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Creation and Management of University Industry Collaborations in South Asia

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INTRODUCTION

The advent of globalisation poses a myriad of problems, from poverty to climate change, which has drawn the attention of Universities and Industries, seeking to remedy these man-made puzzles through effective collaborations.¹ The paradigm change in the international economic conditions has expanded the role of knowledge in the global market, which unlocks numerous opportunities for the development of knowledge-intensive segments.² The University-Industry Collaboration (*hereinafter* U-I collaboration) is one of the effective tools to find new approaches and methods to resolve the extremely challenging issues which are plaguing the lives of people.³ Additionally, the intense competition in international and domestic markets require new knowledge and innovation, therefore, U-I collaborations facilitate the Industries to maintain a competitive edge in the world economy.⁴

With the changing landscape of creation, production and diffusion of novel ideas and knowledge around the world,⁵ the role of Universities as originators and keepers of knowledge and innovation has become



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critical to the future of countries as an engine of development and growth.⁶ Universities are regularly called upon to make significant, substantial and direct contributions towards the society in the form of research. The need of the hour is to redefine the roles of Universities beyond imparting education; to assist countries in achieving economic growth and also finding solutions to the pressing social challenges.⁷ However, to enhance the social and economic impact of the Universities' research, it has become necessary that the knowledge should be refined through the active interaction with the industry. Thus, a proper and effective U-I collaboration mechanism is required to be put in place at the domestic level to fully utilise the Universities' scientific knowledge for the welfare of people.⁸

To shape the future of South Asia, Universities of the region cannot remain static in the dynamic knowledge economy. To put brave front in this competitive global economy, Universities and Institutions have to transform themselves from mere generator of ideas to source of knowledge creation.⁹ In the age of extensive technological innovation, the economic development and growth of the States are profoundly hanging on effective utilisation of the science & technology (*hereinafter* S&T).¹⁰ But economic and social prosperity is unlikely to be achieved without the indispensable role of the Universities in commercialising new knowledge and inventions.¹¹

This essay attempts to analyse the progress made by the South Asian countries in the direction of the U-I collaborations and fundamental problems associated with U-I collaborations.



CONCERNS AND CONFLICTS IN ADOPTING U-I COLLABORATION IN SOUTH ASIA

With few exceptions, most of the Universities and Institutions of South Asian countries are at a nascent stage of commercialising the public funded research and development.¹² It is mainly due to the ideological mindset, which perceives U-I collaborations as a capitalist manifestation, threatening the independence of Universities and Institutions to seek the truth.¹³ Moreover, little awareness about the intellectual property rights aggravates this situation. Furthermore, Universities attach more importance to the publication of academic writings in scientific journals than protecting the knowledge through patent or transferring the knowledge to industry for its effective utilisation.¹⁴ This mindset and weak economic conditions have inhibited the South Asian countries to make progress in the direction of developing mutual relationships between Universities and Industries for the development of S&T. In consequence, South Asian countries are unable to achieve the benefits from their valuable research results¹⁵ which gather dust in libraries and laboratories.¹⁶ Having said that, South Asian countries, if opted to have U-I linkages policy, should ensure that it should not hinder the scientific innovation and its availability, accessibility & affordability.¹⁷

The strategic U-I collaborations can drive the engines of the economy while breaching the knowledge frontiers to tackle societal problems.¹⁸ Therefore, Universities are required to apply their knowledge repositories in the economic progress of the society.¹⁹ But the problem in materialising this scheme is that the academic research and Industries interests are poles apart and difficult to reconcile. Generally, Universities are engaged in the long-term interests of sharing knowledge for the welfare of the society,²⁰ whereas, the industries seek to concentrate on creating economic values for the industry's benefit & strive for market success.²¹ Even after having such ideological gaps, the interests of Universities and Industries can be said to



converge at an area of common and shared interests.²² So, the synergy of the Universities' conceptualization and Industries' skillfulness, if combined together, can positively impact the society. But it can only happen in a continuous interaction between the Universities and Industries, which may not be possible in the absence of an adequate mechanism.²³ An efficient U-I collaborations mechanism can bridge these gaps by bringing Universities and Industries to a common, mutual beneficial platform.

