

UNIVERSITY INDUSTRY PARTNERSHIP: Mutual Benefits, Collaborations & Challenges

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Abstract

The numbers of research, we're performing earlier on partnerships between Industries and Universities, and were increased spectacularly over the past 20 years. This article examines the emerging Technology Transfer, Knowledge Transfer, Product-Process-Service Innovation, Publication Etc. are expected to play in economic development, as well as University Industry (U-I) mutual benefits by mutual understanding and mutual collaboration. In this paper the interface between universities and industry is studied as a way of responding to the economic needs of society in the 21st century through academic entrepreneurship i.e. the variety of ways in which universities take direct part in the commercialization of knowledge through the supply of ingenious research and inventions. This university-industry interaction will help the industry pact with financial pressure to reduce costs, increase efficiency, innovative ideas, increased competition and rising customer expectations. Collaboration with firms increases the quantity and quality of the research output only when the firm's characteristics craft them precious partners. Secondly, by this paper I have discussed about major challenges in which I have find some of challenges as eminence of information generates, lack of information about issue, time perspective, prospect of both the parties, technical issues etc. The purpose of this paper is to find out the Mutual Benefit sand highlight various challenges which create difficulties to University-Industry Partnership (U-I).

Keywords: University Industry Partnership, Mutual benefits, Collaboration, Innovation, Challenges.

1. INTRODUCTION

Working for Mutual Benefits

Over the past three decades, university-industry partnership plays an important role in economy, competition, and began to reap more benefits from the efficient use of their knowledge. University-industry research partnerships have become an important part of business R&D. The emerging era of mutual collaborations between academic and industry offers advantages to both entities and a means by which academic institutions and industry can address global challenges to their mutual benefit and the welfare of society. When U-I collaboration work well, they can make possible research discoveries reaching the people who want them and serving the objectives for which they are required, at reasonable prices. Additionally, the collective credibility and impact of academic and industry can achieve beneficial results for society more swiftly than when the sectors work in isolation. Governments and international organisations can encourage, adopt, and actively facilitate such partnerships. Through collaborations, a company can improve its exploration and exploitation capabilities and consequently improve its innovative capacity. Furthermore, collaborations with customers and suppliers contribute most effectively to the exploitation of results while collaborations with universities rather address the explorative capabilities.



Figure: (U-I) Collaboration Benefits.

Figure, Describes about the collaborations benefits while opted of University Industry Partnership. Clearly, partnerships need gentle design, execution, and monitoring to meet local, regional, and global

needs, and to certify that science give profit to society. Allowing for new ways in which university and industry might work organized, overarching questions also are raised can enlarged collaboration between academic and industry force alternative business models for cases where existing market-based practices have failed to realise a role for science in addressing huge challenges of the 21st century, particularly those affecting the least developed countries of the world? In addition, if U-I expand collaboration, can they, together, supply to the formation of consistent long-term strategies and economic structures for a more sustainable world? Could such partnerships have the vital mass and credibility to speak out against the self-interested approach that is often prevalent today?

Necessary Characteristics of productive university-industry relations that is consistent with the balance between freedom and responsibility, and working for mutual benefits and on ethics. These Characteristics are as follows:

- Promote relationships that encompass research and innovation, as well as education and service to society;
- Begin associations with legal contract that include equitable intellectual property and commercial rights;
- Understand that academia's primary function is education, learning, research, and knowledge generation, while that of business is to produce products and services for societal needs with an economic return, but also understand that the two primary functions are not mutually exclusive or incompatible;
- Maintain openness, transparency, flexibility, trust, respect, work on values and have ethical standard, clear objectives and clear communication for long term relationship.
- Understand inter-culture and encourage of inter-cutler is to better facilitate cross-pollination;
- Understand that patenting can be required and beneficial and that both publication and patenting endorse openness, but on unique terms and conditions;
- Facilitate the talent of students and academics to gain experience in business settings.
- Help the academic sector in developing countries build capacity through scientific research, the establishment of intellectual property policies and industrial collaborations;
- Use the tools of science and technology, along with others, to minimise and diminish environmental effect;
- Encourage Positive dialogue between university, business, and the public sector.

