

INTERNATIONAL ASSOCIATION OF SCIENCE PARKS
ASIA PACIFIC REGIONAL CONFERENCE
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"INTELLECTUAL PROPERTY AND ALL THAT JAZZ";
INTELLECTUAL PROPERTY AND SCIENCE PARKS

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ABOUT THE AUTHOR

JOHN W KENNY, a practicing lawyer for 21 years, is the principal of KENNY & CO. John:

- has two Master of Laws degrees from the Universities of London and Sydney respectively;
- is a regular university lecturer and commentator on matters of Intellectual Property matters; and
- is a former:
 - . member of various Queensland State Government Advisory Panels; and
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KENNY & CO, a solicitors firm practicing in Brisbane, Australia since 1985 and concentrating on matters of Intellectual Property and Business Law:

- has been recently retained on behalf of the Australian Intellectual Property Office (AIPO) with three other prominent IPR specialist professional firms to produce a model for the commercialisation of IPR; and
- is a member of two (2) multidisciplinary partnerships; namely
 - . with COOPERS & LYBRAND, Chartered Accountants on a proprietary structural model for Intellectual Property "Start Up's"; and
 - . with ORIGIN DESIGN, in TM5 a trademark development agency.

**"Traveller, there is no path.
Paths are made by walking"**

Spanish Poem

TERMINOLOGY AND ABBREVIATIONS USED IN THE PAPER

- "IPR" jointly and severally Intellectual Property Rights as understood by the World Intellectual Property Organisation including patents, trademarks, designs, copyrights, secrets, circuit layouts, plant variety rights and goodwill remedies
- "SPM" The Managers of Science Parks, Research Parks and Incubator Facilities
- "MNE" Multi National Enterprise
- "DFI" Direct Foreign Investment
- "TSU" Technology Start Up enterprises generally defined by the intensity of their R&D activities. Where the ratio of R&D spending to output exceeds a designated percentage, the firm is said to be "High Tech"
- "Model" The model proposed by this paper for adoption by SPM regarding the management of IPR of their clients, and outlined in Schedule 1

- "Network" The community of Science Parks and Business Incubators throughout the world, organised through bodies such as the Association of University Related Parks (US based), and the International Association of Science Parks (European based).
- "WTO" World Trade Organisation
- "GATT" General Agreement on Tariffs and Trade under the auspices of the WTO (1994)
- "TRIPS" Agreement reached in Uruguay round GATT negotiations 1995 on trade related IPR
- "SME" Small to medium businesses which, for the purposes of this paper, are the clients of Science Parks and Business Incubators and have reached a level of maturity beyond the embryonic TSU

EXECUTIVE SUMMARY

IPR are an essential management issue for SPM, whose Network represents a potential important and distinct international platform for the development and adoption of "best practices" for innovation management for SME's. The need for an expert system for innovation management to be offered to their tenants is a distinct but complementary issue, to recent developments for the international harmonisation of IPR. With survival rates of less than 5% for TSU, the "instant availability" of modern internationally harmonious management techniques should be a significant goal for SPM. In the proposed Model, SPM would:

1. Ensure they understand, and help their clients/SME/TSU to appreciate, the contemporary function of IPR as their principal commercial assets; and
2. Acknowledge this unique opportunity, if not responsibility, of SPM with respect to their clients/SME's and IPR in:
 - structuring their affairs, and encourage DFI from MNE's;
 - managing of their respective Science Park/Incubator facilities; and
 - using the Network to develop and promulgate the Model.

TSU require a management response as sophisticated as the technology upon which the enterprise is based. The Model will ensure this availability. For example, a project relying on, for example "High Performance Computing Diffusion" or "Elaborately Transformed Manufacturing" will require the immediate application of a similarly sophisticated "best practice" management methodologies. The Model will provide this by way of a conveniently acceptable facility.

The Paper concentrates on the perspective of IPR in the Asia Pacific Region.

INTRODUCTION

"Intellectual Property" is a management expression describing that collection of legal rights operating throughout the World which protect and provide ownership for the innovation and reputation achieved by a commercial enterprise. By giving them negotiable rights, IPR financially reward innovators. By allowing the avoidance of competition, then the owner of IPR do not compete in a price driven market.

For centuries, society's protection of IPR has been intertwined with its trade and commerce. In medieval Europe, artisans organised themselves into guilds for mutual support and to protect their skills and artform by means of secrecy and a rigid apprenticeship system, representing the first

organised attempt to protect trade secrets. These Guilds even used trademarks¹. Right from these origins, a nations need for commerce with foreign traders often conflicted with local favouritism of the guild system. These guild preferences hindered trade to such a degree that, in 1332 the Republic of Venice saw fit to intervene and promulgate special laws to accommodate the right of foreigners to trade with the local business community. 600 years later, Governments throughout the world are still grappling with the interrelationship of IPR and international trade. Venture capital and technology (IPR) has been the chemistry that has driven the explosive growth of new business. Knowledge is the critical competitive force.

