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Strategies For Industry-University Collaboration In Funding And Commercialization Of Research For The Development Of Universities In Rivers State

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ABSTRACT
The study investigated strategies for industry-university collaboration in funding and commercialization of research for the development of universities in Rivers State. The study was hinged on eight objectives, eight research questions and eight null hypotheses. The study adopted a descriptive survey design. The population for the study consisted of all Chief Executive Officers of industries and top administrative staff in the universities in Rivers State. The sample size was 371 respondents (248 top administrative staff and 123 Chief Executive Officers of industries). The sample was drawn through multistage sampling procedure using cluster and disproportionate stratified random sampling techniques. Strategies For Industry-University Collaboration In Funding and Commercialization of Research for the Development Of Universities Questionnaire (SIUCFCRDUQ)' was used by the researcher for data collection. Face and content validities were ensured by experts. Internal consistency through Cronbach alpha gave reliability coefficient of 0.75 for SIUCFCRDUQ questionnaire. Mean and standard deviation was used to analyse relevant data while z-test was used to test the hypotheses. Based on the findings of this study, it was concluded that proper funding, commercialization of research results, effective policy formulation and implementation, improved staff welfare and development, effective administration of physical facilities and curriculum development enhance the development model of the universities. It was recommended amongst others that the management and administrative staff of the universities should strengthen their effort in reaching out to the management of the various industries in order to share ideas, intellectual property rights and also enlighten them on the different services they can render to them (the industries) in order to boost their level of productivity and in turn, develop the university system
Keywords: industry-university collaboration, funding, research

INTRODUCTION

Globally, education has been regarded as a potent tool for engineering the progress of development both on the individual basis and the society at large. As a development agent, it is valued by all nations of the world because it has brought total liberation to man. It is a source of man's transformation from ignorance and misery to knowledge and happiness. Education enriches people's understanding of themselves and the world. It improves the quality of lives and leads to broad social benefits to individuals and society. It has made man useful to himself, his generation and beyond. In view of its relevance, societies have identified education as an effective tool that is capable of breaking the cycle of poverty and lays a strong foundation for socio-economic development of a nation. It develops the human capital of a nation for economic efficiency and social consistency. The development of the relevant human capital, especially the high-level cadre is basically the statutory

responsibility of higher education. The focus of this study is university education which is an aspect of higher education. Industry university collaboration is simply the interaction between the industry and any part of the university mainly with the aim to encourage technology exchange and knowledge. Universities are institutions of higher learning that train students within a period of time and award degrees in different courses and disciplines. One major objective of university education in Nigeria according to the Federal Republic of Nigeria (2014) is to diversify and intensify its programmes for development of high-level manpower within the context of the needs of the nation. To be able to effectively carry out this enormous task, huge sums of money need to be invested into the university system. It should be recalled that in Nigeria, from time immemorial, funding of universities has been borne solely by the federal government, through its regulating body, the National Universities Commission (NUC). The reasons for carrying this burden by the federal government are not far-fetched. The federal government had enough money in her coffers to fund the system especially in the seventies and early eighties; for paying academic staff and other personnel, and for the provision of both physical and material plant facilities that enhance teaching and learning. Furthermore, the government of Nigeria in this period had the capacity to accommodate the demand for places in the universities.

Synergies between higher educational institutions and industries (and other players in the productive sector) can play a critical role in securing and leveraging additional resources for higher education, promoting innovation and technology transfer, and ensuring that graduates have the skills and knowledge required to effectively contribute to the workforce (Mouton, 2015). As a matter of fact, there has to be a very strong collaborative partnership between Higher Educational Institutions, Government and the Industry, the "Triple Helix", the confluence which is a powerful one that drives the economies of nations (Bogoro, 2015:2).

Statement of the Problem

Most industries in Nigeria do not encourage thorough financial and other channels of expansion fort staff training and research in universities. Also, Nigeria universities are not being encouraged to adopt and implement an “Open” innovation system that favours alliances, partnerships, coordination, and collaboration of research with universities. Furthermore, most firms lay more emphasis on informal contacts with universities that relate to internships, graduate recruitment and consulting. In fact, in some cases, industries seem to be having difficulties with aggressive behaviour of universities regarding sharing of property rights and licensing. It is against this backdrop that the researcher delved into strategies for industry-university collaboration in funding and commercialization of research for the development of universities in Rivers State.