Barriers/ Challenges of U-I Collaboration

Managing expectations of Industry is broad challenge which is tackle by university. Building the relationships and trust in one of the most difficult barrier by both university-Industry and to overcome to this problem, both build a tight relationship. Lack of confidence, Conflict on subject, Conflict on generated result, issue related to partnership manage etc are main barrier of U-I collaboration chain.

3. LITRETURE REVIEW

University-industry research partnerships have become an important part of business R&D. Numerous basic things have fueled these coalition. They include reduce in Govt. funding of academic research mentioned above, an explosion in technology, a healthy economy, and greater fight within industries. Over the past decades, all of these factors created an environment that promotes a co-dependency between business and academic research departments. The results of these partnerships are mostly helpful for all parties involved; however, these associations have also created new issues that may significantly affect the opportunity of scientific research and education.

The perspective of the university as a key contributor to wealth generation and economic development (Mansfield and Lee, 1996) has increased in recent decades. Hence, the speed of knowledge creation and its transfer for exploitation offer competitive advantage for industry (US Council on Competitiveness, 1998). Debackere (2000) states that academic research has become "endogenised and integrated into the economic cycle of innovation and growth". Within the current knowledge based economy, the university acts as both "a human capital provider and a seed-bed for new firms" and innovation (Etzkowitz et al., 2000). Viewed simply, the nation that can achieve most effective inter-linkage between the three actors of university-industry-government can achieve faster transition of discoveries from the lab bench to the marketplace.

At the core of the obstacles to U-I collaborations are the different institutional norms governing public and private knowledge (Dasgupta and David, 1994). The creation of reliable and public knowledge has been central to the growth of universities, leading to support from government for research to expand the pool of economically useful knowledge. The institutions of science include strong competitive mechanisms and powerful incentive regimes. The priority of establishing reputation through publication is critical to academic success and career sustainability. Peer esteem cannot be bought and must be created by winning reputation among colleagues.

In contrast to the relatively open nature of the science system, the process of knowledge creation in the private sector is dominated by attempts to appropriate the economic value knowledge in order to gain competitive advantage (Teece, 1986). Despite examples of openness (see e.g. von Hippel and von Krogh, 2003), the primary motivation of firms' knowledge creation activities is the appropriation of knowledge for private gain, and openness to external actors is used as a strategic mechanism to gain advantage over competitors (Chesbrough, 2006). Given these two different systems of knowledge production, private firm soften conflict with university researchers over the topic of research and timing and form of disclosure of research results. While researchers may be eager to release information to gain priority, firms may wish to keep secret or appropriate the information.

The growth over the past 30 years of universities as economic actors in their own right has also been important in shaping the nature of the interaction between universities and firms. The rise of the university Technology Transfer Office (TTO) and the increasing attempts of universities to capture formal IP have had a profound impact on the nature of scientific efforts (Shane, 2004). These efforts have led to the creation of a new commercial focus on the part of the universities to create valuable IP and exploit it for financial gain (Mowery and Ziedonis, 2002).

For some, this focus on commercialization undermines the public commons of science, weakening the institutions of open science through the imposition of private norms on public activities (Nelson, 2004).

It is clear that in some cases, attempts by universities to capture the commercial benefits from research have led to significant conflicts between universities and industrial partners over IP and/or disclosure of results (Shane and Somaya, 2007).

Although we know a considerable amount about the factors that lead some firms to collaborate or draw knowledge from universities (Tether, 2002), we know little about how the barriers perceived by industry to working with universities may be mitigated. Our current understanding tends to rely on information from non-collaborators, which does not provide insights into how those firms that do collaborate with universities overcome these barriers (Fontana et al., 2006). In this paper, we focus on three potential mechanisms to reduce the problems to U-I collaboration experience, breadth of interaction, and trust.

2. OBJECTIVES OF THE STUDY

- To understand the concept of Mutual Benefits by collaboration.
- To examine and analyse the impact of mutual working by partnership.
- To discuss the collaboration benefits/assistance.
- To discuss various obstacles face by University-Industry partnership.

