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Nishantha Sampath Punchi Hewage

Promoting a Second-Tier Protection Regime for Innovation of Small and Medium-Sized Enterprises in South Asia

The Case of Sri Lanka

Nomos

MIPLC Munich Intellectual Property Law Center
Augsburg München Washington DC

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Abbreviations

ACIP	Advisory Council of Intellectual Property
AIPPI	International Association for the Protection of Intellectual Property
ARIPO	African Regional Industrial Property Organization
ASIAN	Association of Southeast Asian Nations
CBD	Convention on Biodiversity
CGPDTM	Controller General of Patents, Designs and Trademarks
DPMA	Deutsches Patent- und Markenamt (German Patent and Trademark Office)
EPC	European Patent Convention
EPO	European Patent Office
EU	European Union
FDI	Foreign Direct Investment
FICCI	Federation of India Chambers of Commerce and Industry
FTC	Foreign Technology Collaboration
GATT	General Agreement on Trade and Tariffs
GDP	Gross Domestic Production
GERD	Gross Expenditure on Research and Development
GNE	Gross National Expenditures
ICT	Information and Communication Technologies
IIC	International Review of Industrial Property & Copyright Law
IIP	Institute of Intellectual Property (Japan)
IP	Intellectual Property
IPAC	Industrial Property Advisory Council
IPC	International Patent Classification
IPO	The Intellectual Property Organization of Pakistan
IPR	Intellectual Property Rights
IPRIA	Intellectual Property Research Institute of Australia
ISA	International Search Authorities
ISIC	International Standard Industrial Classification
ISR	International Search Report

JIPA	Japan Intellectual Property Association
JPO	Japan Patent Office
KIPI	Kenya Intellectual Property Institute
KIPO	Korean Intellectual Property Office
MNCs	Multinational Corporations
MyIPO	Intellectual Property Cooperation of Malaysia
NGO	Non Governmental Organization
NIPO	National Intellectual Property Office of Sri Lanka
NLR	New Law Reports (Sri Lanka)
NSF	National Science Foundation
OAPI	African Intellectual Property Organisation
OECD	Organisation for Economic Co-operation and Development
PCT	Patent Cooperation Treaty
SIPO	State Intellectual Property Office of People's Republic of China
SMEs	Small and Medium Sized Enterprises
SMMEs	Small, Medium and Micro Enterprises
Sri LR	Sri Lanka Law Reports
STP	Second-Tier Protection
TK	Traditional Knowledge
TKDL	Traditional Knowledge Digital Library
TRIPS	Trade Related Aspects of Intellectual Property Rights
UNIDO	United Nations Industrial Development Organization
UM	Utility Models
UI	Utility Innovations
US	United Sates
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

1. Introduction and Background

1.1. Research Statement

> *'Innovators are those who see what everyone sees, but think of what no one else thinks. Innovators refuse status quo, they convert inspirations into solutions and ideas into products'.*
> *RA Mashelkar*[1]

The second decade of the twenty first century is witnessing the rise of global innovation competition. Undoubtedly, this century will be the century of knowledge and indeed the century of mind.[2] In a knowledge-based economy,[3] intellectual property (hereinafter 'IP') is considered as a tool for technological and economic development. The protection of IP is one of the building blocks of national innovation policies in many countries.[4] Innovation is not necessarily lacking in developing countries; however, harnessing innovation to generate wealth is a huge challenge for many of them[5] and this task is particularly daunting for most parts of developing economies in the South Asian region where a large part of innovation tends to be based on improvements or derived from traditional knowledge

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1 RA Mashelkar, 'A Journey from Mind to Market Place' The Financial Express (India, 9 April 2012), available at: <http://www.financialexpress.com/news/a-journey-from-mind-to-marketplace/934242/> (accessed 30 April 2012).

2 RA Mashelkar, 'Intellectual Property Rights and The Third World' (2001) 81/8 Current Science 955, 955, available at: <http://www.iisc.ernet.in/currsci/oct252001/955.pdf> (accessed 20 April 2012).