For example, IPR was at the heart of the threatened China-USA trade war, as well as the continued American demands that the Asia Pacific developing nations strengthen their respective IPR regimes. Recently through the auspices of the WTO, and the GATT and TRIPS initiatives, the developed, developing and as yet undeveloped nations have accepted the need for a consistent and internationally harmonious approach to IPR. However, IPR alone are not of critical significance to SPM, who must assess and exploit IPR within a wider management context - drawing on the distinct management practices for the commercialisation of IPR. Only by developing their client's projects into viability will SPM justify the vision and aspirations of the Network. The management vision must be beyond IPR - it must be practical and transactional. The management requirements of post-industrial technology based industries are different from those of traditional industries. SPM must become more than just identifiers of IPR gleaned from their client's research and development.

The development of the Network has occurred in advance of the evolution of an internationally unified approach on IPR. By 1993 there were 403 technology parks worldwide. However, Science Parks require not just the development of IPR which are internationally consistent. Management practices related to IPR facilitate TSU/SME development. In undeveloped or developing nations such practices have less currency. Accordingly, the Network of SPM have a unique opportunity, if not responsibility, to promote the adoption of a consistent management approach to the commercialisation of IPR by their clients. The Network represents a unique and significant international platform to diffuse these methodologies.

The alternative to the Network seizing the opportunity to develop and promulgate internationally the Model is the respective members and for their regions having an unco-ordinated plethora of ad hoc commercialisation practices. This diversity will be counter-productive to Network goals. Given the common goals of the clients of the Network, it is preferable the Network develops, adopts and constantly updates the Model with the latest management and financing practices specifically associated with IPR. Without the adoption of such a Model, various of the undeveloped and developing countries would be comparatively disadvantaged by their lack of ready access to such practices.

IPR - HARMONISATION - NECESSARY, BUT INSUFFICIENT

Before the dramatic harmonisation initiatives of the "90's", international recognition on IPR was essentially contained in four (4) agreements². The general recognition of the inadequacy of these agreements, especially from the USA prompted TRIPS, wherein all signatories agreed to enhance the provisions of the 4 aforementioned conventions and establish dispute resolution procedures for harmonisation administered by the WTO. In particular TRIPS required the signatories to:

¹(Prager, the Early Growth & Influence of Intellectual Property; 34 JPOS 106 (1952); 24 JPOS 771 (1944)

²(1883) Paris Convention on inventions, tradenames, trade marks, industrial designs, appellations of source; (1886) Berne Convention on Copyrights; (1961) Rome Convention on Sound Recordings; (1989) Washington Convention on Integrated Circuits.

- give foreign IPR the same treatment in each country as they afforded their domestic IPR; and
- prevent signatories from excluding certain products from IPR protection - such as pharmaceuticals from patent protection and to ensure protection for pharmaceutical products "in the pipeline" - these products granted patents in some countries prior to TRIPS, but which had not as yet received the regulators approval to be released.

By 1995 most of the targeted Asian countries had brought their IPR laws relatively close to US standards. Whilst important, TRIPS, especially its recognition and enforcement of IPR, falls short of establishing best practices on innovation management for SME - which objective is, or at least should be, a principal objective for SPM.

This methodology could be co-ordinated in an expert system for adoption in a "hub and spokes" manner by SMEs/TSUs throughout the world and especially those operating in clusters in Science Parks. The "hub and spokes" approach involves a series of "hub" issues being those approaches common in all countries, whilst the "spokes" issues would be those issues upon which the adopting enterprise would have a choice of solutions, perhaps dependent on government issues such as taxation regulations. This dual system would maximise adopting of commonly applied methods, avoiding conflict wherever possible. The Model would discourage experimentation, reduce risk and avoid inadvertence, reducing management risks by a convergence of methods. The Model would combat management inertia by unsophisticated principals in TSUs. Ultimately, with the acceptance of the Model by Venture Capitalists and MNE, DFI would be facilitated in those kind of TSUs/SMEs which populate the Network. In turn, the Model would help the local/regional enhancement of management skills.