It is widely believed that U-I collaboration has been the driving force in boosting the Western economy, which also helped in mitigating various social perils. However, the same model may not be effective and successful in the developing countries, especially South Asia countries, mainly due to the peculiar socio-economic arrangements of this region.²⁴ It is true that South Asian countries are still slow paced in developing U-I collaborations and many times overlook the Industry's need to utilise Universities knowledge but at the same time, howsoever prolong their efforts are, South Asian policy makers' labours in this direction are encouraging and need to be appreciated. But the concerns flagged by the scholars and commentators need to be addressed before undertaking the painful journey of framing the U-I collaboration

policy. Otherwise, the policy similar to US Bayh-Dole for the South Asian countries will do more harm than good. Apart from that, the issues of political interference in the Universities' affairs, the problems of corruption and mismanagement in the Universities' administration, which have become the norms in South Asian countries, requires urgent redressal, else the benefits brought by the U-I collaboration policy may become obsolete, irrespective of its effectiveness. The restructuring of delegating the autonomy in recruitment and financial management needs to be encouraged in ensuring the placid collaboration with Industry.²⁵

South Asian countries should also be mindful of the fact that the ultimate purpose of U-I collaborations is not to enrich Universities or Industries but to promote technology diffusion and transfer for the public welfare.²⁶ It is important for the South Asian countries that some of their inventions developed by the U-I collaborations should be placed in the public domain to conduct basic research without any impediment.²⁷ Also, in order to strengthen the domestic economy, South Asian countries should ensure



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that U-I collaboration gives priority to the production of social utility invention while giving preference to the small-scale local industries sector which doesn't have the capacity and capability to afford the R&D of their own. Thus, U-I collaborations cannot function efficiently in South Asian countries without revamping the governance and organisational structure of the public funded Universities and Institutions.

PROGRESS MADE BY SOUTH ASIAN COUNTRIES IN THE FORMULATING U-I COLLABORATION POLICY

After realising the potential advantages of U-I collaborations to the society and economy, few South Asian countries have commenced efforts in the direction of formulating its policy. This sudden policy shift comes from the perception that U-I collaboration brought enormous benefits to the Western countries through mobilising the scientific knowledge in achieving the economic ends.²⁸ The progress made by South Asian countries towards U-I collaboration policies are as follows:

INDIA

India's success in the area of services especially 'software outsourcing' is notable, however, the same magnitude of efforts in other industrial sectors is inconspicuous. The knowledge economies bring forth numerous opportunities and if utilised to its fullest extent, India can make a leapfrog jump to the advanced stages of development. The U-I collaboration is one such mechanism, among many channels of the knowledge-based economy, which can contribute to the technological change²⁹ and sustainable growth.³⁰

Salient Features Of Protection And Utilisation Of Public Funded Intellectual Property Bill, 2008³¹

In a step towards encouraging and promoting creativity and commercialisation of the public funded intellectual property and allowing the recipient Universities to retain the title of the research, Indian Government brought the PUPFIP Bill to bring uniformity in the public funded research. Here are the salient features of the Bill:

- At the beginning, the "The Protection and Utilisation of Public Funded Intellectual Property Bill" (*hereinafter* PUPFIP Bill)



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states that it has been introduced for protection and utilisation of publicly funded research and the matters related to it.³² This implies that Bill doesn't seek to regulate the privately funded research.




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- The Bill strives to protect every type of Intellectual Property including Plant Varieties and Farmers' Rights.³³
- The grant recipient research institutions have to mandatorily divulge the details of intellectual property to the government within sixty days since its actual knowledge.³⁴
- The Bill also asked the institutions to inform the government within 90 days of its knowledge disclosure whether the institution wants to retain the title of the intellectual property or not. In the absence of its intimation within stipulated time, the title of the intellectual property will vest with the government.³⁵
- The Bill specifies that the government can refuse to grant the title to the institutions if the recipient is not placed or does not have principle business in India or is under the control of the foreign government.³⁶ Additionally, the government will also refuse the title in the public interest or exceptional circumstances or in the interests of security or if the matter is related to atomic energy.³⁷
- The Bill ordained that the recipient institutions cannot assign the title of the intellectual property without the prior approval of the government 60 days in advance.³⁸
- The Bill provides for the establishment of the intellectual property management committee, which has to be constituted with 180 days from the receipt of the grant, to perform the functions of identifying, assessing, documenting, performing market research, monitoring licensing and assignment, promoting the culture of innovation, managing revenues and creating an intellectual property management fund in relation to the public funded intellectual property.³⁹
- The Bill stipulates that the royalties arising from the public funded intellectual property shall be shared with the creator, which should not be less than 30% in any case.⁴⁰
- The Bill prescribes that the preference to grant exclusive rights to use the public funded intellectual rights will be given to domestic industries first.⁴¹
- The Bill clearly lays down that even though the title of the intellectual property will be retained by the research institutions, the government has reserved its right to use it in order to fulfil its international obligations.⁴²
- The Bill provides that the Dispute arising from the public funded intellectual property will be settled in accordance with the Arbitration and Conciliation Act, 1996.⁴³
- The Bill imposes penalties on creator and recipient for failing to discharge their respective assigned duties.⁴⁴

