

## **Limiting intellectual property : the competition interface**

Fonseca Da Silva, Antonio Carlos

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**LIMITING INTELLECTUAL PROPERTY, THE COMPETITION INTERFACE**

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**A dissertation submitted for the degree of Ph.D. at the  
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## ABSTRACT

This is a study of legal limits of the exercise of intellectual property, with emphasis on chip designs. In Part One, the focus is on the economics of innovation dynamics and the nature of the social bargain underlying intellectual property. It analyses the function of intellectual property and the structure of protection of chip designs under the US chip law, the IPIC Treaty and the Agreement on TRIPS. It suggests that while protection of intellectual property is designed to promote technical innovation and enhance competition in the public favour, the innovation process is carried out in conditions of increasingly imperfect competition. On these grounds, a point is made to limit the exercise of proprietary rights in the welfare/efficiency perspective.

Part Two addresses the treatment of legal limitations. An analysis is made concerning the evolution of the safeguarding provisions on which unauthorised use of copyright and patent in the British legal system relies. These safeguards, structured within the intellectual property law, have gradually been developed to also rely on a resurgent competition legislation, which has been considerably used by OECD countries to order the exercise of proprietary rights. The ability of modern competition law to induce an intellectual property order, and the features of the adjudicatory process of non-voluntary licences over UK patents are also examined. From the findings the emergence of, namely, a safeguarding policy is identified. The conceptualisation of this institutional policy, aiming at efficiency and welfare objectives related to the exercise of proprietary rights, is a central theme. It shows that safeguarding provisions intrinsic to intellectual property law is insufficient to pursue these objectives, and holds that to protect intellectual property without an effective control of anti-competitive practices is a distorting and unsustainable legal policy.



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I dedicate this thesis to the memory of both Aureliano Fonseca, my father, and Bertine Luiza, my young niece, as well as the educator Padre Expedito de Macedo to whom I am greatly indebted.

This is the outcome of my own work and includes nothing done in collaboration.

A C Fonseca da Silva

30 October 1994



**LIMITING INTELLECTUAL PROPERTY, THE COMPETITION INTERFACE**

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**PART ONE**

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**THE CASE FOR LIMITING THE USE OF INTELLECTUAL PROPERTY IN THE  
WELFARE/EFFICIENCY PERSPECTIVE**

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## CHAPTER ONE

### INTRODUCTION: CHIP-DESIGNS, LEGAL STRUCTURING AND POLICIES

#### 1.1 The nature of the problem

##### (i) Limiting the use of proprietary rights

At the conclusion of the Treaty on the Protection of Intellectual Property in Respect of Integrated Circuits (IPIC Treaty)<sup>1</sup> in 1989, the US Trade Representative in WIPO, who criticised the text for, among other reasons, containing a broad provision about compulsory licensing with equitable remuneration, voted "no" on the Treaty.<sup>2</sup> Standing against compulsory licensing over chip-designs<sup>3</sup> in the early debates in WIPO, the American representative stated that the minimal protection afforded by the IPIC Treaty differed from the minimal protection afforded by the copyright and industrial property conventions. While compulsory licence (a typical limitation on intellectual property) was necessary for the legal reproduction of copyright or a protected invention, the reverse engineering (allowed by the chip-designs law) guaranteed the desirable technological development. Thus, non-voluntary licences were "never necessary, not for reasons of public interest, non-working, excessive contractual licence fees, or any other reason."<sup>4</sup> As the discussions progressed in WIPO, the American view was supplanted. As a result, provisions were inserted in the IPIC Treaty and later in the Agreement on TRIPS<sup>5</sup> to allow non-voluntary licences over chip-designs.

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<sup>1</sup> Also called "Washington Treaty", the IPIC Treaty is not yet in force. Up to January 1994, it has been signed by 8 countries although it has only been ratified by Egypt. [1994] 1 Industrial Property 20.

<sup>2</sup> See statements of Michael Kirk and Ralph Olman from the US delegation. [1989] 38 BNA's Patent, Trademark & Copyright Journal 123, 124.

<sup>3</sup> Chip-design is applied as a particular form of intellectual property right distinct from copyright and patent but may be protected under these regimes. It is also termed as layout-design or topography of an integrated circuit, or mask work and circuit layout. As a technical item on which the intellectual property right relies, the chip-design is the arrangement of the elements representing the three-dimensional structure of the popular *chip* or integrated circuit.

<sup>4</sup> WIPO document, IPIC/CE/II/2, at p. 20/21.

<sup>5</sup> Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods, concluded in 1993 within the framework of the General Agreement on Tariffs and Trade (GATT).

The IPIC Treaty stipulates that the exclusive right over the topography of integrated circuits is limited by the use of the topography without the consent of the rightholder in such circumstances which make it necessary to safeguard a vital national purpose, or secure free competition.<sup>6</sup> Under the Agreement on TRIPS, the use of the IC-Layout design without the consent of the owner should comply with detailed conditions evaluated on the basis of individual merit and proper procedures.<sup>7</sup>

This thesis is a theoretical-legal study about the regulatory policy concerning limitations on the exercise of intellectual property rights (IPR),<sup>8</sup> and chip designs in particular. Bringing these new international agreements into considerations together is a concern which, firstly, transcends the domestic affairs of any country in particular, and secondly gives rise to interrelated questions of economic, social and legal relevance which are of great interest to all countries. The economic aspect, dominating the theme of the incentive to innovation and the use of intellectual property under competitive conditions, is closely related to the public interest issue. The social aspect of intellectual property arises from its welfare function, i.e., in simple terms the availability of wider benefits from the IPR use for society at large. These interrelated aspects are the core of the rationale for protection of intellectual property, and provide an understanding of the institutional regulation of the legal limits to IPR use. Subordinated to the economic and social pre-conditions, the legal aspect accounts for what the authorities do, and how the regulatory arrangements governing the intellectual property issue can be designed to ensure that the regulatory policy over IPR use do actually achieve a desired balance of interests. From the portrayal just sketched, the significance and complexity of the intellectual property equation is visibly clear. In order to characterise this complexity, and demonstrate why the proposed study is important and timely, a review of the intellectual property issue now follows.

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<sup>6</sup> Article 6(3)(a)(b).

<sup>7</sup> Articles 37 and 31(a) to (k).

<sup>8</sup> For the purposes of this study, intellectual property is only concerned with copyright, designs and patents.



## **(ii) Review of the intellectual property issue**

There have been three basic ways of legally approaching the modern IPR issue. One considers the "North/South" tension, focusing on both the disagreement over the level of IPR protection and the implications of the so called "free-riding" economy to international trade. A second approach, reflecting the difficulties in protecting products in the field of new technologies, such as biological processes, computer software and integrated circuits, raises questions of how and in what manner existing IPR models, such as copyright and patent, are appropriate to protect those products. These difficulties are compounded by the speed of technological change. A third approach is to focus on the balance of the rightholder's interests and the interests of the public at large, by limiting IPR use on the grounds of public policy. This third approach forms the conceptual foundation for the present study.

The North/South approach is obviously strongly qualified by political elements. Whether or not to protect intellectual property, and to what degree protection should be enacted, is a matter for the international agenda. Industrialised countries from the North claim stronger protection is deemed necessary to recoup high investments. Against the prospect of allegedly growing "piracy" they threaten to impose retaliatory measures. On the other side, those developing<sup>9</sup> or newly-industrialised economies have advocated beneficial treatment, broadly arguing that high global standards of protection would be a vexing barrier to their ambition to achieve technological autonomy, thus impairing their capacity to set up their own development strategy.

Reflecting the domestic attitude at large, protection of intellectual property has been dictated by the assumption that high protection is likely to stifle social progress and jeopardise technical catch-up. Although debatable, this understanding may be historically explainable. For instance, up to the 1970s protection over chemical and pharmaceutical related inventions was a controversial matter. Over a long period, some European countries and Japan either did

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<sup>9</sup> The basis of the analysis is the limitation of the use of proprietary rights not of the scope of protection. The study might attract the attention of policymakers in developing countries concerned with limiting properly the exercise of rights over chip designs. However, addressing a solution of a legal problem in such countries is not the purpose of the thesis.

not provide for, or abolished, patent over such inventions. Alarmed at this move which prevailed for the first half of this century, developing countries eventually followed suit, thus making pharmaceutical and chemical drugs unpatentable. Amounting to a prejudicial attitude at international level against the protection of intellectual property, that widespread legal setback contributed to a cultural resistance to intellectual property still existing today amongst developing countries. These countries have so far been unable to either fully implement a comprehensive system of IP protection, or build up the necessary safeguards to limit or prevent the abusive exercise of proprietary rights.

Viewing the question within the historical mainstream, however, it seems reasonable to expect that developing countries eventually will upgrade their systems of intellectual property protection, provided that they manage to off-set the social cost by putting in place a strategic policy regulating limits to the use of proprietary rights, as it exists in leading industrialised countries.<sup>10</sup> The reason to predict that upgrade is simple. Common observation suggests that countries usually emulate each other's laws. They do so either for convenience or out of necessity. As far as international trade is concerned, the replication of economic law to a certain extent follows the force of economic interdependence. Historically, it has largely been so. If, in this respect, emulation means to consciously reproduce legal IPR protection at the level existing in leading industrialised countries, then such countries are expected to pioneer advanced intellectual property standards. This leads to the question of adapting IPR models to protect innovations and original creations in the field of high-technology.

More than a review and adaptation of the existing IPR models, the issue behind the new-technology approach is a matter of adequacy of protection. Claims for stronger protection are based on the argument, *inter alia*, that the Berne Copyright Convention and the Paris Convention for the Protection of Industrial Property do not secure a level of protection required in modern times. Whilst some Government Reports (e.g., CONTU and the OTA Background Paper) have discussed the inadequacy of IPR systems, they have failed to establish appropriate substantive elements which could provide reliable models giving

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<sup>1</sup> For instance The United States, The United Kingdom, Germany, Canada, or in OECD countries in general.

adequate protection. This concern, as far as theoretical tenets matter, is dictated by a sense of reasonable return to investors and a satisfactory response to public interest.

As a theoretical foundation for intellectual property, the encouragement of the innovation process and industrial applications rely on the granting of an exclusive right. Temporary protection allows the rightholder to put the innovation or the original creation into practice, or to seek a successful application of it either by himself or by licensing others in return for royalties. It also enables innovative firms to disclose the information regarding their inventions, seek a rewarding profit and enjoy a competitive head start over rivals. It is assumed that society at large can benefit in many ways from the application of technical innovation or originality. For instance, new technologies may not only provide the needs of society but also contribute to reducing unemployment by encouraging domestic manufacturing. Moreover, once the monopoly expires the right passes into the public domain allowing free access to the intellectual property.

The speed of technical change and the quick obsolescence of technology, however, has impaired the equation envisaged by that theory. In technologies such as computer software and integrated circuits by the time the monopoly expires there will be little, if any, utility. Increasing protection to trade secret and know how has also made difficult the unleashing of IPR-related technical information. All of these have created increasing tension between the interests of the rightholder and the public. At the heart of this misunderstanding, the development of the innovation process under conditions of imperfect competition is a matter for concern. This leads to the third approach, i e., balancing interests through limitations on the exercise of proprietary rights.

On the grounds of freedom of trade, the IPR owner has the right to seek the best strategy to maximise his return. Failure apart, there is a tendency of the rightholder to go beyond a limit where his trading behaviour itself constitutes an artificial influence in the market conditions. That behaviour may work a great mischief to free competition, thus inhibiting technical output in general terms. Taking the matter of the exploitation of technical innovation or

originality a little further within the context of the market structure, the interface between intellectual property and competition law and policy is inevitable.

The defence of stronger IPR protection over the two last decades has developed alongside substantial developments in competition laws of OECD countries. Historically, the coexistence of both legal disciplines goes back to the first quarter of the seventeenth century, when the English Statute of Monopolies confirmed patent as a legal exception.<sup>11</sup> A similar position was taken later in the eighteenth century by the United States and France. In America, the Sherman (Antitrust) Act of 1890 came into being with no restriction regarding the patent right. The French revolution, which abolished all privileges and guilds in 1789, favoured the Patent Act of 1791.<sup>12</sup> However, such coexistence has not been peaceful as American legal experience shows.

Historians are unanimous in pointing out the ability of the American antitrust policy to affect the pace of development in the inter-war period.<sup>13</sup> At that time, the leniency of antitrust policy and stringency of patent led corporations, such as General Electric and Du Pont, to consolidate dominating positions. Late in the 1890s and in subsequent decades many patent licensing arrangements were challenged in antitrust suits brought before US Federal Courts. Although the courts upheld the validity of those arrangements, it could be assumed that the apparently peaceful coexistence of intellectual property and antitrust law resulted from judicial tolerance. Dissatisfaction against that leniency led to legal tensions which emerged in the post-war period, where patent protection could be less important than being competitively viable.<sup>14</sup>

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<sup>11</sup> Statute of Monopolies of 1624. Article 1 prohibited all trade restraints and monopolies. Article 6 kept the limited right of patents for invention.

<sup>12</sup> Cf. Friedrich-Karl Beier, Patent Protection and the Free Market Economy, [1992] 23(2) IIC 159. A correction ought to be made, that is the coexistence of both patent and anti-monopoly law had not been peaceful as Beier suggests. In this respect, the preamble to the 1624 English Statute of Monopolies is very illustrative.

<sup>13</sup> See a detailed survey by David C. Mowery, The US national innovation system: Origins and prospects for change, [1992] 21(2) Research Policy 125.

<sup>14</sup> According to a survey based on questionnaire and interview of large corporations carried out in America in 1956, "patent protection was least important to R&D investment decisions, emphasizing instead the necessity of maintaining competitive leadership or remaining competitively viable." Citation from M. Handler *et alii*, Patent and Antitrust, p. 7, Foundation Press, 1983.

In the post-war period, US antitrust policy contributed enormously to intensive R&D activities. The new competitive environment was dominated by newcomers - small firms, which played a prominent role in commercialising new technologies, and were boosted by a stringent antitrust policy and a liberal patent licensing. Government policy of that period, which affected the coexistence of competition and intellectual property,<sup>15</sup> contrasts with the 1980s new guidance. The new policy put in place, characterised by antitrust relaxation contrasted with the strengthening of intellectual property rights, made possible the acquisition of smaller firms by large corporations and encouraged joint collaboration<sup>16</sup> mainly for the purpose of technology exchange.<sup>17</sup>

The change in policy set up by the Reagan and Bush administrations<sup>18</sup> in the 1980s, while exposing the tension still present, gave rise to considerable concern and justified new thoughts regarding the actual aims pursued by the legal disciplines of intellectual property and competition laws. The handling of cases concerning IPR misuse and IPR-related competitive behaviour has illustrated how the interface of those disciplines is influential in reaching a proper balance of the interests of investors and the society at large in matters of intellectual property. The emergence of this pattern has led to the abandonment of patent revocation and less use of compulsory licence as a controlling measure. In this respect, the importance of a safeguarding policy follows the increasing role of intellectual property law in protecting technology which is the basis of the modern world economy.

An evaluation of the intellectual property and competition laws interface is rather significant when directed to trade practices in the field of information technology (IT). In this respect two observations are considered: the IT ability to change the trade environment at large, and

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<sup>15</sup> In *Morton Salt Co. v. G.S. Suppiger Co.*, the US Supreme Court recognised the presumption of market power derived from patent, 314 US 488, 494 (1942). The presumption was asserted in *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 US 2, 16 (1984), being extended to copyright.

<sup>16</sup> In this respect, see the National Cooperative Research Act of 1984.

<sup>17</sup> As an un-hidden target, the IT industry seems to have been considerably influenced by that policy.

<sup>18</sup> Cf. Atwood & Lister, *International Antitrust Enforcement in the George Bush Administration: The Enforcement Guidelines and Beyond*, [1989] 23(2) *Journal of World Trade Law* 97; US Department of Justice's *Antitrust Enforcement Guidelines for International Operations*, [1988] 12 *World Competition L. and Econ. Rev.* 99.

the pattern of business practices in the IT market. The changing trade environment is seen in the context of computer-aided management, leading to new practices in the conception, production and distribution of products and services. Computer-aided management does not represent solely an attitude in management, but also - much more important - generates a competitive advantage. Those firms and economic regions lagging behind in IT capability are bound to fail competitively. As a result of these IT trade practices, challenges have been posed to the legality of certain arrangements, such as tie-in deals, exclusivity and joint businesses involving intellectual property rights, which bring additional implications to the equation of the public interest.

The problem is much more complex as it relates to the internationalisation of competition. It inevitably creates the need to approach the domestic market taking into account foreign competition at both levels, market structure and legal framework. Bearing in mind the objectives (innovation and consumer welfare) pursued by intellectual property and competition disciplines, the effective operation of national law inevitably reflects the rules governing international trade and technology flows. In this respect, compatibility of laws would help to remove uncertainties<sup>19</sup> surrounding international trade, but such a prospect has always been impossible to sustain once the full implications of an approximation have been recognised. Improvements, however, are possible in areas where the costs of converging regulation seem to be affordable. The regulatory policy concerning limitations on intellectual property rights is one example.

Returning to the IPIC Treaty and the Agreement on TRIPS and their key provisions on non-voluntary licensing, crucial issues emerge from their implementation which involves conflicting public policies, e.g., freedom of trade, protection of proprietary rights, sound competition, and efficient state intervention. While committed to the conciliation of these elements at the operational level, a regulatory policy on the limits of the IPR use aims to:

- ensure an expected credibility from the legal machinery;

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<sup>19</sup> OECD, *Interdependence and Co-operation in Tomorrow's World, A Symposium Marking the Twenty-Fifth Anniversary of the OECD* (1987).

- induce pro-competitive attitudes associated with the IPR use;
- ensure an effective incentive to innovation and brighter prospects of public welfare; and
- guarantee a sound adjudicatory process.

The study deals with the theoretical-legal treatment of that regulatory policy. There are political, social and economic aspects associated with this policy. Although aware of these links, it is not possible to define the boundaries of these aspects, and they are therefore not specifically discussed here. To some extent, they are reflected in the competition framework, which is a central focus of this study.

## **1.2 Outline of the dissertation**

The study of the legal limitations on the use of intellectual property rights, with special reference to chip-design law, sets out to examine the exercise of intellectual property rights in the context of market structure and, more specifically, in connection with both the process of technical innovation under dynamic competition and the interests of society at large. There are two main themes to this study. The first is to show the need to limit the exercise of intellectual property rights from the welfare and efficiency perspective. The second is the emergence of an institutional safeguarding policy framed to work towards achieving the social bargain.

Part One takes into account the economic theory of technical innovation and its implications on both the legal foundations of intellectual property in general as well as chip-designs in particular, and the regulation of the exercise of the proprietary rights. It aims to justify the limitation on intellectual property on the basis of the efficiency and welfare perspective. The proposal comes from a suggestion found in an UNCTAD background paper on multilateral trade stressing that "the argument for a looser regime of intellectual property rights could be stronger if it were based on efficiency rather than on equity grounds".<sup>20</sup> A statement made by Robert Benko on the economics of the intellectual property is also suggestive:

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<sup>20</sup> Report of Ad Hoc Expert Group on Technology Policies in Open Developing Country Economies, p. 6, UNCTAD/ITD/TEC/3, 12 Feb 1993 (GE.93-50434).

*[intellectual property rights as] "monopoly privileges violate static economic efficiency or optimal resource allocation in the short term in an effort to generate a continuing supply of inventions and other creative goods. Dynamic or technological innovation is thus facilitated. Just how this economic logic or these principles are translated into concrete intellectual property systems is, of course, a social welfare question. The guarantee of specific monopoly privileges impose certain costs and benefits for the promise of additional, future benefits. These costs and benefits must be weighed and balanced in the construction of any particular intellectual property system."*<sup>21</sup>

Considering the efficiency/welfare dichotomy as a paradigm for the analysis and assessment of laws and institutions, the thesis offers a theoretical criterion to govern the limitation on the exercise of intellectual property rights. There are two reasons why this dual claim is deemed a good one to guide the limitation. One is that the legal pre-conditions for the protection of intellectual property in leading industrialised countries are assimilated to welfare and efficiency goals. The other reason is that these goals are also pursued by competition law and policy. An analysis of the claims of efficiency and welfare in relation to the legal pre-conditions for the protection of intellectual property shows that because the process of innovation is run within conditions of increasingly imperfect competition, firms tend to exercise their proprietary rights in a manner detrimental to those objectives. Although the structure of intellectual property law contains in itself a sense of social bargain (i.e., broadly, an attempt to balance the competing interests of both the owners and the public at large) this is not sufficient to guarantee the fulfilment of the objectives of the bargain theory.<sup>22</sup> These make a point of limiting the exercise of intellectual property rights.

