Challenges in technology-A Residue to Ponder

It is essential for an organization to bring continuous changes in the products and services provided by them to suit the ever changing and growing demands of the society.This in turn helps to maintain the sustainability of the organization in the newly developed scenario. Attitude of an organization is reflected in the technology policy adopted by the organization towards innovation. Innovation in technology helps to achieve the same objective. The challenges in the process of technology innovation may exist at any one of the stages of problem recognition or generation of idea, selection of technology , development of solution and its resultant implementation. There is need for continuous improvement in the ndustrial and scientific set-up of the system.This helps to ensure sustainable and faster growth of the country. Traditional means may not suffice to fulfill all needs of the people of the country and it is of utmost importance that benefits of the goods and services should percolate down to the grassroot level of the society. Products developed by innovation should have mass appeal as India mostly comprises of low-income group people due to unequal distribution of capital. The techniques of innovation should be safe , have economical inputs and environmentally sustainable.Many people are still marginalized by the technological development in the country. They are still not able to avail the benefits of newly developed products due to various constraints which may be economical or societal.Progress of the country is ensured if the needs of such group of people is addressed and looked into.This is one of the major challenge in front of the developing country as India.

New ideas need to be encouraged and worked upon. People in administration need to formulate strategies and policies which come up with new and improved solutions for the societal challenges ahead. Few of the areas in which upcoming challenges can be addressed are highlighted as follows-

1. Enrichment of knowledge base-Promotion of joint research in collaboration with globally active forces in the areas of science and technology needs to be encouraged to overcome the lacunae in technology. Novelty of ideas can

be promoted by discouraging the phenomenon of brain-drain and providing correct platform to the budding light house of society. Areas of National interest need to be identified by scientists and innovators to promote and improve the quality of science education.

2. Maximizing Research and development in private and public sector-More allocation of funds should be made for research projects in the private sector. Enterprises which run on commercial basis do not utilize the technology leads generated by the public funded institutions.The initiative from government to give tax- benefits for investments into research and development have bore few fruits. There is need to establish more co-ordination between industry, academicians and research. Emerging issues of partnership in public and private sector should be taken care of so that a strong platform develops for them to co-operate and co-ordinate. New policies and procedures should be adopted to encourage investments from the industry sector into research and development .
3. Effective governance in software and technology institutions-Efforts to introduce structural changes in transforming and rebuilding existing institutions should be multi-directional. Participative transformation which takes care of the needs of the basic set-up of the institution should be encouraged.
4. Co-ordination in University, industry and scientific establishment-Objectives of research and development centre's and universities should be clearly set and defined. Infrastructure of government laboratories should be improved and well-maintained. Efforts should be made to promote new universities which have active participation in the research and development. Universities, research centres and industry bodies should co-ordinate among themselves to be updated with emerging demands and current developments in innovation. The products of innovation need to be transformed into marketable products which are beneficial to the end user. Certain group of universities can be identified and innovation set up around them should be increasingly strengthened and developed. If need is felt new models of universities where the above integration is possible can be set-up. Efforts should be made to tap the underutilized capital. There is

increasing need to establish co-ordination and link between intellectual, human and financial capital.

5. Supportive Financial system –Finance support should cover the risk factor involved in the process of innovation.There is need for supportive financial systems.One of the best means to cover risk capital for the growth of technology of innovation and novel ideas is venture funds.

India leads in Asia among the countries receiving private equity funds and venture funds. Lack of proper infrastructure suggests these investments should focus on initial stage start-ups and not necessarily on large investments. Government can increase the existing funding options to mobilize more resources. Innovators of technology should have improved access to knowledge and ample support in form of outreach, mentoring linkages and resources. Increasing the knowledge base of innovation helps to speed up their adaptations and they can be adopted on a large –scale. Stakeholders should collaborate and co-operate among themselves to maximize the benefits of innovation.

3. Improving the flow of technology-Vast talent base of the country and low expertise costs help to initialize innovation of technology for public and social good. The population of India is large and people here are vulnerable to varied epidemics.

4. Promoting growth by collaboration of clusters-Physical or virtual clusters can bring together research, risk capital, business and creativity so that novel ideas turn into services ,processes and products. Organizations need to develop affordable products by collaborative approach which otherwise might not be an economical option for many organizations. Clustering is an effective technique for ensuring high availability. The National Innovation council is initiating measures to facilitate setting up of university and industry based clusters to speed up innovation process.

Permanency of research –led solutions depends to the extent of interaction of technology with behavior of society at large . Co-operation of state and centre should be encouraged in the field of technology innovation. Research findings from laboratories should be converted into models which generate revenue and establish co-ordination in centre and state. Sources of energy supply are imported from outside in India.The options of energy utilization should be increased and frequently brought into usage. Executives of technology believe that India is one of the few countries with the capability of tremendous growth in technology and can impact the world globally.The rising class of middle group is speeding up the adoption of many technologies but India is still far ahead to lead in innovation of technology on global scale.Delivery of education in schools and Universities can drastically improve with use of digital technology and tablets.The focus sectors for innovation of technology can be agriculture and food processing, bio-technology, information and communication, pharma and health care. Devices which promote human health and welfare named as Bio-medical devices need to be increasingly made use in daily life by means of innovation in technology.More and more co-ordination of academia and industry needs to be encouraged for improving health-care at public health level and at individual level.

Availability of water in terms of quality usage and availability is a major challenge .Effective delivery of research-led solutions depends on interaction of technology with societal elements and policy initiatives.There is need to convert research into forms which generate revenue and help the government at centre and state level. Sources of energy supply are imported in India from outside. Increasing need is felt to decouple demand of energy from GDP growth. More and more clean energy options need to be brought into daily use.

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