Brief Appraisal of Protection And Utilisation of Public Funded Intellectual Property Bill, 2009

The preamble of the PUPFIP Bill states the objective of Bill which is *to provide*

incentives to increase innovations, collaborations, licensing and commercialisation in India."⁴⁵ India has brought legislation on the U-I collaboration Bill in the year 2008, to provide a uniform legal framework for protection and utilisation of the government sponsored Intellectual Property.⁴⁶ The PUPFIP Bill closely resembles the US Bayh-Dole Act that suggests that Indian policy makers are certainly swayed by the popular perception that the Act was a catalyst in developing an innovation culture in the US.⁴⁷ In addition, it seems that policymakers also hoped that the Bill would escalate the translation of Universities' research into marketable products or processes and stimulate the much-required research and


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development in the country.⁴⁸ However, now the Bill stands withdrawn from Rajya Sabha as current government at the helm of affairs wants to reconsider the Bill afresh to see if any changes can be incorporated in the Bill.⁴⁹ The government of India has assured that the decision on the Public Funded Intellectual Property legislation will be taken soon.⁵⁰ Recently, India in its National IPR Policy has acknowledged the need for the commercialisation of IP or else Indian IPR will fade into extinction.⁵¹ The National IPR policy states that at present the scope of IPRs commercialisation is limited and there is no coordinating agency which can promote and encourage it.⁵²

After the recommendation of Parliamentary Standing Committee on the Bill, no drastic change seems to be forthcoming since it has accepted almost all the objections and public outcry issues of the various stakeholders.⁵³ Nevertheless, still, it is pertinent to examine the withdrawn Bill for the theoretical purpose, in order to analyse the functions, institutional mechanisms and safeguards provided in the legislation to regulate the U-I collaborations.

India tried to develop the culture of entrepreneurship by creating a uniform and coherent standards for publicly funded research and providing incentives in the form of U-I collaboration legislation. At the abstract level, the Bill attempts to define the rights and obligations of both the government and Universities in reference to ownership and also the management of the intellectual assets. Moreover, the Bill also included the identification, disclosure and protection of intellectual results. Unlike US Bayh-Dole Act, Indian Bill provides two remarkable features, the minimum compensation for inventors and the government intervention in exceptional situations.⁵⁴

The PUPFIP Bill, 2008 (Indian Bayh-Dole Bill) was closely modelled on the US Bayh-Dole Act.⁵⁵ This Indian Bill allowed the Universities rather than the government to retain the ownership of publicly funded research and freedom of granting a license of its invention to the industries.⁵⁶ The

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PUPFIP Bill also allowed the inventors to partake in the royalties received from the research exploitation.⁵⁷ However, the whole affair of its preparation and introduction of India's Bayh-Dole Bill i.e. PUPFIR Bill was shrouded in secrecy.⁵⁸ The Bill was prepared without thorough study and consultation with the stakeholders, especially when it has huge implications for the public interests.⁵⁹ Hopefully, when in near future the Bill to regulate the public funded research is again reintroduced in the parliament, it should encompass and retain the public interest's safeguards such as affordability, issuance of compulsory licenses at the time of public necessity, preferences to small scale and

local industries while keeping into account the social, cultural and economic needs and conditions of the country.⁶⁰ The same requirements also hold true for other South Asian nations who are planning to have Bayh-Dole type of legislation or policy in their respective countries. However, the task to elaborate the brief appraisal of India's attempt to bring U-I collaboration policy still remains unfulfilled without the reproduction of India's Parliamentary Standing Committee Report which thoroughly examines the Bill while integrating the suggestions and recommendation of various stakeholders.

Recommendation Of Parliament Standing Committee On Science, Technology, Environment And Forests On Protection And Utilisation Of Public Funded Intellectual Property Bill, 2008⁶¹

The public outcry over the manner in which the Bill was prepared i.e. without consulting various stakeholders and its implications on the research institutions and also on public interests, forced the Parliament to send it to the Parliamentary Standing Committee for its threadbare examination.