3 "The phrase 'knowledge-based economy' describes the new economic environment in which the generation and management of knowledge play a predominant part in wealth creation, as compared with the traditional factors of production, namely land, labor and capital". WIPO, 'Intellectual Property (IP) Rights and Innovation in Small and Medium-sized Enterprises' (2004) WIPO Working Paper August 10/2004, 2 available at: <http://www.wipo.int/export/sites/www/sme/en/documents/pdf/iprs_innovation.pdf> (accessed 10 June 2011).

4 R Landry and others, 'Managing the Protection of Inventions and Technological Innovations in Canadian Manufacturing SMEs' (2009) 3/1 International Journal of Intellectual Property Management 57, 58.

5 See generally, U Suthersanen, G Dutfield and KB Chow (eds), *Innovation Without Patents: Harnessing the Creative Spirit in a Diverse World* (Edward Elgar 2007) 5-6.

and often subpatentable. As scholars have pointed out, a vast majority of scientific and cultural creations, if not all, are built on pre-existing creations and discoveries and do not represent giant leaps beyond what we already know.[6] Such innovations can be incremental in nature[7] and they are based on multiple small steps or increments.[8] Not surprisingly, they may not be able to satisfy the 'flash of genius test' in order to qualify for conventional patent protection. Thus, there is a great need to harness innovative potential, especially in developing countries such as Sri Lanka.

Inventions involving small inventive steps and short commercial lifecycles, gain growing importance each day. These innovations are routine and primarily devoted to product improvements or enhanced user-friendliness or searches for new use for those products.[9] More importantly, a large part of such innovations emanate from small and medium-sized enterprises (hereinafter 'SMEs'), which have been recognized as the principal engine of economic growth and technological progress in many countries.[10] Such incremental innovations are usually not protected, or not adequately protected because of the minor nature of the inventive activity involved in their creation. In other words, such innovations are the most vulnerable to unfair copying and misappropriation. In the absence of protection, incentives for investments for SMEs may dissipate. Obviously, there is a need to provide more incentive for such innovations with exclusive rights to commercialize, even though one can conversely argue that what does not qualify for patent protection should not be protected at all.

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6 Ibid 7.

7 U Suthersanen, 'Incremental Inventions in Europe: A Legal and Economic Appraisal of Second Tier Patents' (2001) July, Journal of Business Law 319, 320.

8 U Suthersanen, G Dutfield and KB Chow (eds), Innovation Without Patents: Harnessing the Creative Spirit in a Diverse World (Edward Elgar 2007) 7.

9 Ibid.

10 The Government of India, *Annual Report of Ministry of Micro, Small and Medium Enterprises 2011-12* (New Delhi) 161 available at: <www.msme.gov.in> (accessed 31 July 2012). M Al-Mahrouq, 'Success Factors of Small and Medium-Sized Enterprises (SMEs): The Case of Jordan' (2010) 10/1 Anadolu University Journal of Social Sciences 1. See also, T Tambunan, 'Micro, Small and Medium Enterprises and Economic Growth (2006) University of Trisakti – Center for Industry and SME Studies Faculty of Economics Working Paper Series No. 14/2006 at 4-7, available at: <http://103.28.161.15/pusatstudi_industri/PUSAT%20STUDY%20TULUS%20TAMBUNAN/Pusat%20Studi/Working%20Paper/WP14.pdf> (accessed 12 January 2012).

In the eyes of conventional patent law, such creeping and incremental innovations are left unprotected being unable to meet stricter novelty and inventive step requirements though they are no less worthy and useful to society.[11] It is, therefore, possible to argue that there is a lack of incentives resulting from the said protection gap for this type of innovations in the existing IP paradigms.[12] While no protection may mean more access in developing countries, but no protection would also lead to dissipation of marketable value in innovation. As a corollary, this may reduce the incentives for investment for local innovation in improvement, in contrast to foreign ownership of major patentable inventions. A specifically designed second-tier protection (hereinafter 'STP') regime such as of a utility model (hereinafter 'UM') or petty patent system may be explored as one possible solution to this conundrum. Most remarkably, an STP regime can coexist with other IP rights which can either be used as an important supplement or even a complement to an existing patent system. By its very nature, an STP system has been a national response to different national circumstances.[13] According to WIPO's World Intellectual Property Indicators 2011, there are currently around sixty countries[14] as well as three regional organizations[15] that provide for such a system of IP protection in one way or another.

