be useful supplements to regular courses being conducted at the Institute.

   c) Teaching staff will be deputed to the industry for short periods during vacation time to gain first hand experience on industrial plants and processes. This experience will naturally enhance the teaching capability of the faculty in their subjects of specialization.

   d) The Institute shall provide adequate test and laboratory facilities for corporate establishments and industries in the area of materials testing, standards and calibrations. This is one of the basic aims of any Engineering College to serve the community around in an effective manner.

   e) To develope a pool of consultants and experts from the faculty who will have the skills and capacity to offer advice and consultancy to small scale and medium scale industries in south Kanara Dist. and Karnataka.

4. Last but not the least MIT will emphasize on the all round development and commitment of the students in addition to giving them training in their Engineering fields of specialization. The MIT will aim at not only producing good technical men, but also good and worthy citizens of great country aiding it in its overall progress and development.

MASTER PLAN :

Based on the above objectives a Master Plan for the MIT was prepared in the autumn of 1986 and essential (or core) recommendations of the Master Plan are outlined below for the benefit of the reader.

1. A major sustained effort must be made to improve the quality of the faculty. Emphasis must be on scholarship, research, creative work. Salaries must be such as to attract the best talent to the Institute.
2. A systematic programme of increased investment in Library acquisitions and facilities.
3. Small scale demands for computing should be met by realatively small computers for individual departments, while a centralised computing facility should be available for large scale needs.
4. Appointment of visiting Professors and adjunct Professors must be encouraged.
5. Inter disciplinary programmes, inter departmental programmes should receive institutional suport through the creation of a liasion cell for inter departmental and inter disciplinary studies.
6. All areas of academic programmes within the departments should be subjected to periodic external reviews.
7. All Engineering and Computer science programmes should be given sufficient resources and encouragement to steadily improve their quality and expansation in the next few years.

Post graduate courses in specific disciplines in which the Institute has sufficient expertise and which have great demand must be introduced in a progressive manner.

8. Programmes in Humanities, Mathematics, Physical and social sciences must be broadly supported at levels needed for strengthening instructions in Engineering.
9. Programmes are needed to enhance faculty involvement in student life. Residential life programmes that directly countribute to the academic mission must be encouraged.
10. Health services, career planning, counselling services for students should be reviewed and improvement in these aspects must be carefully considered.
11. A long term plan must be established for the maintenance of capital equipments available in the various departments. A depreciation fund should be provided for the care of aging and deteriorating equipments and their eventual replacement
12. Administrative services of the Institute must function in an effective manner and help in academic record keeping, analysis of Institutional data, monitoring academic programmes and making projections for the futures.

The Institute is very glad to report that by and large all the plan proposals have been fulfilled in the given period.

Q. I. P.

The Q. I. P. (Quailty Improvement Programme) has made great progress since it was first implemented in July 1987. The management had sanctioned study leave with full pay for about 10 % of the teaching staff annually to improve their qualifications in higher centres of learning such as IIT's, the Indian Institute of Science and other reputable Universities.

By the end of this academic year 1993 over 40 of our teachers would have successfully completed their M. Tech degrees under this scheme and about 12 teachers would have returned with doctoral degrees. The Q.I.P scheme has not been without set backs during the early stages due to the tremendous prejudice that Govt. and higher institutions have for teachers hailing from self financing colleges.The teachers of MIT as in other self financing college were barred entry into Summer and Winter schools conducted by higher centres of learnings. They also faced considarable resistance to admission for higher degrees in these Institutions. It is hoped that in the near future there will be more smooth sailing for our teachres in regard to Q. I. P. Programmes.

LIBRARY :

During the last few years a heavy investment has been made on the development of the library. The M. I. T. is now spending over 16 lakhs a year on books and about four lakhs on Journals. The number of volumes have now crossed the Forty Five Thousand mark and the total number of scientific and technical journals has reached a peak of about 200. A new building of approximately 30,000 sq. ft. at cost of about one crore of rupees has been added to the Library and the library reading rooms can accommodate at a time nearly thousand students (1/3 of the total number of students). Modernization of the library is now in progress. The new facilities that are expected to be provided in the very near future are a well equiped Audio Visual centre, and an upto date computerised library information system.

EQUIPMENT :

A Zenith LAN Computer System working on Novell Network and Dos, and a UNIX based mini system have been installed in 1988 costing about 56 lakhs. The total number of available PC's / PC - AT's available then were about 71. The institute

also acquired Micro - Vax - II costing Rs. 12 lakhs in addition high - end graphics work stations costing over 12 lakhs have been procured for Computer Engineering and Machanical Engineering departments. All the departments have been provided with LAN terminals. Today, total number of Computer terminals available at MIT are about 200. In addition a MINI Computer system costing Rs. 55 lakhs is on purchase order now for the fast developing Computer Engineering Department.

VISITING AND ADJUNCT PROFESSORS:

The institute has made several appointments of visiting and adjunct professors during the last few years. Notable among the visiting professors were Prof. Rama Bhat from Concordia, in Canada, Prof. Bauman from Oklahama USA, Prof. Korochman from the University of Berlin, and Prof. Varaiya and Walrand from the University of California at Berkeley. Among guest lecturers who have visited the institute recently, mention must be made of Prof. I. S. M. Murthy, Chidambara and D. K. Subrahmanyam from Indian Institute of Science, Bangalore, Prof. V. J. K. Murthy and Yagna Narayan from IIT Madras, Prof. Ramshesham from the Raman Research Institute, Bangalore, Dr. R. Shrinivasan from the NAL Bangalore, Prof. E. G. Parameswaran from the Osmania University Hydrabad.