Aiming at an integrated understanding of the legal and economic aspects of intellectual property, Chapter Two discusses the nature of the social bargain underlying the theory of intellectual property and the dynamics of the process of innovation. The discussion begins with an analysis of two phenomena: new technology and new competition.<sup>23</sup> It will be shown that the state of disequilibrium and uncertainty in competitive conditions resulting from these phenomena, explain the tendency of owners to develop strategic practices. These practices

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<sup>21</sup> "Intellectual Property Rights and New Technologies" (discussion), in *Intellectual Property Rights and Capital Formation in the Next Decade*, p. 28, edited by Charles Walker & Mark Bloomfield, Press of America, 1988.

<sup>22</sup> See the concept of the bargain theory at Chapter 2.3.1.

<sup>23</sup> See discussion at Chapter 2.1.



undermine the basic assumptions inherent in the intellectual property bargain, and make it necessary to regulate the exercise of the proprietary rights.

This theme is further developed in Chapter Three. It considers the structure of the protection of intellectual property, and chip-designs in particular. The study of this structure raises the question of the appropriateness of protection. It is assumed that appropriate protection in a structural sense conforms with the policy the legislation stands for. Through the discussion of the US law of mask works, the agreed statutory bargain is critically reviewed and contrasted with the legal pre-conditions as part of the theoretical background supporting the institution of intellectual property. The discussion includes the international standards of protection of chip-designs. It confirms the argument that at a structural level the social bargain, deeply rooted in the modern legislation of intellectual property, does not guarantee the fulfilment of the welfare and efficiency goals the protection of intellectual property pursues. This reinforces a case for limiting the exercise of intellectual property rights, requiring a degree of state intervention.

An assumption rather than an explicit defence is that a safeguarding policy to limit the exercise of proprietary rights does imply a degree of state intervention necessary not only to protect the property, but also to promote a free-market economy and social welfare. To this end, a safeguarding policy implies the inadequacy of the laissez-faire state to redress wrongs and attain wider availability of benefits from the intellectual property. This leads to Part Two.

Looking at the steps taken to safeguard the objectives of the bargain theory, Part Two analyses the emergence of what is called a safeguarding institutional policy,<sup>24</sup> emphasising its historical origins, evolution and trends. It includes:

- the description and analysis of safeguarding legal measures intrinsic to the law of intellectual property;
- the discussion of the increasing role of competition law and policy to order the exercise of intellectual property rights, thus being used as a fashionable safeguarding mechanism; and

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<sup>24</sup> See the concept of safeguarding policy and its variations at Chapter Four.

- the scrutiny of the process of adjudication on non-authorised patent use.

In relation to these themes, a regulatory approach to the safeguarding policy and its implicit ability to yield efficiency and welfare gains is considered. A cross-reference with related international standards is also made.

Chapter Five is a study of the unauthorised use of copyright and patent in Great Britain, intrinsic to the law of intellectual property. The evidence points to a strong need to control the exercise of intellectual property and to take from it the full public benefit, an early endeavour shared by the Parliament, through legislation, and courts on a case-by-case basis. Setting the original foundation for the scope and purpose of intellectual property, copyright and patent statutes and cases have reflected a strong legal culture and thinking directed to the constraint upon proprietary rights. Although the existence of this legal background does not suggest the formation of a system of combined policies, the legal rules were designed for purposes such as technical and trade developments, and military ends. Whether these purposes were and are being attained or not is a different matter, which raises a question of efficiency of means considered by the discussion of the safeguarding policy. However, the utilitarian aspect of a statutory safeguard is not necessarily placed in a material context, nor has such an aspect ever been claimed as a pattern of legitimacy. Thus the lack of apparent gain from a legal measure instituting an unauthorised use, either of copyright or patent, has never been characterised as a meaningful hindrance to proprietary rights. Concerns in this respect, nevertheless, have accompanied the legal move towards a conception of safeguards based on contingent rules reflecting competition elements.

Viewing the safeguarding policy within a wider regulatory framework, Chapter Six considers further changes in the institutional discipline which emerged with the resurgence of competition law and policy in the post-war period. The main point is to show the significance of competition law and policy as a legal mechanism able to safeguard the social bargain behind intellectual property. It suggests that the competition law framework is significant:

- by its implications on the intellectual property order,<sup>25</sup>
- because, pursuing efficiency and welfare goals analogous to those the intellectual property pursues, it is equipped with more desirable enforcement tools; and
- because it is framed and operated at large national discretion, thus providing the country not only with an additional instrument to limit the exercise of proprietary rights, but also with an element which allows appreciable bargaining power.

Affecting the intellectual property order, the growing and substantial development of competition law in selected OECD jurisdictions puts limitations on the exercise of proprietary rights into the scope of the competitive process. The natural follow on from this is the encouragement of competitive attitudes in general, and in the market in intellectual property. Firms which do not hold competitive attitudes in respect of the market in general, should not be expected to hold such attitudes in intellectual property. The sense of control presumes, for instance, the need for an alignment of the market conditions concerning licensing and exercise of the proprietary rights. Although this alignment in relation to the market forces could in principle result from a response to rules of supply and demand, such natural response (market self ordering) is not taken for granted. The state regulatory intervention, by continual enactment of new or amendment of existing laws on competition, reflects the failure of an unconvincing natural market response.

The regulation of the competition process itself provides for an indirect control of the intellectual propriety rights, that is, as a benefit of a more competitive market the abusive or anti-competitive exercise of patents and copyright works is discouraged. In other words, the less concentrated and more competitive the market is, the less opportunities owners have, or the less they tend to use their rights in a manner incompatible with or less beneficial to the social bargain.

As a safeguarding mechanism, the significance of competition law lies in the nature of the proceedings it applies, and the flexibility of remedies to redress competition mischief related

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<sup>25</sup> See at Chapter 4.4 the concept of intellectual property order.

to intellectual property. It is suggested in Chapter Six that procedures in competition law provide more opportunity for the analysis of the alleged wrong exercise of intellectual property rights, more emphasis being placed on the discussion of suspected competitive behaviour. The consequence is that greater weight is given to assessing possible damage to efficiency and welfare objectives. The remedial measures are flexible to the extent that they may not amount to unauthorised use. Committed to efficiency and welfare allocations through competition principles, the process may end with an acceptance by the competition body of undertakings offered by the right holder in order to redress possible adverse effects on public interest. While less upsetting to the intellectual property, this sort of "gentleman's agreement" is easily enforced, therefore having a low enforcement cost, and is significant by its impact (i.e., the creation of better bargaining conditions between licensors and licensees) on the exercise of proprietary rights. The effectiveness of the enforcement measures, nevertheless, depends on how flexible or tough the competition policy is.

The account of the legislative move from the 1950s in selected OECD jurisdictions, and in Great Britain in particular, gives an essential picture of a legal mechanism framed in accordance with national tastes. To what extent a country is willing to control the competition process is a matter of domestic policy. In connection with this, it could be said for instance that the British competition system is a benevolent one compared to the US system. Being able to format legal control of the competition process almost entirely at its discretion, a country can avail itself of a protectionist and defensive system<sup>26</sup> free from the fetters of international standards. Furthermore, resorting to the legal framework on competition in order to safeguard the social bargain does not exclude the remedial setting provided within the intellectual property law. All of this is an advantageous situation in comparison to other countries which, still engulfed in their own political reluctance, have no sound response to the competition phenomenon.

As the analysis of the legal treatment of the competition issues in those selected jurisdictions reveals, competition thoughts and concepts show a significant contribution to the understanding of the dynamics of the economic matters underlying the legal rules governing

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<sup>26</sup> See the discussion at Chapter 4.2 and 4.4.

the competition process and the exercise of proprietary rights. The resolving strength of these rules, nevertheless, is limited. Entailing a degree of obscurity, the legal tests are conducted within a standard of debatable accuracy, and they reflect the application of flexible rules (e.g., workable competition) which exclude pure economic concepts. The tenor is that efficiency is not to be taken for its own sake. In the light of this background, an unsurprising finding points to the reduced aptness of the legal framework to yield welfare and efficiency gains. From this, however, nothing is suggested to undermine the significance of competition law and policy to order the exercise of the proprietary rights.

Chapter Seven is an approach to the regulation of the process concerning unauthorised use of proprietary rights, with emphasis on the discretionary power exercised by the comptroller general concerning adjudication over unauthorised use of UK patents. It reflects on the nature of the procedures from which these decisions have been made, without intending to evaluate their correctness regarding allocative efficiency. Aiming to undertake no comprehensive analysis of discretion, the study is confined to an understanding of the institutional process of adjudication as it is carried out by the comptroller general. A major concern is to discuss an adjudicatory policy sufficiently credible in the eyes of traders and consumers. A credible regulatory policy would require, *inter alia*, clear substantive conditions and concepts on which unauthorised use of intellectual property rights should rely, procedural regulations designed to guide the reasoning process suffused with public policy arguments, limited discretionary power, and sound assessment of royalties. Now projected into international standards, these themes (already an essential part of the safeguarding policy in place in leading OECD countries) are incorporated in the Agreement on TRIPS, and again considered in the concluding Chapter Eight which gives further thoughts to a regulatory approach. In this respect, a central question is how the limitations on the exercise of intellectual property rights are treated, and to what extent the regulation is strong enough to achieve related objectives?

### 1.3 Synopsis of the research

This introductory chapter begins stating the disagreement between a number of countries' representatives about non-voluntary licences on chip designs. Non-voluntary licensing is a

typical limitation on intellectual property. In this respect, it seems desirable to state to what extent limitations on the use of proprietary rights conceptually provide for welfare and efficiency defence, and on which formal (theoretical) conditions such defence could properly be exercised under IC law. The research explores the theoretical-legal aspects of the limits to the exercise of intellectual property. From the analyses, it will be shown that:

- it is proper for any country to limit the exercise of proprietary rights on welfare/efficiency grounds. These purposes, however, have not been properly achieved within the framework of IP law;
- a well structured and balanced policy is necessary in order to prevent and redress misuse of proprietary rights;
- regulation on the exercise of proprietary rights does not guarantee efficiency and welfare gains, but determines the formal conditions and a principled basis which forms the best response for achieving them.

#### **Limitations on welfare/efficiency grounds: inadequacy of remedies intrinsic to IP law**

It is widely recognised that a social bargain (translated into efficiency and welfare purposes) underlies the theory of intellectual property rights, protected for the mutual benefits of owners and society. Rather than a point explicitly defended, this is an assumption supported by a specialised literature. Contrasting with such a theoretical basis, the innovation dynamics tend to be performed in conditions of increasingly imperfect competition. If innovators tend to develop their activities in a context of such imperfect competition, it should be legitimate for the state to establish a proper policy to limit the exercise of intellectual property rights on grounds of efficiency and welfare.

It should be evident from the existence of a social bargain underlying the intellectual property that a set of remedial measures is necessary to police and promote the settled bargain, as well as to remove the obstacles which prevent or impede the achievement of it.

While providing for some control on the exercise of proprietary rights, intellectual property law (or the theoretical background behind it) does not fully explain such control in the welfare/efficiency perspective. Explanations are rather given by the conceptual framework behind the regulation designed to secure free competition by controlling anti-competitive practices. In many ways competition regulation is significant to order the exercise of intellectual property rights. For instance, the legal proceedings or mechanisms concerning the methods of investigation of the competition phenomenon tend to secure more transparency, and thus attract acceptance. More than a belief, this is reflected in the growing development of competition legislation.

Here, it is brought to the attention that leading industrialised nations (e.g., the United States and Great Britain) have traditionally sought to improve mechanisms to limit intellectual property. The same observation applies to the European Community as a supranational organisation of States. In developing limits to proprietary rights, each of these States has often resorted to competition law and policy. Whether these nations would be prepared to provide strong protection to intellectual property without at the same time developing a form of remedial or safeguarding law is a matter for wonder. The increasing evolution of the regulation of the competitive process in these countries leads to a visible, interactive and significant role for the regulatory policy of intellectual property and competition. A suggestion arising from such an interactive role is that without proper control of the competitive process (i.e., setting of remedies to redress mischief against the social bargain) intellectual property protection makes little or no legal sense. It follows that the setting or operation of limits to the exercise of proprietary rights within the framework of intellectual property law is far from sufficient to fulfil the social bargain.

### **Emergence and significance of an institutional and safeguarding policy**

The manner in which the law in industrialised countries (the study concentrates on UK legal experience) limits the exercise of intellectual property rights is significant. This significance lies in the evolution of the regulation on intellectual property, competition law and policy, the performance of relevant enforcement bodies, intergovernmental co-operation, and public

management. The study identifies an emerging institutional policy organised and implemented to limit the exercise of proprietary rights.

To the extent that technical innovation and competitiveness are desirable, and efficiency is supposed to blend with social welfare, state intervention to ensure that these objectives are achieved assumes a major feature of the modern regulation of economic affairs. This applies also to regulation of intellectual property. The structuring of this regulation, far from being an isolated and static undertaking, claims legal safeguards which may operate in connection with broader and strategic policies (e.g., technical and industrial policies). Thus, the limitation on the exercise of intellectual property rights is a legal concern deserving treatment separate from intellectual property protection and enforcement. The pursuit of welfare and efficiency through such limitation has shaped an institutional and safeguarding policy.

### **Legal conceptualisation of a safeguarding policy**

Assuming that there is an incomplete theoretical knowledge about the relationship between competition and the degree to which it fosters innovation and creativity efficiently, the possibility of efficiency and welfare being achieved through legal policy is in the main contingent upon the assessment of particular cases. Thus, at law the pursuit of such objectives is a matter of "formal" claims. That is, the aptness of a safeguarding policy to yield efficiency/welfare gains related to intellectual property is conceived ultimately in terms of reasonable operation of incomplete rules, discretion, and streamlined proceedings. Considering these elements theoretically, the study finally attempts to establish a legal conceptualisation of a safeguarding policy.





## CHAPTER TWO

### INTELLECTUAL PROPERTY, CONOMICS AND INNOVATION

#### **2.1 Introduction: technical change, competition and policies**

Over the last two decades, protection of intellectual property has undergone intense negotiations. Two related elements which have attracted the attention of negotiators are the nature of high technologies, and the competition in the innovation process. The aim of this chapter is to discuss these elements and establish the importance of them to intellectual property policy.

Protection of intellectual property, in the second half of this century, was marked by the emergence of two interrelated phenomena: growing technology and new competition. The former is characterised by the ability of the developing technology to stimulate economic activities and operate revolutionary transformations. Similar to developments in information technology, they have taken place in a large range of sectors, including education and training systems, industrial relations, managerial styles, and financial systems, thus creating a huge volume of new services and affecting greatly the social mode of life. This has led to the perception that innovation is good and desirable. Such awareness has resulted in a type of a syndrome, i.e., an attitude towards a technological race and the world-wide belief that lack of technical capability will hamper a country's economic development.

The latter phenomenon is characterised by a natural change in the competitive structure of industry and the emergence of large-scale firms acting under conditions of increasingly imperfect competition. The perception of the changing nature of competitive behaviour over time explains for the dynamics of the market order, and provides a justification for intermediary forms of imperfect competition (monopolistic competition and oligopolist market) unknown by the classical economics. While technical progress tends to be affected by those market models, new technologies have brought about a sense of disequilibrium and uncertainties.

Such a sense of disequilibrium is, firstly, of theoretical nature. Although too formal to function as an economic model, perfect competition is still of beneficial regulatory effects at least because of the maximisation of efficiency and welfare it pursues. When considering the increasing conditions of imperfect competition in which innovation activities occur, it can be assumed that the innovation process entails some degree of welfare and efficiency losses. Secondly, an additional type of disequilibrium stems from the fact that all regions cannot benefit evenly from new technologies as technical changes flow *a la* wave. The structural imbalance resulting from the uneven spatial development is likely to impair the ability of some regions or countries to compete. In order to follow the technical race, they face massive disadvantages and uncertainties.

Any investment project contains conceptual risks, expressed in terms of costs, an ability to satisfy demand and to compete with rivals. Such risks vary according to the magnitude of the undertaking and the level of sophistication of the technology. Additionally, companies are concerned about to what extent and how much existing legal regimes of intellectual property can afford proper protection to new technologies.<sup>1</sup>

Traditionally, intellectual property would protect mental creativity which results in both works (expressed in a particular form) and inventions with industrial applications. These do not include scientific ideas or theories which would belong to the public domain. As a determinant feature of the intellectual property right, the mental element places the creativity output in close relation with creators (authors or inventors). Today, the purity of this theoretical background is being challenged as never before. What matters, essentially, in the protection of new technologies, is to secure the return on investments. Hence, intellectual property rights increasingly express an investment relationship banked by firms. The mental element is no longer the most important, nor is the relation between the creator and his creation the most significant. The law leans towards protecting scientific theories and mathematical sentences mainly through increasing protection of trade secrets and know-how.

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<sup>1</sup> Concerning deficiency of IPR protection for new technologies, see footnotes 1 to 4 and accompanying text in Ch. 3.1. The study does not deal with this problem in particular. It is referred to with a view to emphasizing consequential uncertainties.

Concerned with return on investments and facing all sort of uncertainties, including lack or inadequacy of protection of proprietary rights, innovative firms are likely to develop defensive and strategic activities, i.e., trade practices which increase market imperfection and may not be acceptable in the light of competition standards. As an illustration, patents over chemical inventions from the late nineteenth century to the middle of the current century were strategically used as a tool to prevent access to the market and control output. Cross-licensing of patents in the field of electronics, carried out by leading computer firms in a restrictive style, has also taken place over the last two decades. These are only some examples of how profit-maximising firms struggle against uncertainties. In some circumstances, government assistance is a means of support, if not the only way to turn a radical innovation into a successful project.

The indisputable role of the government makes the *laissez-faire* state inadequate to attain technological progress. The state involvement in assisting firms, plainly justified by neo-liberalism, varies from country to country according to domestic traditions or the policy of the government of the day, and takes different forms. Whether the state, as a regulator, customer or underwriter, does conform its action to welfare and efficiency principles is not a matter to set up a priori. The state presence in the innovation process is crucial for pursuing a balance of interests.

In this chapter it is argued that while intellectual property is designed to promote technical innovation and enhance competition for public favour, the innovation process tends to be carried out in a context of increasingly imperfect competition. As a result, the achievement of the social-bargain policy, underlying the intellectual property, is impaired.

Built up under the influence of the classical economics, intellectual property has been protected under a framework of legal pre-conditions. Such protection is granted to encourage innovative activities, induce disclosure of information, reward inventors and authors, and boost industrial applications. These are assumed to work for the benefit of the society at large, and to found a sense of social bargain assessed and comprehended in the light of

welfare and efficiency goals.<sup>2</sup> The purpose in placing the institutional bargaining in a welfare-and-efficiency perspective is to reach an understanding of the combined institutions of law and economics in intellectual property. Such an analytical approach provides a dynamic and more precise sense of the elements forming that bargain in connection with the innovation process.

While protecting themselves against the risks inherent in innovative activities, firms move towards concentration. As a result, barriers for entrants and distortions to competition are likely to be created. These potentially work against the purposes underlying intellectual property. On this grounds lies a strong argument for limiting the use of proprietary rights.

This chapters begins by describing the nature of chip technology, which is taken as a paradigm for a number of reasons. Firstly, protection of chip design is regulated by specific international treaties, establishing a legal regime of intellectual property and with which this study is mostly concerned. Secondly, as a product with multiple applications, chips have a close relationship with computer software, data-basis and artificial intelligence. Developments on chip designing and manufacturing<sup>3</sup> give rise to theoretical-legal concerns.

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<sup>2</sup> There is not a definite description of efficiency and welfare goals. It is here assumed that to limit the intellectual property on efficiency grounds requires a fault or competition mischief on the part of the owner. A limitation not based on efficiency grounds can only be justified on public welfare (e.g., expansion of employment, export and tax basis, balance of payment, supply of a product essential to public health or national security, and to correct a distortion of competitiveness or distribution of the industry). See the discussion in Ch. 2.3.1., Ch. 6.3.1 (i) and Ch. 7.2.4.

<sup>3</sup> To a degree, integrated circuits are in the core of, or associated with, technologies such as advanced semiconductor devices, artificial intelligence, digital imaging technology, flexible computer-integrated manufacturing, high-density data storage, high-performance computing, and sensor technology. For details, see "Emerging Technologies - A Survey of Technical and Economic Opportunities", US Department of Commerce, 1990. [From now on "1990 DOC Technical Survey"].

## **2.2 Technological background: the chip as a paradigm**

### **2.2.1 The semiconductor chip**

#### **(i) Chip: from history to business**

The huge difference between today's computers (based on large-scale circuit integration) from those in the 1950s (valve computers) can be explained in terms of cost, reliability, user-friendliness, speed of operations performed, and memory size. Succeeding valve computers, transistors represented a development which was limited due to the difficulty of interconnecting them. Advancement allowed logical units, made up of a number of transistors and its associated circuitry and connections to be placed on single semiconductor material (a chip). The development of this technology led to machine miniaturisation, creating third and fourth generation computers. The integrated circuits not only made the formidable change in performance possible, but also determined the overwhelming growth of computer technology.