Brief Introduction

"Globalisation presents a conflicting world order. On one side, it calls upon for economic interdependence, free trade and transfer of technology, and on the other side, in the stark contrast, it allows monopoly and exclusive rights over the creation of human mind. The Standing Committee recognised that Universities and research institutions are the backbones of the socio-economic growth of a country. Therefore, to get a competitive advantage, it becomes relevant to manage IPRs and utilise knowledge



infrastructure for the creation of innovation. The need of the hour is to create institutional framework and frame guidelines to make the country capable of undertaking scientific innovation, in which India comes at the bottom."

It was argued before the Standing Committee that technology transfers between the Universities and the Industries is taking place but in an inefficient and obscure manner. Thus, this Bill is an attempt to bring uniformity and to institutionalise the process of understanding and mapping the public funded intellectual property for the smooth and efficient flow of knowledge to the industries. The Committee observed that to clear the hazy picture of the state of affairs, there is a requirement of a uniform and holistic approach across all the academic institutions.

In the globally competition and intense environment, it is desirable that the innovation system should be enthused with professionalism. Mere writing papers may give someone solace and satisfaction but the changed global scenario demands that the society and its people should get affordable opportunities and solutions. For inclusive development, the gradual shift from the traditional role of science, to perceive it as an instrument of socio-economic transformation has to be consciously pondered by the country.

Recommendations of Parliament's Standing Committee

- In India, scientific and academic research is spread among various departments and ministries. So, to bring uniformity, consistent institutional framework and for the commonly accepted guidelines, an enabling legislation is a much better option than the executive orders to regulate public funded research.
- The requirement of all intellectual property needing protection and that too

intimated to the government within the strict time frame of sixty days will lead to loads of paperwork in the bureaucracy, so the Bill needs to be improved from the perspective of facilitation.

- The word 'commercialisation' which appeared in the objective goes against the tenets of the tradition of imparting knowledge, which in all likelihood promotes crass competition in the institution's creative research.
- The incorporations of all types of intellectual property in the Bill will unnecessarily stretch the scope of the Bill far beyond the inventions.
- The public good should take precedence over mere commercial benefits while granting exclusive licenses and non-exclusive



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licenses. It should be decided on a case to case basis, so as to serve the public interests in the best possible manner.

- To prevent the abuse and misuse of exclusive licenses, periodic monitoring should be provided in the Bill.
- In the cases of non-compliance by the recipient or when the invention is not available at affordable and reasonable prices, Government should revoke the right and acquire the invention for societal benefits.
- The harsh penalties for failure to discharge the duties may deter scientists and prove to be counter-productive; therefore, the penal provision needs to be moderated without compromising accountability.
- To ensure greater transparency, it should be made obligatory upon the grant recipient to publish the details of the acquired, assigned and licensed research on the websites.

PAKISTAN

In South Asia, Pakistan is another country where the debate on the U-I collaborations is going on. In Pakistan also, U-I collaborations are perceived as promoting and facilitating economic progress, which helps in encouraging S&T diffusion.⁶² Time and again Pakistan's stakeholders, especially industry people, are stressing that in the era of globalisation, it is important to make local industries competitive in the international market so as to maintain the strength of the economy.⁶³ But the competitiveness cannot be achieved without innovation as both are intertwined.⁶⁴ The innovation system attracts huge demands for the new utility products and services which in turn develops an enabling atmosphere for the increased market activities.⁶⁵ Therefore, U-I collaboration is vital for Pakistan's innovative system⁶⁶



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and to strengthen its industrial and economic growth process, the obstacles have to be identified and eliminated.⁶⁷

The Industry representative of Pakistan claimed that the creation of innovation system through U-I linkages is critical to saving the economy from the perils of global challenges.⁶⁸ However, it can only be done by transforming Pakistan's labor-intensive economy to a knowledge-intensive economy which is not possible without the U-I collaborations.⁶⁹ Many scholars believed that the troika of Government, Universities

and Industries which was effectively utilised by the developed countries and developing countries, like Brazil, to their advantage can also bring greater socio-economic development to Pakistan.⁷⁰ Thus, the need for having effective U-I collaborations in Pakistan is also largely driven by the experiences of developed countries which has facilitated in obtaining tremendous visible growth and also with the belief that the joint collaboration can spur innovation in Pakistan's local industries.⁷¹