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11 See similar line of argumentation in Department of Industrial Policy and Promotion, Discussion Paper on Utility Models (23 May 2011) para 7, available at: <http://dipp.gov.in/English/Discuss_paper/Utility_Models_13May2011.pdf> (accessed 30 December 2011).

12 U Suthersanen, G Dutfield and KB Chow (eds), *Innovation Without Patents: Harnessing the Creative Spirit in a Diverse World* (Edward Elgar 2007) 5. See also, J Lahore, 'Designs and petty Patents: A Broader Reform Issue' (1996) 7 Australian Intellectual Property Journal 7, 8.

13 Bird and Bird, 'Why have Utility Models?, Legal Commentary: EU Green Paper' (1995) July/August, Managing Intellectual Property 3, 3-4.

14 WIPO, *World Intellectual Property Indicators*, 2011 edition 34, available at: <http://www.wipo.int/ipstats/en/wipi/index.html> (accessed 15 March 2012).

15 The three regional organisations which provide for a system of utility model protection are the Andean Community (comprising Bolivia, Colombia, Ecuador and Peru, OAPI (the African Intellectual Property Organisation) and ARIPO (the African Regional Industrial Property Organisation).

UMs are a form of patent-like protection given to minor and incremental innovations against unfair copying and imitation.[16] There is a plethora of terms used to describe "UMs".[17] The umbrella term "utility model" is used in many parts of the world, even though there is no global consensus on the term. A UM regime has also been given various names in different countries; such as petty patents, utility certificates, simple patents, short term patents, second-class patents, secondary patents, utility solutions, utility innovations, minor inventions, and innovation patents.[18] Nevertheless, policy makers, legislatures and lawyers anchor their definition to a secondary form of protection offering a cheaper, simpler and an easier, no-examination protection regime for minor and incremental innovations, usually characterized by less stringent patentability requirements (such as the degree of novelty and inventiveness required) which is often less than that needed for patent protection.[19]

In stark contrast to the South Asian legal landscape, many East Asian and South East Asian countries such as Japan, China, South Korea, Philippine, Malaysia and Thailand have adopted an STP regime in order to reward, incentivise and protect subpatentable innovations that have achieved remarkable progress in their innovative activities, particularly for local innovations. The evidence from recent scholarly investigations suggests that there is a reasonable nexus between such an STP system and the technological progress of a country. It means that there might have been a significant and positive impact on the country's innovation climate.[20] Per-

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16 U Suthersanen, 'Utility Models and Innovation in Developing Countries' (2006) ICTSD Issue Paper No.13, vii, available at: <http://unctad.org/en/docs/iteipc20066_en.pdf> (accessed 15 March 2012).

17 See generally, U Suthersanen, G Dutfield and KB Chow (eds), *Innovation Without Patents: Harnessing the Creative Spirit in a Diverse World* (Edward Elgar 2007) 5.

18 See LH Gee, 'Second Tier Protection for Minor Inventions in Asia: An Appraisal of the Similarities and Differences' (3rd ASLI Conference Shanghai (China), 25-26 May 2006) 1-2.

19 U Suthersanen, 'Utility Models and Innovation in Developing Countries' (2006) ICTSD Issue Paper No.13, vii, available at: <http://unctad.org/en/docs/iteipc20066_en.pdf> (accessed 15 March 2012).

20 YK Kim and others, 'Appropriate Intellectual Property Protection and Economic Growth in Countries at Different levels of Development' (2012) 1/4 Research Policy 358, available at: <http://www.sciencedirect.com/science/article/pii/S0048733311001715> (accessed 2 June 2012). See also, N Kumar, 'Technology and Economic development: Experiences of Asian Countries' (2002) Commission of Intel-

haps even more importantly, some commentators in a most recent study who focused on East Asian countries have strongly argued that different types of IP rights may be more appropriate for countries at different stages of economic development, rather than different levels of strength of IP rights.[21]

In view of the above, this research investigates whether from a legal policy perspective it is desirable for Sri Lanka to foresee a specifically designed STP regime such as a UM or a petty patent system, in addition to the existing patent regime. It also examines whether such a system may be able to offer a solution to the problem of lack of incentives for incremental innovation and to the perceived protection gap without introducing undue costs. Thus, the underlying thesis of this study is that an STP regime, which is based on the legislative examples of other jurisdictions, would provide an efficient and locally accessible incentive system for innovation of SMEs in developing economies such as in Sri Lanka if it is properly tailored to suit the innovation landscape of the country with a mechanism to address the potential abuses.