#### **Some technical definitions and the importance of the chips**

The chip is a popular name for an integrated circuit or semiconductor chip, which is an electronic device with electrical functions. These terms are synonyms, differing only in the product manufacturing process. The terms topography, circuit layout, layout-design and mask work, now legally coined, are used interchangeably to indicate the arrangement of the elements representing the three-dimensional structure of the chip. The term chip-design also appears in this study as a synonym for the same representation of that arrangement on which the legal protection relies. Hence, the chip or integrated circuit is the final product or device in solid state distinguished from its layout or design itself.

The complex collection of transistors contained in an integrated circuit corresponds to minuscule patterns of switches which control electric current and perform assigned functions (manipulation of electrical signals) at nearly the speed of light. The transistors determine the

chip capacity assessed in terms of computing power, speed, power consuming, reliability, and cost. These require the use of very sensitive types of material.

Well known as a semiconductor system of circuits, the chip is made up of two broad categories of material: good conductors (rich in conducting electricity) and bad conductors (insulators). Due to high technical methods and processes, thousands of circuits are imprinted in a single, thin structure forming a semiconductor compound or substrate of material such as silicon, glass, sapphire, ceramic, magnetic domain, and superconducting material. Several types of chips differ from each other due to the manufacturing methods or process they apply or the functions they perform.

According to their manufacturing methods, chips are bipolar or MOS (metal oxide semiconductor). Power consumption and speed depend on such methods. In their variations, MOS chips are technologically dominant and have wider applications. Linear and digital circuits differ from each other due to the methods of altering electrical signals. Linear circuits process electrical signals over a continuous voltage range, and are suitable for analog computers, radios and TV sets. Digital circuits are suitable for processing information in bits (binary digital), and are largely used in digital computers. Within the digital category, a distinction is made between logic (microprocessor) and memory chips.

Two basic functions of a chip include computing of processing information and storing data (as either input or output already saved for ulterior computations). Although these functions can be performed by a single device, memory chips have the primary function of storing data or programs; they are ROM (read-only-memory), PROM (programmable-read-only-memory), and EPROM (erasable PROM) chips. A microprocessor has complex logic circuits containing the basic elements (forming a central processing unit - CPU) of a conventional computer. For this reason the microprocessor is regarded as a microcomputer on a chip. Both functions (storing data, and making decisions which rely on data) could be integrated on a single VLSI (very large-scale integrated) chip whose use is not confined to computers.

Developments in computer technology would not have been possible without integrated circuits. Their applications, therefore, go beyond the computer industry, to include consumer

products, telecommunication equipment, industrial process control, medical and manufacturing equipment, defence systems, and any area which requires significant use of electronics. These growing applications illustrate how crucial the technological progress and competitiveness of the integrated circuit industry is to the economic growth of any nation. Yet, only a minority have been able to enter the chip business.

The design and manufacture of chips requires a considerable amount of investment and a highly trained labour force. The innovative activity takes thousands of hours of research and development, and is a costly business. Designing and marketing an entire family of integrated circuits may take years and million of dollars. Nevertheless, such high costs are alleviated thanks to automation and mass production, so that the price per unit is only a few dollars.

## **(ii) Designing and manufacturing process**

Designing, manufacturing and testing a chip involves decisions regarding which techniques to apply, costs and purposes. Advances in methods and in the manufacturing process offer a variety of options which meet specific needs. The appropriateness of the technology<sup>1</sup> depends on the type and the amount of information one wants to include in a single chip or chip system.<sup>2</sup> The scale of integration, the flexibility of the microprocessor (the versatility to update), the advances in CAD,<sup>3</sup> and the purposes -if it is an application-specific integrated circuit (ASIC), or a general-purpose microprocessor - affect the costs. These technical requirements, costs and purposes are intrinsically related. The search for profit and capability are contributing factors. If designing and production have commercial purpose, a microprocessor may be smaller and cheaper in order to reach competitiveness; perhaps, no similar product has been produced before, and hence a generous scale of production is considered. If the focus is on capability, e.g., a microprocessor for military application, power and performance are decisive.

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<sup>1</sup> In the description of the steps below, the designing and fabrication of an MOS integrated circuit is considered. The MOS technology dominates the IC market, and is largely applied to VLSI circuits. Cf. A. F. Murray & H. M. Reekie, *Integrated Circuit Design*, pp. 6, 24.

<sup>2</sup> A microprocessor system differ from a microprocessor on a single chip in the sense that the former includes a printed circuit board, a few number of chips and discrete components.

<sup>3</sup> The computer-aided design (CAD) consists of a variety of hardware and software tools.



Designing follows several steps. (a) Abstract description. A plan of the electrical functions to be performed is prepared. The electrical specifications are described with precision and in detail. A market study previously undertaken perhaps supports the conception of the desired functions. (b) Logic diagram. A detailed schematic data describes the circuits symbolically. This is a very important piece of work, which requires talent and experience.<sup>4</sup> (c) Layout design. The arrangement of the components and the complex interconnection patterns is defined. The selected geometrical placement of the elements provides a picture of how the chip topology will be implemented. The designer is then able to make input (progressive specification of data) in order to optimise the layout configuration; by manipulating the schematic he makes choices, selecting a particular way of arranging the elements in the semiconductor substrate.<sup>5</sup> He is bound, however, to adhering to a set of technical design rules. These rules represent "constraints" upon the freedom of design, and are dictated by technological considerations. The geometric rules, for instance, address the problem of the transistor size; the electrical rules specify electrical parameters applied according to the manufacturing process; some mandatory features are also imposed, and are supposed to be present in every design.<sup>6</sup> To observe and implement these rules, the designer enjoys the aid of the computer which is regularly utilised.

Although designing can be computer aided (CAD), the simulator capacity of mimicking the circuit and predicting its behaviour is limited; some inaccuracies do exist, and thus the design automation tolerates certain levels of inefficiency. For this reason, the designer's intuition is needed.<sup>7</sup> Furthermore, automation is developed inside large companies. As access to them is rather difficult, it is uncertain how much simulation is applied. Increasing of IC density has rendered the use of simulation nearly indispensable. Moreover correction<sup>8</sup> of the chip configuration must be made before the design is released for mass production, otherwise modifying the chip is impossible.<sup>9</sup> The simulation patterns are applied to verify the logic design, i.e., to check its internal consistency, help generate alternate architecture, and file

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<sup>4</sup> Provided the schematic is sufficiently novel, protection may be available under the patent law.

<sup>5</sup> This job carries out the considerable work of mind that the *sui generis* law protects. The layout design corresponds to an encoded set of masks - the "mask work" of the American SCPA.

<sup>6</sup> For details about the design rules, see Murray & Reekie, ob. cit., p. 63 *et seq.*

<sup>7</sup> Murray & Reekie, ob. cit., p. 101.

<sup>8</sup> At every stage corrections are performed, by adding further specifications and improving earlier results.

<sup>9</sup> After fabrication, each layer or mask is permanently fixed or embodied in the semiconductor material.

additional information regarding the whole IC network. Such data will be useful during final testing. The more complex the chip architecture is, the more automation is needed, despite the challenges posed by the simulation.<sup>10</sup> A factual consequence, however, deriving from the CAD (computer-aided design) discipline and the strict design rules to which the designer is bound, is that limitations on engineering techniques lead designers to create independently layout circuit which may be substantially similar.<sup>11</sup>

The material is ready for manufacturing<sup>12</sup> when the interconnecting pattern is complete and correct. The integrated circuit is developed by the transfer of the encoded pattern, through an expensive process and by applying a series of operations.<sup>13</sup> The result is a collection of masks,<sup>14</sup> which determine the features of the transistors.

The stages in the manufacturing of a silicon-based integrated circuit are as follows. The masks are produced by photo-reducing the circuit design. The manufacturing process itself starts with the oxidisation of the silicon. At a high temperature, chemical and photographic treatments are applied on the substrate, including repeated addition and removing of materials. The result is a resistant product consisting of a basic metal-oxide semiconductor

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<sup>10</sup> Challenges, for instance, in terms of reliability. See M. Feuer, "VLSI Design Automation: An Introduction", a supplemental article presented to the "Subcommittee on Courts, Civil Liberties, and the Administration of Justice", of the American House of Representatives, H.R. 1028, pp. 380 *et seq.* In a less accurate source, the generalized use of automation seems to create no problems, mainly in designing of gate arrays and standard cells. Special Report from Business Week, May 23 1983, transcript in Hearings on S 1201, p. 162.

<sup>11</sup> The problem of substantial similarity is legally relevant, and, as a technical fact, was referred by M.A. Lechter in his written comments recorded in the hearings of the H.R. 1028, p. 280. Serious incompatibility would exist, however, in applying the copyright test of similarity in the domain of the semiconductor chip.

<sup>12</sup> The chip law does not primarily focus on the fabrication or the product, but on the chip design (the intermediate masks) instead. Nevertheless, the manufacture helps to understand some legal definitions. Moreover, the design normally reflects specific manufacturing process, the interrelation between them may be rather significant. "On one hand, designs may have to be substantially modified because of manufacturing limitations while, on the other hand, advances in manufacturing techniques or materials may compel major changes in design parameters." - Cf. [1988] III(4) Monthly Labor Review 27; see Hearings on S 1201, p. 162.

<sup>13</sup> Such as metallisation: application of a metal which is used for interconnections of the device, and act against the high resistance of other materials; and insulation or oxidation: a layer of oxide, an insulating material, is deposited on the wafer (a disk of silicon) in order "to prevent any undesirable short-circuits" producing silicon dioxide. This material is a very good insulator, permitting the application of the masking technique at a high temperature. Murray & Reekie, *ob.cit.*, p. 48/59.

<sup>14</sup> They represent the number of layers (10 to 16), precisely aligned or juxtaposed; each of one has less than one micron (one thousandth of a millimeter), and bears the information concerning both the processing technology, and the electronic system embodied in the chip; they together describe the entire topographical dimension of the chip.

transistor. The last step is testing each chip still on the wafer.<sup>15</sup> Those which do not perform the desired functions are rejected and thrown away.

### **(iii) Reverse engineering and audit trail**

Ordinarily, there are two ways of getting access to a given chip: obtaining a pattern either (a) in form of a tape,<sup>16</sup> or (b) through the reverse engineering process.<sup>17</sup> Both may derive from a normal technology share agreement<sup>18</sup> but the latter - although being a lawful practice - may be a step towards a misappropriation.

### **Defining reverse engineering**

Reverse engineering is a process by which one may disassemble the chip into its constituent patterns (masks or layers), using photomicrography. The top layer is photographed, carefully measured (and the related information preserved appropriately) and etched away in order to expose the next pattern, and so forth layer by layer, until the schematic of the whole chip is drawn. The operation is undertaken with a microscope and a camera mounted to take pictures, and the layers are removed by applying a set of chemical baths. When the entire mask set is reconstructed, the embodied principles, techniques or specifications (concepts and ideas), are evaluated for the purposes of studying or teaching. Next, another IC layout may be designed around the protected one, modifying and improving it, both chips (the model and the second one) being functionally equivalent, but visually dissimilar.<sup>19</sup>

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<sup>15</sup> A wafer is approximately five inches in diameter and 0.025 inches thick, and can yield 100 to 200 chips at one time. The higher the number of sound devices per wafer, the lower the end-cost per output unit.

<sup>16</sup> The IC layout tape, including the reticle set and working masks, are carefully kept by the company. These intellectual assets - according to the 1991 amendment to the Unfair Competition Prevention Law of Japan - should be part of an inventory in order to be protected. [1991] ICLA 13, Nov.

<sup>17</sup> One well-known case of reverse engineering that has been cited was the NEC version to the Intel 8080 microprocessor. The Intel assumed that its chip was served as a model by NEC, which analyzed the 8080 allowed by a private agreement signed in 1976 with the Intel. See Hearings on HR 1028, pp. 39/40.

<sup>18</sup> Technology share agreements are commonly made by great corporations. Toshiba, Siemens and IBM have recently joined to create a memory chip which will hold 256 megabits by 1998. The reason for going into alliance is basically the high cost of research: "Toshiba earns US\$ 7 billion from chip each year. It will cost US\$ 1 billion to develop the 256-megabit chip." [1992] 135 (1831) *New Scientist* 9.

<sup>19</sup> Cf. Hearings on HR 1028 p. 392, Hearings on S 1201, pp. 27/28 and 38. American firms specialised in chip analysis charge a few tens of thousand dollars for assembling service, including topological layouts, and material analysis. The high-price range may oscillate from \$10,000 to \$30,000, but one may come across advertised chip reports at \$980 to \$1880, "with volume discounts for additional copies." Cf. M. D. Goldberg,

It is indisputable that reverse engineering is an appreciable means of technology diffusion. Its accessibility effect is particularly understood within the context of the second-source manufacture (integrated circuits interchangeable with counterparts). For technical and commercial reasons, a firm may want to make a chip equivalent to a competitor's, or a manufacturer to have a second-source of its product in pursuit of adequate supply, market certainty, technical compatibility and cost reduction.<sup>20</sup> Second sourcing, a common practice in the US semiconductor industry, provides the buyers with at least two possible suppliers, protecting them against the risk of excess demand.<sup>21</sup> The equivalent product, normally resulting from a private agreement, would be a competitive version enjoying lawful circulation.

Whatever the status of the equivalent product, whether a copy or a legitimate and similar one, an additional issue is the reproduction of the microcode<sup>22</sup> built into a memory chip.<sup>23</sup> As far as the law<sup>24</sup> is concerned, there is a potential conflict between the decompilation of a chip and a computer program.<sup>25</sup> Apart from this aspect, to find out whether or not a second-comer is a copying output is legally relevant. In this respect, the audit trail<sup>26</sup> is of some assistance.

### Definition of audit trail

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Intellectual Property Rights and Technology - Semiconductor Chip Protection as a Case Study, paper presented at the Conference on Global Dimensions of Intellectual Property Rights in Science and Technology, held on January 8-9, 1992, at the National Academy of Sciences, Washington, DC.

<sup>20</sup> For details, see J. C. Oxman, Intellectual Property Protection and Integrated Circuit Masks, an article reprinted from the *Jourimetrics Journal* and presented at US Congress as supplemental material, Hearings on HR 1028 p. 388/9.

<sup>21</sup> Cf. UN Chip Report, pp. 142/143. See Table 8.4. Second sourcing is also a legal requirement of the US public procurement law. See Luc Soete, "International Diffusion of Technology, Industrial Development and Technological Leapfrogging", [1985] 13(3) *World Development* 409, at 421 (footnote 36).

<sup>22</sup> The microcode is a particular computer program built into a chip as a pattern of tiny transistors, i.e., a piece or portion of electrical circuitry.

<sup>23</sup> This is a matter of great importance because the memory chips or RAMs form a category considered as "the vital fuel of the computer industry". Aware of this and by the time the American SCPA was passed, the US Defense Department was worried about the possibility of the US computers, weapons and telecommunication become dependent on foreign memory chips. This concern made sense, because Japan soon after emerged as a leading force in the market of memory chips. Hearings on HR 1028 p. 359.

<sup>24</sup> Although lawful under the *sui generis* chip law, reverse engineering is uncertainty in copyright as this applies to computer program.

<sup>25</sup> Disassembling a memory chip technically leads to the decompilation of the computer program microcode embodied in the chip.

<sup>26</sup> Audit trail is here applied replacing the expression paper trail. The former seems to be more appropriate, because the elements involved in the concept rely increasingly on electronic means rather than on paper.

The audit trail consists of the overall documented job of trial-and-error performed along the course of the chip design, and include blueprints, computer simulation outcomes, logic circuit diagrams, trial layouts, test data, and time records. These elements are necessarily generated as a result of significant efforts put in the making of an IC design, and may be printed on paper (paper trail) or electronically stored in a computer (electronic trail)<sup>27</sup> The electronic trail incorporates technical principles, specifications, ideas and concepts manipulated or arranged by the chip designer in the course of the making of an original chip.

A discerning observer should be able to tell whether a chip is a copy or fruit of reverse engineering.<sup>28</sup> The distinction which needs to be made is a matter of "change" or "adaptation"<sup>29</sup> rather than a direct evidence of authorship.<sup>30</sup> It follows, if the audit trail has been produced it does not necessarily mean the IC-design is an original one.<sup>31</sup> The audit trail is significant in the sense that it does provide evidence of systematic tasks and investment, but it is not a test of originality.

As hardware, an integrated circuit is a device very distinct from computer software. Nevertheless, these two technical elements work together in a large number of applications, mainly in computing. The scale of this technical interplay is such that commercial and industrial exploitation of integrated circuits and software considerably affect each other, and the infringement of a microprocessor chip most likely involves infringement of computer software as well. For this reason, an approach to advancements in computer software seems commendable.

## 2.2.2 Computer software and artificial intelligence systems

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<sup>27</sup> The electronic printing may include accidental errors or traps. This is the case of a small imperfection fixed in the Intel 8086, causing a chip designer to discover by chance the copying made by NEC in the fabrication of an 8086 version. This most famous copying case is part of the high-scale competition between Intel & NEC, the two giants of the electronic industry.

<sup>28</sup> L.L. Vadasz, *loc. cit.*, p. 37.

<sup>29</sup> The debates carried out at the US Congress suggested that the audit trail was only half important. As a result of a technical routine and in-door activity, the paper trail could hardly be accepted as a proper test of originality, thus, unsuitable to be included in a legislation dealing with intellectual property.

<sup>30</sup> In technical sense, significantly different designs may present very subtle mask changes. Hearings on HR 1028 p. 37.

<sup>31</sup> The conclusion is a valid one, but it is assumed that to forge an audit trail is nearly impossible.

## (i) Development of computer software<sup>32</sup>

### Definition of computer software

As a legal concept, computer software includes the *computer program*, *program description* plus any other related *supporting material* necessary to the whole specification of the computer program itself.<sup>33</sup> The conception and execution of a software project may involve a considerable amount of intellectual effort and investment. These inputs vary according to the software application which could be for the control of a nuclear reactor or a washing machine. Regardless what the software function is, its development entails the same basic phases roughly associated with those elements relevant to the legal concept. These phases are the specification, designing and programming.

### Development steps

At the initial stages of the process, there are specifications or statements of requirements provided by the customer. Usually written in natural language, the requirements may consist of a few pages or a number of volumes, and describe what the program is required to do (function or task) within certain conditions or limits (constraints).<sup>34</sup> The language of the statements often contains plenty of imperfections, such as ambiguities, omissions and so on. Thorough analysis of the statements is then carried out in order to resolve such imperfections and reach an agreed specification, formulated in accordance with certain properties and understandable by both customer and developer. Once completed and tested, the specification

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<sup>32</sup> See IEEE Standards Collection, Software Engineering (1993)

<sup>33</sup> The WIPO defines these terms as follows: **computer program**: "a set of instructions capable, when incorporated in a machine-readable medium, of causing a machine having information-processing capabilities to indicate, perform or achieve a particular function, task or result"; **program description**: "a complete procedural presentation in verbal, schematic or other form, in sufficient detail to determine a set of instructions constituting a corresponding computer program"; **supporting material**: "any material, other than a computer program or a program description, created for aiding the understanding or application of a computer program, for example problem descriptions and user instruction." Draft Treaty (Article 1) and 1977 Model Provisions (Section 1) on the Protection of Computer Software. Computer software and computer program are terms used by academics and practitioners interchangeably.

<sup>34</sup> A fragment of a hypothetical statement: if the driver does not put on the seat belt and the engine is started, an alarm will sound intermittently.

describes what the system is to do in terms of application; the description is a basic document to develop the system design.

The designing is the second phase. At this stage, procedures or subroutines are arranged and grouped in units. *Program units* are sets of codes and data which define each function or task and their performing order, and are capable of intercommunicating in a logical flow by parameters. The architecture of the operations organises the data in terms of sequential file, expressed in algorithms, i.e., set of steps, and is expected to satisfy the functional specification and constraints. A detailed logical design structure of the operations is then reduced to a form called a *flowchart*,<sup>35</sup> which expresses how a system, as a series of functions, is to be implemented in computing terms.

In the third phase, algorithms and program units are written in computer language.<sup>36</sup> The flowchart is now translated into *source code* or source program, which describes key statements in mathematical notions. The translation is made through an *interpreter*, instruction by instruction, or a *compiler* which translates the whole diagram in one operation.<sup>37</sup>

In order to be run and commercialised, the source program is translated into object code (code program or machine code), which is a series of instructions to be operated by the computer, and written in a special format. As the translation is carried out aided by the computer, the source program is taken as an input supplied to the translator.

As a second program or output, the object code takes a machine-readable form. Its binary notation makes up sequences of zeros and ones,<sup>38</sup> which correspond to equivalent wired

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<sup>35</sup> The flowchart or flow diagram is independent of the coding, and is said to represent the idea behind the computer program (cf. K R Moon, [1991] CLP 158). Apart from the idea/expression dichotomy, the arrangement *per se* of algorithms, mathematical statements, procedures or subroutines, whatever form of language expressed, would justify copyright protection.

<sup>36</sup> The types of language applied include BASIC, COBOL, FORTRAN, PL/I, PROLOGO LISP C and PASCAL.

<sup>37</sup> Interpreter and compiler are special programmes written specially to accomplish the translation.