Aim and Objectives of the Study

The aim of the study was to investigate strategies for industry-university collaboration in funding and commercialization of research for the development of universities in Rivers State. The specific objectives were to:

1. Find out ways of industry - university collaboration for the funding of universities for the Development of Universities in Rivers State.
2. Identify strategies commercialization of research results through industry – university collaboration contributes for the Development of Universities in Rivers State.

Research Questions

The following research questions were answered in the study.

1. In what ways do industries collaborate in the funding of universities for the Development of Universities in Rivers State?
2. In what ways do industries and university collaborate in the commercialization of research results for the Development of Universities in Rivers State?

Hypotheses

The following hypotheses were tested at 0.05 level of significance

1. There is no significant difference between the mean ratings of Chief Executive Officers of industries and top administrative staff of universities on the funding of universities for the Development of Universities in Rivers State.

2. There is no significant difference between the mean rating of Chief Executive Officers of industries and top administrative staff of universities on ways in which commercialization of research results through industry – university collaboration contributes for the Development of Universities in Rivers State.

Concept of University

The term 'university' according to Microsoft Encarta Premium version (2009) is an institution of higher education which offers programmes beyond the high school level. University provides necessary training for individuals interested in entering professional careers. The university education strives to develop students' creativity, insight and analytical skills. Wikipedia, the free encyclopedia (2019) saw university as an institution of higher (tertiary) education and research which awards academic degrees in various academic disciplines. University typically provides undergraduate and postgraduate education. The Oxford Advanced Learner's Dictionary in Chimekwele and Ojekudo (2017) perceived the term 'university' as an institution at the highest level of education where you can study for a degree or do research. University is the apex level of education where variety of courses that lead to different level of professionalism in different disciplines are offered. This may have been the reason Chimekwele and Ojekudo (2017) viewed university as an educational institution where learners study for all kinds of degrees and where research works are carried out for the overall development of the society.

Concept of Industry

An industry is a classification that refers to groups of companies that are related based on their primary business activities. The term industry covers all the businesses and factories that convert raw materials into goods or that provide useful services. Industry produces all the goods and services needed by society and distributes them to consumers. It is an economic activity concerned with the processing of raw materials and manufacture of goods in factories. The term is also used to describe a group of businesses that produce a similar product or service. An industry is a group of manufacturers or businesses that produce a particular kind of goods or services. Workers in the textile industry design, fabricate, and sell cloth. The tourist industry includes all the commercial aspects of tourism. One can use industry to refer to a group of similar businesses: the automobile industry makes cars and car parts; food service industry prepares food and delivers it to hotels, schools, and other big facilities. All the factories, mills, and other enterprises that produce steel are known as the 'steel industry'. Those that produce milk are known as 'milk industries.

University – Industry Collaboration

Industry - University Collaboration (UIC) can be seen as the interaction between any part of the higher educational system and industry aiming mainly to encourage knowledge and technology exchange (Bekkers, Bodas, & Freitas, 2008; Siegel, Waldman & Link, 2003). The increase in knowledge and technology exchange has been attributed to a combination of pressures on both industry and universities (Giuliani & Arza, 2009). Looking on the side of industry, pressures have included rapid technological change, shorter product life cycles and intense global competition that have radically transformed the current competitive environment for most industries (Clarysse, Bruneel, & Wright, 2007).

Types of Industry-University Collaboration

An alliance or partnership is a relationship that is strategic or tactical, and that is entered into for mutual benefit by two or more parties having complementary business interests and goals (Segilnd, 1996). There are long established and natural links between universities and industries, not least because universities produce a pool of well-educated graduates and postgraduates from which the professional workforce is recruited. With the people come the ideas, skills and knowledge from which many companies derive their competitive edge.

The following are assets belonging to both parties in an industry-university partnership:

- Physical Assets/ Resources: laboratories, equipments and facilities
- Human Resources: highly skilled and experienced staff
- Other Knowledge Resources: information, database, libraries, processes, ideas, contacts,
- Financial Resources: own research funds or access to public funds.

The differences between universities and industry lie in the extent and diversity of these resources and this is where collaboration is mutually beneficial. For example, companies may have considerably greater financial resource and many will have state-of-the-art IT facilities and resources, but few companies can match universities in terms of the breadth of their human and other knowledge resources. Even where the partners are evenly matched, the diversity of experience that can be drawn upon in a partnership and synergy that results, may give the competitive edge that leads to successful innovation.

