INNOVATION AND TECHNOLOGY TRANSFER THROUGH POLYTECHNIC INSTITUTIONS

V.P.M.'S POLYTECHNIC THANE – A CASE STUDY

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Abstract -

The 21st century has opened new vistas for influencing industries by offering better solutions in different areas. Earlier the institutional activities were more confined to training of students to supply right type of human resources with necessary fundamental expertise. With the present scenario, automation, progress in ITES and ICT, there is a paradigm shift. Industries and Institutes are working much closer than ever before. The high attrition rate and the need for skilled manpower that can readily take up the assignments with minimum orientation period, Organisations are looking for better partnerships.

Polytechnics, over the years have established status recognition. With Globalisation, Standardization and Accreditation, Institutes have many facilities to offer to industries. The additional facilities apart from Classrooms and Laboratories such as Testing and R&D Centers, Conference Halls, Learning Resource Utilization Centers, Training and Placement Facilities and Laboratories are helping these ideas easily feasible.

With the support of industries, AICTE and Affiliating Bodies most of the standard institutes are looking for opportunities in training for Industry Personnel, Intellectual Property Rights and Patents, Industrial Sample Testing and their Certification, Consultancy and Development of New Products.

Our paper mainly details various progressive steps undertaken by the Polytechnic and the stage attained for Technology Transfer.

Keywords : Testing and R&D, Paradigm Shift, Certification, Consultancy

Introduction :

Formal Technical Education in India is thought to have started in mid nineteenth century. The pre-independence period globally was restricted to development of Mines, Factories and Physical Assets. Growth of industries post-independence, resulted in acute demand for qualified people in the fields of Architecture, Pharmacy, Business Management. Food, Tourism and Marit-time industry gained more importance in the Eighties. The Applied Arts and Crafts had also undergone similar progress. The pre-independence period was quite sluggish in the number of Engineering Institutes as well as Industrial Growth. In 1947, there were 44 Engineering Colleges and 43 Polytechnics in the entire country. In 2007, there are around 1500 Engineering Colleges and 1250 Polytechnics in the country. The growth of Technical Education was quite phenomenal in the last three decades. This can be attributed to private sector getting into Higher and Technical Education, Industrial Progress and Opportunities to the qualified manpower. The Private Managements, which have adequate Space, Infrastructure and Capabilities are getting permissions to start programmes of their choice, without much hassles.

With Indian rupee growing stronger, and country getting technologically advanced, globalisation is providing larger opportunities to Indian talents and industries. The multiskill expectations from individuals are being taken care to some extent by the institutions and by their Organisations. The seamless interaction between Industries and Institutes is making the process much easier.

Emergence of Indian Knowledge Industry :

The 21st century has brought major changes in the industrial outlook. Intellectual Capital, R&D, Proprietary Technologies, Databases and even relationships are dominating and will determine Institute and Industries competitiveness. India has the highest Intellectual Capital available per dollar in the world; the only resource required for building Knowledge Industries.

The Affiliating Boards/Universities have already started taking steps in this direction. Some of the initiatives are,

- Add creativity to Curricula.
- Connectivity with various stakeholders.
- Partnership for mutual and quality growth.
- Quick adapting to new developments and technologies.
- Development of world-class facilities.

This is mainly because the Government as well as the Managements have realized that

- The future belongs to Knowledge-Based growth.
- Strong Educational and Intellectual Capital.
- Research, IPR, sustained growth.
- Quality approach.
- Best Communication Skills.

In fact, the reforms and innovations are capturing the high ground in the intellectual arena with a fast rate of technological phase out.

V.P.M.'s Polytechnic, Thane (MS) – A Case Study

V.P.M.'s Polytechnic, Thane (1983) is a self-financing, accredited (2004) institution, which believes in very strong principles of Student-Faculty discipline. The regular Co-Curricular Activities, Guest Lectures, Students Participation, Presentations, Technical Paper Competitions and organizing National Level Conferences are some of the special features of this Institute. The special locational advantage for the Institute is its vicinity to the Thane-Belapur Industrial Belt, Wagle Industrial Estate as well as the MIDC area. Over 3000 Small, Medium and Large-Scale Industries are located around the Polytechnic within a radius of ten kms and it is an ideal situation for interaction.