<sup>38</sup> In computer sense, the binary digit "zero" or "one" is called "bit"; a sequence of eight bits form a "byte" which is treated as a single unit and represents a character (a letter, number or symbol). According to the American Standard Code for Information Interchange - ASCII the most commonly used characters are

commands electronically expressed as "Off" and "ON" switches. These instructions are loaded into the electronic memory and organised into sets of bytes. The physical means used to store the data includes magnetic or optic disc, electro-mechanical switches and semiconductor chips,<sup>39</sup> appropriate devices to market software. The range of tasks in the different phases are performed by teams of professionals hired by a corporate entity. The circumstances in which software is conceived and developed almost invariably do not allow the creator (or creators) a close relationship with the product. This feature is more pronounced in systems, such as artificial intelligence, in which the interoperability of hardware and software is more complex.

## (ii) Artificial intelligence systems, concepts and functions

Can a machine think? This has been an intriguing question of this century,<sup>40</sup> and a challenge which remains in the frontiers of the computer science. A similar question could have been made two centuries ago with respect to the aeroplane, can a machine fly. For the average laymen both questions (made in the corresponding due era) allow similar curiosity and scepticism. Under the eyes of science, however, those questions differ fundamentally. Man discovered the principles of flight, which enabled the machine to fly. In order to make the machine think, man would supposedly need to discover the principles of intelligent thought.<sup>41</sup>

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represented in decimal codes and interchanged into binary codes. For instance, the letters for MARY have the notation M=77, A=65, R=82, Y=89; in binary codes the name in capitals is represented as follows:

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0 1 0 1 1 0 1 0
0 1 0 0 0 0 0 1
0 1 0 1 0 0 1 0
0 1 0 1 1 0 0 1

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Electronically, zero and one represent a switch with its contact open or "off" and close or "on", and means low and high voltages, or different polarities of magnetization.

<sup>39</sup> A microprogram permanently stored in a ROM chip (Read-Only Memory), in microcode instructions, is called *firmware*. In a microcomputer, the processor unit (CPU) consists of one or more of this device used to control and direct the microprocessor's activities.

<sup>40</sup> The question was considered for the first time in 1950 by Alan Turing, cf. Palfreman & Swade, *The Dream Machine*, pp. 137/138, The BBC Books, 1991.

<sup>41</sup> The (human) intelligence is something associated with the process of thought, reasoning and learning. Although consisting of neural events confined to the brain, thinking is not identified today with conscious experiences - these are rather limited, but with the learning experience captured through stimuli (inputs) and responses (outputs). This process would originate cognitive structures or "perceptual representations of the world or parts of the world." Many psychologists are concerned with the mental structures irrespective of man



Moreover, these principles are supposed to provide the scientific ground for the development of a machine with the ability to recognise things, adapt to a new environment, learn and create. Such a *rationality disembodiment* project has no precedent in the history of the industrial revolution. In conceptual terms the implications are enormous.<sup>42</sup> The creations of the so called "electronic brains", however, have not gone beyond "idiot savants,"<sup>43</sup> which have resulted in little success achieved only in confined areas. In this respect, frustrations<sup>44</sup> have been debited to the complexity of the real world that artificial intelligence purports to reproduce, and to the still mysterious scientific concept of (human or real) intelligence.

As a technology in development, AI relies on scientific models not fully confirmed, and not yet satisfactorily defined.<sup>45</sup> In attempting to draw some concepts, specialists are prone to centre on technical concepts associated with operations and outputs.<sup>46</sup> This approach avoids both the underlying debate about the nature of intelligence, and the uncertainty concerning actual learning as a possible result from machine tutorial.<sup>47</sup> Nevertheless, available knowledge

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being aware of them. In the 20th century there is no unanimity among the scientists about the intelligence phenomenon. For a sound account on this, see Encyclopedia Britannica, vol. 22, pp. 641 *et seq.*

<sup>42</sup> The ability to reason distinguishes the human from the rest of the life forms and things. From this phenomenon, the law has been universally developed under the assumption that the man is the unique being capable of having his own will, and so only the human being is bearer of rights and duties, with the exception of the artificial person or legal entity being applied.

<sup>43</sup> Computerized machine built to manipulate concepts like human brains has comparatively been "brilliantly gifted in one small area, but outside that area, he is unable to function competently." Palfreman & Swade, *ob. cit.*, p. 154.

<sup>44</sup> Based on unexpected outcomes, irreverent AI definitions have been made, such as "any software system which is sufficiently sophisticated that it doesn't quite work", and meant as "Always Impossible" or "Advanced Implements". WIPO pub. 698(E), pp. 121, 95. The unfavourable comments do not seem to apply to robots, which have a secure future in the manufacturing process, and are progressing quite well in biorobotics. A team of researchers in Montreal, at the Biorobotics Laboratory of McGill University, is building a microrobot called Micro Surgery Robot-1. The MSR-1 is designed to perform eye surgery. The system "creates a three-dimensional robot's eye view of the inside of the eye that the surgeon can see by wearing a virtual reality helmet that has a small screen in front of each eye." [1992] 134(1826) *New Scientist* 22.

<sup>45</sup> In the Symposium on the Intellectual Property Aspects of Artificial Intelligence sponsored by WIPO, held at Stanford University in 1991, the WIPO Director General delivered in his opening statement a preliminary definition as follows: "an expression commonly used to designate those kinds of computer systems that display certain capabilities associated with human intelligence, such as perception, understanding, learning, reasoning and problem-solving." WIPO pub. 698(E), p. 17.

<sup>46</sup> Apart from the lack of consensus about the definition of human intelligence, what really matters is to know how an artificial system works in order to be accepted as an intelligent one. This treatment tends to cast aside false and exaggerated expectations derived from the expression artificial intelligence. Cf. Dreier, WIPO pub. 698(E), p. 151.

<sup>47</sup> As Johnson-Laird pointed out, "neural networks are not so sure; they only seem to learn from failure. When they are wrong you tell them the correct answer and they adjust. When they are right, it is not clear that they are actually learning." In "Main Categories of Artificial Intelligence and Their Intellectual Property Aspects", WIPO pub. 698(E), p. 45.

in the field of computer science (including development in software and hardware) only provides for limited explanations. In addition to scientific doubts and scepticism and as far as the legal interest<sup>48</sup> is concerned, a way of approaching AI systems is to consider their parts, and that software is one of them. This leads to the question of how AI systems differ from conventional software, involving, *inter alia*, aspects related to concepts, function and structure, categories, applications and development.

Some attempts at a definition regard artificial intelligence as a (a) computer system, (b) possessing certain capabilities (c) developed on a human-like basis and (d) addressed to specific goals. As a computer system, artificial intelligence relies on sophisticated sets of software and hardware, which process or manipulate electronic representations, and draw inferences.<sup>49</sup> These patterns of magnetic or electronic current, common in a digital computer, are responsible for the processing of the internal representations of the external world.<sup>50</sup> As a representational system,<sup>51</sup> AI stands beyond its physical basis and is not reduced to a device.

The output the AI systems intend to operate include sound emission, writing, and perception. These capabilities, achieved through manipulation or application of knowledge (cognitive tasks), result from a process of, or equivalent to, learning, reasoning, and self-adjustment. Such a function is reduced purely to a mechanism of randomisation,<sup>52</sup> processed before and after the system is made. The operation requires the system to understand or

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<sup>48</sup> The approach to these interests has been made much more on basis of speculations, because as far as intellectual property is concerned no serious problem has been encountered yet, as it was reported at the 1991 WIPO Symposium on the Intellectual Aspects of Artificial Intelligence, US Stanford University, Doc. 698(E), p. 298.

<sup>49</sup> An expert system (a well-developed subdivision of artificial intelligence) has basically three components: knowledge base, inference engine and user interface. The knowledge base contains interrelated information about particular area. The inference is a reasoning process or a means of using that information and so as to render specific goals.

<sup>50</sup> CYC, a super knowledge base, is being built since 1984 in Austin, Texas. The project shall take at least ten years, and is intended both to capture the every-day world knowledge and to express common sense. Such an ambitious project has inspired scepticism. *The Dream Machine*, p. 157 *et seq.*

<sup>51</sup> The representation of knowledge is largely developed in a hand-crafted way. A initial 30%-error rate is something expected. The error rate after the training test set is inferior to 7%.

<sup>52</sup> Randomisation is a sort of interaction operator/machine. The operator presents a series of codified facts (inputs) and then the machine is asked questions associated with those facts. Incorrect answers (outputs) are supposed to come out. Each mistake requires adjustments, until the right answer is served. This may be a long job, complex and costly, equivalent to a training or tutoring performance, on which the intellectual content or creativity relies.

interpret input, and gradually infer solutions from stored knowledge (database).<sup>53</sup> Bearing a utilitarian character, the AI systems aim at meeting a human need, rivalling or assisting man, replacing him in the performance of complex tasks,<sup>54</sup> and solving problems efficiently in narrow areas.

Before discussing the next point (machine tutoring), a conceptual line is now drawn between what is called artificial intelligence and intelligence as a human attribute. AI systems may only assume a putative intelligence in the sense that they express imperfect analogy with few faculties of human beings, and there is no need to demonstrate the nature of the artificial representation of the external world. Such a remark, while limiting the expectation created by the Turing query, confines AI systems to truly semi-autonomous and therefore limited creations. In other words, the "intelligence" of the so-called intelligent machines is reduced merely to a particular achievement which may, to a certain extent, recollect or emulate an attribute inherent to a human one.

In order to sufficiently describe the object of protection, the law-maker has to set, among other prerequisites, the minimal level of complexity, technically defined by the speed and the number of inferences, as a pattern of both intellectual and investment inputs.

### **(iii) AI development and machine tutoring**

The creation of an AI system involves a large number of specialists, such as programmers and knowledge engineers, as well as professionals from different fields other than computer science. The development encompasses those activities achieved in the production of any conventional software, plus improvement tasks and testing on a more intensive scale. These

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<sup>53</sup> Something similar, but really in a lower scale, applies to "conventional programming disciplines", reduced to routines mathematically serviced step-by-step and as part of the "intellectual creativity of computer programs (i.e.) the creative combination of instructions and statements expressed therein." The AI system "training", however, is distinguished by its "indeterminacy". See S. Miki, "The Creation of Works of Copyright under Japanese Copyright Law Resulting from the Utilization of Artificial Intelligence"; and R. S. Laurie, "The Patentability of Artificial Intelligence Under US Law", both in WIPO pub. 698(E), pp. 294 and 122.

<sup>54</sup> Some applications include medical diagnosis, translation, financial analysis, geological search, weather forecast, and recognition of military target.

activities may vary within the AI categories,<sup>55</sup> however all of them are intended to be capable of learning. The focus will be, notably and briefly, on the processing of the representation of knowledge and inference, tutoring, and the audit trail formation.

The processing of knowledge relies on two forms of representation: symbolic and non-symbolic;<sup>56</sup> expert systems, for instance, apply the former and neural networks apply the latter. In standard expert systems, the knowledge (substantive and procedural information) is translated into appropriate and formalised rules (representation) and implemented in a data base. In a further stage, the inference engine (software set)<sup>57</sup> is designed and implemented by applying the knowledge to a particular problem area. In neural networks, which simulate human brain functioning,<sup>58</sup> three layers of artificial neurones, equivalent to RAM-memory chips,<sup>59</sup> comprise the system structure: input layer, "hidden" layer and the output layer. These layers form a sort of connectionist system, in which the relation between input and output is given through assigned weights.<sup>60</sup> For the system to work successfully, the skill in choosing the data representations (i.e., the number of neurones attributed to the input, hidden and output layers), the initial weights, and the selection of training facts are crucial. In addition to such required skills, an interesting feature of the neural system is that its intelligence "derives,

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<sup>55</sup> The WIPO has identified three categories of AI systems: the classical expert system, perception system, and natural language. Other classification includes less explored subclasses, such as neural network and robotics, and exclude perception systems. From the point of view of the US Patent Office regulation, a broad class (364 - electrical computers and data processing systems) lodges Generic AI Inventions (subclass 513) based on expert systems, neural networks and robotics. There are other tens of subclasses connected with a few classes (381, 382, 414), covering a number of AI applications, besides the non-generic (dedicated AI-based inventions tools) covering related subcategories. [WIPO pub. 389(6), pp. 123/4].

<sup>56</sup> Machine translations and genetic algorithms, for instance, apply representations based on symbolic framework, as most AI systems do. Non-symbolic representations rely on connectionist or neural frameworks, as is the case of neural network systems regarded today as an embryonic form of artificial intelligence.

<sup>57</sup> See J. H. Spoor, "Protecting Expert Systems, in Particular Expert System Knowledge: A Challenge for Lawyers", in WIPO pub. 698(E), p. 77. The inference engine operates and controls the expert system by "selecting rules to use, accessing and executing the selected rules, and determining when a solution has been found." (Technical Appendix to "The Patentability of Artificial Intelligence Under US Law" by R. S. Laurie, p. 141.)

<sup>58</sup> The first logical model of artificial neuron (an idea of brain-like machine) was produced in 1943 by McCulloch and Pitts (University of Illinois). Cf. Aleksander & Burnett (1987), *Thinking Machines, The Search for Artificial Intelligence*, pp. 156, 198, Oxford Univ Press.

<sup>59</sup> A bit-organized RAM (random access memory) is imprinted in microchips or silicon neurons, which are repositories and processors of information. They simply work as interacting computers.

<sup>60</sup> The network relates the input values to the correct output by means of weights. Before training, the designer arbitrarily sets "the weights from the input layer to the hidden layer and from the hidden layer to the output layer." Cf. Appendix, WIPO pub. 698(E), p. 143.

at least in part, from the way in which the elements are interconnected rather than being entirely the product of programming."<sup>61</sup>

The distinct categories of systems described above lead to different procedures of learning simulation.<sup>62</sup> Two examples of these systems, which focus on specific tutoring patterns, are natural language processing (a translation machine), using symbolic representation, which is nearly hand-crafted, i.e., written and encoded explicitly by hand,<sup>63</sup> and a neural framework applying non-symbolic representation.

The natural language system requires: a) a grammar to assure the right order of words in a sentence. Since there is no formalised grammars,<sup>64</sup> such as the existing standard codes of computer language, a particular grammar has to be made, which is time consuming and costly; b) a lexical system, which is a definition of words (dictionary); c) lexical disambiguation, i.e., a set of rules designed to provide contextual meaning. This is fundamental for dealing with the syntax of certain words which play different roles, such as verb, adjective, or noun, according to the context; and d) a combining approach and testing, necessary for generalisation of algorithms and instruction of the system with patterns of translation. This activity is a plus in terms of intellectual content, and so remarkably distinctive in the whole system.

The example of a non-symbolic representation is a neural framework designed for the analysis of DNA sequences, with the purposes of recognising "promoter sites" and "splice junctions."<sup>65</sup> Extracted from biological literature, an inaccurate theory is formulated to explain the rules of promoter sites and splice junctions. Following that, these rules are encoded into a neural network, i.e., in a network typology, and an initial set of weights is

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<sup>61</sup> Aleksander & Burnett, *ob. cit.*, p. 197.

<sup>62</sup> As it is pointed out, "in a traditional expert system, the knowledge engineer specifies rules and search techniques to correlate input and output. In a neural network, the system itself designs and adjusts the weights in order to correctly correlate input and output." In Technical Appendix, WIPO pub. 698(E), p. 143.

<sup>63</sup> L. T. McCarty, *loc cit.*, p. 34.

<sup>64</sup> The Japanese Electronic Dictionary Research Institute is carrying out research to develop an electronic dictionary intended to apply to any type of system. Cf. Makoto Nagao, WIPO pub. 696(E), p. 41.

<sup>65</sup> Promoter site is a biological element associated with the process of gene transcription. The identification of a promoter site means that a gene discovery is likely to happen. On a DNA sequence, splice junctions are points "in which segments of messenger RNA are spliced out." To be aware of these is important for the biologist. WIPO pub. 696(E), p. 35.

provided. The next stage consists of training the network. The training consists of strengthening or weakening the connections between the processors of the system; this adjusting of weight patterns with the initial typology, using known examples of DNA sequences, aims at improving the theory.<sup>66</sup> The result is a particular representation of knowledge in biology, useful for the study of promoter sites and splice junctions. The error rates in the recognising of those elements are inferior to 6.5% considered as very good.<sup>67</sup>

The AI systems in general, as aforementioned, are developed on a crescendo of trial and error. The errors and rejected output are imprinted in a way that a trail is electronically coined. The way the trainer has carried out the training, the patterns of tests have been applied, the facts and the code that simulated the neural network have been inputted. This suggests that creative efforts and investments have been carried out. All of these hidden aspects make up a sort of "cartographic trick"<sup>68</sup>, and thus assisting in the indirect identification of the system.

The background just described reflects an intellectual work suffused with challenging barriers, explained by the study of the nature of the innovative process, and relating to the bargain underlying intellectual property.

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<sup>66</sup> For more about training neural net, see Johnson-Laird, at pp. 50/51 WIPO pub. 696(E), and H. Collins, [1992] 134(1826) *New Scientist* 40.

<sup>67</sup> This is a summarised description made by Prof. McCarty of a work done by Mick Noordewier, biologist and computer scientist at the Rutgers University, WIPO pub. 698(E), pp. 35/36.

<sup>68</sup> Cf. Johnson-laird, *loc cit.*, pp. 52/53.



## **2.3 Intellectual property and innovation dynamics**

### **2.3.1 The intellectual property bargain and competition**

#### **(i) The nature of intellectual property bargain**

The early structuring of intellectual property emerged as a result of the liberal ideas behind perfect competition, and the property as a right. Both were vital fuel for capitalism centred in the notion of a contractual relationship between the owners of means of production and society. The rationale for that relationship was as follows. Without private property "no rational economic calculation would be possible"<sup>1</sup>, and competition was conceived as a bargaining process for public favour, hence, rendering an unrestricted competition with the notion of society.<sup>2</sup> The focus on these ideas is only to state briefly the historical background within which intellectual property was developed.<sup>3</sup>

As a legal institution born under the influence of the classical economics and exempted from unwanted monopolies, intellectual property was designed to ensure temporary protection "only to the end of promoting science and the useful arts."<sup>4</sup> Early in the current century, this steadily founded theory was vastly absorbed by the law of the industrial countries. The conceptual basis was first developed by the British courts. In common law, judges learned that letters patents could be ruinous to the society by affecting the price of commodities. The courts had, however, at least two reasons for tolerating patents: the encouragement of manufacture in the country, thus furthering trade for the good of the nation; and even if not recognised as lawful monopolies, letters patents would be granted anyway by the Sovereign "as a convenient means of raising revenue."<sup>5</sup>

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<sup>1</sup> A Radomysler, *Welfare economics and economic policy*, p. 81 passing, in "Readings in Welfare Economics", The American Economic Association series, vol. XII, 1969.

<sup>2</sup> Mary S. Morgan, "Competing Notions of 'Competition' in Late Nineteenth-Century American Economics". [1993] 25(4) *History of Political Economy*, 563, at 570 and 580.

<sup>3</sup> Since existing literature deals with liberal ideas abundantly, further investigation on them is unnecessary and beyond the purpose of the chapter.

<sup>4</sup> United States, *The Constitution of the United States of America - Analysis and Interpretation*, p. 317, edited by N. Small & S. Jayson, 1964.

<sup>5</sup> Great Britain, Board of Trade, "Patents and Designs Acts, Second Interim Report of the Departmental Committee", p. 3. Cmd. 6789 (1946). *Darcy v. Allin or Allen* (Noy 173) [1602] 74 E.R. 1131.



Principles and practices which prevailed in the construction of the British patent regulation were incorporated into the US Constitution and law and conferred a true right to inventors<sup>6</sup> The theory behind the clause of science-and-technology promotion of the American Constitution is read univocally as being for the benefit of both inventors or authors and society at large. The clause calls for a balance between private and public interests, or a bargain<sup>7</sup> between inventors or authors and society

### **The social bargain theory**

The sense of bargain is that somebody's gain is someone else's loss. This gain-and-loss relation is synallagmatic in the sense that inventors and authors on one hand and society at large on the other are placed in a prospective context of both gains and losses. The framework of this quid pro quo underlying the concept of protection of intellectual property is determined by four social objectives:<sup>8</sup> encouragement of innovative activity, inducement to the disclosure of the invention, reward inventors and authors, and inducement towards industrial application. Here it is suggested that the achievement of these objectives is a combination of social welfare and efficiency ends. To what extent these legal pre-conditions are achieved has always been a matter of contention and concern.

### **Encouragement of R&D and inventive activities**

Although arguable, the literature regards the incentive for R&D activities as the main justification for patent protection. Several surveys, nevertheless, have showed that the stimulating effect varies according to industry, size of firms and traditions.<sup>9</sup> In this respect

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<sup>6</sup> U.S. Constitution, Art. I, § 8, cl. 8. *Abraham L. Pennock and James Sellers v. Adam Dialogue*, US Supreme Court, January 1829, pp 327-335.