There are many ways in which partnerships between universities and industry can be structured. CBI (2001) and Polizzotto (2000) identified the following arrangements:

Contract Research: - this is where the university conducts research in an IT-related area where they have previous expertise but the effort is focused, and funded, by the industrial partner. Usually a contract research team will comprise project-specific research and technical staff working under academic supervision with the industrial partner allowed to set the agenda for the project. The industry will generally wish to own all the results of the project that it is commissioning and to have the exclusive right to use and exploit the results commercially.

Collaborative Research: - a partnership where the IT research goals are defined by all the partners and where all the partners (industrial and university) make an active contribution to the research activity is described as collaborative research. Here, all the project partners contribute to the costs of the research either in cash or in kind (although the universities will generally expect the industrial partners to cover the full cost of the project).

Sponsored Research: - this is where researchers put together proposals, which industry may then consider funding. The industrial partner does not necessarily feed creatively into the research, but is expected to fund the project. The results from the research efforts are shared and the academic or university partner is expected to publish them as early as possible. The university and the industrial partner negotiate details relating to publication and access rights to the research results such that it meets the requirements of both partners.

Graduate Fellowships/ Studentships: - sponsorships of a studentship, whether in full or in part, in an IT-related research topic, offers companies a means of gaining a foothold in an emerging area of computing. These studentship may include M.Sc./M.Tech., M.Phil or PhD. Although industries may help shape the student's research goals, those goals and the research methodology employed, must meet the university's requirements for the award of a degree and should reflect the student's endeavours.

Student Projects and Placements: - placement schemes can initiate a relationship between a university and a company. These placements could be in form of the Students Industrial Work Experience Scheme (SIWES) used in Nigerian universities as currently coordinated by the Industrial Training Fund (ITF). Students from the university spend some time in the company on gainful activity and benefit in terms of getting first-hand experience on real-life issues affecting the industries and even enhancing their employability.

Sponsored and Honorary Posts and Secondments: - in the same way that students can diffuse knowledge into companies, business people can do the same into universities. They can provide business/industry experience for teaching and innovation support and sometimes, applied research experience. While providing these benefits they can keep a watching brief on academic advance in computing and forge closer ties as precursors to future partnerships. Universities sometimes can offer honorary posts or secondments to specific industrial researchers which may be full-time or part-time and usually involve supervision or participation in a research project, teaching or occasional lectures. Academic secondments into industry are possible with the academic gaining an insight into and training in the latest technologies and methodologies used by the industry.

University Consultancy and Associated Commercial Services: - here, universities academic staff are encouraged to devote a proportion of their time to external work, such as providing consultancy services for external customers. Consultancy differs from research in that it does not have as its prime purpose the generation of new knowledge for the institution and is always on a short-term basis. Industry can sometimes pay to use spare capacity of the university's computing facilities and e-learning centres and sometimes, universities could purchase some specialized computing equipments for use by industrial partners at a fee.

Clubs and Networks: - clubs and networks of companies are also a form of partnership. They are often set up by an individual university or by an outside agency such as the Nigerian Computing Society, Shell Petroleum Development, First Bank Plc, etc. They could be national or international in character. Networks taking the form of research clubs usually have formal participation rules to ensure that benefits are distributed evenly and are only available to members. They give members an opportunity to keep abreast of an emerging area of computing and may also allow them collectively to help shape the direction of the research carried out by academics.

Jobs: - when particular companies and universities develop close relations, they get to know better the other's needs and what they have to offer, and have a good understanding of what they are getting from the other. This makes it possible for IT graduates to secure jobs with ease in such companies.

Strategies for Effective University- Industry-Government Linkages in Nigeria

Like in most countries in sub-Saharan Africa, the reality in Nigeria is that the NSI is relatively weak (Muchie *et al.*, 2016), and the developmental role of universities is highly constrained. As the foregoing discourse suggests, the challenge of creating developmental universities in Nigeria is closely linked with the state of the NSI. The firm is at the centre of the NSI framework as the loci of innovative activities and the critical unit that determines the innovative outcomes of the interactions among agents in the NSL. For universities to attain significant developmental roles, it, therefore, follows that their interactions with firms would be crucial. Firms in this respect should be viewed from its generic meaning of firm as a productive unit which can be a farm, manufacturing or commercial enterprise. Innovation is important for competitiveness in all types of enterprises. In dynamic economies, growth is powered by the NSI that functions to generate and employ innovation. The University system, as a sub-system of the NSI, plays fundamental roles especially as the principal agent for specialization. The University system interacts with the industrial system in strategic sectors that present opportunity for competitive advantage.