1.1.1. Objectives

The primary aim of this research is to analyse, taking into account the specific characteristics of innovation landscape of the country, the adequacy of the existing IP paradigm to accommodate minor and incremental innovations and to establish whether Sri Lanka needs an STP regime to promote such innovations in the country. The study also investigates whether an STP system would be more suitable for SMEs as an important supplement to the existing IPRs. This research also aims to find out whether and

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lectual Property Rights- Study Paper 1b, 4-5, available at: <http://www.twnside.org.sg/title2/FTAs/Intellectual_Property/IP_and_Development/IPR_Technologyand EconomicDevelopment-Nagesh_Kumar.pdf> (accessed 10 January 2011). See generally, KE Maskus and C McDaniel, 'Impacts of the Japanese Patent System on Productivity Growth' (1999) 11/4 Japan and the World Economy 557, available at: <http://www.sciencedirect.com/science/article/pii/S0922142599000122> (accessed 10 January 2011).

21 YK Kim and others, 'Appropriate Intellectual Property Protection and Economic Growth in Countries at Different levels of Development' (2012) 1/4 Research Policy 358, available at: <http://www.sciencedirect.com/science/article/pii/S0048733311001715> (accessed 2 June 2012).

to what extent such a protection helps unleash the innovative potentials of grassroots innovators, especially the traditional knowledge (hereinafter 'TK') based or inspired innovations. Furthermore, it examines and recommends whether such regimes are warranted for other selected South Asian countries in order to further enhance economic and technological progress.

1.1.2. Research Problem

Even though the emerging markets in the East and the South East Asian region appear to have been continuously and effectively benefited from an STP designed to protect minor and incremental innovations,[22] Sri Lanka and other leading South Asian countries have been a notable exception to such regimes, arguably, in spite of the growing importance of creeping and incremental innovations in the technological progress of a developing country. It is of course difficult, if not impossible, to imagine the reason why there is no protection for innovations falling below the threshold required by patent law in view of the fact that a large part of innovations in the region tends to be based on improvements or derived from traditional knowledge and are often subpatentable. It is often claimed that minor and incremental innovations in developing countries are mostly created by individual innovators and SMEs.

1.1.3. Hypothesis and Research Questions

There is a general perception that, in the innovation landscape of South Asia, there is a protection gap in the existing patent laws and IP policies.[23] Apparently, the South Asian region has time and again failed to address

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22 Ibid.

23 See generally, AK Gupta, 'Rewarding Traditional Knowledge and Contemporary Grassroots Creativity: The Role of Intellectual Property Protection' (Centre of International Development, Harvard University 2000), available at: <http://www.hks.harvard.edu/sustsci/ists/TWAS_0202/gupta_0500.pdf> (accessed 15 May 2012). See also, N Kumar, 'Technology and Economic development: Experiences of Asian Countries' (2002) Commission of Intellectual Property Rights- Study Paper 1b, 4-5, available at: <http://www.twnside.org.sg/title2/FTAs/Intellectual_Property/IP_and_Development/IPR_TechnologyandEconomicDevelopment-Nagesh_Kumar.pdf> (accessed 10 January 2011).

the issue of improvement innovations and falls short in providing them with an adequate protection mechanism.[24] Many innovations in developing countries such as in Sri Lanka, Pakistan, and of course with some exception in India, do not reach the high level of threshold that is required to secure protection under patent law. The high requirements for patent protection in these countries correspond to the international standards as required by Multinational Agreements. Thus, existing patent and other IP regimes do not adequately protect and incentivise incremental and minor innovations in Sri Lanka and in other South Asian countries and an introduction of an STP regime designed to protect such innovations would have a positive impact on innovations. Moreover, individual innovators and SMEs are more likely to benefit from such a regime.

