Commentary

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Building Successful University-Business Partnerships

Fifty-eight young scientists from nearly 50 countries gathered at the World Economic Forum's (WEF) Summer Davos meeting in Tianjin, China, in September to discuss the promotion of successful university-business partnerships. Such collaborations are important platforms for translating technologies from the laboratory bench to the marketplace. Yet, numerous cultural, technological, and intellectual challenges — facing both universities and the private sector — still hinder the formation and execution of such partnerships.

Models of success

Successful models of university-industry cooperation vary considerably, ranging from a direct partnership of an individual at a university with a specific division of a company, to a relationship that stems from a chance meeting of academic and industrial researchers at a professional conference. Governments can enable these collaborations, providing subsidies and acting as social lubricants to encourage university-industry partnerships. For example, the successful Small Business Innovative Research (SBIR) grants provided by various U.S. government agencies help nucleate research with a more applied flavor than might otherwise find support through traditional funding mechanisms.

Challenges

A major challenge is the wide range of cultural differences among countries and regions. For instance, in China, rigid social hierarchies in academia afford little opportunity for young scientists to connect directly with industry, since such connections are typically cultivated at more senior levels. Coupled with the fact that the reward system established in academia is not necessarily aligned to promote such partnerships, collaboration between universities and the private sector are more an anomaly than the norm.

Intellectual property (IP) issues loom over the initial stages of university-industrial research agreements. IP policies at academic institutions range from nonexistent to ill-defined to excessively rigid. Furthermore, experience with IP law varies from country to country and institution to institution. Yet, careful agreements on IP rights need to be articulated at the outset.

A myriad of other challenges should also be acknowledged. First, the time horizons of industry and universities are decidedly disjointed. Universities focus on projects requiring a 4–6-yr commitment, commensurate with the timeline of students earning PhDs. In contrast, industrial partners typically expect results in 0.5–1.5 yr. Universities and businesses also have fundamentally different values and goals. Universities must commit to full academic freedom, open sharing of ideas, and willingness to apply the scrutiny of peer-based criticism. The two partners thus speak different "languages" and operate in different cultures.

Recommendations

To accelerate the cycle of academic-industrial partnerships, universities must adopt open minds and be receptive to mutually beneficial partnerships. One approach to initiate such contacts is to establish sabbatical programs for faculty members to spend time in industrial labs. Government intervention can also kick-start developing economies where both industry and universities are weak. Such support could cushion the impact of possible failure, which should be seen as an incentive for learning and further development.

At the university level, the reward system needs to be realigned to encourage such partnerships. Stable scientific policies with an emphasis on long-term goals can nurture the formation of productive linkages. Universities should implement a strong IP reward system to promote engagement in such partnerships. To address the IP issues mentioned earlier, a generic open-source project agreement could be devised, and researchers and companies could expand on that depending on their situation. This "Creative Commons License" approach could be adopted fairly quickly.

At the same time, academic scientists should learn how to reach out to industry. Not all researchers are equally adept at forming collaborations. Formal training to enable talented faculty members and administrators to become "intelligent bridges" to industry could strengthen such partnerships. Encouraging global networking through international forums, such as WEF workshops for young scientists and young global leaders, could connect problem-solvers with problem-identifiers.

Businesses can play a crucial role in supporting scientific research and infrastructure through partnerships with academic researchers. The cultural and policy barriers discussed here could be addressed through proactive engagement. CEP

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