If Nigerian universities are to contribute more actively to innovation, there is a need to support closer interactions among governments, universities, the industry, and other relevant actors. The various national policy frameworks are not in themselves sufficient, but provide a start as well as incentives and help clarify the role of each stakeholder in advancing innovation.

In Nigeria, how can university industry-government collaboration serve as impetus for the creation of developmental universities? Institutional reform is a major component of current economic reform. Reforming the University system has been in focus and a subject of intense debate (NUC, 2016). First, it is important to point out that Nigeria's education and industrial policies are isolated from each other. The NSI approach that links various policy measures that are aimed at making innovations drive the economy is still relatively alien to Nigeria's policy process. For example, the Nigerian Industrial Policy addressed critical issues of competitiveness, policy, finance, technology advancement, incentives to industries, research and development without any significant relationship with the role of the educational system in providing the ingredients required for these elements to achieve the objectives of economic growth and development.

The education policy concentrates on development of formal education to achieve the objectives of Education for All (EFA) without thorough analysis of what is required to make the educational and training system fulfill the role of generating knowledge for development in an innovation system framework. The starting point for creating developmental universities in Nigeria, therefore, requires a close integration of the education and industrial policies. To achieve this, either the education or the industrial policy could be the entry point. For the purpose of our discourse in this paper, we have chosen the industrial policy because it has more clearly defined specific objectives.

The aim of the Nigerian industrial policy is to place Nigeria among the ranks of industrially developed countries, while the specific objectives include:

1. to encourage the private sector to play a pivotal role in the industrial development of the country;
2. to increase industrial output and linkages for both domestic and export market;
3. to increase value addition by creating a few niches of competitive advantage;
4. to increase capacities for entrepreneurship and technical skills in order to create more direct and indirect employment opportunities;
5. to increase competitiveness of made-in-Nigeria products;

6. to facilitate inflow of foreign capital and technologies; and
7. to encourage geographical dispersal of industries (FMI, 2013).

Placing Nigeria among the largest economies as conceived in Vision 20-2020 will require a speeding up of the pace of Nigeria's industrialization. A close relationship between the universities and industrial firms is a necessary strategic input. If Nigeria would be among the most industrialized, then she has to learn to innovate and have some sectors of the economy employing technology at the frontier. The basic requirement of the universities would be to train scientists, engineers and other related skills with active involvement of firms that would later employ them. Involving firms in university training activities could be directly by the participation of factory scientists and engineers as resource persons for teaching specialized course modules, and by industrial training of students in firms operating in the field of the prospective career of the student. Indirect engagement could involve joint development of the relevant course contents or curricula by universities and firms, and periodic review of the course contents to suit industry or practitioners' demands.

METHODOLOGY

The design for this study was a descriptive survey. The population for the study consisted of all Chief Executive Officers of industries and top administrative staff in the universities in Rivers State. The sample size was 371 respondents (248 top administrative staff and 123 Chief Executive Officers of industries). The sample was drawn through multistage sampling procedure using cluster and disproportionate stratified random sampling techniques. Strategies For Industry-University Collaboration in Funding and Commercialization of Research for the Development of Universities Questionnaire (SIUCFCRDUQ)' was used by the researcher for data collection. Face and content validities were ensured by experts. Internal consistency through Cronbach alpha gave reliability coefficient of 0.75 for SIUCFCRDUQ questionnaire. Mean and standard deviation was used to analyse relevant data while z-test was used to test the hypotheses.