The following research questions guide the study. First and foremost: what is the applicability of the existing patent system as an appropriate mechanism for the protection of minor and incremental innovations? Should such innovations be left unprotected? Secondly, is there any better way than patent to encourage such innovations? Can the design law successfully fill in the protection gap created by patent law? Would the existing Unfair Competition Law regime as a fallback protection provide an adequate protection for such innovations? Thirdly, is there a need to seek an alternative means of protection found in STP regimes or utility models and what are the lessons that can be learnt from other developed and developing countries? Then, is there a need for Sri Lanka to introduce an STP regime which will provide for minor and incremental innovations which fail to reach the requisite level of inventiveness under the existing patent system?[25] If there is such a need, which has not previously been fulfilled by the use of other forms of protection, can this newly created right be able to fill the protection gap? Is it possible to provide a distinctive rationale for justifying the adoption of such a second-tier protection regime?[26] What would be the implications of adopting such a regime? Would it be more appropriate in application for minor and incremental innovations which are mostly created by small and medium sized firms?

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24 MD Nair, 'A Case for Grant of 'Petty Patents' *The Hindu* (New Delhi, 10 May 2001), available at: <http://hindu.com/2001/05/10/stories/0610000h.htm> (accessed 15 January 2010).

25 M Llewelyn, Utility Models/Second Tier Protection: A Report on the Proposals of the European Commission (1996) The Intellectual Property Institute 4.

26 Ibid.

Can large enterprises also benefit from this system? Would such a regime be more suited than any other type of IP for protecting TK-inspired innovations? Next, have other countries in the South Asian region felt the need for this form of protection and can they find valid reasons for supporting and adopting such a right? Why is it necessary to have such a drastic departure from the traditional patent threshold for these countries? Should such policy changes be applicable across the South Asian region or should it be addressed at a national level rather than regional level? Finally, what policy options can be recommended for consideration by policymakers in the South Asian countries?

1.1.4. Research Methodology

This research takes the form of a Hypothesis-Testing (Experimentation) Research. It was carried out primarily as a library-based research. In so doing, primary and secondary sources are used extensively. The primary sources consist of relevant Legislative Instruments and Case Law, while secondary sources include various documents such as Text Books, Research Articles, Journals and Annual Reports, and Statistical Data relating to the topic. Field research methodology was also used to ascertain evidence, in particular, from Sri Lanka. Visits and personal interviews of various organizations such as the Judiciary, IP offices, Law firms/IP attorneys, Companies/Industries and other business entities were conducted. Moreover, legal research and analysis concerning international legal framework and comparative legal analysis of STP regimes in selected jurisdictions have been carried out with support of the empirical research and analysis. Last but not least, interpretation methodology was also employed in order to enrich the arguments in the thesis.

1.1.5. How does this Research contribute to the Legal Science?

Limited academic attention has been paid to examine the issue of subpatentable innovations, which remains by and large an unexplored territory of IP law landscape in the South Asian region. Not surprisingly, there is an acute dearth of relevant and helpful scholarly investigations on the protection of incremental and minor innovations which is almost non-existent in Sri Lanka. This research aims at an in-depth understanding of the

usefulness and appropriateness of an STP regime in relation to Sri Lanka. To that extent, this doctoral thesis attempts to fill this gap by contributing towards designing a new legal framework for Sri Lanka which may be used as a model across South Asian countries. It will therefore contribute to advance the legal science in the South Asian region**.**

1.1.6. Limitations

The obvious challenge we face in this research is that there is no experience of a domestic second-tier protection system either in Sri Lanka or any other country in the region. Due to time and space constraints, this study was mainly confined to the Sri Lankan legal landscape. Nevertheless, it has an insight into the recent initiatives undertaken by two leading jurisdictions in the South Asian region, namely, India and Pakistan, to explore the possibility of adopting a UM regime. Nevertheless, perspectives of the other countries in the region were taken into consideration when common policy options are discussed depending on available resources, time and space for this study. Two jurisdictions each from the developed and emerging market countries, along with another developing country are selected for the purposes of comparative analysis.

1.2. Preliminary Thoughts and Definitions

1.2.1. Invention and Innovation

Ideas change the world, innovations shape our lives and improve our quality of life.[27] Innovation is not a new phenomenon. Arguably, it is as old as mankind itself.[28] There seems to be something inherently 'human' about the tendency to think about new and better ways of doing things and try them out in practice. An important distinction is normally made between invention and innovation.[29] Although the term 'innovation' is broadly

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27 M Elmslie and S Portman, *Intellectual Property: The Lifeblood of Your Company* (Chandos Publishing Oxford 2006) 1.