POST GRADUATE COURSES :

In spite of insurmountable difficulties MIT has been able to start seven post graduate courses, and run them successfully under the Mangalore University. The post graduate courses are in the following specializations :

1. Lighting Science Engineering.
2. Biomedical Engineering.
3. Construction Engineering and Management.
4. Structure.
5. Engineering Management.
6. Computer Science.
7. Computer Applications in Management.

The first two courses are unique to MIT and are not available elsewhere in the Country. The course on Lighting Science has been particularly appreciated by the Lighting Industry in India and we received ample support from Phillips India, HMT Lamps Division in academic formulation of these courses. The Biomedical Engineering course is an inter disciplinary course, and is run under the joint auspices of the Medical and Engineering faculties of the Mangalore University. The close physical proximity of the Kasturba Medical College with the MIT has provided a very favorable environment for Biomedical Engineering studies both at the graduate and undergraduate level at Manipal. It is very strange that the great dynamism and initiative shown by the MIT in starting Graduate studies have not been met with the necessary support and encouragement from the A. I. C. T. E. which is a statutory body created by the Govt. in 1988 to give a fillip to technical education in the country. The A. I. C. T. E. Instead of fostering its growth has only served to hamper the development of private initiative in Technical education. Under the pretext of preserving " Standards " the A. I. C. T. E. has been stifling self financing Institutions instead of promoting their creativity and growth so vital to our country's prosperity.

PROGRESS ON OTHER FRONTS AND TECHNICAL DEVELOPMENT :

Health services, career planning and counselling services have leaped forward during the last few years. Campus interviews are being conducted on a grand scale to attract our students to the various fast growing companies in India under the liberalization plan. Health services have been excellent under the " MEDICARE " programme and counselling has started in a big way for a majority of our students who go abroad for advanced studies and placements. A new department for

placement and entrepreneurship training was started in 1990, and this department is headed by a Professor of the Institute. A separate department for continuing education and student counselling has also been started in 1992, and this full fledged department is also headed by a senior Professor of the Institute. A centre for energy studies has been created with sole object of investigating into alternate and renewable sources of energy for use in the Twenty First century. Consultancy has been very active in the Civil, Architecture, and Electrical Engineering Departments of the Institute. The Civil Engineering Department particularly, has been in the fore-front of testing of materials such as concrete soil, steel and other structural materials received from several Corporate and Govt. Organisations.

EXTERNAL REVIEW :

At the end of the plan period the Management thought it fit to subject the MIT for external review. A Committee consisting of two former Vice Chancellors and a wellknown social worker was appointed in 1992 to review objectively the working of the MIT and make suitable recommendation for the future. The Committee was generally happy with the facilities available in the MIT and they felt that the facilities matched the increased intake into the Institution. They were also satisfied with the efforts made by the Institute in improving the quality of the teaching staff. The committee however made the following three major recommedations.

1. MIT having been an undergraduate teaching institution for many years, there was an absence of research temper in the majority of the teaching staff. They hoped that with the introduction of the Post Graduate Courses MIT will fast develop into a major Engineering Research Centre, with a Research oriented faculty.
2. Student motivation needs to be stimulated by introducing a strong advisory programme. Attendance to classes must be encouraged and defaulters punished appropriately.
3. The Management should give special scholarship to a few brilliant students to draw them into the MIT fold. These scholarship may be recovered from the students after they join work within a period of ten years.

SUMMARY AND CONCLUSION :

The intake of students every year has been steadily increasing at the MIT due to severe community pressures. The demand for higher class technical education is very great throughtout the country and MIT draws students from Cape Comorin in the far remote South to Jammu and Kashmir in the North, from Gujrat in the West to the North-east frontier. The student population has almost doubled from 1600 to 3200 in the last six years. The number of teachers have tripled and today we have nearly one teacher for every 11 students a very comfortable ratio even according to A.I.C.T.E. norms. The institute has spent over four crores of rupees on acquiring new high technology equipment to cater to the phenomenal expansion in the student intake. The MIT spends on an average Rs. 30,000 /- per student, per year, more than what regional colleges of Engireering spend on their students.

The analysis of the University results during last few years has revealed that MIT students are no less proficient in academics than the students of Govt. and Aided Engireering Colleges. About 7000 students have so far graduated from the MIT since the first graduate passed out in 1960. Most of our Alumni have started their own industries or have joined the industries run by their parents. In this sense MIT graduates have become employers rather than persons who seek employment. Another unique feature of the MIT is the teacher guardian scheme which is working

extremely well. The parents are very happy about this scheme, as their wards are being personally looked after by the teacher Guardian who sents monthly reports about the students progress and welfare to the individual parents regularly.

Over the years the MIT has grown into a colossus enjoying a high reputation as a teaching Institution. The MIT is not just a technical school traning technical men. It aims at the all round development of the student, and attatches great importants to extra mural and extra curricular activities in addition to conventional technical education. It has a unique residential system wherein all the students are provided accommodation in ten blocks of hostels specially constructed for the students. This unique residential system provides close rapport between the teaching staff and students both inside the classroom and outside which is so vital and necessary for the progress of any prestigeous Institution. Like the all time great American Universities we try to embody the principles of liberal education at MIT, we try to introduce the spirit of competitiveness; we spurn complacency; and we spur on the drive for excellence and change.