RESULTS

Research question 1: *In what ways do industry – university collaboration contribute to the funding of universities for the Development of Universities in Rivers state?*

Table 1: Weighted mean and standard deviation scores on the industry – university collaboration contributes to the funding of universities for the Development of Universities in Rivers state

	ways do industry – university collaboration contribute to the funding of universities for the Development of Universities in Rivers state	**Administrative staff**			**Chief executive officers**		
		Mean	**Std**	**Decision**	**Mean**	**Std**	**Decision**
1.	Effective supervision of university budgetary and accounting system	2.67	.53	Agree	3.19	.41	Agree
2.	Organizing programs in order to sensitize and educate university administrators on the dangers of misappropriating funds	2.77	.49	Agree	2.99	.66	Agree
3.	Organizing training programs to train school administrators on how to budget	3.33	.54	Agree	2.68	.67	Agree
4.	Contribution of public – private funds to the universities	2.86	.38	Agree	2.77	.77	Agree
5	Mobilization of fund from identified private donors	2.88	.39	Agree	2.83	.55	Agree
	Grand mean and standard deviation	**2.70**	**0.47**		**2.89**	**0.62**	

Table 1 showed that items with serial numbers 1 to 5 have their various mean scores above the criterion mean value of 2.50 and were agreed by the respondents. However, it could be seen that the grand mean and standard deviation of administrative staff (2.90); (0.47) and chief executive officers of industries (2.89); (0.62) showed that administrative officers had a higher opinion on the ways industry - university collaboration contribute to the funding of universities for the Development of Universities in Rivers state. These includes Effective supervision of university budgetary and accounting system, organizing programs in order to sensitize and educate university administrators on the dangers of misappropriating funds, organizing training programs to train school administrators on how to budget, Contribution of public – private funds to the universities, Mobilization of fund from identified private donor

Research question 2: *What are the ways commercialization of research results through industry – university collaboration contributes for the Development of Universities in Rivers state?*

Table 2: Weighted mean and standard deviation on ways ways commercialization of research results through industry – university collaboration contributes for the Development of Universities in Rivers state

	ways commercialization of research results through industry – university collaboration contributes for the Development of Universities	**Administrative staff**			**Chief executive officers**		
		Mean	**Std**	**Decision**	**Mean**	**Std**	**Decision**
6.	Through payment of royalties to universities	3.17	.58	Agree	3.53	.39	Agree
7.	Through the sale of research findings	3.19	.36	Agree	3.36	.35	Agree
8.	Through sales of intellectual property right	3.13	.59	Agree	3.13	.39	Agree
9.	Sales of technological products developed by universities	3.21	.36	Agree	3.39	.39	Agree
10	Through patent licensing	3.13	.38	Agree	3.29	.35	Agree
	Grand mean and standard deviation	**3.17**	**0.45**		**3.3**	**0.37**	

Table 2 showed that items with serial numbers 6 to 10 having their various mean scores above the criterion mean value of 2.50 and were agreed by the respondents as ways commercialization of research results contributes to the development of universities in Rivers State. However, it could be observed that the grand mean and standard deviation of administrative staff of universities were 3.17 and 0.45 while that of chief executives of industries were 3.33 and 0.37. The chief executive officers had a higher opinion on ways commercialization of research results contributes to the development of universities in Rivers State. Thus, the entire questionnaire items were accepted by the both group of respondents which were; through payment of royalties to universities, through the sales of research findings, through patent licensing, through sales of intellectual property rights and sales of technological products developed by the universities.

Hypotheses

Hypothesis 1: There is no significant difference between the mean scores Chief Executive Officers of industries and top administrative staff of universities on ways industry-university collaboration contributes to the funding of universities in Rivers State

Table 3: z-test analysis of the mean scores of Chief Executive Officers of industries and top administrative staff of universities on the funding of universities for the Development of Universities in Rivers state.

Category	N	$\bar{x}$	Sd	Df	z-cal.	Table value	Alpha level	Remarks
Chief Executive Officer	248	2.89	.47					Null hypothesis is rejected
				369	3.02	1.96	0.05	
Administrative staff	123	2.90	.62					

Table 3 showed that administrative staff have mean and standard deviation scores of 2.90 and 0.62 while the CEO's have mean and standard deviation scores of 2.89 and 0.47 respectively. With a degree of freedom of 269, the calculated z value of 3.02 is significant because the calculated value is greater than the alpha level of 0.05. Therefore, the null hypothesis was rejected. By implication, there is a significant difference on the mean scores of Administrative and Chief executive officers on ways industry-university collaboration contributes to the funding of universities in Rivers State

Hypothesis 2: There is no significant difference between the mean rating score of Chief Executive Officers of industries and top administrative staff of universities on ways in which commercialization of research results through industry – university collaboration contributes to the Development of Universities in Rivers state.