A) Industry Personal Training Programmes

Grabbing this advantage, Polytechnic has been active in providing training to industry staff at Lower Level and Supervisory Level. This was proving to be a morale booster for the employees as they were getting opportunity to interact with teachers and refresh their theoretical concepts. Many industries in the process gave career growth to their staff who showed exceptional performance upon undergoing such programmes.

B) Advanced Diploma Programmes / Information Technology Centre

Last decade, the Institute has ventured into special areas of programmes where Industry Personnel on their own take admission to certain Advanced Diploma programmes affiliated to State Board of Technical Education. These programmes are generally conducted in the evenings on weekdays. This is helping many Industry Technicians, Supervisors and even Industry Managers to upgrade their qualifications by continuing in their job.

Presently four programmes of One-year duration are being organized. They are,

1) Advanced Diploma in Computer Software, System Analysis and Applications.
2) Post Diploma in Computer Maintenance.
3) Advanced Diploma in Industrial Safety.
4) Advanced Diploma in Robotics and Automation.

In the near future Polytechnic proposes to add few more programmes in futuristic subjects such as

- Geo Informatics
- Energy Management And Audit
- Embedded Systems
- Nanotechnology

This approach helps in utilizing the Institute resources to the optimum and at the same time enables the development of Advanced Laboratories.

Projects of industry standard are undertaken by these experienced students under the guidance of Academic and Industrial Faculty. The academic standard has got a boost with these programmes which enable the participants to upgrade their qualifications.

The Polytechnic presently works around the following model.

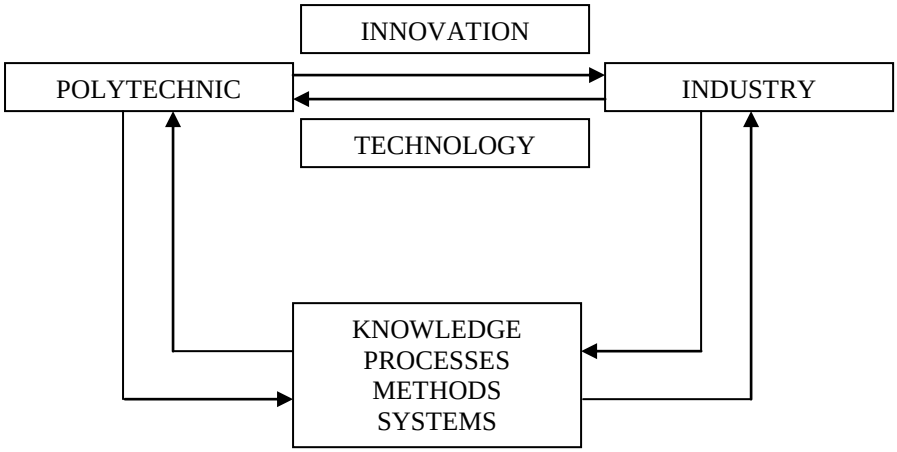

Figure 1 - Industry – Institute Interaction Model followed by the Polytechnic – which believes this as the necessity and need of the day.

The enhancement of Economic prosperity for Countries, Industries, Business depends on the effective Management of Technology. At the macro and micro levels industries acknowledge the link between innovations and economic success. Small and Medium Scale sectors looking forward towards Technical Institutions in rendering assistance for mutual benefit.

To push innovation post the idea shape, we believe that there is a need to create new networks. This includes

- People
- Processes
- Strategy
- Structure
- Leadership – for doing right things.

The set of competences include

- Conversion Of Knowledge Into Wealth
- Nurturing Young Talents
- Going Global
- Innovative

Innovation Dilemma :

Polytechnic desires to have genuine innovations than imitations. Simple and affordable solutions will be the key to success. We propose to have a Vision beyond academic instructions by maintaining a symbolic relationship with industry.

The Polytechnic has initiated a process of developing Industry Institute Partnership Cell (IIPC) with the objective of strong interaction for programmes to multiple industries and common training programmes.