The international tension between national policies on innovation can be potentially disastrous for fledgling TSU. With the pressure on countries to foster internationally competitive enterprises, innovation policies generally have become the significant source of international tension. Given, however, the commonality in transactions and obstacles faced by TSU, the Model could assist with the practical accommodation of these local policies - using the analytical distinction between "hub" and "spokes" issues. For example, IPR could be seen as a "hub" issue - with the harmonisation program ensuring that the connection between IPR, DFI and technology licensing and general economic activity being broadly accepted throughout the international community. However, competition law policies with their different local exemptions for IPR have significant regional differences - thereby being characterised as a "spokes" issue. Competition law and other non-IPR policies impact on innovation and remain important sources of potential policy friction between countries. The proposed Model would provide an accessible methodology to resolve these complex tensions. The Network and their clients have a common interest in reducing policy frictions, creating an environment conducive to the efficient movement of capital and technology both internally and internationally. The Model would facilitate agreement on these issues by setting common standards and benchmarks for the commercial and transactional issues associated with IPR - an objective already significantly achieved in the existing IPR harmonisation program.

SPM - THEIR MANAGEMENT RESPONSIBILITIES - TO WHOM?

Typically, Science Park tenants come from one of six groups³. The adoption of the Model is primarily aimed at at least four of these six sectors, which sectors traditionally have no, or at least limited, access to this kind of entrepreneurial expertise. However, each of the tenant sectors would face certain key common issues - a trend towards global specialisation and consolidation; a greater incidence of small specialised companies able to compete - strategic differentiation strategies; collaborative use of resources. By having a Model responsive to those common issues, the chances of project success are heightened.

SPM have primary responsibilities to their own clients - and also to the economic welfare of their country and region. However, there are also responsibilities arising from their membership of the Network given that each SPM deal with common transactions.

The Network should be about the development of internationally competitive products and services by their clients, irrespective of their regional location. The development of the Network will not be best served by a series of individual and distinctive national responses to innovation management. Rather a series of supranational issues and management responses can be identified and addressed in a consistent manner and by way of the Model. This framework would thereby be recognised throughout the respective regions, if not the world.

Given the harmonisation initiatives in the Asian Pacific Region, SPM in this region can provide the initiative for the development, and regional adoption of a Model and its promulgation to other areas of the world - especially the USA and Europe which provide the bulk of DFI by MNE. The members of the European Union have provided strong evidence of benefits stemming from IPR integration. GATT holds the promise of even greater economic integration. The SPM members of the Network can now respond to the increased importance of Asia as a major centre of world trade requiring western MNE's to acknowledge an "Asian way" of doing business.

IPR

Essentially IPR has two (2) transactional functions, being either the subject of:

- litigation for enforcement; or
- commercial transactions - for the development of innovative goods and services ("Commercial Application").

The recent harmonisation initiatives of TRIPs are essentially about the co-ordination of enforcement. None of the initiatives to date actually address the Commercial Application. Accordingly, and given the SPM focus on commercialising technology, the Network would profitably adopt the Model as a significant facilitator to SME/TSU success.

The core concept of the Model is the importance of innovation to substantive economic viability. The Malaysian 10 Point Bill of Guarantees for Cyberjawa, aims to ensure that the Malaysian "Super Corridor" becoming a regional leader in IPR protection. IPR assist innovation but industrial factors are more important. For example, Japan formerly protected processes for making drugs rather than the actual drugs. Such process protection allowed a rival manufacturer to reverse engineer and slightly

³Large R&D facilities of local or MNE; R&D or technology organisations of government; small or medium technology based manufacturing firms; technology based service providers; technology based start-ups; and ancillary service providers - Qld Department of Tourism, Small Business and Industry - "Strategic Plan for Development and Management of Brisbane Technology Park" August 1996 2; Corporation Page 16.

modify the process to make the drugs without infringing upon the patent. In 1995 Japan switched to product patents, with the value of Japanese drug firms increasing by up to 25%, especially when they had strong emphasis on R&D⁴. However, innovation requires something more than a TSU/SME's adoption of IPR. Indeed, the achievement of IPR and a technological advance is regarded as about 10% of the innovation cycle. All the other entrepreneurial skills - finance, planning, marketing and the like, make up the other 90% of the management process of ensuring that good or service actually turn a profit on an ongoing basis. These are the entrepreneurial management skills that SPM need to ensure their clients possess - but which are not readily accessible by TSU or SME even in developed countries. The low success rate of IPR commercialisation by TSU even in developed countries is testimony to the scarcity of adoption of these management "best practices". The typical fate of a TSU is either financial failure or acquisition by a larger firm, and primarily due to the lack of venture capital. Indeed in undeveloped or developing nations, knowledge of these management practices may be entirely missing. An important role for SPM is to facilitate this innovation process by their clients. Accordingly, SPM should identify the relative but central role of IPR in the innovation cycle of SME/TSU who typically make up their clients, namely:

- that IPR are the key to the development, ownership and competitive protection of their innovative value added goods and services;
- the absence of IPR will inevitably enable their competitors to treat inventions as common property, use these rights and the sell of company products thereby:
 - reducing the return to the original investors/current owners; and
 - discouraging other innovations and having a negative effect on national income growth.
- ensure a financial reward for the owners of the IPR and enable the transfer of innovations as a tradeable commodity and the financing of those SME which own the IPR.