<sup>7</sup> For the discussion of the protection of intellectual property as a bargain, see "OTA Background Paper" p. 7; *Copyright and Home Copying: Technology Challenges the Law*, OTA-CIT, 1989, ch. 3; US Congress/OTA, *Intellectual Property in an Age of Electronics and Information*, OTA-CIT 302.

<sup>8</sup> Cmd 6789, p. 3.

<sup>9</sup> G. For some accounts, see Sipa-Adjah Yankey, *International Patents and Technology Transfer to Less Developed Countries*, p. 10-24, 1987; and H. Ullrich, *The Importance of Industrial Property Law and Other Legal Measures in the Promotion of Technological Innovation*, [1989] *Industrial Property* 103-112.

empirical data does not always tell the same story, for instance, the general pharmaceutical industry appreciably relies on patent, and to a certain extent large firms have a propensity to patenting, however, the impact of this tendency on R&D, varies from country to country.

### **Inducement to the disclosure of the invention instead of keeping it segregated**

It is expected that access to patent information may render improvement around the invention, enabling the creation of a substitute product. The disclosure of technical data, hence, provides everyone, combining talents and resources, with the competitive opportunity of making a broader use of the technology. Although the patent is a valuable source of technical information by avoiding duplicative R&D activity, in practical terms, its informational function depends on the disclosure of the real value of the invention. For many firms, patent applications are only filled when it is no longer possible to keep the invention secret.<sup>10</sup> The patent hence works as an additional framework with which know-how or a trade secret is extended and negotiated. In the areas of software and integrated circuits, which are characterised by large use of secrecy and fast technical obsolescence, the scope of the disclosure, where patenting is possible, may be very limited indeed. In fact, the increasing reliance on secrecy in the information technology sector stands alone as a component of business strategies. This was considered with much concern by the CONTU Report.

Over the initial period of 12 years when copyright was made available for computer programs in the United States, the US Copyright Register received only slightly more than 1% of the number of computer programs, developed each year, for registration.<sup>11</sup> While the figure showed a very low interest of the 300,000 programmers in copyright, it dismissed the belief that protection of computer software under registrable copyright would ease great "public access to innovative programs"<sup>12</sup>. The industry made it clear that it would not give up trade secrecy protection and, additionally, it "would fight hard to assert its undeniable

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<sup>10</sup> See Edmund W. Kitch, *The Nature and Function of the Patent System* [1977] 20 *Journal of Law and Economics* 265-290, at 275-278.

<sup>11</sup> According to the CONTU Report p. 34, only 1,205 programs was registered from 1964 to January 1, 1977, 971 of them were registered by IBM and Burroughs. By that time, about 1,000,000 were developed each year.

<sup>12</sup> CONTU Final Report, p. 34.

continuing right"<sup>13</sup> to secrecy. Furthermore, technical know-how necessary to explore the invention is not always satisfactorily disclosed; this may occur deliberately or because of incomplete or inaccurate patent specification.

### **Reward for inventors and authors**

A rewarding profit available for successful inventions or works, to the extent in which the invention is commercially practicable and the work original, is in itself indisputable and includes the prospect of a reasonable return on investments. Such a prospect, from the theoretical point of view, relies on the competitive head start over rivals created by the temporary monopoly right. The reward, however, as an isolated function, is an incomplete view of the intellectual property which is more than "a system created to guarantee income to creators."<sup>14</sup>

### **Inducement to industrial application**

No protection will be worthwhile if the invention, design or use of copyright on hi-tech renders no industrial application. While the output stemming from them makes it possible to meet a human need, resources are put at risk at the owner's expense, by joint application, or by means of licensing in return for royalties.

### **Towards the welfare/efficiency perspective**

An approach of intellectual property within the perspective of welfare and efficiency necessarily faces a margin of conceptual insecurity reflecting the inaccuracy of existing theories. Avoiding the disputed aspects involving the meaning of welfare,<sup>15</sup> the economic

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<sup>13</sup> Idem, idem.

<sup>14</sup> US Congress, OTA Background Paper, p. 7.

<sup>15</sup> In a popular sense, welfare describes the happiness of human beings. In politics, the term welfare state is associated with social justice, i.e., the state has the duty to provide assistance for those people in need. Philosophically, the exercise of individual preferences as a value linked to personal satisfaction is contested. Through the perception of values, which are associated with a process of justification, people understand the world. Some preferences, as that concerning food, for instance, needs no justification, but others do. For some accounts on these notions and welfare economics, see Robin W Broadway & Neil Bruce, *Welfare Economics*, Blackwell, 1984; Amartya Sen, "Choice, Welfare and Measurement", Blackwell, 1983; Kenneth J Arrow,

theory has dealt with it in terms of individual preferences and associated it with both economic and technical efficiency.<sup>16</sup> The higher the efficiency of resource allocation, the higher the welfare rate. Focusing on this association (social preferences with efficiency of resource allocation), economics creates a consumers' welfare function as a value-free relationship. Instead of dealing with assumptions based on ethics, justice and political desirability, welfare economics<sup>17</sup> is most concerned with the measurement of efficiency or optimality of satisfaction of consumers' preferences.

As described by K.J. Arrow,<sup>18</sup> the social function is translated into a "constitution" or set of conditions to govern the welfare judgements. Arrow's idea was to transform individual desires into concrete social choices.<sup>19</sup> One procedure inferred from his theory was that no individual alone should be allowed to dictate the outcome. What Arrow's theorem in its entirety means is that no set of rules could possibly and consistently devise that judgement. His theory, nevertheless, proves, firstly, the inherent imperfection of any legal policy regulation on welfare grounds, and, secondly, that a sense of welfare which goes beyond the pure logic of economics does exist. There is, in other words, a strict and a broad sense of economics welfare. How much this broad sense lives up to the concept of welfare entailed in the intellectual property bargain is a matter for later consideration.

For now, the study will concentrate on further explanation of the strict meaning of economics welfare. As such, welfare is a function of economics efficiency fully understood in the context of two other notions, market and competition. In order to clarify this point, a brief account on the whole competition context is necessary.

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General Equilibrium (Collected Papers), Blackwell, 1983; American Economic Association, "Readings in Welfare Economics", (papers selected by K J Arrow & T Scitovsky), 1969.

<sup>16</sup> Efficiency "relates to the most effective manner of utilizing scarce resources." There is an increase in *allocative efficiency* if "higher scale of output is produced at lower cost." A *technical efficiency* occurs when a firm using superior technical process compared to another produces the same level of output using less inputs. OECD, Glossary of Industrial Organisation Economics and Competition Law, p. 41

<sup>17</sup> The expression is used to designate the study and evaluation of public policies designed to achieve maximization of human well-being.

<sup>18</sup> Kenneth J. Arrow, General Equilibrium (Collected Papers), Blackwell, 1983. The author, an American Professor of Economics at Stanford University, was awarded the Nobel Prize in 1972.

<sup>19</sup> K Arrow, *ob cit*, p. 222-225, heading "the theory of social choice".

## **(ii) From perfect to imperfect competition**

As a straightforward concept, the market describes a relationship between sellers (supply) and buyers (demand) subject to economic laws,<sup>20</sup> for instance, demand tends to increase as the price falls. Owing to individual preferences and income within a period of time, variations occur mostly because demand is a function of consumer income and price levels.<sup>21</sup> On the supply side, within a period of time and depending on the length and characteristics of that period, an increase in a price commodity is likely to work as an incentive for the producer to increase the quantity of commodity supplied. However, higher prices sooner or later act against the demand level. The picture may be changed when the introduction of new technology lowering the production cost, enables the producer to produce more cheaply and increases the quantity of supply. In addition to the interaction of demand and supply the price is an important element. Above an ideal price, part of the commodity supplied is unwanted (excess supply), and below that price demand tends to increase. At an ideal point, there is an *equilibrium* between quantity demanded and quantity supplied, and the price tends to be stable for a period of time. Although very formal, the notion of equilibrium in the model of perfect competition is important for a number of reasons, mainly for guiding a pricing policy (methods used by firms for determining their prices) which determines the behaviour of firms concerning the allocation of resources and shapes the competitive process, where the market is visualised as a relationship among rivals.

The conditions under which firms relate to each other define two broad classes of market: perfect competition on one hand and imperfect competition (monopoly, monopolistic competition, and oligopoly) on the other.

### **Perfect competition**

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<sup>20</sup> Edwin Mansfield, *Microeconomics, Theory and Applications*, 6th ed, Norton, 1988, p. 20. In writing this expository section, I have much drawn from Mansfield's work, as well as from Roger D Blair & Lawrence W Kenny, *Microeconomics With Business Applications*, Wiley, 1987.

<sup>21</sup> The measure of the sensitiveness of a product demand in a particular market is called in economics *price elasticity of demand*.

Although appreciably sensitive to the welfare/efficiency claims lying behind the protection of intellectual property, the model of perfect competition is conceptually unfavourable to technical changes. In its static monotony, the model presents the following features: a large number of sellers have the same product; provided that the price is the same, purchasers do not care which seller they buy from, as both purchasers and sellers are so small in relation to the entire market, none of them acting alone are able to affect the product's price. The resources mobility is such that raw materials, for instance, cannot be monopolised; consequently, firms can enter and leave the market freely. There is a perfect share of knowledge regarding prices, technological data, and all the possible uses of the resources, so as consumers, firms and resource owners are able to take the best economic decision at an unfailing accuracy.

### **Pure monopoly, a contrasting approach**

Opposite to perfect competition is the situation of pure monopoly, where "there must exist one, and only one, seller in a market."<sup>22</sup> The two states (perfect competition and pure monopoly) move from a point of a market impersonally defined by a myriad of suppliers to the extreme of a market personality<sup>23</sup> based on a sole supplier. These theoretical models are so formal that one could hardly adopt one or other as a permanent policy. Nevertheless, monopolies occur for different reasons, some of them being that a single firm may:

- *control the entire supply of a basic input that is required to manufacture a given product;*
- *become a monopolist because the average cost of producing the product reaches a minimum at an output rate that is big enough to satisfy the entire market at a price that is profitable;*
- *acquire a monopoly over the production of a good by having patents on the product or on certain basic processes that are used in its production;*
- *become a monopolist because it is awarded a market franchise by a government agency. The firm is granted the exclusive privilege to produce a given good or service in a particular area.*<sup>24</sup>

Monopolies have the ability to change market conditions by affecting prices and output. Economists believe that under monopoly the use of resources tends to be less effective than

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<sup>22</sup> Mansfield, p. 280.

<sup>23</sup> "The firm in a perfectly competitive market - says Mansfield - has so many rivals that competition becomes impersonal in the extreme; the firm under pure monopoly has no rivals at all." *Ob. cit.*, p. 281.

<sup>24</sup> Mansfield, *ob. cit.*, p. 281, 282. The second situation (the competitive advantage of minimum cost production) above defines the so-called natural monopoly.

under perfectly competitive industries. In the latter situation, output tends to be greater and prices lower than under monopoly.<sup>25</sup> One of the means through which monopoly may act is price discrimination, which economists regard as socially inefficient, but which is sometimes recommended<sup>26</sup> Due to some type of indirect competition, however, monopolies rarely hold their position in the long run, giving room to intermediary market forms, such as *monopolistic competition* and *oligopoly*.

### **Monopolistic competition**

Three conditions define monopolistic competition: the existence of a large number of firms, producing and selling similar products, and having the same level of demand and cost. For the sake of economic theory, firms producing similar products are arbitrarily grouped. Each firm has a degree of monopoly power over its own product, but not enough to enable the firm to threaten rivals. Each competitor's product is a little different from the others'. The variation is based on several elements, such as physical make-up and brand names, making the products or *dresses* very close substitutes.<sup>27</sup>

The model of monopolistic competition is supposed to operate under a degree of inefficiency, but close to perfect competition. From the above conditions one could infer that under monopolistic competition deterrence to entry is rather weak compared to an oligopoly industry.

### **Oligopoly**

The main features of an oligopolist market are: a small number of firms (not necessarily large ones), great independence among them, and each firm's policy is likely to affect the other rival firms.<sup>28</sup> The oligopolistic firms tend to make entry difficult and pursue an economy of scale.

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<sup>25</sup> Mansfield, p. 297.

<sup>26</sup> When a firm sells a commodity at more than one price, or sells similar products at prices in different ratios to marginal costs, it is said that price discrimination occurs. Discrimination however is needed if without it the good can hardly be produced. See Mansfield, p. 301, 312.

<sup>27</sup> Typical monopolistic competition include toothpaste, food, shoes, clothing, and furniture industries.

<sup>28</sup> Some of the US oligopolies are IBM and Microsoft in the IT industry; GM, Ford, and Chrysler in the automobile industry; and GE and Westinghouse in the electrical equipment industry.

Various theoretical models have been developed to explain the oligopolist behaviour. The duopolist equilibrium of output says that each firm tends to make profit-maximising choices on the assumption that the other competitor will not respond to change in output. The price rigidity theory assumes that a price cut by an oligopolist is likely to be followed by the others; conversely, competitors most unlikely change their prices to respond to an individually taken price increase.

Although these theoretical approaches do not take any form of collusion into consideration, oligopolist industries tend to come into collusive arrangements in order to increase profit, fight uncertainty, and make entries uneasy. Cartel arrangements designed to set price uniformization, distribution of sales, or to divide up a market, however, tend not to last for long because sooner or later firms are likely to cheat and breakdown the collusion.<sup>29</sup> This flows to the game theory which explains how decisions are made in the oligopoly environment where conflicts and co-operation take place. The competing game requires each player to set up its dominant strategy, and this sometimes includes cheating the other cartel members by cutting price, for instance.

Pricing policy under oligopoly is often guided by a dominant oligopolist who tends to determine the price of technology by negotiation<sup>30</sup> rather than on the basis of competitive market principle. The decision of the price leader affects the rest of oligopolist firms, and may work to bar entry. Barrier to entrants depends on the market size. Limit pricing may discourage newcomers to invest millions of dollars in order to establish and maintain, for instance, a sophisticated and modern foundry of integrated circuits. Entries, nevertheless, are not impossible in the long run.

### **Entries versus theory of contestable market**

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<sup>29</sup> Based on this competitive behaviour, one may believe that the market itself is able to self regulate, thus making government intervention unnecessary. Historically, this conclusion has not been proven true.

<sup>30</sup> See Yoo Soo Hong, UNCTAD/ITD/TEC/3, 12 Feb 1993, p. 35. Price negotiation may take VER (voluntary export restraints) form, or bilateral agreement. In Europe, it is estimated that VERs cover 30 per cent of international trade in electronics. M.M. Kostechi, [1991] 14(4) World Competition 32. Warning about the debatable legality of such arrangements is found in "GATT Activities 1989", p. 18. See "Japan-Trade in Semi-Conductors" in GATT/BISD, 36th Supp. 1990, p. 116-163.



The theory of contestable market says that at a given time in a market there is a vulnerability to entry. Under the threat of newcomers, firms tend to behave as perfect competitors. They stop attempting to collude so as to prevent prices from rising, otherwise entry would be affordable.<sup>31</sup> The existing firms, however, may not be prepared to engage in a price-cutting policy which would work in the opposite way, i.e., would bar entry, but also would lead to a pricing war within the monopolistic industry, a dangerous and also unwanted outcome. All of these points lead to the assumption that in conditions of imperfect competition, firms are likely to behave in a way that affects price, output, and profits. When such a behaviour is coupled with the use of intellectual property right, the effects, although difficult to predict, will head to a loss of efficiency and welfare.<sup>32</sup>

### **(iii) Social welfare and efficiency**

Turning now to its restrict concept, welfare is described as a measure of *consumer's supply*, i.e., "a net benefit received by the consumer."<sup>33</sup> Such benefit is translated into greater quantity of commodity the consumer is supplied with for the lowest price the producer can possibly charge, given certain conditions of supply and demand within a market and a period of time. While on the demand side the conditions are chiefly dictated by consumer preferences, the supply is considerably related, *inter alia*, to costs. These may include expenditure on R&D activities and royalties paid for intellectual property licensing. It is now understandable that increased consumer supply is a benefit arising from competition. Applied economics has developed fairly secure methods through which a learned technician is able to calculate the effects of a business practice on consumer supply. The theory, however, tells very little beyond the economic logic.

Theoretically, a static model of perfect competition assumes that the interrelated markets for all products are in a general equilibrium. At such a point, it is said that the firms apply the best combination of resources at the lowest cost, thus leading to maximisation of profit and utility. Efficiency, then, is synonymous with optimality. Optimal efficiency, in other words, is

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<sup>31</sup> As Mansfield states, "if existing firms are charging a price in excess of marginal cost, it is profitable for an entrant to undercut the price of the existing firms." *Ob. cit.*, p. 358. This describes the market contestability.

<sup>32</sup> Mansfield, *ob. cit.*, p. 359-362.

<sup>33</sup> Mansfield, p. 100.

a concept which describes an optimal allocation of resources.<sup>34</sup> In order for that unreal world of general equilibrium to exist, it is assumed that consumers exercise different levels of preferences and consume, but the utilities flow from consumer groups to others without affecting the overall level of demand. This efficiency in exchange is a necessary condition for general equilibrium. Knowing all products with an unfailing accuracy, consumers are able to exercise a perfect substitution of products for others. This is another condition, i.e., efficiency in product substitution. A third condition for the general equilibrium relies on the efficiency in production, that is, the optimal allocation of resources remains unaffected, so the overall level of supply or production also remains unchanged. The whole picture gives a sense of optimal welfare distribution. Although too formal, the model provides for some practical lessons. One is that the concept of social welfare goes beyond the measurement of individual preferences.

In view of those three conditions of efficiency (efficiency in exchange, efficiency in product substitution, and efficiency in production) a situation called grand utility possibility frontier is created.<sup>35</sup> At this point it is said that some people have increased their utility to the maximum at the expense of the reduction of the utility of other people. The welfare frontier is an imaginary point representing the maximum well-being a person can enjoy "given the level of welfare enjoyed by the remaining members of the society."<sup>36</sup> Theoretically, it is not possible to establish the maximum point of the frontier, but outside of it no point is possibly attainable by society.

A situation of grand utility possibility frontier provides no more than a sense of optimal welfare distribution; it fails to establish a fair meaning of interpersonal satisfaction. A lesson can be drawn, nevertheless, which is that social welfare is desirable and is a function of consumer utility and resource allocation. An attempt to incorporate a sense of fairness into that functional relationship leads to the assumption that society as a whole is better off when a degree of utility is allocated from a consumer group to another. Scientific criteria, however,

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<sup>34</sup> The concept was developed last century by Vilfredo Pareto (Pareto Optimal). Blair & Kenny, *ob. cit.* p 457.

<sup>35</sup> The economic analysis of the social welfare function is based on a model which takes into account a pair of goods and of consumers. Indifferent levels of the distribution of the commodities to both consumers are discussed. These levels represent a range of possibilities under optimal conditions of distribution of the total of the available quantities of the goods. See Mansfield, *ob. cit.*, p. 474; Blair & Kenny, *ob. cit.*, p. 465/66.

<sup>36</sup> OECD, *Glossary of Industrial Organisation Economics and Competition Law* (1993).

do not exist to guide a fair distribution of utility or income. This is arbitrarily developed either by a dictator or a parliament through a democratic process (majority rule). This suggests that a safeguarding policy affecting the exercise of the owner's right based on welfare and efficiency ends could hardly follow rigid criteria.

In so far as it is pursued, efficiency measure is supposed to conform to welfare, but other grounds are available to back the limitation of the exercise of intellectual property rights in the name of social welfare. The state knows to what extent a system should limit the use of intellectual property on basis of social welfare rather than efficiency, as much as it knows how heavily the middle class should pay taxes for the benefit of social welfare. Therefore, technological progress is desired to increment the level of community prosperity.

The maximisation of welfare and efficiency in a static sense cannot be fulfilled unless it is in conditions of a fixed level of technology. "That is, - Mansfield says - they show how inputs and commodities must be allocated if welfare is to be maximised, *given a fixed level of technology*. It is possible that an allocation of inputs and commodities that violates these conditions might lead to a higher level of consumer welfare than any allocation that meets these conditions, because it might result in a faster rate of technological change and productivity increase."<sup>37</sup> In this respect, it is suggested, "a perfectly competitive economy is likely to be inferior in a dynamic sense to an economy including many imperfectly competitive industries."<sup>38</sup> It follows that the introduction of new technologies is required to push forward the frontier of utility which in turn creates a paradox.

The technical change, although desirable to the extent which it promises a new dimension of welfare and efficiency frontier, leads to an innovation process developed under conditions of imperfect competition where some degree of welfare/efficiency losses are greatly expected, if not unavoidable. It is on that paradoxical prospect of gains and losses in welfare and

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<sup>37</sup> Mansfield, *ob cit*, p. 552.

<sup>38</sup> Mansfield, *idem*. Economists do agree that competitive markets potentially favour greater social welfare, but monopoly is not necessarily bad. An effectively productive monopoly has the ability to operate technical change bringing a prospect of higher social welfare. In view of this, doubts exist whether perfect competition is desirable. Since such an unreal model cannot be achieved in all markets, a sort of "workable competition" would be the target. But there is no consensual criteria to define this.

efficiency that both protection and limitation of intellectual property encounters the best justification from the economic rationale point of view.