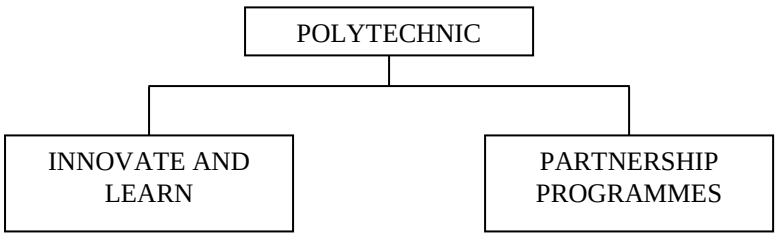

Figure 2 – Industry Institute Partnership Model

- SWOT Analyses.
- New Ideas.
- Share Resources.
- Evaluate Effectiveness.
- Build Support Systems.
- Shared Objectives.
- Innovations with Environment Safety.

The initial incubation period is being taken care through seed money from the Institute, Allied Programmes, AICTE Support and Industry Funding.

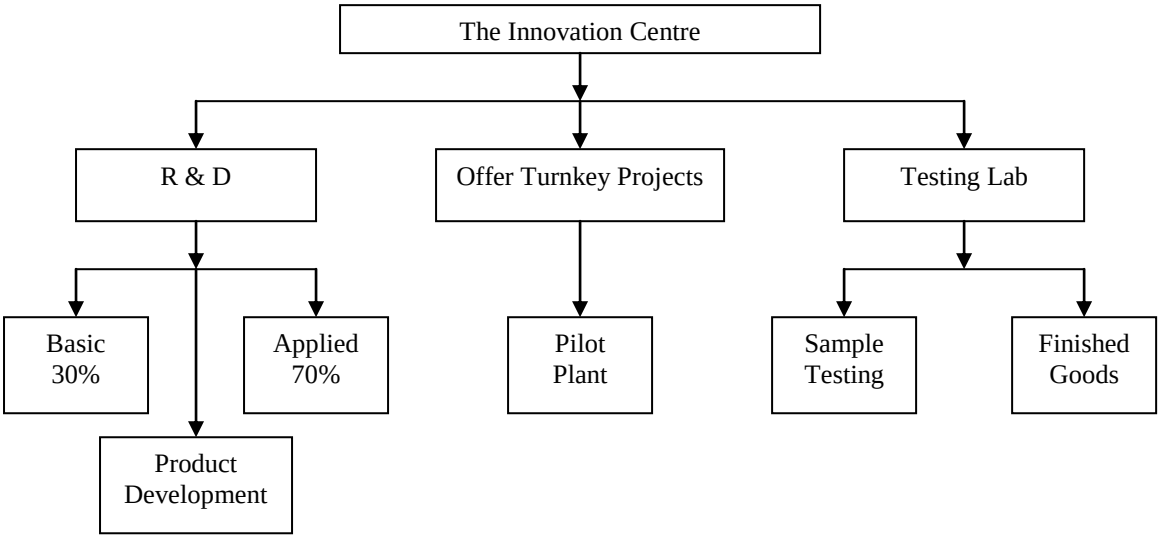

Figure 3 – Structure of Proposed Innovation Centre

The above Centre is already proposed and is projected to support wide range of industries. Initially the Paint and Pigments, Pharma industries and Construction, Chemical and Instrumentation industries are being approached.

According to us real differentiator will be the applied technology to client problems faster than anything else.

"Winning through Innovations", we believe that "Knowledge without Innovation is of no value."

India is uniquely placed to appreciate the unleashed the problems of emerging market. The bottom line of pyramid is the ability to provide global leadership to innovative solutions.

Conclusion:

Polytechnics are catering to students who are enrolling for the Engineering Programmes after SSC for a duration of three years. This period is generally inadequate to achieve large-scale Technology Transfer or Services to Industry. However the present situation is quite conducive for this interaction due to availability of qualified staff and infrastructural facilities. If the same trend continues, industries can depend on institutions for more R&D and Innovation Support along with taking care of their Training needs.

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