28 J Fagerberg, DC Mowery and RR Nelson (eds), *The Oxford Handbook on Innovation* (Oxford University Press 2005) 1-4.

29 Ibid.

used, it is still without consistent definition across relevant disciplines. From a general perspective, innovation refers to the creation of better or more effective products, processes or technologies that are accepted by markets and societies.[30] As interpreted from a linguistic point of view, the term 'innovation' stems from the Latin word *innovare*, meaning to renew, alter, to make new or to introduce as new or change.[31] On the other hand, the term invention stems from Latin *invenire* which emphasizes 'original' rather than renewal or alteration.[32] Even though both terms involve an element of 'newness', there is a distinction between the originality of invention and the renewal of innovation.[33] Whereas the word 'innovation' is not a legal term, invention is legally defined. Therefore, the word invention is more associated with patent law terminology.

The economic literature on innovation has greatly been influenced by the theories of Joseph Schumpeter.[34] He argued that economic development is driven by innovation through a dynamic process in which new technologies replace the old; a process he labeled 'creative destruction'. In Schumpeter's view, 'radical' innovations create major disruptive changes, whereas 'incremental' innovations continuously advance the process of change. Schumpeter proposed a list of five types of innovations; (i) introduction of new products; (ii) introduction of new methods of production; (iii) opening of new markets; (iv) development of new sources of supply for raw materials or other inputs; (v) creation of new market structures in an industry.[35] Furthermore, Michael Porter has also attempted to define innovation from an economic perspective. According to him innovation is defined as "a new way of doing things (termed invention by some authors) that is commercialized".[36] Although there is no uniquely accepted definition, innovation is often defined as the conversion of knowledge into new

30 P Frankelius, 'Questioning Two Myths in Innovation Literature' (2009) 20/1 The Journal of High Technology Management Research, 40, 41.

31 Y Lee and M Langley, 'Invention and Innovation' (2004) August, The CIPA Journal 464.

32 Ibid.

33 Ibid.

34 OECD/Eurostat, *OSLO MANUAL: Guidelines for Using and Interpreting Innovation Data* (3rd edn, The Measurement of Scientific and Technological Activities, OECD Publishing 2005) 29.

35 J Schumpeter, *The Theory of Economic Development* (Harvard University Press 1934) 66.

36 ME Porter, *The Competitive Advantage of Nations* (Free Press 1990) 780.

commercialized technologies, products and processes, and how these are brought to the market.[37] According to OECD's Oslo Manual (2005), there are four types of innovations: product innovation, process innovation, organizational innovation and marketing innovation. For this analysis, product and process innovations warrant discussion. A product innovation is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses.[38] This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics. For example, replacing inputs with materials with improved characteristics (environmentally friendly plastics) or products with significantly reduced energy consumption (energy efficient stoves) and food products with new functional characteristics (margarine that reduces blood cholesterol levels).[39] A process innovation, on the other hand, is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques and equipment, installation of new or improved manufacturing technology, such as automation equipment.[40]

Another aspect of innovation that merits discussion is the difference between radical and incremental innovations. Of course, radical innovations are technological breakthroughs that push the boundaries of global technology frontiers, for instance, the invention of the electric light. This kind of innovation can be considered an 'out-of-the-blue' solution to the problems existing in the field of technology which can create a far-reaching impact on our lives. Incremental innovations, on the other hand, take place in industries which continuously innovate to create products, which displace their own products with the fear that otherwise their competitors will do it for them.[41] In comparison, an incremental innovation is more concerned with improvements on an existing product or service, whereas a

37 WIPO, World Intellectual Property Report: The Changing Face of Innovation (2011) WIPO 23.

38 OECD/Eurostat, *OSLO MANUAL: Guidelines for Using and Interpreting Innovation Data* (3rd edn, The Measurement of Scientific and Technological Activities, OECD Publishing 2005) 151.