## 2.3.2 The nature of the innovation process and policies

### (i) Innovation under uncertainties

The uncertainties affecting the innovation process are not *per se* detrimental to the intellectual property bargain. The assumption made here is that in order to cope with uncertainties, innovative firms are likely to develop strategic behaviour,<sup>1</sup> the effects of which may ruin the intellectual property bargain.

Economists do not contend the uncertainty as an element of innovation activities.<sup>2</sup> Studies available on the matter are based on empirical analysis. Although these empirical and statistical studies are criticised for lack of completeness of information on which researchers elaborate, one survey published in Great Britain<sup>3</sup> is a very illustrative source from which the following assertions are briefly drawn.

The innovation process is described as being inherently surrounded by risks. Although low in 'adaptive' and 'imitative' types of project, the rate of uncertainty is reported to be considerably high. Three categories of uncertainties are identified; they relate to technical matters, market, and general business. These two latter categories are based on management of technology, involving a team of specialists with knowledge in interdisciplinary matters, including business affairs and potential demand forecast. The technical uncertainty "lies in the extent to which the innovation will satisfy a variety of technical criteria without increased cost of development, production or operation."<sup>4</sup> Uncertainty of this kind is normally associated with integration of R&D and manufacturing, product and interface standards, and product liability.

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<sup>1</sup> In the course of Part One, it will be clear that the uncertainties of the innovation process themselves make for a strong point to claim protection of intellectual property. This is out of the question.

<sup>2</sup> See F M Scherer, *Innovation and Growth* pp 94, 182, MIT, 1984.

<sup>3</sup> Christopher Freeman, *The Economics of Industrial Innovation*, Pinter Publishers, reprinted in 1991. Freeman is a well known senior researcher of the University of Sussex, Science Policy Research Unity - SPRU. His book comments on a considerable number of surveys carried out in Europe and the United States.

<sup>4</sup> Freeman, *ob cit*, p 149.

Uncertainty may be minimal, for instance, in "adapting electronic circuit designs to novel applications, but well within the boundaries of established technologies, or minor modifications of existing designs."<sup>5</sup> However, in general the scale of uncertainty is such that, it is argued, "most firms have a powerful incentive most of the time not to undertake the more radical type of product innovation."<sup>6</sup>

Due to these uncertainties, the bulk of investments concentrate on less risky projects accounting for minor improvements,<sup>7</sup> and profit-maximising firms are likely to develop strategic trade practices leading to block technical information. For instance, in a situation where the firm can make some profit by ultimately licensing to other firms the process or innovation, "there may be a deliberate preference for secrecy and not licensing."<sup>8</sup> Resorting to government assistance is another means of greatly reducing the technical and market uncertainties.<sup>9</sup> Yet, the remarkable, and to a certain extent debatable, finding is that high investments in radical long term innovation are likely to be confined to large firms enjoying oligopolistic competition

## **(ii) Innovation in the context of imperfect competition**

As aforementioned in section 2.3.1, perfect competition leads to maximisation of welfare and efficiency. The logical assumption to draw from the preceding discussion is that under imperfect competition a degree of loss in welfare and efficiency is expected, if not unavoidable. The evidence that the innovation process is carried out in a context of dynamic imperfect competition allows another assumption, that is, the more the innovation process is encouraged, the more incremental losses will be expected in a certain period of time. It thus follows that the innovation process entails a threat to the intellectual property bargain. The explanation made in the previous section has proved this remark to be true on a theoretical level. Large market share in itself, it may argued, does not upset the intellectual property bargain. Being large, however, means being able to capture economic resources and

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<sup>5</sup> Freeman, *ob cit*, p. 151.

<sup>6</sup> *Idem*, p. 150.

<sup>7</sup> Freeman, *ob cit*, p. 162.

<sup>8</sup> Freeman, *ob cit*, p. 163.

<sup>9</sup> On the government role in the innovation process see below in this Chapter, heading "The syndrome of the technical capability and policies".

monopoly position thus holding the power to influence or manipulate market forces. Even being strategically advantageous or necessary to shield investments from the risks of innovation activities, such ability is *per se* a cause for concern about the achievement of the intellectual property bargain. The task now is to show the empirical evidence related to the environment of imperfect competition under which the innovation process is carried out.

### **The phenomenon of new competition**

The case that innovation dynamics reflects an observable reality of, or leading to, an imperfect competition is historically supported by the termed "new competition" phenomenon.<sup>10</sup> In the middle of the last century, economic theorists were unfamiliar with the idea of industrial monopoly (large-firm competition). Economic studies were predominantly centred on the classical model of perfect competition opposed to monopoly. As that theoretical model did not explain the behaviour of large-scale firms, economists of that period viewed the firms' "trustification" as an emerging reality which required a new economic theory of competition. Accounts on the nature of that phenomenon in America, focus on the growth in concentration and oligopolies of the late nineteenth century as a trend "associated in the contemporary mind with greater efficiency and lower prices," dominating large industrial sectors. This impressively challenged the economists' "perceptions of the nature of competition."<sup>11</sup> In fact the growing number of combinations, which appeared during that period as a result of the free competition, was later confirmed as part of a complex competitive reality which today's legal policies recognise and are designed not to condemn or revert but to control.

By establishing the first large-scale industry development of the late nineteenth and early twentieth centuries as marking the emergence of a "new competition", historians have contributed to the explanation that the phenomenon of intermediary imperfect competition is associated with the wave of the today's technical pace. This relationship between market structure and innovation, first suggested by Schumpeter followed by Galbraith,<sup>12</sup> illustrates

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<sup>10</sup> See Mary S Morgan, *Competing Notions of 'Competition' in Late Nineteenth-Century American Economics* [1993] 25(4) *History of Political Economy* 563-604.

<sup>11</sup> M Morgan, *loc cit*, p. 564, 565.

<sup>12</sup> Joseph Schumpeter's work, "Capitalism, Socialism, and Democracy", was published in 1947 and is frequently cited by modern analysts. Similar strand was developed in 1952 by J. K. Galbraith in his work "American Capitalism".



that an imperfectly competitive economy will satisfy the conditions for a higher rate of technological change. There is, however, some controversy regarding the extent imperfect market is conducive to technological innovation. No analyst, however, has denied Schumpeter's proposition.

Holding a pessimistic view of the Schumpeterian perspective, Scherer says that "rivalry normally accelerates the pace of technological research, development, and innovation, as long as the number of firms competing is not excessive." He, then, establishes his sense of balance by adding: "what is needed for a rapid rate of technological advance is the proper blend of competition and monopoly."<sup>13</sup> Concrete evidence is provided by Freeman, addressing the role of the firm's size's in the innovation process.<sup>14</sup>

Small firms established by inventor-entrepreneurs have made some good contributions "in the early days of the chemical industry, and the early days of the semiconductor and radio industries" and continue "to flourish in the minicomputer industry and in computer software."<sup>15</sup> The contribution, however, varies greatly from industry to industry and according to the level of innovation. Concerning the American semiconductor industry in particular, it has been pointed out that small firms have played exceptional role thanks to tactics of "technological entrepreneurs bringing with them ideas and half developed new products from a scientific environment in universities and government laboratories." However, when referring to "key innovations" large corporations continue to predominate.<sup>16</sup>

The contribution of small firms in types of innovations, such as "complex engineering products for which more than 10,000 components may be needed", including telephone exchanges and large computer systems, is beyond their resources.<sup>17</sup> In electronics, for instance, the "fairly significant contribution" British small firms have made is in printed circuit board for the electronics industry.<sup>18</sup> This consorts with the general assumption that in

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<sup>13</sup> F M Scherer, *Innovation and Growth - Schumpeterian Perspectives*, pp. 114, 127, The MIT Press, 1986.

<sup>14</sup> C Freeman, *The Economics of Industrial Innovation*, 1991, chapter 6.

<sup>15</sup> C Freeman, *ob cit*, p 131. It is conventionally regarded as a small firm that with 200 or less employees.

<sup>16</sup> C Freeman, *ob cit*, p 138.

<sup>17</sup> *Idem, idem*.

<sup>18</sup> *Idem*, pp 141-143.

Europe, as in Japan, the innovation process has been greatly dominated by large corporations.<sup>19</sup>

Enjoying advantages such as more access to finance, ability to cope with government regulations, and specialist management expertise, large firms are more prepared to engage in long and costly R&D projects. This has been proven to be just as true in Europe as in the United States. Conclusive evidence from a study for the OECD shows "that the vast majority of small firms in OECD countries do not perform any organised research and development."<sup>20</sup> Similarly, a survey about R&D in America also suggested that "there is some tendency for R&D intensity to increase with size of firm with the largest size-groups."<sup>21</sup> The scale of research and development may suggest some relationship with patenting as a measure of scientific output. In this respect, information has not been found reliable, but has provided interesting findings.

### **Large firms' behaviour towards patenting**

While "some firms attach great importance to patents and have large departments with a strong interest in patenting activity", others "either do not want to bother with patents or prefer to rely on secrecy," postponing filing patent applications.<sup>22</sup> Large firms, as a general assumption, are more strongly interested in patenting, confirming the historical view that patents represent a strategic tool in a large firm's hands. By 1945 in Britain, for instance, electrical engineering, chemical and pharmaceutical industries "accounted for 60 per cent of all patents"<sup>23</sup> The assumption of the large-firm propensity to patenting, however, is not plainly supported. Surveys carried out in the United States and Britain have suggested that propensity to patenting is higher among small firms. The conclusion is based on the fact that large firms depend on "patent sharing and know-how exchange arrangements" and small firms, in contrast to large ones, who "usually cannot afford not to patent and cannot afford to

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<sup>19</sup> *Idem*, p 138.

<sup>20</sup> C Freeman, *ob cit*, p 132.

<sup>21</sup> The survey conducted by Soete was published in 1979. See C Freeman, *ob cit*, p. 134.

<sup>22</sup> C Freeman, *ob cit*, p. 136.

<sup>23</sup> Jonathan Liebenau, Patents and the chemical industry: tools of business strategy, in "The Challenge of New Technology, Innovation in British Business Since 1850", 135 at 136, edited by J Liebenau, Gower, 1988.

wait."<sup>24</sup> These studies just referred to did not take into account copyright and chip-designs, two very considerable forms of intellectual property protection in the field of information technology. The force of the surveys' outcome is thus very limited. They do not alter the monopolistic aspect of the intellectual property concentration as part of the nature of the innovation process. As a general rule, such a concentration is not only a reality at a firm level, but also observable at the spatial level of industrial structure.

### **(iii) Industrial structure and technical innovation**

In section 2.3.1 it has been assumed that barriers to entry is an element which works against efficiency and welfare. Due to the uneven nature of technical change, the innovation process has the effect of forming a structural barrier to entrants, thus, threatening the intellectual property bargain. The formation of this potential deterrence is now considered.

The analysis of the relationship between innovation and industrial structure has led theorists to compare the technical diffusion to a wave motion. Diffusion follows waves of development prospects determined by social and economic conditions, which vary from region to region. A consequential outcome is that technical changes are accelerated in selected industries or regions, and set back in those sectors and regions adversely affected by lack of adequate conditions.<sup>25</sup>

A study of the industrial structure related to innovation in the United Kingdom has also confirmed the exacerbation of regional disparities associated with uneven technical diffusion. It has been suggested that the unbalanced technical development is not simply a matter of the concentration of innovation activities. The reality is that technical revolutions induce instability because it is impossible for all regions to develop even rates of technical capability simultaneously. The fatality of capitalism is stated in these terms: "the constant drive to raise

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<sup>24</sup> C Freeman, *ob cit*, p. 136.

<sup>25</sup> Carlota Perez, "Microelectronics, Long Waves and World Structural Change: New Perspectives for Developing Countries" [1985] 13(3) *World Development* 441.

profits, the anarchy of the market and the inability to plan production in consonance with the market all lead to uneven development between individual firms."<sup>26</sup>

Resulting from an accumulation of conditions such as a skilful work force and competitive muscles, the disequilibrium is a determining factor in the nature of the innovation activity as a process of gains and losses. Some enterprises of different regions lose out at the expense of others in the same product market.<sup>27</sup>

The stigma of the imbalance of industrial structure in the OECD areas has also been discussed. Showing his concern in this respect, a representative of Japan stated:

*If technological innovation were to take place uniformly in every field, there would be no problem. However, advanced technology innovation is bound to centre on selected industries; there will inevitably be a lack of equilibrium in the development of industries due to the time lag caused in the process of the spread of technological innovation from one industry to another. The present situation is causing a domestic and international disequilibrium in structure between the field which remains in the dark and the field which is in the limelight and where technological innovations are rapidly taking place and towards which capital and human resources gravitate.*<sup>28</sup>

Two contributing factors to that imbalance and particularly associated with information technology are speed of technical change and economy of scope. For instance, in the case of personal computers with potential applications to industrial use, the lapse of time for upgrading performance has become shorter than a twelve-month period. Furthermore, describing the technical speed in the computer business, an IBM representative testified in these terms: "the art is growing and changing with blinding speed that if the automobile industry had progressed on the same curve as computer in the fifteen years, we would now have been able to buy for twenty dollars a self-steering car that would attain speeds up to four hundred miles per hour and be able to drive the length of California on one gallon of

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<sup>26</sup> Ash Amin & John Goddard, "Technological Change, Industrial Restructuring and Regional Development", p. 3, Allen & Unwin, 1986.

<sup>27</sup> Amin & Goddard, *ob cit*, p. 2, 10. In order to tackle the problem, state intervention is contemplated on the assumption that "what is happening due to the operation of market forces in the growth areas can be reproduced through public interventions in the crisis regions." The authors, nevertheless, do not take it for granted.

<sup>28</sup> The statement has been made at the OECD forum by Mr G. Takanashi when he was Chairman of the Fair Trade Commission -Japan "Competition Policy and Technological Innovation", p. 23.

gasoline."<sup>29</sup> As to the economy of scope, the impact<sup>30</sup> is on production management, requiring a ready response.

Economy of scale (single production line of uniform products) is based on cost-efficient large-scale investment in production facilities, mass production and mass sales of standard or homogeneous products. Yet, today development of microprocessors has made possible *production management of different products on a single production line* a possibility<sup>31</sup> The management of this economy of scope includes.

- *collection of information about consumer demands at point of sales (POS);*
- *analysis of the customer data by POS computing system; and*
- *data communication from the distribution system to manufactures.*<sup>32</sup>

The features of the economy of scope is that it allows prompt identification of diversified demands, accommodation of consumer needs through manufacture of different (related) products, an increasing variety of business opportunities, and full operation of the small and medium-sized firms capabilities. This dynamic environment illustrates a performance only attainable by selected technologically equipped industrial segments. In order to tackle distortions of this kind, the limitation to intellectual property seems to be a valid assistantial policy, and in this respect the role of the state has been rather noticeable.

#### **(iv) The syndrome of the technical capability and policies**

The theoretical and economic background has been developed to support the existence of welfare and efficiency claims framing the underlying intellectual property bargain. As much as this bargain is associated with technical change relying by definition on an unstable economic structure, the welfare and efficiency ends anticipated by the protection of intellectual property are kept under impairing conditions. While the economic rationale makes a case for limiting the use of intellectual property, it is now argued that the limitation depends on the assistantial

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<sup>29</sup> Testimony of Ralph Gommery, CONTU Report, p. 35.

<sup>30</sup> The rapid development in the fields of hardware and software has been identified as giving rise to problems of compatibility or interoperability of equipments. See Karl H. Pilny, *Legal Aspects of Interfaces and Reverse Engineering - Protection in Germany, the United States and Japan*, [1992] 23(2) IIC 196.

<sup>31</sup> The text follows the explanation stated by G. Taghanashi, OECD Report W.00050/D.390, 2473, p. 22.

<sup>32</sup> *Idem*.

role of the state acting along side the private enterprises. Control on IPR use is not, or should not be, an isolated policy. The point here is this: if technical capability and change are part of a country's policies and law, to not ensure proper protection of intellectual property does not seem logical. The social objectives of protection however are hardly achieved, unless IPR use is controlled. Neither does it seem logical to not have a policy to safeguard those objectives. Concerning incentive to innovation, protection and safeguarding policies together are only meaningful within a complex arrangement where state and societal acting forces work together. The observations of the way the incentive for new technologies are organised support and justify these remarks, as well as the degree of state intervention. The question now is how much do state assistantial policies matter.

They matter where they rectify the defects of the market economy and complement it, so as to respond to the Nation's will to catch up with, or to maintain leadership in technology by supporting innovation strategic activity; to ensure that firms act, and society's resources are free from undue restraints; to preserve or promote social welfare by making the improvement of living standards possible.

### **Justification of state intervention**

Although plainly justified in the light of modern liberalism,<sup>33</sup> government intervention has always been a very controversial matter due to the distortive effects it may have.<sup>34</sup> The influence of the increasing role of the government, nevertheless, in the creation and diffusion of new technologies is very strong.<sup>35</sup> In exercising influence, as a consumer, regulator or underwriter, the state acts either in partnership with the industry, or by leading actions to create conditions for industrial development and competitiveness.<sup>36</sup> The ways in which state

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<sup>33</sup> R. Eccleshall, "Liberalism", pp. 37-78, in *Political Ideologies - An introduction*, 1984

<sup>34</sup> For some accounts see comments by Yoo Soo Hong in the "Report of Ad Hoc Expert Group on Technology Policies in Open Developing Country Economies", p. 33-37, UNCTAD/ITD/TEC/3, 12/FEB/1993.

<sup>35</sup> See abstracts of significant articles appeared in the period of 1972-1991 in [1993] 22 *Research Policy* 101.

<sup>36</sup> For details about the US policies for the incentive of new technologies, see "1990 *DOC Technical Survey*" [footnote 3] and John Street, *Politics and Technology*, Macmillan, 1992.

support is organised vary from country to country and depend on historical and contextual reasons.

#### **Four examples of state intervening partnership**

In Japan, for instance, the coalition of state and business contrasts with the partnership of business and labour in Germany.<sup>37</sup> This relationship between government, business and labour is qualified by both, the catalyst function of the state and societal commitment. In some cases the state assumes a dominant position, such as in France, distinguishing from the business-dominant system of the United States.<sup>38</sup> In any case the state acting alone, i.e., without private alliance, would hardly conform to the liberal ideal.

A commitment and a choice rest in the core of that alliance. Both state and citizens are aware of the technological dilemma, that is to miss the technological race seems to jeopardise the welfare of the Nation. Conversely, the risks of sharing the race are several, at least in short term. Some welfare and efficiency losses may occur due to disruptions in market structure, and a number of jobs may be put at stake because of the displacement caused by automation. The consent to technology, if it occurs, invariably leads to a syndromic technical capability characterised by the particular attitude of the country as a whole to catch up with, or keep the leadership in technology and competitiveness. Such an attitude is reflected, for instance, in government policies and law. Three examples illustrate the point.

In passing the American Technology Pre-eminence Act of 1991, designed to speed technical development and maintain economic competitiveness, the US Senate stated that the decline in both technological leadership and market share of the US industries could not be allowed to continue in prejudice of the "Nation's standard of living."<sup>39</sup> The desire for

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<sup>37</sup> Jeffrey Hart, "The Effects of State-Societal Arrangements on International Competitiveness: Steel, Motor Vehicles and Semiconductors in the United States, Japan and Western Europe", [1992] (22) *British Journal of Political Science* 255-300.

<sup>38</sup> Jeffrey Hart, *loc cit*.

<sup>39</sup> P.L. 102-245, H.R. 1989, Senate Report No. 102-157. The ATPA 1991 traces the national needs in technology, sets out programmes, allocates funding, organizes the technology administration, and refers to other four Acts which form the legal framework of the US technology policy.

technical leadership was also expressed in the High-Performance Computing Act of 1991,<sup>40</sup> thus shaping the American technology policy. One consequence of this policy<sup>41</sup> affecting the use of intellectual property is that the title to any intellectual property arising from joint R&D programme supported by the government shall vest in, and cannot be transferred except to, a company incorporated in the United States. The legislation also outlines a range of administrative measures and Government-funded programmes which are part of a complex framework.

The best example to illustrate the syndrome of technical leadership in Japan is in the integrated circuit business, where the Japanese industry is regarded as a strong rival to the United States'. As soon as very-large scale integrated circuits (VLSI) appeared in the 1970s, -  
J. Hart comments -

*it became policy of both the major Japanese firms and the Japanese government to beat the Americans in process technology so as not to be dealt out of the competition in VLSI products. The government committed itself to this enterprise not just because it was concerned about semiconductors, but also because it believed that overtaking the United States in semiconductors was the key to improving Japanese competitiveness in all major downstream industries such as consumer electronics, computers and telecommunications equipment. Thus, in the transition from LSI to VLSI in semiconductors, the connection between state-societal arrangements and technological innovation was extremely clear.*<sup>42</sup>

The strong desire for a rapid economic growth has not only been a Japanese post-war commitment set up by the government and businessmen, but also a "central political goal to which all other Japanese policies have been subordinated,<sup>43</sup>" including the intellectual property policy which has become a weapon Japan's developmental system.