To shape the U-I linkages in Pakistan, Pakistan's Higher Education Commission initiated the "University-Industry Interaction (UII)" project in 2005 with the objective to strengthen the University Industries relationships and to provide a launching pad for the collaborative research.⁷² Pakistan has also tried to boost the Universities-Industries linkages by establishing offices of research, innovation and commercialisation (ORIC) in its universities.⁷³ However, even after that, the U-I collaborations situations in Pakistan are not at the desired level and have failed to yield impressive results.⁷⁴ Pakistan's National Innovation Policy also stated that "Innovation spurs competitiveness, economic growth and prosperity" and created Innovation Strategy Working Group for the facilitation of U-I partnerships,⁷⁵ but apparently the success of these efforts are not much discernable. Much of Pakistan's efforts on U-I linkages went into vain because of the lack of strategic governmental policies to develop effective U-I collaboration. An



appropriate and comprehensive framework to regulate U-I collaboration can function effectively by addressing the concerns of Pakistan's Universities and Industries to work in a tandem.⁷⁶

SRI LANKA

Sri Lanka desires to transform their country into a knowledge hub.⁷⁷ It is an irony that Sri Lanka was the first country to adopt free trade among South Asian countries⁷⁸ and included innovation in its policy agenda but still lags behind its neighbours in having an effective U-I collaboration.⁷⁹ It is mainly due to the absence of any systematic or organised U-I collaboration policy to stimulate the economic development through research & innovation.⁸⁰ The outcome of Sri Lanka's higher education is generally focused on the traditional methods of academic publications. There is a lack of proper mechanism and procedure among other important factors, which is hindering the U-I interactions in Sri Lanka.⁸¹ Nevertheless, Sri Lanka has taken a few commendable initiatives like "cell", a research and development unit to promote entrepreneurship through U-I partnerships. But to transform Sri Lanka into a knowledge economy, it requires an integrated approach to collaborating with all the pillars of the innovation i.e. government, universities and industries.⁸²

The progress of U-I collaboration policies in the rest of South Asian countries such as Bangladesh, Nepal, Bhutan, Afghanistan and Maldives are either at a nascent stage of its development or yet to kick-start its deliberations on the need and benefits of this policy in their countries.

Globalisation has created a conducive atmosphere for the South Asian countries to achieve technological progress. Therefore, countries should be



on the forefront to commence the formulation of effective policy to regulate U-I collaborations based on the coordinated actions of government, Universities and industries to accelerate the pace of national growth and development through utilisation of S&T.⁸³ However, in the process of policy formulation, South Asian countries should provide effective safeguards to address the public interest implications before adopting Bayh-Dole type of legislation or similar kind of policy in their respective countries. The better option is that South Asian countries should make efforts to develop *sui-generis* U-I collaboration policy or framework to orient their resource based economies towards knowledge-based economies.⁸⁴

CONCLUSION

Science and Technology have brought changes in every field of human endeavour. Thus, to compete on the international playing field, South Asian countries should hasten the progress of institutionalising intellectual property creations and transfer the knowledge from Universities to Industries. To transform South Asian countries from technological dependency to self-sufficiency in an array of critical areas from pharmaceuticals to agriculture, an efficient and effective U-I partnership framework is highly desirable. U-I linkages can facilitate this creation and regulate the flow of knowledge in an efficient fashion, benefit the society at large. But the U-I collaborations scheme and policy requires a modicum of methodical and judicious deliberations and consensus among several stakeholders, in order to minimise the adverse impacts of U-I collaboration policy. However, it will be wrong to assume that uniform and comprehensive U-I collaboration policy is the only scheme to encourage and stimulate innovation. Various other methods and schemes are available with a need to find more to foster innovation and creativity without impeding the progress of science and technology.

The primary function of U-I collaboration is to further the public interest, therefore, it needs to be ensured that U-I collaboration scheme should not become subservient to the industries. In the absence of sufficient safeguards to prevent the industries from filling their coffers, the U-I collaboration policy will fail to achieve its noble objective to provide access to public, the cost-effective socially beneficial products and processes while enhancing future research and development. South Asian countries do not have enough resources to meet the increasing demand of the society and industries alike, therefore, U-I collaboration is a way out to meet and address these necessities and future exigencies.

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³² *Preamble*, The Protection and Utilisation of Public Funded Intellectual Property Bill (2008).

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³⁴ PUPFIP Bill (2008), cl 4.

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³⁶ PUPFIP Bill (2008), cl 5(1)(a) and 5(1)(b).

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