

Business School-Industry Linkage: Experience from Adama University

Tsigab Aregawi

Dean, College of Business and Economics, P.O.Box 50, Adigrat University, Ethiopia

Abstract: *A paradigm shift is now underway that promotes new patterns of collaboration among industry consortia, university linkages and government agencies, with an emphasis on the integration of commercialization, empirical knowledge and the public good. Moreover, a triple helix of overlapping spheres of university-industry-government is a process increasingly at the core, rather than the periphery, of national, regional, and multinational innovation systems (Etzkowitz, 2003). The study is an attempt to identify the current status of business school-industry linkages, the barriers for the interaction and the possible conditions for sustainable interaction from both academic and industry perspectives. To investigate the area under study, two different sets of questionnaire were distributed for both the academic and industry staff. The data were analyzed using percentage, mean, standard deviation and factor analysis. Accordingly, important variables were suggested as barriers and as preconditions for sustainable interaction between the Business School and the Industry. The theoretical nature of teaching that has little focus on problems of industry, lack of autonomy to work with the industry, lack of confidence to carry out research, lack of motivation and entrepreneurial spirit among academics; and lack of clear information for industries on the responsible people/office who handle the Industry-School linkages in the school are some of the barriers. Setup of mechanism to link universities with industries which can act as an intermediary between universities and industry and giving more autonomy to the academic staff to is selected as a prime-precondition for sustainable interaction. Finally, conclusion and recommendations were suggested based on the barriers and suggestions as cited by the respondents and believed to overcome the problems.*

Keywords: Paradigm shift, Business School, Industry, Entrepreneurial spirit, Interaction,

1. Introduction

Nearly all universities have some forms of linkage with the industry. These interactions are hugely initiated and supported by any governments as it is the base for competitiveness and economic developments. According to Basant and Chandra (2006), there are a number of different ways through which university-industry linkages are formed: including the employment of university graduates in the industry, informal meetings, joint research programs, consultancy work commissioned by the industry and not involving original research, licensing of university patents, purchase of prototypes developed by the industry etc.

The National Science, Technology and Innovation Policy of Ethiopia, Universities, government research institutes (GRIs), and Industries are the major actors in the national innovation system. Their joint efforts shall be focused on identifying technologies and their sources, understanding the technologies through learning-by-doing and adaptation of these technologies. Creating a synergy of Universities, GRIs and Industries in imitating, adapting and generating appropriate technologies through the establishment of strong linkage shall be an urgent task (National Science, Technology and Innovation Policy, 2010:8). These efforts typically attempt to upgrade traditional industrial clusters by connecting them to foci of government funded research located at universities and research institutes that are encouraged to become more entrepreneurial (Ethiopian Herald, 2006).

But practically, these linkages are not fruitful yet and the contribution of industries for the university is still not discovered and the benefit of new curricula and case studies to the industries are not tasted. What is more, there is no clear policy: at school level regarding school-industry

interaction, the role of other stakeholders in fostering industry-business school linkage, and the nature of interaction. Therefore, the study is designed to find out the characteristics of existing interactions and constraints and potentials for developing sustainable Business School-Industry interactions.

1.1 Objectives of the study

1. To find out the nature of existing interaction between Business School of Adama University and the Industry;
2. To point out the constraints in establishing viable Business school-Industry interaction; and
3. To identify the prerequisites of Business School-Industry linkages structure;

2. Review of Literature

The vertical hierarchies of the pre-industrial and industrial eras, the first based on tradition, the second on expertise, are gradually superseded in the transition from an industrial to a knowledge-based society. A renovation in social relations occurs comparable to the one that took place during the transition to industrial society. The primary factor in each of these transformations was the role of knowledge in society.

According to Rappert et al 1999, there have been remarkable observations that universities around the world are adopting a policy of encouraging entrepreneurship and the university as an institution is moving toward a more entrepreneurial paradigm. Explaining on this, Etzkowitz and Leydesdorff (2000) have defined the interplay between universities, industries, and governments within a structure of overlapping spheres and 'hybrid' forms of organization as a Triple helix.' As Etzkowitz (2002) clarify the "triple helix" is

a spiral model of innovation that captures multiple reciprocal relationships at different points in the process of knowledge capitalization.