Acknowledging the importance of IPR to the managers of SME, there is much ignorance about management practices associated with IPR, which ignorance inhibits the DFI by MNE. The adoption by the Network of the Model would maximise the interdependence of Science Park clients.

THE MODEL

Whilst there is no single "correct" method of commercialising IPR, the commonality of challenges facing TSU allow the aggregation of a critical path for the various stages of the innovation cycle.

The factors within the proposed Model are described in Schedule 1. Their successful adoption determine a TSUs viability. Such sustainability is not principally determined by the existence of IPR in the project. IPR are important but are just one factor. Isolated pre-occupation with research and development and the acquisition of enforceable IPR of themselves will not ensure sustainable business from TSU.

These IPR require manipulation by management techniques from a variety of complementary professional areas. Some of the strategic components addressed in the legal component of the Model would include the SPM ensuring that:

- the TSU/SMEs understand what IPR are and how IPR apply to their respective goods and services conducted in the Science Parks;

⁴SJ LaCroix; "The Rise of Global Intellectual Property Rights and their Impact on Asia". Asia Pacific Issues; East West Centre, University of Hawaii. No. 23 August (1995).

- the structure of the project reflects the best available tax concessions within the region - especially with regard to capital gains tax and deductions for approved research and development;
- SME's incorporate IPR into their Balance Sheets in accordance with the applicable accounting standards of the region and valuation principles acceptable to MNE and financiers internationally, thereby facilitating DFI by MNE or venture capitalists;
- the clusters of IPR driven SME's with compatible capabilities operating in same technology sector and geographical area formally organise their projects in line with the latest organisational and financing theory - especially "clusters" and joint ventures which provide the vehicle for the respective project and the conduct of collaborative ventures. In the TSU even the observance of corporate formalities must be carefully observed - a compliance facilitated by the Model.

Such a Model is the key to SME's developing internationally competitive value added goods and services, protected by IPR. DFI by MNE and venture capital would be facilitated by the adoption of the Model, preparing the investee SME's in advance for the legitimate and predictable requirements of MNE with respect to DFI. Lipnack and Stamps in their book "The Team Net Factor"⁵ gave many examples of boundary crossing by firms to collaborate using their complementary specialist skills and facilities where previously they competed against one another. Five organisational elements are identified which fundamentally overhaul the nature of a company and how it will operate in the "new knowledge economy". These modern concepts need propagation quickly and throughout the Network, and especially to Network members in regions where these modern management concepts might be unavailable otherwise not readily available. The Model would allow the perceived strengths and weaknesses of a project to be more quickly approved - reducing planning and transaction costs.

The availability and strength of IPR will affect the intensity of innovation activity and affect ownership issues. Weak IPRs mean that MNE will be reluctant to transfer relatively new or advanced technology to other than wholly owned subsidiaries. In turn, the subsidiary's role would be devoted to only sales and distribution or rudimentary production and assembly. Where IPR are perceived to be stronger the wholly owned subsidiary's role would be more independent.

Few, if any, other international professional associations have the unique role and perspective as does the Network. It would be a platform for diffusing management capability which would not be readily accessible by technology clusters. The members have as much responsibility to their clients survival and development as they do to their region. The Model is the management methodology beyond that level reached by the IPR harmonisation program which reached its highwater mark with TRIPS. There are still major unresolved areas in the harmonisation process within the Asia Pacific region including computer software protection, plant variety rights, protection of pharmaceuticals, the question of narrow and broad patents, Specialist Intellectual Property courts and a central Asian Patent Office. The Network's contribution on the Commercial Application of IPR will reduce disharmony and facilitate the resolution of these issues. The convergence of IPR regimes in the Asian Pacific region pre-empts the adoption of the proposed Model. In turn the Model will reduce resource misallocation, reduce the effects of policy conflicts between regions, provide joint solutions to common problems and facilitate the longer term planning which is required for DFI.

The Model will be responsive to the predictable "realities" for TSU's, such as high failure rate; need for collaborative clusters of technically specialised participants; scarcity of funding; likelihood that the original participants will be replaced prior to success; high intensity of R & D; need for association with MNE's after start-up; and short product life cycle.