39 Ibid.

40 Ibid.

41 RA Mashelkar, 'An Eminent Scientist's new Road-map for India' (GoodNewsIndia, November 2000), available at: <http://www.goodnewsindia.com/Pages/content/inspirational/mashelkar.html> (accessed 30 January 2011).

radical innovation is an entirely new product, service or process. Besides, the development and life of an incremental innovation is much more 'predictable' than that of a radical innovation, and it will potentially generate less return and less benefits.[42]

At a very basic level, innovation is all about the practical application of creative ideas to the point it generates value to an organisation.[43] Innovation is key to the production as well as the processing of knowledge. A nation's ability to convert knowledge into wealth and social good through the process of innovation will determine its future.[44] Of course, the ultimate cause of all innovation is human creativity. But innovation does not occur in a vacuum; it requires a workable structure of incentives and institutions.[45] Furthermore, normally when we consider innovation, we refer to only formal systems of innovation; namely that is done in universities, industrial R&D laboratories, etc. Often not recognised is the technology innovation that takes place in an informal system of innovation, be it by artisans, farmers, tribes or other grassroots innovators. Such innovations are also taken into consideration as 'innovations' for purposes of this research.[46]

For the sake of clarity, it is worth drawing a clear distinction between the terms 'invention' and 'innovation'. According to the general understanding, "'invention' is a specific patent law concept and 'innovation' is a broader economic term, encompassing incremental improvements".[47] Obviously, the 'one-size-fits-all' conventional patent system leaves an un-

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42 UN-ESCAP, Managing Innovation in a Knowledge Economy: A Guidebook for SMEs in Asia and the Pacific (ESCAP 2010) 3.

43 A Dharmasiri, 'The Triple 'I' for Transformation', *Daily FT* (Colombo 20 June 2011), available at: <http://www.ft.lk/2011/06/20/the-triple-%E2%80%98i%E2%80%99s-for-transformation/> (accessed 2 August 2011).

44 RA Mashelkar, 'Intellectual Property Rights and the Third World' (2001) October – 18/8 Current Science 955, 955 available at: <http://www.sristi.org/material/1.2intellectual%20property%20and%20the%20third%20world.pdf> (accessed 30 January 2011).

45 Business and Industry Advisory Committee (BIAC) to OECD, Discussion Paper on 'Creativity, Innovation and Economic Growth in the 21st Century: An Affirmative Case for Intellectual property Rights (BIAC Paris, December 2003) 3.

46 RA Mashelkar, 'Intellectual Property Rights and the Third World' (2001) 18/8 Current Science 955, 956.

47 KF Jorda, Utility Models: The Penacea for our Broken Patent System – Newsletter (Germeshausen Center 2007) 4, available at: <http://www.ipo.org/wp-content/uploads/2013/03/utilitymodels.pdf> (accessed 30 March 2013).

protected class of inventions of a lesser scope, which could not fulfil higher patentability criteria. Such inventions can well be described as 'innovations'. For purposes of this study, I shall therefore use the word 'innovation' to mean minor and incremental technical advances which represent improvements over prior art but with a lower level of inventiveness.

1.2.2. Second-Tier Protection

Even though second-tier protection has been considered a backwater of intellectual property, worldwide interest in such regimes appears to be substantial.[48] More than sixty countries currently offer second-tier patent protection, including key patenting jurisdictions such as Germany, Japan and China.[49] Generally, a second-tier protection (STP) system compliments a patent system to offer a more accessible form of protection for a shorter term, usually characterized by less stringent patentability requirements.[50] Given its origin in the late nineteenth century and the time-tested continuous existence, one can argue that the STP is neither new nor radical.[51] Such a system combines traditional IP protection with a 'lower tier' of previously largely unprotected or loosely protected subject-matter. In other words, a protection system consists of a top tier with a standard form of patent and a lower tier protection with a utility model or petty patent system.[52] In essence, this type of two-layered protection system is used in many regions of the world to provide an additional strategy in which access to the patent system can be enhanced by the expansion (or, in some cases, the creation) of an entirely separate regime of rights.[53]

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48 MD Janis, 'Second Tier Patent Protection' (1999) 40/1 Harvard Law Journal 151, 152.

49 Ibid.

50 PA Cummings, 'From Germany to Australia: Opportunities for a Second Tier Patent System in the United States' (2010) 18/2 Michigan State Journal of International Law 300.