Universities and industries are two different social entities as a result they differ considerably in the nature and objectives of their activities. In university-industry collaboration, given the early stage of technology development, financial barriers to innovation may be strong given the imperfections of the financial markets for these early stage ventures. In view of industry, the specific reasons for collaboration with university research centers are considered to be lack of in-house R&D, shortening product life cycle, cutback in R&D budgets, and changing nature of research priorities.

University research centers also want to collaborate with industry as they increasingly need find new ways of generating income as the government intends to reduce R&D fund. It was also discovered that firms enter into university– industry relationships to gain access to students as potential future employees and to aid on product development (Links and Rees, 1991).

3. Research Methodology

This study was conducted while securing the cooperation from staffs of School of Business, and some selected firms management staff within Adama area. The target population of the study was the academic and administration staff of Business School and management bodies of selected firms found in Adama, Ethiopia. Accordingly, a total of 62 respondents were contacted by the researcher (25 staff from business school, and 37 management bodies from industries) by using structured questionnaire.

The survey questions measured the current status of business school-industry linkage, the constraint for the relationship, and the pre-requisite for sustainable relationship using open ended, Likert-type scale, and dichotomous type question. Additionally, the questionnaires were maintained items to measure the demographic profile of the respondents. However, before adopting the instrument for final study, a pilot study was carried out with 5 and 7 randomly selected business school staffs and industry managers. This is to ensure that the items within the questionnaire, as being designed for the study, were valid in Business School context, and to correct the wordings of statement (if any) for better understanding by respondents.

Based on this, minor adjustments were made in the layout of questions, difficult to understand questions, and filling-up instructions. Additionally, to check the internal consistency of the measures of determined items, Cronbach coefficients (alphas) were computed. Finally, twenty questionnaires from business school and thirty seven questionnaires from industries were found to be completely filled and retained for further analysis.

4. Data Analysis and Findings

For in-depth investigation and clarity, the responses of business school staffs and industries managers were treated separately. Descriptive statistics were applied to summarize

mean scores of various items for both response from business school and industry. The mean scores were also verified using factor analysis. The demographic profiles of the respondents were also computed using mean scores.

4.1. Data analysis and findings from Business School

This part of the analysis consists of data obtained from seven department staff of business school, founder dean of the school, dean of studies and business school-industry unit. The respondents were mainly deans, heads of department and senior Lecturers in the relevant departments.

4.2. Current status of industry interaction with the school of business

Firms interact with the University for their Search for knowledge, research output, consultancy, technical assistance, training, etc. Table 4.5 contains the types of interaction between industries maintain with the school of business. Surprisingly, significant number of firms (35.13%) did not have any interaction with the academic sector. Among those who have interaction with the school, personal contact with the school dominates (43.4%) the other types of relation. While no interaction type is reported in the survey on three items mainly: exchange of information, literature, and data with the school; attending seminars, symposiums; and workshops and conference. Among those who interact with the academic world, all of them don't have industry-university interaction unit, as the interaction is mainly informal and through senior level managers and owners.

Table 4.3: Types of Industry-Business School Interaction

| Types of Interaction | Frequency | Percentage |
|--|-----------|------------|
| Personal contacts with business school | 9 | 37.50 |
| Academics | 5 | 13.51 |
| Attendance at seminars, symposiums, workshops and conferences | -- | -- |
| Attendance at training programs | 5 | 13.51 |
| University student internship | 3 | 12.5 |
| Exchange of information, literature, data etc with business school academics | -- | -- |
| Engagement of university academic staff for consultancy | 2 | 8.33 |
| Others, please specify | -- | -- |
| Total | 24 | 100 |

4.4. Barriers for Industry-Business School Interaction

Regarding the barriers for industry interaction with the school of business as shown in Table 4.5 below, 'lack of motivation and entrepreneurial spirit among academics' is reported as the highest factor with mean value of 1.3 and factor loading factor of 0.876. The next highest factor is reported on 'we don't know who to contact at universities to initiate collaborative activities' followed by we are not aware of expertise/ facilities available at universities. The items in the questionnaire have a 64.7 percent of cumulative variance. This implies the items can measure more than 64 % of the constraint for interaction while the remaining 26 % will be addressed using other additional items.