### **An account of the Brazilian ground rule**

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<sup>40</sup> Public Law No. 102-194, S. 272

<sup>41</sup> Senate Report (Commerce, Science, and Transportation Committee) No. 102-157, p. 17, Sept. 24, 1991.

<sup>42</sup> Jeffrey Hart, "The Effects of State-Societal Arrangements on International Competitiveness: Steel, Motor Vehicles and Semiconductors in the United States, Japan and Western Europe" [1993] (22) B.J. Pol. S., at 281.

<sup>43</sup> Michael Borrus, *Macroeconomic Perspectives on the Use of Intellectual Property Rights in Japan's Economic Performance*, in "Intellectual Property Rights in Science, Technology, and Economic Performance", p. 261 at 264, edited by F Rushing and C Brown, 1990.



In Brazil, the Nation's will for catching up with technology is part of the constitutional framework,<sup>44</sup> creating a state duty and preordaining objectives and means. While the responsibility for developing and commercially applying new technologies lies within the private sector, the Constitution charges the State with the duty to promote and foster scientific development, research and technical expertise, by means of supporting training and investment in R&D. Government actions are also directed at fostering science and technology for the benefit of the population, the solution for Brazilian problems, the development of national and regional productive systems, and the technological autonomy of the country. All of the above mentioned have been made permanent political goals.

Despite the non self-executing character of the constitutional provisions,<sup>45</sup> the clear fundamental purpose has been to create the foundations of a state-societal covenant shared by the State and the society at large, expressing a strong desire to catch up with technology and to develop a technological market. The institutional agencies, nevertheless, have so far failed to respond to these economic and social ambitions effectively.

Brazilian technology policy has always been implemented under a carrot basis, i.e., on the basis of financial incentive and market restrictions which, in the recent past, put the country under severe foreign pressure. Set up under the self-reliance assumption, market restrictions were much criticised.<sup>46</sup> Due to the dynamic nature of high-technology, IT policy has fallen far behind the technical pace. There is no precise reason for this failure. Strong suggestions however refer to either lack of confidence or will of foreign firms to transfer advanced technology, or the State's subsidising policy being carried out on a carrot basis rather than on a carrot-and-stick basis under which some penalty would be imposed upon national firms for not pursuing technical capability. Moreover, the targets set up in the informatics programme (National Plan of Informatics and Automation - PLANIN), *per se* too ambitious, have never been met.<sup>47</sup>

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<sup>44</sup> 1988 Constitution, Articles 218 and 219.

<sup>45</sup> M. G. Gonçalves Ferreira Filho, "Fundamental Aspects of the 1988 Constitution", p. 11-25, in *A Panorama of Brazilian Law*, Dolinger & Resenn (ed), North-South Center/EEL, 1992.

<sup>46</sup> Gallanger, *The United States-Brazilian Informatics Dispute*, [1989] 23(3) *The International Lawyer* 505; Ellene Felder & Andrew Hurrell, "The US-Brazilian Informatics Dispute", *FPI/School of Advanced International Studies*, 1988.

<sup>47</sup> Law 8,244, 16 October 1991.

Apart from some optimistic views<sup>48</sup>, a general feeling of doubt among the business sector has always existed as to the efficacy of the IT policy, coupled with the belief that to promote high-technology foreign co-operation is indispensable. A major inconsistency or weakness in the overall policy, therefore, has been in not enacting proper protection for intellectual property.

It is part of the constitutional covenant that Brazilian and foreigners, as provided in law, shall be ensured temporary protection of rights on works and industrial inventions (including any intellectual property with industrial applications). As to the latter, protection aims at both social interest and technological and economic development of the country.<sup>49</sup> The rationale underlying such a clause is that protection of intellectual property is mandatory to the degree it works for the welfare of the Nation. In this regard, the lack of a steady intellectual property policy has made the country ill-equipped to comply with the fundamental agreement and the Nation's syndromic pursuit of technological autonomy.

### **Guidance to the state catalyst function**

The challenge in limiting the exercise of intellectual property rights rests on the country's ability to combine policies, i.e., to safeguard the social objectives behind the protection of intellectual property as a component tunelessly integrated with the overall policies put forward as a means of fostering the development of new technologies and technical change. In connection with this, two principles guide the function of the catalyst state: surveillance as a means to improve, in terms of welfare and efficiency, the state assistential machinery; and planning as a process to justify legal measures or reliefs which especially affect the use of intellectual property.

Surveillance is necessary to the extent that it makes state action effective by capturing the best opportunity to act, while the process of justification makes the implementation of the

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<sup>48</sup> For some accounts, see Hubert Schmitz & Jose Cassiolato (eds), "High-Tech for Industrial Development - Lessons from the Brazilian experience in electronics and automation", Routledge, 1992.

<sup>49</sup> 1988 Constitution, Article 5 (XXVII and XXIX)

legal policy, in a particular situation, reasonably acceptable to the parties concerned. The force of these principles relies on the need to identify circumstances where welfare-improving interventions are likely to be feasible in practice. In dealing with this, in Part Two the study identifies the intellectual property policy as a complementary instrument to explore concrete possibilities of improving welfare and efficiency.

Especially in the information technology sector, the policy is translated into legal measures made available to facilitate new entries, to increase the bargaining power between rivals, to discourage abusive behaviour, to encourage regional development, and to foster high-performance computing for the improvement of state services such as education, public transport, national health, and basic and applied research. In this respect, a balancing protection of chip designs should be included as a state commitment.

## CHAPTER THREE

### THE CHIP-DESIGN LAW AND THE INTELLECTUAL PROPERTY BARGAIN

#### 3.1 Introduction: legal structuring of intellectual property

In the previous chapter, the effects of the competition dynamics of the innovation process upon the "social bargain" was studied. Lying behind the intellectual property theory, such bargain is linked to efficiency and welfare goals. In chapter three, the protection of intellectual property, particularly that of chip designs, is examined. The statutory framework is considered in the context of the bargain theory.

The growing awareness of the importance of intellectual property has led industrialised countries to claim at international fora the strengthening of protection on the grounds that uneven levels of protection world-wide had caused losses in business and employment due to an increasing economy of counterfeit goods. Distortions associated with inadequacies of intellectual property regimes<sup>1</sup> were reported to upset the system of international trade.

In entertaining the question whether a desirable and adequate level of protection does exist, it may be justifiably argued that a proper protection would be that which provides for a reasonable return on investments. Relying on a reasonable period of exclusivity, such an adequate protection would also allow a balanced rate of private and social returns (rewarding the right holder and benefiting society). However, this study (which is not concerned with appropriate level of protection) suggests that from the legal viewpoint appropriateness can only be assessed in terms of the scrutiny of the framework of the statutory protection designed to achieve certain requirements of a social bargain.

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<sup>1</sup> Intellectual property has been brought to the GATT framework in the belief that protection could be improved. Arguments put forward by the USA, Japan and EC presented two reasons. First, they indicated trade losses due to deficiencies in protection of intellectual property, and that existing copyright and patent conventions did not ensure adequate level of protection. Second, in the GATT a settlement system of dispute could remedy trade distortions and impairment of previous concessions arising from weak protection worldwide. See MTN.GNG/NG11/W/7, 29 MAY 87

Furthermore, an objective sense of adequacy is connected with the consistency of the body of rights related to the different forms of protection. A set assumption is that all systems have a degree of inconsistency and ambiguity which make appropriation of rights imperfect. Additionally, the legal structure itself, i.e., the manner in which the rights are formulated, does not prevent owners from exercising their rights in a way which is contrary to competition rules. As a result, the welfare and efficiency goals that the statutory framework is supposed to pursue are permanently at stake.

The analysis suggests that a sense of social bargain linked to welfare and efficiency objectives has been a part of the intellectual property law for over two centuries, and therefore deeply rooted in the bundle of rights and exceptions which form the modern statutory protection. The primary concern of protection is the assertion of rights rather than the regulation of the outcome derived from their exercise. In this respect, although the legal framework itself conceptually strikes a balance of interest, it cannot be taken for granted that the working of proprietary rights will effectively be carried out in accordance with such a *quid pro quo*.<sup>2</sup> This denotes that any system of protection is by its nature imperfect<sup>3</sup>, to the extent that an adequacy of protection is or should be committed to welfare as well as efficiency functions.

No country can aspire to provide inventors and authors with a perfect appropriability system of intellectual property. Not even the United States, regarded as having one of the most effective mechanisms for protection has such a system. Therefore, it must be stated that "the intellectual property protection mechanisms need not guarantee perfect appropriability for the innovator to yield net benefits to the country involved."<sup>4</sup> Provided that international

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<sup>2</sup> It is noteworthy to stress that the insertion in the PIC Treaty of non-voluntary licensing contrasted to those views which found it unnecessary.

<sup>3</sup> For an example of imperfection, see the criticism on the tests designed to draw a line between expression and idea in computer programs. The tenor of these tests is that "copyright should not grant anyone more economic power than is necessary to achieve the incentive to create." But they have been "incompatible standards." See the update survey of Julian Velasco, "The Copyrightability of Non-literal Elements of Computer Programs" [1994] 94(1) Col L. R. 242 at 253, 281, 291.

<sup>4</sup> Richard P Rozek, Protection of Intellectual Property Rights: Research and Development Decisions and Economic Growth, in "Intellectual Property Rights in Science, Technology and Economic Performance", p 33, edited by F. W. Rushing and C G Brown, Westview Press, 1990. At p. 34, Rozek adds that a perfect appropriability would be so costly that would not pay off. Apart from the cost/benefit imbalance, there is a tremendous factor which is the traditional element. In other words, "perfect appropriability is difficult because

agreements are complied with, level of protection is a matter of national discretion. Therefore, whatever the protection a country is prepared to afford, within the framework of intellectual property treaties, a system of remedial measures is needed to redress the adverse effects the exercise of proprietary rights may cause to public interest.

As aforementioned, the legal structuring of intellectual property intends to provide both a sense of appropriateness of protection and an agreed statutory bargain. The discussion of the drafting of the US law on mask works, in addition to the IPIC Treaty and the Agreement on TRIPS reveal not only the sense of bargain underlying them, but also that in order to protect new technologies negotiators have had to drive a hard bargain. Based on a critical analysis, an apprehension of failure of this bargain is entertained. Several points explain this concern, emphasising the need for putting in place a permanent policy about legal limitation of intellectual property.

In choosing a sui generis protection for mask works, the US Congress once again confirmed the federal policy of not protecting useful articles under copyright. In contrast, this fundamental principle, adhered to by US law for over two hundred years, is to afford protection for useful articles under patent provided that the standards of novelty and inventions are met. Consequently, it is for the public benefit that designs which do not meet the patent requirement are available for "imitative copying", unless the reproduction seems to be too predatory to competition. In the Congressional judgement, mask work designs (a functional article not eligible for patent) deserve protection for their technical merit, that is, a combination of advanced, known and valuable technical elements.

Aspects of the US law are critically examined. In particular, it is argued that the permanent fixation of the mask work as a requirement for protection may encourage the coupling of designing with manufacturing activities. This may give rise to anti-competitive practices, and is certainly an inappropriate provision for the interests of regions or countries not possessing the capability of chip manufacturing.

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the intellectual property of each industry has unique characteristics which the protection of mechanism would have to incorporate."

The bargain behind the traditional forms of intellectual property (patent and copyright) is critically analysed. A noteworthy point, while patent is designed to expand the use of knowledge by meaningful disclosure of information, the increasing use of secret,<sup>5</sup> eg, in the field of information technology, is a potential impairment to the social bargain by making the access to non-novel utilitarian elements uneasy.

A sense of bargain is also found in the discussion and drafting of the IPIC Treaty and the Agreement on TRIPS. This viewpoint stems from several provisions, including those dealing with the objectives of the Agreement, public interest exception, non-voluntary licensing, and the control of anti-competitive exercise of intellectual property.<sup>6</sup> These provisions make the Agreement on TRIPS not only a framework of standards of protection, but also a charter for efficiency and welfare goals.

In the particular field of integrated circuits, the study traces further concerns, for instance, regarding the debatable appropriateness of the term of protection it is pointed out that if the period is such that it appears to eliminate competition, than the intellectual property bargain may not be fulfilled.<sup>7</sup> Moreover, in order to benefit from reverse engineering and non-voluntary licensing a country needs to master capability not only of designing, but also of manufacturing of chips. For those countries lacking capability of chip manufacturing the safeguarding mechanisms, such as non-voluntary licensing and reverse engineering, have limited beneficial effects.

On the grounds of these inherent imperfections, a case is drawn up to limit the exercise of proprietary rights. To this end, it is realistic to infer the legitimacy of a proper policy in order to curb the adverse effects of the right-holder conduct. The chapter starts by discussing the debates at the US Congress concerning the model of protection for mask works.

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<sup>5</sup> The use of confidentiality in know-how transfer has been pointed out as a cause for concern in the sphere of the European Community. See chapter 6, subsection 6.2.1 (vii).

<sup>6</sup> Agreement on TRIPS, Articles 7, 8, 31, and 40.

<sup>7</sup> For a similar argument, see The MMC Report on the Ford's licensing policy, paras. 6.62 to 6.65, Cmnd. 9437 (1985).

## **3.2 The structure of the US sui generis law of mask works**

### **3.2.1 The debates at the US Congress**

#### **(i) The copyright approach**

When opening the hearings on the Bill S. 1201 to protect semiconductor chips, the chairman of the US Senate Judiciary Committee stated that the proposed legislation would give designers and manufactures the necessary instruments to protect investments in research and development from unauthorized reproduction. The bill asserted protection for ten years. The use of mask works was included in the bundle of exclusive rights, but innocent purchasers were allowed to use the infringing chips on a basis of compulsory licensing, thus eliminating liability for innocent infringement. Legitimate reverse engineering was encouraged. Copyright was chosen as "the best tool at hand to get the job done."<sup>1</sup> Whether the protection could be integrated into the copyright regime was, nevertheless, unclear.

At the US Copyright Office, a number of issues were raised. The main objections against copyright rested on the utilitarian nature of the mask work and chips. In this respect, the Copyright Office did not consider copyright the most appropriate form of protection for four reasons. Under the US system, copyright is not available for useful articles themselves. The design of an utilitarian article is eligible for protection only to the extent that the design can exist separately from, or independently of, the useful product. Protection for drawings of an useful article does not prevent the latter from being copied. Copyright over expressions does not extend to ideas, plans or processes.<sup>2</sup> Since the layout or the mask work and the chip represented the published version or embodiment of an imprinted technical drawing only this, on a paper blue-print-type deposit, could be registered. It was on these grounds that years before, the registration of a claim to copyright a chip was refused.<sup>3</sup>

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<sup>1</sup> Hearings on S 1201 Before the Subcomm. on Patents, Copyrights & Trademarks of the Senate Comm. on the Judiciary, 98th Congress, 1st Session, 98-493 (1983). [Hereinafter cited as 1983 Senate Hearings.]

<sup>2</sup> See Statement of Dorothy Schrader, 1983 Senate Hearings, *supra* note.

<sup>3</sup> As it was reported in the Schrader Statement, in 1977 an action was filed to compel registration but the case was eventually withdrawn (*Intel Corp v. Ringer*, C 77-2848, N.D. Cal., 1978). See 1983 Senate Hearings.



The Senate 1201 Bill was not the first proposal for copyright protection. In 1979, a bill introduced in the House of Commons proposed including "the photographic masks used to imprint patterns on integrated circuit chips and the patterns themselves" in the category of pictorial works by amending the copyright law.<sup>4</sup> Protection of mask works as ornamental copyright designs was also considered.<sup>5</sup> These bills had no legislative progress due to the scale of controversy they caused among the industry and experts. In general they were very similar, and attempted to assimilate semiconductor mask works to existing subject matters. This was the case of the S. 1201 and the H.R. 1028.<sup>6</sup> These two bills, however, would create a new category of copyright work. The advantage was that it would not interfere with those existing subject matters which enjoyed different terms of protection and would not share the exceptions to exclusive rights, such as reverse engineering and innocent infringement particular only to chip-designs. The industry seemed to be comfortable with the new developments particularly as they would create a new category of work and relax the useful article doctrine.<sup>7</sup>

The Senate Committee concluded that protection of mask works could be accommodated in the copyright framework. The integration, it was pronounced, was both "adequate" and "well suited to the task at hand," rather than "an untried form of *sui generis* protection"<sup>8</sup> which the Committee dismissed. Six reasons were put forward to support the copyright choice.

### Arguments for copyright protection

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<sup>4</sup> *Idem*.

<sup>5</sup> H.R. 2985, 98th Cong., 1st session (1983), drawn around the H.R. 20, 97th Cong., 1st Sess. (1981). 1983 Senate Hearings, Schrader Statement, at 47.

<sup>6</sup> See H.R. 1028, 98th Congress, 1st Session (1983). Other two bills, the S. 3117 and H.R. 7207, written around S. 1201, were introduced for the benefit of discussion. See Scharader written statement in 1983 Senate Hearings.

Letter written by Warren Davis, Director of the Semiconductor Industry Association, attached to the record of the Hearings on H.R. 1028 Before the Subcomm. on Courts, Civil Liberties, and the Administration of Justice of House of Comm. on the Judiciary, 98th Congress, 1st session (1983), (Appendix 1). [Hereinafter cited as 1983 H.R. Hearings.]

<sup>8</sup> Senate Report No. 425, 98th Congress, 2nd Session, at 12 (1984), hereinafter cited [1984 Senate Report].

Firstly, for over two centuries the evolution of the American copyright has included new forms of expression.<sup>9</sup> While keeping pace with technology, modern copyright law "protects a vast range of works, some of which have value almost exclusively as utilitarian objects."<sup>10</sup> The Committee found that, to protect mask works could be beyond the traditional copyright, but not "a giant leap."<sup>11</sup> In overcoming the bar of the utilitarian doctrine, the Committee embraced an expanded interpretation of the constitutional term "writings", already established by the Supreme Courts in accepting copyright in sound recordings.<sup>12</sup> In approaching the matter, the CONTU Report referred to the term "literary works" as connoting no "criterion of literary merit or qualitative value."<sup>13</sup>

Secondly, the Committee argued that mask works were considerably similar to maps and technical drawings. On these grounds, copyrightability of chip designs would cause minimal distortions.<sup>14</sup>

The third copyright argument was of a practical nature. Relying on copyright background, protection would provide for legal certainty and avoid costly litigations. For the Committee, the past developments in copyright would "encourage certainty and stability within the field of semiconductor chip-design."<sup>15</sup> The Committee's concern was that under a *sui generis* protection the members of the semiconductor industry could count on no judicial guidance, and a scheme of protection standing alone with new concepts and terms would "invite costly litigation to define the parameters of the new form of protection."<sup>16</sup>

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<sup>9</sup> 1984 Senate Report at 12.

<sup>10</sup> *Idem.* As cited in the testimony of Professor Miller, some useful articles include "belt buckles", "E.T. lunch pail", and "E.T. piggy bank". 1983 Senate Hearings.

<sup>11</sup> *Idem.*

<sup>2</sup> For instance, in *Goldstein v California* quoted by the 1984 Senate Report, at 13, the Court established that "writings" included "any physical rendering of the fruits of creative intellectual or aesthetic labor." (412 US 561). In this case, it was discussed copyright in sound recordings.

<sup>13</sup> CONTU Final Report, p. 16. The passage refers back to the discussion of the US 1976 Copyright Act, PL 94-553 (1976), Senate Judiciary Committee, 94th Cong., 1st session, 1975.

<sup>14</sup> 1984 Senate Report, at 13.

<sup>15</sup> *Idem.*

<sup>6</sup> *Idem.*

Protection of the American chip abroad was the fourth reason. The Committee was aware that a copyright on mask works differing from the traditional copyright would lead to a degree of uncertainty and thus render the recognition of the US copyright internationally unsafe. The Committee contended, nevertheless, that a *sui generis* regime would make protection abroad more troublesome.<sup>17</sup>

The "simplicity and economy" of a copyright form of protection was, according to the Committee, preferable to a *sui generis* one.<sup>18</sup> As a fifth argument, it was thought that applying a new form of intellectual property to protect chip-designs would require the courts to borrow considerably from concepts inherent in copyright. If this was the case, the job would be simpler if protection of chip designs were accommodated in the copyright framework, despite the danger of such an integration.

On its last issue, the Committee held that the Senate Bill containing the developed copyright proposal had been sufficiently well drafted to avoid the fear of distorting copyright.<sup>19</sup> The alleged danger of distortion appeared as a serious concern posed by publishers. They contended, for instance, that the accommodation of reverse engineering in the concept of fair use would be likely to erode their interests, or at least would create a grey area as to the extent of protection for publishers' works embodied in chips.<sup>20</sup> Opposing the Senate Committee, the House of Commons rejected the copyright approach, enriching the debates with its arguments for a *sui generis* protection.

