



## USAID's Higher Education System Strengthening Activity

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**Session 11:** Wednesday, 12 June 2024 (09:00 to 10:30 hrs)

**Topic:** The Importance of University-Industry Linkages for Pakistan's Economic Growth

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Panelists:

- Engr. Muhammad Asif Aslam, Director General, NUTECH Office of Research, Innovation and Commercialization (NORIC), National University of Technology, Islamabad
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- Dr. Maria Anjum, Director, Business Incubation Center (BIC), Lahore College for Women University, Lahore
- Mr. Aamir Ibrahim, CEO, Jazz
- Mr. Sohail Sajid, Country Manager, Turkish Aerospace Industries (TAI)

#### Introduction

The Government of Pakistan established the Higher Education Commission (HEC) in 2002 with the mission to “facilitate Institutions of Higher Learning to serve as [an] Engine of [the] Socio-Economic Development of Pakistan” (Higher Education Vision 2025, 1). According to a study commissioned by the United Kingdom Department for International Development, universities drive a country's economic growth in several ways (Grant, 2017):

1. University graduates earn higher salaries, an effect that leads to higher levels of savings and investment.
2. Higher learning promotes technological advancement and innovation by enabling high-quality research.
3. Higher education enables greater efficiency and productivity in the workforce.
4. The presence of large numbers of university graduates makes the labor market more flexible.
5. Higher education increases the number of high-paying jobs.

6. Higher learning increases tax revenue to the government.
7. University graduates are less reliant on government for support.
8. Many university graduates are successful entrepreneurs, who expand employment opportunities and attract investment.

The principal means then by which higher learning contributes to building the wealth of a nation is by supporting the private sector of the economy. University-industry linkages are essential to a developing country's prosperity. For institutions of higher education to make the maximum possible contribution to a country's economic development there must be a coordinated effort among government, businesses and the university (Grant, 2017).

Many of Pakistan's public universities are in rural areas and small cities. Experience shows that institutions of higher education can stimulate economic growth in such areas. Students and faculty can become entrepreneurs and establish local start-ups that provide new opportunities for employment. Higher education can play a critical role in Pakistan's strategy for regional economic development.

Thus, among the HEC's main programs are to increase industry and university research collaboration, develop new technology parks and foster curriculum revision. One of the weaknesses of university education in Pakistan is the mismatch between what students learn in the classroom and the knowledge and skills demanded by private employers (Alam, 2023). Among HESSA's goals are to help its 16 participating universities form partnerships with critical stakeholders in the private sector, including companies, chambers of commerce, entrepreneurs, and associations of professionals, such as engineers and bankers.

### **Benefits to Industry**

Businesses seek collaboration with universities for a variety of reasons, including upskilling their workforce and tapping faculty research that can help them develop innovative products and services. As Pakistan moves closer to a knowledge economy, companies need access to academic research in the fields that foster it, such as information and communications technology. Established firms benefit from competition generated by young university graduates who start their own businesses or become innovators in existing companies as employees and faculty who commercialize their research and launch start-ups and spin-offs. As Pakistan's foreign trade and investment grows, businesses need the help of academia to become and stay globally competitive. The most beneficial forms of tie-ups with academia are strategic, where businesses and universities focus on identifying and harnessing technological trends that define the future, such as artificial intelligence, blockchain, cybersecurity, internet of things, quantum computing, nanoscience, supercomputing, and robotics. In a strategic partnership, industry can influence both the teaching and research agenda of a university to meet its needs. Industry benefits when universities offer a curriculum that matches their evolving needs. Faculty are available to help industry solve problems, through both consulting and research. Universities can train company employees through certificate and micro-credential programs. Enterprises can gain access not only to a university's faculty but also its laboratories and equipment.

## **Benefits to Universities**

In turn, institutions of higher education seek partnerships with industry to help their students find employment, to assist their faculty in accessing consultancies and research funding, and to broaden their revenue stream. There are many social benefits to university-industry ties, including a more skilled workforce, industry profitability and greater domestic and foreign investment. At the university level, these linkages can:

1. Improve teaching and learning.
  - a) Modernize teaching methods. Private sector employers demand that university graduates have practical skills as well as technical and theoretical knowledge. To meet this need, faculty must adapt their teaching methods so that students have opportunities to apply what they learn in the classroom. Project-based learning, for example, helps meet this need. Internships in enterprises, supervised by faculty, provide students opportunities to apply their classroom learning to the real world. The businesses can assess the knowledge and skills of the student and provide feedback to their university partner on gaps the interns may have. Many internships lead to full-time employment.
  - b) Make curriculum relevant. Industry can provide feedback on whether what is taught in university courses is relevant to the evolving needs of the private sector. Information technology firms, for example, can provide advice on how to make the program in computer science more relevant to the rapidly evolving needs of the industry.
  - c) Inculcate soft skills. Employers require university graduates with a variety of skills, including leadership, communication, problem solving, teamwork, time management, adaptability, critical thinking, conflict resolution, positive attitude, and initiative. Universities meet this need in a variety of ways, including through group projects, service learning, opportunities for extracurricular activities, and courses dedicated to soft skills training.
2. Improve faculty research.
  - a) Diversify sources of research funding. Researchers no longer need to rely solely on government grants.
  - b) Obtain private-sector funding for state-of-the-art laboratory equipment.
  - c) Provide students, including post-docs, with opportunities to conduct research, under the supervision of a faculty member, relevant to the needs of private sector employers.
  - d) Generate new sources of revenue for universities.
  - e) Lease university facilities and land to private entities.
  - f) Share profits from commercialization of faculty research, including income generated by start-ups and patents.
  - g) Share faculty consulting revenue.
  - h) Share income with businesses that market online courses developed by faculty, including those for executives and other new markets such as non-degree certificate programs and micro-credentials.

## **Forms of Collaboration Between Businesses and Universities**

Universities and industry typically formalize their tie ups with a written agreement, such as a memorandum of understanding (MOU). MOUs can cover many forms of collaboration, including:

1. Student internships.
2. Faculty externships, to bridge the gap between faculty knowledge and industry practices.

3. Industry service on departmental, college and university advisory boards.
4. Industry service as adjunct faculty and guest speakers.
5. Industry service as mentors of students, including through alumni associations.
6. Industry participation in university governance, such as appointments to governing bodies.
7. Contracts with faculty researchers.
8. Leasing of university land and buildings.
9. Participation in technology parks on university land.
10. Joint sponsorship of university degree and research programs.
11. Establishment of joint research and development (R&D) centers.

### **Challenges to Building Successful Industry-Academia Linkages**

There are several barriers to building successful higher education-industry linkages. Because public universities in Pakistan have not traditionally been oriented on the needs of the market, many business enterprises do not consider universities as relevant to their needs. Faculty do not typically consider the need to help students become more employable when they are designing courses and a research agenda. Many university teachers and researchers have little or no experience in working with private firms. Building an ecosystem in which university teaching and research focus on the needs of industry requires strong leadership and a well-written strategic plan. When new sources of revenue come to an institution of higher education from partnerships with industry, there is the danger of facilitating corruption, as in the leasing of university land and buildings to businesses. Effective leadership and oversight, however, can mitigate these dangers, including developing best-practice policies and procedures.

### **References**

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