Table 4.5: Barriers for Industry interaction with Business School

| <i>Items</i> | <i>Mean</i> | <i>Standard deviation</i> | <i>OBLIMIN</i> |
|---|-------------|---------------------------|----------------|
| 1. Differences between the universities and my company in values, mission, or priorities | 2.7 | .891 | .497 |
| 2. Academics are not competent enough to undertake consultancy/industry oriented research | 2.0 | .647 | .563 |
| 3. Lack of motivation and entrepreneurial spirit among academics | 1.3 | .321 | .876 |
| 4. Low commercialization potential of university research | 1.9 | 1.02 | .598 |
| 5. There is no proper mechanism to collaborate with universities | 1.7 | .239 | .721 |
| 6. Poor communication between the universities and us | 1.7 | .845 | .679 |
| 7. Most universities lack adequate research facilities | 1.8 | .774 | .634 |
| 8. Universities are not interested to collaborate with us | 3.0 | 1.07 | .568 |
| 9. We are not aware of expertise/ facilities available at universities | 1.5 | .639 | .793 |
| 10. We don't know whom to contact at universities to initiate collaborative activities | 1.4 | .794 | .831 |
| 11. Our business is not big enough to seek assistance from universities | 1.9 | 1.06 | .725 |
| 12. Lack of funds to initiate collaborative work with universities | 2.1 | 1.23 | .604 |
| 13. The university structure is not adapted to the needs of industrial collaborations | 2.3 | .348 | .603 |
| 14. Geographical location of our facilities results in less access to universities | 4.2 | .927 | .468 |
| 15. Others, please specify | -- | | |

Note: Likert scale 1-Very great extent, 2- Great Extent, 3- Somewhat, 4- Very Little, 5- Not at all, *- significant at 5% and % of variance explained 64.7%, only loadings above 0.4 are displayed

4.6. Conditions for Sustainable industry-business school linkages

As shown in the Table 4.7 below regarding the favorable condition for industry interaction with business school, all the items have significant contribution towards industry-school interaction. The highest mean value (3.6) is revealed

Table 4.7: Conditions for Sustainable industry-business school interaction

| <i>Items</i> | <i>Mean</i> | <i>Standard deviation</i> | <i>OBLIMIN</i> |
|--|-------------|---------------------------|----------------|
| 1. Include industrial internship in the curricula | 3.5 | .345 | .792 |
| 2. Encourage industrial visits by students | 2.9 | .754 | .674 |
| 3. Encourage regular industrial visits by academics | 3.3 | .262 | .551 |
| 4. Improve laboratory facilities and other infrastructure at universities | 2.7 | .273 | .491 |
| 5. Involve staff from industry in teaching programs | 3.4 | .362 | .763 |
| 6. Setup a mechanism to link universities with industries which can act as an intermediary between universities and interested industrialists. | 3.6 | 1.231 | .802 |
| 7. Publicize university activities relevant to industry | 3.1 | .673 | .598 |
| 8. Jointly (university and industry) organize informal meetings, talks, and communications | 3.2 | .735 | .733 |
| 9. Government tax concessions for companies collaborating with universities | 3.5 | .764 | .745 |
| 10. Setup industrial parks closer to universities | 2.8 | .356 | .406 |
| 11. Encourage academic representation in industrial committees/chambers/boards | 3.2 | .633 | .634 |
| 12. Encourage industry representation in university committees | 3.4 | .643 | .599 |
| 13. Others, please specify | | -- | -- |

Note: Likert scale 1-Very great extent, 2- Great Extent, 3- Somewhat, 4- Very Little, 5- Not at all, *- significant at 5% and % of variance explained 64.7%, only loadings above 0.4 are displayed

5. Conclusions and Recommendations

Based on the data obtained from the survey, the researcher deduces the following points:

From the academic perspectives, most of the academic staffs believe the existence of relation with the industry. The main interaction type is giving training programs for the industry. Most of those interactions were reported with government

in the item 'setup a mechanism to link universities with industries which can act as an intermediary between universities and interested industrialists'. This result is also supported by the factor analysis as the item loaded at .802. When we see the cumulative variance, it amounted as 69.8% of the total variance. This indicates that nearly 70% of the factor for creating sustainable industry-school interaction is addressed by the items in the questionnaire while the remaining 30% will be addressed using a more diversified items.

and it is coordinated by individuals. From these we conclude that, the School is not in a position to get diverse experience from different industry. Furthermore the continuity and significance of those interactions is questionable as largely coordinated by individual interest.