51 M Crinson, 'Is Some Novel Protection of Invention Needed in Canada' (1998) 12 Intellectual Property Journal 26.

52 A Kur, 'Two Tiered Protection-Designs and Databases as Legislative-Models?' in A Ohly (ed), *Common Principles of European Intellectual Property Law* (Mohr Siebeck, 2012) 99.

53 MD Janis, 'Second Tier Patent Protection' (1999) 40/1 Harvard Law Journal 151, 151.

Perhaps more encouragingly, the experience of different countries, especially those who have lived with STP regimes lend credibility for other countries to experiment with this supplementary protection system to provide a relatively quick, inexpensive, easy to obtain and simple protection mechanism for minor technical advances. Moreover, it is a lesser form of protection for low-level innovations which otherwise fall through the protection net of patent law. The most important advantage of this system is that it can be tailored to suit specific needs and circumstances of each country. While some regimes follow the classic utility model, others can be considered as modern second-tier regimes such as the innovation patent system in Australia that vary from the classic utility model, as exemplified by the original German *Gebrauchsmuster* regime. "Modern second-tier patent regimes are not easily represented by a singular example [single model]".[54] Most notably, neither Sri Lanka nor any other South Asian jurisdiction currently provides any form of STP for subpatentable innovations. Arguably, it may be high time for these countries to experiment with a two-track protection system with one dedicated to conventional patents and the other specifically attuned to incentivise small incremental innovations of SMEs.

For purposes of this study, the term 'second-tier protection regime' is used as a generic label encompassing utility models, petty patents, and other modern regimes such as innovation patents (Australia) or utility innovation (Malaysia) that are comparable to a utility model regime in most respects. For practical purposes, the terms second-tier protection, utility models and petty patents are treated as synonymous in this study. As a general matter, a 'second-tier protection' (STP), refers to a system that provides short-term protection for minor or incremental innovations with varying novelty standards (global, relative or local novelty depending on the jurisdiction) and with a lower level of inventiveness or without any requirement of showing an inventive step, and for which rights are granted without a substantive examination but after merely a check of formalities.

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54 K Osenga, 'Entrance Ramps, Tolls, and Express Lanes-Proposals for Decreasing Traffic Congestion in the Patent Office' (2005) 33 Florida State University Law Review 119, 151.

1.2.3. A Developing Country

When it comes to dealing with the classification of countries based on their economic and social achievement, there is a plethora of indicators that have been adopted by different international organisations. As a result, currently, different standards determine whether a country is regarded as 'developing'. The United Nations agencies, the World Bank, the International Monetary Fund (IMF) use relatively different yardsticks in making this determination.[55] According to commentators, there is no generally accepted criterion (either grounded in theory or based on an objective benchmark) for classifying countries according to their level of development. "Classical economists were mostly preoccupied with what is now termed economic development in the sense of sustained increases in per capita real income, and neoclassical economists paid scant attention to the issue altogether".[56] Against this backdrop, the Preamble of the TRIPS Agreement particularly addresses least-developed countries. They comprise some 50 countries as defined by United Nations Economic and Social Council (ECOSOC) Development Committee on the basis of low income per capita under USD 750 to USD 900, weak human assets, measured by a composite Human Assets Index and Economic Vulnerability Index.[57] Most recently, in its country classification, the World Economic Outlook Report 2012 of the IMF has divided the world into three major groups: advanced economies (examples, Germany, Japan) and emerging (examples, Korea, China) and developing economies (examples, India, Thailand).[58]

Moreover, for analytical purposes, the World Bank classifies economies in the world into four groups namely low-income (USD 1,005 or less) lower middle-income (USD 1,006 to USD 3,975) upper middle-income

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55 S Ragavan, 'Can't We All Get Along? The Case for a Workable Patent Model' (2003) 35 Arizona State Law Journal 117, 124.

56 L Nielsen, 'Classifications of Countries Based on Their Level of Development: How it is Done and How it could be Done' (2011) IMF Working Paper No. 11/31, 3-5.

57 T Cottier and P Véron, Concise International and European IP Law: TRIPS, Paris Convention, European Enforcement and Transfer of Technology (Kluwer Law 2008) 9.

58 IMF, *World Economic Outlook Report* (Washington, April 2012) 177-178, available at: <http://www.imf.org/external/pubs/ft/weo/2012/01/pdf/statapp.pdf> (accessed 10 June 2012).