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**Education developments**

The first foreign university, the Pakistan Austrian Fachhochschule with five departments and four major postgraduate research centers of excellence, started to function last month in Haripur Hazara, within a record time of two and a half years of project approval.

Its focus will be to produce well trained engineers that are qualified to the highest European standards at BSc and MSc levels, and to establish high quality PhD and postdoctoral training programmes in selected fields of engineering sciences in collaboration with leading Chinese universities, making it a unique hybrid blend of a high-quality technical institution and a postgraduate research institution.

This is probably the first university anywhere where eight foreign universities will be partnering and offering their courses and ensuring the very highest quality through their Quality Assurance systems. It is also the first university in Pakistan where 100 percent of the faculty has PhD degrees from leading western universities. Prime Minister Imran Khan deserves all the credit for its establishment as even before he became prime minister, he had persuaded the KP government to fund it.

Another new university that will be set up with similar foreign partnerships with Austria and China is the one in Samrial, Sialkot. The Punjab government had earlier set aside 600 acres of land to set up a Swedish University in 2007 on my initiative. That programme was cancelled by the then PPP government. However, now a new university of applied engineering and technology will be set up under my supervision with foreign partners.

As I was fortunate to receive the highest national awards both from China as well as from Austria, it has been relatively easy for me to convince the senior academics and institutions of these countries to collaborate with Pakistan. Samrial lies between Sialkot, Gujranwala and Gujrat. So, it is right at the center of the industrial hub of Pakistan. The university will therefore be well-placed to serve the needs of industry in this region through its high-quality manpower, and its emphasis on the development of high technology products for export in the technology park within it. The credit for this again goes to Prime Minister Imran Khan for convincing the chief minister of Punjab to invest in this visionary product.

The centers that will be established in this university will be in the fields of industrial engineering, industrial management, industrial manufacturing, mechatronics, chemical and materials engineering including textiles, leather, surgical goods, sports goods, nanomaterials, artificial intelligence, big data, agricultural engineering, industrial biotechnology, business management, entrepreneurship and innovation.

The heart of these universities will be technology parks to foster innovation and promote new start-up companies with close linkages with the Austrian, Chinese and Pakistani industries. Emphasis will be on applied research of industrial importance. The aim will be to foster the development and manufacture of innovative products both for the local market of Pakistan (population 220 million) and for export. The technology parks will house technology firms which will facilitate coordinated efforts in developing commercially viable technological products or services.

A sizable venture capital firm will be available for new product development. The intellectual property rights will be shared with foreign partners if the new developments are in collaboration with them. An innovation fund will also be set up for the development of social innovations that aims to improve the local industry in a modern setting. It will act as the future hub of technological advancement in Pakistan, bringing together graduates, academia, researchers, industry and government.

The technology parks will allow graduates and students to share their ideas with academia, refine them in incubation firms and commercialize them with access to venture capital with in-house leading firms. The technology parks will be equipped with the required technological infrastructure and offices of leading international research and development organizations will be established within. Offices and project spaces of leading international manufacturing companies that are also seeking viable business ventures/ opportunities will also be set up. It will house a major start-up center for students/ graduates/ entrepreneurs who want to refine their ideas through collaborative research with fresh PhDs in the related field while incorporating inputs regarding commercialization from private enterprises housed in the technology parks.

A similar university project has been approved to be established on the land behind the Prime Minister House in Islamabad but that will be a postgraduate research university focusing on new and emerging technologies including artificial intelligence, industrial biotechnology, genomics and microelectronics. These projects reflect the vision promoted by me in the Knowledge Economy Task Force of the Prime Minister which is chaired by the prime minster himself and of which I am the vice-chairman.

Other exciting projects that have been launched by the knowledge economy task force include a huge Rs12 billion scholarship programme for sending our brightest children for PhD level studies to the top 100 universities of the world and to absorb them within our institutions on their return to Pakistan.

Yet another important project is to promote high quality distance education. Costing Rs6 billion, this will be centered at the Virtual University in Lahore, and will provide excellent courses and facilities for distance learning to universities across Pakistan. A visionary project which is under approval is to establish a network of Centers of Excellence in Artificial Intelligence across Pakistan. These centers will focus on the myriad applications of this fast-growing field in agriculture, health, industrial manufacturing, construction, city planning and management, defence and in a host of other fields.

According to a McKinsey Global Report, Artificial Intelligence will have an impact of about $15.7 trillion by the year 2025. If Pakistan can capture even one percent of this huge and growing market, it will have an impact of $160 billion annually. When we consider that our exports remain frozen at about $25 billion, it highlights the magnitude of returns that can come to Pakistan if we invest wisely in these new and emerging technologies.

Serious efforts are now underway through the Knowledge Economy Task Force to help Pakistan transition to a knowledge-based economy. It is only by investing in education, science, technology, innovation, entrepreneurship and by manufacturing and exporting high technology products that Pakistan can emerge as an economic giant.

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