As the barriers for interaction according to the School staffs view, the theoretical nature teaching that has little focus on problems of industry is considered as the most determinant. Lack of autonomy to work with the industry and lack of confidence to carry out research are also additional determinant. Giving more autonomy to the academic staff is selected as a prime-precondition for sustainable interaction.

Significant number of firms didn't have any interaction with the School of Business. Furthermore, those who maintain interaction are through personal contact and no university-industry interaction unit is available in all firms.

From the view point of the industry prominent barriers to Business School-Industry linkages are lack of motivation and entrepreneurial spirit among academics and we don't know who to contact at universities to initiate collaborative activities.

6. Recommendations for Improvement, for the Schools, the Industry and other Stakeholders

1. The School should take the initiatives to take the responsibilities for establishing and supervising linkages with the industry.
2. Autonomy and incentives for academic staff had to be in place, so as to foster interaction.
3. Industries should have responsible unit for creating contacts, and maintaining those linkages with the schools.
4. It should be better to set-up a common Industry-Business School linkage unit. The unit/team plan, arranges, facilitates, and evaluates the ongoing interaction continuously.
5. Government and other stakeholders like funding organization should consider industry-academic interaction as criteria for evaluating higher education quality.

References

- [1] Basant, Rakesh, and Pankaj Chandra. 2003. "Inter-organization Linkages in the IT Industry in India: A Case Study of Telecom Technologies." In *The Context of Innovation in India: The Case of the IT Industry*, ed. Anthony D'Costa and Eswaran Sridharan, 193–219. London: Palgrave
- [2] Decter, M., and Bennett, M., and Leseure, M. (2007) University to business technology transfer—UK and USA comparisons. *Technovation* 27, pp.145–155
- [3] Dierdonck, R.V., Debackere, K., and Engelen, B. (1990) University-industry relationships: How does the Belgian academic community feel about it? *Research Policy* 19, pp. 551-566.
- [4] Etzkowitz, H., 2003. Learning from transition: The triple helix as innovation system. Paper presented to the Symposium on "Knowledge based society: A challenge for new EU and accession countries," Zagreb, Croatia, 23 October.
- [5] Etzkowitz H., and Henry 2002 *MIT and the Rise of Entrepreneurial Science*. London: Routledge
- [6] Etzkowitz, H., and Leydesdorff, L. "The Dynamics of Innovation: From National Systems and 'Mode 2' to a Triple Helix of University-Industry-Government Relations." *Research Policy* 29 (No. 2 2000): 109-24.
- [7] Links, A., and Rees, J. (1991) *Firm Size, University based Research, and Return to R&D in Innovation and Technological Change: An International Comparison, USA*.
- [8] Rappert, B., Webster, A., and Charles, D. "Making Sense of Diversity and Reluctance: Academic-Industrial

- Relations and Intellectual Property." *Research Policy* 28 (No. 8 1999): 873-90.
- [9] Veugelers, R., and Cassiman, B. (2005) R&D cooperation between firms and universities: Some empirical evidence from Belgian manufacturing. *International Journal of Industrial Organization* 23, pp. 355– 379.
- [10] Weber, Max 1958. *The Protestant Ethic and the Spirit of Capitalism*. New York: Scribners
- [11] Weber Max 1947. *Theory of Social and Economic Organization*. New York: Oxford University Press
- [12] Adama University: Transformation Best Practices by End of Academic Year 2009/10.
- [13] Ethiopian Herald, 2006.
- [14] National Science, Technology and Innovation Policy, 2010:8.