Table 4: z-test analysis of the mean scores of Chief Executive Officers of industries and top administrative staff of universities on ways in which commercialization of research results through industry – university collaboration contributes for the Development of Universities in Rivers state.

Category	N	$\bar{x}$	Sd	Df	z-cal.	Table val.	Alpha level	Remarks
Chief Executive Officer	248	3.33	.37					Null hypothesis is rejected
				369	2.96	1.96	0.05	
Administrative staff	123	3.17	.45					

Table 4 showed that administrative staff of universities have mean and standard deviation scores of 3.17 and 0.45 while the Chief Executive Officers have mean and standard deviation scores of 3.30 and 0.37 respectively. With a degree of freedom of 269, the calculated z value of 2.96 is significant because it is greater than the calculated value of 1.96. Therefore, the null hypothesis was rejected. By implication, there is a significant difference between the mean rating score of administrative staff and Chief Executive Officers on ways industry-university collaboration contributes to the funding of university in Rivers State

DISCUSSION OF FINDINGS

Ways Industry-University Collaboration to the Funding of Universities

Funding is an integral aspect in the development of universities, and as such universities needs to be properly funded in order to achieve its goals and objectives. However, ways in which industries can fund universities are through the affective supervision of university budgeting and accounting system, organization of programmes in order to educate administrative staff on the dangers of misappropriating funds, training administrators on how to budget, contributing private/public funds to the universities and mobilizing funds from identified tagged donors.

This is why Onaolapo, Uche and Raimi (2013) posited that industry-university partnership has contributed immensely to the financial base of universities. This is through the payment for the

conduct of research in order to improve on the goods and services of industries in order to gain more patronage. This finding was in line with Olaleye (2012) who reported that the private sector should continue to participate in the funding and management of universities.

Ways Commercialization of Research Results Contributes to the Development of Industries

The study revealed the ways commercialization of research results from industries to universities contributes to the development of universities. These ways include payment of royalties to universities, sales of research findings, sales of intellectual property right, sales of products developed by universities and also, through patent licensing (i.e) by licensing intellectual property. Adelokun, (2001) posited that mutual association with the industries are likely to bring about mutual benefits. The establishment of contract by the university with the industries will go a long way in providing fund that can be used by the universities in day-to-day administrative function. This could be one of major rationale why Onaolapo, Uche and Raimi (2013) found that post graduate students from different Universities across the country have had opportunity to engage in research with SPDC under internship programmes in different fields, donation of books covering on all field of study by SPDC, intellectuals from Universities are instruments of technology transfer from Universities to industries and provision of University liaison office provided incentives for partnership for research development.

Still in support to the finding of this study was Nwakaudu, Eneh and Bema (2015)who reported that public Universities can generate funds by embarking on consultancy services to the public and organised private sector, Universities should organise commercial business venture to raise funds, public Universities should collaborate with multinational business corporations, endowment funds are good sources of funds for public Universities, and alumni associations should contribute in funding public Universities. The findings of Okejim (2016) corroborated the findings of this study as they revealed that filling stations, agricultural activities (poultry, piggery, crop farm, palm/plantain plantation, fruit garden, among others) can always improve the funding base and development of universities.

Summary of Findings

The findings of this study were summarized as shown below:

1. Providing specific support services to industries and universities in the search for partners; designing research and development research grants, matching grants and tax incentives; creation of technology transfer offices in universities; developing science parks, spin –offs and business incubators and Introduction of reward systems for researchers.
2. Contract Fees; sharing of intellectual property rights; payment for consultancy services; provision of modern facilities by industries and donation of scientific equipment by industries.

CONCLUSION

Based on the findings of this study, it was concluded that proper funding, commercialization of research results, effective policy formulation and implementation, improved staff welfare and development, effective administration of physical facilities and curriculum development all enhance the developmental models of the universities. However, the industry-university collaboration is also faced with a lot of challenges arising from terms and conditions of operations.

RECOMMENDATIONS

1. The management and administrative staff of the universities should strengthen their effort in reaching out to the management of the various industries in order to share ideas, intellectual property rights and also enlighten them on the different services they can render to them (the industries) in order to boost their level of productivity and in turn, develop the university system
2. . The university management should develop a functional and informative website where they can advertise and market their research findings; intellectual property and sales of their products to industries.

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