4. RESEARCH METHODOLOGY

Research and experimental development is work undertaken systematically to increase the stock of knowledge. This research paper is carried out with the help of only secondary data. The major tools for the collection of the information has been available collected primarily from journals, articles, online database, websites or newspaper etc.

5. DISCUSSION AND ANALYSIS

Knowledge cannot be produced in an unplanned fashion – it needs to be managed well. For that Universities& firms who have joined hands for a specific subject or specific purpose should first of all, decide a common frame of work. There are several needs for make a partnership of industrial organization and educational institute or universities to make a sustainable growth.

Concept of working for mutual benefits can be defined as “Industry gets required research, universities get financial support, and society gets new products and technology. It's a balancing act in which everyone wants a success”. Industry wishes to bring their products to the market faster by forming partnerships with universities, which result in surely profit for both parties. The business gains proficiency in areas they need the most, and they have a hand in constructing graduates who are better equipped to enter the industry world. Universities gain required funding, financial benefits, and more gratitude from society. We cannot refuse that industry has benefited hugely from these partnerships.

Who benefits from partnerships?

First and foremost, we in industry receive answers to problems that we are not equipped to answer ourselves. Working with the university community exposes industrial researchers to the most superior

technical thinking, new research trends, and unique experimental techniques. Discussion with academic scientists also provides a way to test the validity of our own thinking and directions.

In the past decades, the adjacent collaboration between universities and industrial organizations helped to develop products that affect our lives directly. Universities promote from industrial funding. Industrial-academic collaboration also allows universities to better prepare their students to enter the industrial/commerce work force: obviously, a mutual benefit/profit. By working on industry- funded projects, students gain greater and earlier introduction to marketing, developing, business processes, and ecological related factors that are of huge importance to industry/business. These practices facilitate the evolution from university to industry and increase productivity of these young people once they join an industrial organization.

Through collaborations, a company can improve its exploration and exploitation capabilities and consequently improve its innovative capacity. Furthermore, collaborations with customers and suppliers contribute most effectively to the exploitation of results, while collaborations with universities rather address the explorative capabilities.

Regardless of the benefits of these partnerships, the university's main mission is to supplying highly knowledgeable and skilled people to work in Govt., public, and industrial institutions. Universities also act as centers of learning by providing a broad-based knowledge. There exists a large variety of potential motivations for university and industry to collaborate. They have been found to vary regarding firm size, company culture and geographic locality of the firm. On the academic side, categories could be established especially regarding the culture towards collaboration with industry. The motivational aspects to collaborate are listed in table.

Table1: Incentives for U-I Collaboration (Collaboration Benefits)

University	Industry
Funding resources problem resolution	Risk sharing for research
Generation of job for graduates	Sourcing latest technological advances
Knowledge sharing	Personal resource /cost saving
Enhancement of teaching and knowledge	Laboratory usage
Publications	Recruitment channel
Enhancement of reputation for both	Stabilizing long term research project

Challenges of University-Industry partnership

These alliances have the potential for some ill effects that we should not ignore. Table helps to identify the right measures to help overcoming the different barriers or challenges:

Table 2: Barriers of U-I Collaboration

Cultural barriers	Institutional barriers	Operational barriers
Conflicting missions and goals	Different nature of work	Lack of knowledge about the partner and his processes
Conflicting interests concerning secrecy and IPR		Insufficient coordination and project management
Different languages and assumptions	Arrangement change and change of responsibilities on the company's side	Lack of acceptance for results generated by the partner

Cultural barriers of U-I Collaboration and solutions

In general terms, the mission of universities is to advance science and therefore to advance a public good. Business mission on the other hand is to make profit and advance the private good of its stakeholders and shareholders. This conflict in the mission is also present on the level of objectives. The universities need to generate scientific results that are thoroughly validated in order to advance their scientific reputation. Industry needs products and services which can be sold with profit in the marketplace; an extensive validation of research results is therefore not the main interest of industry, but fundamental for the achievement of the goals of the universities.