⁵Lipnack J & Stamps J; "The Team Net Factor", Oliver Wright, Essex Junction VT (1993).

The writer has begun the development of management expert systems within the context of two virtual partnerships. Firstly with Coopers & Lybrand, a proprietary company and tax structure has been developed and launched - adopting risk management techniques with exit/eviction mechanisms for participants and combined with innovative allocation of IPR within the R&D tax concessions on offer in Australia. The Model is adopted in a structured pre-costed process which significantly reduces costs for the TSU. Secondly the writer is a member of Tm5, which partnership creates trade marks in association with a Brisbane based design house, then ensure the brand is registered as a trade mark in all relevant markets, placed in the appropriate location for risk management, valued and marketed. Both these models have a structured conceptual and fully costed transactional base - and one well suited for assimilation into the Model recommended by this paper.

CONCLUSION

The codification of management issues means these techniques will be more accessible to all members of the Network. Management knowledge would thereby become more of a commodity facilitating its transfer and access throughout the Network. It will reduce uncertainty and management asymmetry in the management of TSU/SME within Science Parks. SPM have a catalytic responsibility as facilitators for their clients' adoption of best practises for innovation management. The performance of Science Parks is incurred by the survival and growth rates of their tenants - their cash flow, profitability, number of firms created, jobs created and income generated in wages and taxes. IPR is likely to be an essential part of this process - but not singularly so. Drawing from the title of this paper, it is the other factors, ie. ("all that (other) jazz") which "add value" to the management mix and are likely to be determinature of a TSU/SMEs viability. This facilitation role for SPM is preferably addressed in a consistent, multilateral manner on an international level by the adoption of the Model. The outcomes sought for the Model are strong and sustainable clusters that emerge cheaply and quickly and accelerate the creation of high value added economic growth and job creation. The Model should reduce the tentativeness in investment and collaboration negotiations - shedding new light on the innovation cycle which has gone largely unexplored from an empirical standpoint.

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**SCHEDULE 1
 THE MODEL**

Conceptually it is proposed that the model would be a holistic multi-disciplinary "expert system" of constructive management co-ordinates to facilitate the successful commercialisation of IPR. The aggregation of these foci create synergies in the enterprise. The components would be sourced by a series of professional disciplines, making complementary contributions to the outcome. The system would be sequential and mounted on a IT platform which would be both multimedia and interactive and available on exclusive networks. IPR would be a necessary but not a sufficient component - and must be assessed in the context of all the other contributions. The Model would be owned and managed by an independent management agency and on behalf of the Network and kept constantly updated with the assimilation of management developments from all available sources, including the Network.

ISSUE	DETERMINANTS	PROFESSIONAL SOURCE
Existence of a market	<ul style="list-style-type: none"> . clear measurable objectives in a strategic plan for focused differentiation; . market assessment; . pricing, margins, gross and nett profit; . rates of return for investor; . competitors, sensitivity analysis. 	<ul style="list-style-type: none"> . marketing/management consultant/branding consultant/corporate image consultant
Protection of the product/ source - Intellectual Property Rights	<ul style="list-style-type: none"> . patents, designs, trade marks, copyrights, trade secrets, goodwill remedies, circuit/layout protection, competition policy law and its application to IPR. 	<ul style="list-style-type: none"> . lawyer, patent/trade mark attorney
Marketing of product	<ul style="list-style-type: none"> . product launch - domestic/international; . branding 	<ul style="list-style-type: none"> . marketing consultant . trade mark attorney
Legal structure	<ul style="list-style-type: none"> . vehicle through which to trade - joint ventures; . risk assessment; . raising finance; . taxation - research and development concessions 	<ul style="list-style-type: none"> . lawyer; . accountant; . grants consultant
Personnel	<ul style="list-style-type: none"> . staff required; . selection, retention, remuneration - salary/equity 	<ul style="list-style-type: none"> . consultant . personnel
Finance	<ul style="list-style-type: none"> . capital and loans (DFI); . venture capital, (seed, venture, second round), public fundraising; . availability of government assistance/incentives; . cash flows 	<ul style="list-style-type: none"> . stockbroker; . venture capital consultant; . accountant; . management consultant
Management Practices	<ul style="list-style-type: none"> . "clusters" - association with MNE/universities; . when to leave the Facility; . training; 	<ul style="list-style-type: none"> . management consultants

	<ul style="list-style-type: none"> . information management practices; . organisational culture; . stakeholders; . "the virtual corporation"; "value added networks"; . when to expand, contract, maintain; . obtaining non-executive directors; . total quality management 	
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