The conflicting goals lead directly to the conflict concerning secrecy policy. Companies usually believe that treating R&D results as confidential is the best way to maintain their innovative competitiveness. Publishing results by universities in order to gain reputation and therefore would also like to publish the results from the combined research activities. Universities would like to publish the results fast to ensure that they are still novel while the industry wants to profit from the temporal head start.

Because of the different environments cultural barriers in form of different language and basic assumptions develop. It is generally assumed to be the result of effective project management and execution. In University academic the assumptions are often opposite. Speedy results are associated with research being rushed by project management and erratic and not validated enough.

Institutional barriers of U-I Collaboration and solutions

The different nature of work consists of the following aspects. One is that universities are usually more engaged in basic research with diffuse, abstract and complex goals while industry R&D is motivated by clear deliverables and thus generally starts with applied research or even on the development stage. In addition, companies are looking on short term revenue, periodical result tracking being the rule. In contrast, reporting cycles in academia are much longer and less-well defined in terms of technical results.

In practice the transform of responsibilities and the organizational structure within companies remains a crucial challenge. This is particularly true for cases, where the U-I Collaboration was initiated and run by

a single person or when the U-I Collaboration was only in place for a short time when the responsible person on the company's side changes.

Operational barriers of U-I Collaboration and solutions

The fundamental difference on the operational level is that universities are still mostly public organizations and are therefore organized very differently from the companies that are profit driven and have well established management structures. Most companies have well defined incentive systems to align their employees' interests with the corporate strategy and interests. Academics are much more bureaucratic without explicit incentives offered to the professors and researchers. In consequence the processes of budgeting, task definition and task execution are very different.

For U-I Collaboration, the lack of knowledge of the partner's processes remains a major barrier. Especially in time-crucial situations, the university researchers are much more reluctant to work the extra hours to keep the time limit, because they are not directly committed to them or profit from complying with them.

In situations where results from the two partners are building on each other, coordination of the work is vital. An insufficient project management is reported from U-I Collaboration which often leads to project delay or failure. In the moment of transfer or implementation of project results another barrier frequently stated is a lack of acceptance of the results generated by the partner.

6. SUGGESTION

The following suggestions were made based on the basis of above discussion. The suggestion which were mentioned as follows describes to improve U-I Collaboration and the implementation is easier in different ways.

- Through respectable collaborations, a company can improve its exploration and exploitation capabilities and consequently improve its innovative capacity.
- Transparency in relationships that encompass research and innovation, as well as education and service to society.
- It's important to know about their inter-culture, so it's easier better to understand working thoughts and thinking.
- Clear communication by university-industry is helpful to establish long-term partnerships.
- Maintain honesty, transparency and elasticity, respect, and follow ethical standard which build trust and establish good working relationship.
- Both learn to communicate clearly and in the other sector's language to help establish long-term partnerships.
- Goals and Objectives of both university and industry are always clear and pre-determined.

- Coordination and project management by mutual positive collaboration can help to solve their problem in right direct in estimated time.
- Evaluation and analysis of research project time by time is important by both.
- Pre measurement of cost, timing etc. is essential and which is measured by both for further complication.

7. CONCLUSION

University-industry research relationships have existed in multiple forms in past years. Current collaborations are complex and often appear threatening to both the university and industrial enterprises through value and objective variance. However, universities have developed formalized relationships with industry that alleviate some of the tensions that arise from these relationships. Universities and industry have had a long history of collaboration. As public financial support for higher education continues to decline, universities will be forced to aggressively seek different sources of private funding in order to survive.

By this paper some best practices have been identified:

- Mutually benefits of collaboration.
- Trust and transparency is important factor.
- Clear policy on publication and IPRs
- Challenges and overcoming factors determined.etc

As a result, university-industry partnerships will become much more important in the future. The literature is replete with examples of the benefits and risks associated with such partnerships. As these sorts of partnerships continue to proliferate, it is serving upon universities to clearly recognize the benefits and risks associated with them in the beginning and to put organizational structures and processes in place to maximize the benefits while minimizing the potential risks

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