#### **(ii) Arguments for a *sui generis* regime**

The copyright route with adjustments would have been technically possible by elaborating adequately on the wording of the bill. The choice would not necessarily have facilitated

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<sup>17</sup> *Idem*. Contrasting with this view see the opinion held by H.C. Jehoram who suggests that the lack of protection for the American chip abroad would have been the main and decisive reason for the US Congress to make the *sui generis* choice. In "Some Curious Problem Caused by Chip Protection" [1989] 3 WIPR 91.

<sup>18</sup> 1984 Senate Report, at 14.

<sup>19</sup> 1984 Senate Report, at 13.

<sup>20</sup> See statement of Jon A. Baumgarten, representing the Association of American Publishers, in 1983 Senate Hearings.

protection of American chips abroad, and would have considerably diluted the two-centenary fundamental principle of non-copyright protection for useful articles. These were the major reasons why the House of Commons' Committee substituted its copyright version, introducing an hybrid form of intellectual property.<sup>21</sup> Moreover, anti-copyright precedents had already been created, refusing copyright protection for mask works, equipping the House Committee with additional munitions to refute the Senate Committee's arguments for the copyright approach.

Designing a legislation primarily to combat unfair chip copying, the House Committee elaborated:

*The creation of a sui generis form of protection for mask works represents, in the Committee's view, appropriate recognition of the industrial nature of mask work designs and avoids conceptual confusion in copyright law to accommodate a form of intellectual property which is better protected by reference to the background and practices of the semiconductor industry.*<sup>22</sup>

For the Committee, copyright would not strike mask work copying, nor safely accommodate reverse engineering - a practice well established among the industry. In this respect, to experiment with a modified copyright protection which would sacrifice the useful article doctrine would not be of public interest. Unavailability of copyright in useful articles was, as it is, a fundamental principle adhered to the US law for over two hundred years. Copyright was available to protect expressions rather than ideas, and as to useful articles protection fell within patent provided that the standards of novelty and inventions were met. As a result, it was for the public benefit that designs which did not meet the patent requirements were available for "imitative copying", unless the reproduction was too predatory to fair competition.<sup>23</sup>

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<sup>21</sup> After the H.R. 1028 being declared a "clean bill" with adjustments, the H.R. 5525 Bill was introduced as a substitute amendment for the former. Consubstantiating "a new form of legal protection separate from and independent of the Copyright Act," the H.R. 5525 was approved in the House Committee without dissent, creating "a form of industrial intellectual property" [] "premised on a finding that original mask works are "writings". See 1984 House Report No. 98-781, U.S. Code, Cong. & Ad. News, at 5754/5, 5758 and footnote 22, 5764/5 and footnote 36.

<sup>22</sup> *Idem*, at 5756.

<sup>23</sup> *Idem*, at 5757/8.

When the law protects artistic features, existing independently of the corresponding useful articles, protection does not extend to the overall shape of the article. This has been established by courts, which have refused copyright to designs of automobile wire wheel, or outdoor lighting fixtures.<sup>24</sup> The Committee recognized that mask works are in some superficial aspects similar to maps, technical drawings, photographs or audiovisual works which are not useful considered articles. These categories, however, have no function beyond their information content, appearance, visual or aesthetic appeal. Conversely, mask works deserve protection for a very different reason, that is, "the technical and creative skill employed in laying out or designing electronic circuitry", and although mask works may convey information, "their primary purpose is being used in the manufacture of a useful article - semiconductor chip products."<sup>25</sup> Therefore, protection of mask works would not fall under copyright. Their reproduction would not be a violation of the right on the technical drawing as already established in judicial precedents.<sup>26</sup>

Acknowledging that the semiconductor industry was of international nature, the House Committee realized that a legal form which would be paramount for the protection of mask works domestically should also induce protection abroad. In this respect, there were sufficient reasons to believe that "the possibility of international protection under copyright conventions [was] speculative."<sup>27</sup> Whatever form of protection chosen, there was no guarantee that the US standards of protection would be easily followed by other countries. If protection was made available under copyright framework, the United States would have to protect foreign chips at home by virtue of the national treatment rule. Protection of American chips abroad, nevertheless, would be uncertain.<sup>28</sup> A *sui generis* form of protection, escaping from the compulsory effects of the national treatment rule derived from both copyright and industrial

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<sup>24</sup> See among other *Norris Industries v I.T.&T. Corp. and Ladd*, and *Esquire Inc. v Ringer* cited in 1994 House Report, at 5758.

<sup>25</sup> *Idem*, at 5759.

<sup>26</sup> *Idem*, at 5757. The House Report cites the *Intel Corp v Ringer* case. Furthermore, copyright on drawings does not prevent the use of drawings because traditionally the right of use is not included in the bundle of the owner's exclusive rights. 1984 House Report, at 5770.

<sup>27</sup> 1984 House Report, at 5756. See also 1987 House Report No. 100-388, U.S. Code, Cong. & Ad. News, at 843.

<sup>28</sup> See 1984 House Report, at 5756 and H.C. Jehoram, "Some Curious Problems Caused by Chip Protection" [1989] 3 WIPR 91.

property conventions,<sup>29</sup> would make it possible for the US Congress to conduct an innovatory in the field of intellectual property. In order to encourage a new and uniform regime of intellectual property worldwide, the House Committee introduced a scheme of reciprocity based on a bilateral comity,<sup>30</sup> which three years later was reported to be a success.

Finally, the House Committee argued that a specific regime regulating only the mask work protection, "would avoid the possible distortion of copyright law."<sup>31</sup> Additionally, in the development of a new legal form, concepts from the copyright background could be invoked by analogy "to the extent clearly applicable to mask works."<sup>32</sup> A *sui generis* regime, however, the Committee added, "should not be restricted by the limitations of existing copyright law."<sup>33</sup> These responded to the claims for certainty and economy in litigations inserted in the Senate's arguments.

The choice made by the US Congress duly considered the interests of the industry, and expressed the sense of bargaining asserted on behalf of the society at large.

### **3.2.2 Intellectual property structure and social bargain**

#### **(i) The social bargain under copyright and patent**

As a hybrid form of protection, the *sui generis* regime, created by the Semiconductor Chip Protection Act of 1984 (SCPA), integrates a degree of both, copyright and patent. The SCPA history reveals a conspicuous congressional efforts to protect the interests of right holders and safeguard the interests of society et large. In short, these interests consist of encouraging innovation by making possible a rewarding and reasonable return on investments, as well as

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<sup>29</sup> The House Committee believed that a new form of intellectual property would not fall either under the Universal Copyright Convention or the Paris Convention for the Protection of Industrial Property. 1987 House Report No. 100-388, U.S. Code, Cong. & Ad. News, at 843.

<sup>30</sup> The experiment refers to the application of the Sections 902 and 914 of the Semiconductor Chip Protection Act authorizing the grant of interim protection under certain conditions to national of foreign countries. The reciprocity mechanism was described as a success, and the Section 914 as "a unique provision without parallel in the intellectual property field." *Idem*, at 845 and 849.

<sup>31</sup> 1984 House Report, at 5759.

<sup>32</sup> *Idem*.

<sup>33</sup> *Idem*, at 5760.

giving the society a wider prospect of material satisfaction. Focusing on these objectives, it explores the main features of the bargain theory inherent in the structure of the traditional classes of intellectual property, copyright and patent, and then considers its implications for the analysis of the SCPA framework

All countries have a particular method of structuring their patent and copyright laws. The legal construction tends to follow traditions developed over years. These traditions, ie, doctrines and fundamental principles, reflect the perceptions of the courts, parliament and experts who almost invariably are not prepared to abandon their dogmas, unless they are urged to do so on behalf of a superior cause. Therefore, the precise features of patent and copyright valid for all countries can be hardly traced. Even an identical copyright or patent rule common to two countries may be construed differently. In view of this, the similarities and differences which now follow are general indications particularly associated with the US system. While forming the legal structure<sup>34</sup> of both types of intellectual property, these indications are subject to variations from country to country and can only be meaningfully examined within the context of a particular system.

### **The legal structure of patent and copyright**

Patent and copyright represent two sets of legally enforceable rights which differ from each other in several aspects. A patent owner is normally entitled to exclude others<sup>35</sup> from making, using, or selling the subject matter of the patent which is granted under the conditions of exchange of a meaningful and extensive disclosure of the state of the art and later unlimited use of the invention.<sup>36</sup> The granting has at least a two-pronged rationale. The disclosure of the knowledge derived from a patented item or process is necessary, firstly, for the examination of the claim and the requirements of novelty and, secondly, to make the

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<sup>34</sup> The expression legal structure, as it refers to copyright and patent, means the bundle of rights legally enforceable, including exclusive rights and exceptions to them, conditions and procedures for protection, duration, remedies and enforcement. For the purpose of the study, the legal structure does not include contingent measures (limitations or suspension) affecting the use of the rights.

<sup>35</sup> A patented invention may be used for non-commercial purposes, ie, purely for scientific study or interests.

<sup>36</sup> See White, "Why a Seventeen Year Patent?" [1956] 38 J. Pat. Off. Soc'y 839, 440.

incremental art known to skilful men. Lack of proper disclosure<sup>37</sup> will frustrate the quid pro quo, and enforceability to the extent beyond the technology not disclosed will not be available. If the subject of a claim is not novel, the granting would not achieve one of the patent aims, to promote innovation, and would serve only to restrict free access to technical knowledge already available to the public. It would go against not only the public policy<sup>38</sup> behind the patent, but also be a fraud to society.

The exclusive rights may last for seventeen years, and can be enforced against a supervenient inventor. The duration is to a certain extent arbitrarily fixed. While from the economic point of view no criteria can sensibly justify a shorter or longer term, an interesting speculation in the field of law exists in why copyright grants a far longer period of protection. One possible reason can be found in the basic nature of these types of intellectual property. Traditionally, the patent owner is granted the right to practise the art disclosed in the invention. This legal monopoly is exercised through the manufacturing of an utilitarian article and by discharging new comers. Conversely, by protecting only expressions disclosed with the publication of a work, copyright does not prevent identical works independently created from being circulated. Therefore, in the view of its increasingly wider role in protecting useful articles in the context of information technology, such as protection of computer software, copyright has interfered with industrial property.

Under copyright, the owner controls the copying and distribution of copies, hence preventing others from reproducing and selling the work. In general, however, no power is available to prevent others from using an infringing article. Subsisting for at least fifty years, copyright's term of protection is the longest of any other form of intellectual property. The period is so long, some analysts argue,<sup>39</sup> because protection is limited to expressions<sup>40</sup> and

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<sup>37</sup> Exceptions are made for those so called "secret inventions." Being a contradiction in terms, this expression designates those inventions of strategic interest for national security.

<sup>38</sup> Interpreting Thomas Jefferson's writings on patents, the US Supreme Court reasoned: "The grant of an exclusive right to an invention was the creation of society - at odds with the inherent free nature of disclosed ideas - and was not to be freely given. Only inventions and discoveries which furthered human knowledge, and were new and useful, justified the special inducement of a limited private monopoly." In *Graham v John Deere Co.* (383 U.S. 1, 1966)

<sup>39</sup> As Pamela Samuelson argues, "it is one thing to grant a lengthy term of protection to songs, poems, and paintings, and quite another to do so for airplane wings, pumps, and clothes dryers." In "Creating a New Kind of Intellectual Property: Applying the Lessons of the Chip Law to Computer Programs" [1985] LXX Minnesota Law Review 471 at 512.



traditionally does not cover the utilitarian aspects of the work. Protection of expressions aims to compensate authors for their creations in exchange for dissemination of expressions and ideas; the latter can be used by anyone, and both promote learning. The implicit disclosure of ideas and expressions, by registration and/or publication, in exchange for granting exclusive rights to copyright owners is thus part of the social bargain.

Although publication is not a condition for protection, nor the commencement of duration of protection depends on registration, a basic assumption underlying copyright is "that authors will publish their works when seeking to reap the commercial rewards for them."<sup>41</sup> Since "that reaping commercial rewards would not be possible without publishing and disclosing,"<sup>42</sup> publication and disclosure are not explicitly required. A consequential effect of the requirement of disclosure is to exclude trade secret.

## **(ii) Trade secret and the ambiguity *in medio***

Clearly, the extent of the bundle of rights that patent and copyright embody and the conditions on which they are asserted follow considerations of public policy. It is acknowledged that the structuring of these rights bear inherent imperfections, in terms of inconsistency and uncertainty, as well as giving opportunity to abusive exercise. These are likely to affect the underlying social bargain. Two issues will be examined: firstly, the implications of trade secret coupled with copyright and, secondly, the unclear boundary between enforceable legal monopoly and legitimate public access in the area of useful designs with industrial applications.

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<sup>40</sup> To draw a line between expressions and ideas has been a matter of ingenuity. As it is pointed out in a survey by J. Velasco, "by protecting only an author's expression from an unauthorising copying, copyright law strikes a balance that is intended to "promote progress." The author concludes: the various court tests applied to determine the copyrightability of computer programs are "incompatible standards;" courts tests so far developed have failed to combine simplicity with accuracy. The *Welan* case, for instance, is stated in a simple way: "the court need merely determine the program's function to arrive at its idea, and then determine what is unnecessary to that idea to arrive at the protected expression." Julian Velasco, "The Copyrightability of Non-literal Elements of Computer Programs" [1994] 94(1) Columbia L. Review 242 at 253, 241, 291.

<sup>41</sup> Pamela Samuelson, *idem* at p. 511, footnotes 198 and 199.

<sup>42</sup> *Idem*, footnote 199.

## Trade secret in computer technology

In the United States, the vast use of trade secret coupled with copyright has raised some controversy<sup>43</sup> in the past. Currently the issue seems to be resolved, especially in the field of computer programs marketed in small numbers by licensing.<sup>44</sup> Trade secret has been held on the grounds of the particular nature of computer programs, ie, the high development costs and expertise they require, and easy copying due to their intangible nature. The secret over software and computer systems, both compared to industrial processes, has been found necessary to insure a just competitive advantage for the right holder, and secret may cover combination of "known computer elements", eg. logic and coherence in computer software."<sup>45</sup>

Although the widespread distribution or publication of the content of an existing trade secret generally has the effect of diluting the relation of confidentiality, courts "have been fairly liberal in allowing extensive distribution of software information without terminating the related trade secrets."<sup>46</sup>

Even a copyright notice on protected material does not preclude the trade secret claim.<sup>47</sup> An unlimited trade secret undermines the social bargain inherent in intellectual property, first, in creating "a perpetual bar against copying"<sup>48</sup> and, second, in creating an unrestricted protection regardless of the degree of originality the programs bear, if any. To a certain extent, secret might not harm and may in fact be needed. However, since

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<sup>43</sup> Smedinghoff, "Critique of Trade Secret Approach to Protecting Computer Software", in Holmes, *Protecting Computer Software*, p. 21-29, 1984 John Marshal Intellectual Property Institute, [1984] 2 Software Protection.

<sup>44</sup> Sally March, *Creating Solutions for a Creative Industry: Protecting Computer Software*, [1987] Patent World 10. For an update survey, with large number of cases in different jurisdictions, see Melvin F Jager, "Trade Secrets: The Steady Protection for Computer Technology", in A.I.P.L.A., 1992 Mid-Winter Institute on The Law of Computer-Related Technology, Vol. 1, Section P. But see different thoughts in *Bonito Boats v. Thunder Draft Boats* [1989] 489 US 141.

<sup>45</sup> *Jostens, Inc. v National Computer Systems, Inc.*, 214 U.S.P.Q. 918, Minn. S. Ct. (1982), cited by Melvin Jager, see previous note, at P-8.

<sup>46</sup> *Idem*, at P-15.

<sup>47</sup> *Idem*, at P-16.

<sup>48</sup> *Idem*, P-10.

secret provides for a business scheme with no transparency, the concern is that consequences likely detrimental to the social bargain will rarely be perceived.<sup>49</sup>

The trade secret defence in computer technology is based on the assumption that patent and copyright are inappropriate forms of protection. The argument states that if early access through public disclosure of the computer elements is allowed, the right holder is likely to lose his competitive advantage which the intellectual property intend to insure. Based on this and other assumptions, the hypothesis of the trade secret defence is, or should be, that the right holder should be prepared to offer the computer technology to public disclosure as soon as the risks of losing his competitive advantage have been overcome, or that the secret-based exploitation of the technology over a period of time has already given a just return on the investments of risk-taking innovative activities.

Provided that the hypothesis is followed, the integrity of the social bargain will be preserved. Nevertheless, two contentions still apply. The weakness of the secret scheme is that the judgement of what is fair return is left entirely to the discretion of the right holder. An additional weakness is that trade secret will, by definition, subsist as long as the relation of confidentiality lasts. Following this, the right holder may promote the disclosure of the technology through patenting or copyright. At this stage, it may be possible that the technology has already reached its obsolescence due to the rapidity of technical change. The conditions of the market for the product- or service-related technology, as well as the technical pace are crucial for the assessment of the social bargain.

Assuming that customers are sufficiently informed about the advancement of art in computer hardware and software, it may be argued that the distortive effects of trade secret can be paid off, or at least alleviated. In other words, customers will not be prepared to enter into a confidential agreement to buy a technology-based product which they know is, or will soon be, outdated. In an industry considerably marked by exploitation relying on secret, however, it would be unrealistic to expect entrepreneurs to possess such a high level of

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<sup>49</sup> For instance, a relation of confidentiality may lead to the absurd of providing protection for a slavish and unregistered copy of computer program that may be licensed to a customer with no sufficient skill to discern about the state of the art.

market information.<sup>50</sup> The picture is worse in technologically less privileged regions or markets.

### **Speed of technical change and secrecy**

A further factor which may counterbalance the distortive effect of secret exploitation is the speed of the technological change which is a feature of the software and chip industries. Owing to the technological race, new products are commercialized and soon superseded by others, particularly in technologically developed regions. As aforementioned in the previous chapter, the theory of technical wave explains that technology flows unevenly. In those markets and regions where for a multitude of reasons<sup>51</sup> technological development is retarded, trade secret has an additional function, of securing the innovative investors' maximization of profits on technology which is likely to be obsolete. The distortive effects on the social bargain are thus greater.

### **Between copyright and design patent**

There is a gap between copyright and design patent where protection is uncertain, or no protection at all is available.

A basic distinction between copyrightable design and patentable design is that the latter is concerned with aesthetic related to function, while the former with aesthetic related to non-functional form. Having emerged with the flourishing of the industrial revolution, industrial designs initially played the role of adding a conception of industrial decoration to the ugly machine.<sup>52</sup> It evolved to the stage where the machine's form and function are intimately

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<sup>50</sup> The deficiency regarding market information about the resources available, including resources of technical nature, is also a feature of a market of increasingly imperfect competition. Perfect knowledge as a theoretical presupposition of perfect competition would be desirable to make trade secret perfectly compatible with social welfare.

<sup>51</sup> The reasons the technical flows may be retarded include incapacity of the market to absorb efficiently the technology, and lack of proper protection of intellectual property, and the country's infrastructure in general (eg, educational system). See Edwin Mansfield, "Intellectual Property Protection, Foreign Direct Investment, and Technology Transfer", pp. 15, 18, 23-32. International Finance Corporation/World Bank, Discussion Paper no. 19, Washington, 1994.

<sup>52</sup> See Robert C Denicola, "Applied Art and Industrial Design: A Suggested Approach to Copyright in Useful Articles" [1983] 67 Minnesota Law Review 707 at 738/9.

connected.<sup>53</sup> Aesthetic and utility are mutually influenced, determining a "nexus between what the product must do and how it must look."<sup>54</sup> One element relates to the other, and both inflict upon the designer the constraint of limited choices dictated by industrial and commercial interests.

Conversely, in copyrightable works of applied arts features and shapes reflect the "unconstrained aesthetic perspective of the artist."<sup>55</sup> Useful aspects that the articles may bear are "viewed as an attempt to identify elements whose form and appearance reflect... [that] perspective."<sup>56</sup> From the legal standpoint, an independent utility which may be attached to the aesthetic form is irrelevant.<sup>57</sup> This establishes non-utility as a fundamental principle of the US copyright law.

The statutory protection for design patent ensures a monopoly over the appearance of mass-produced useful articles which are new and ornamental.<sup>58</sup> If the industrial design as a type of useful article<sup>59</sup> does not meet the standard of novelty, no protection is available. Although some variations<sup>60</sup> have been admitted, the useful article doctrine is still a predominant principle which excludes unpatentable useful products from protection. While maintaining this policy, the Supreme Court,<sup>61</sup> in addition to the US Congress<sup>62</sup> allows free copying of utilitarian articles which do not meet the requirements of invention nor originality,<sup>63</sup> ie, containing no merit either for design patent or copyright.<sup>64</sup>

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<sup>53</sup> *Idem*, at 740.

<sup>54</sup> *Idem*, at 739.

<sup>55</sup> *Idem*, at 707.

<sup>56</sup> *Idem*, at 742.

<sup>57</sup> For instance, in the *Mazer v Stein* (347 U.S. 201, 1954) where statuettes were employed as bases for table lamps. "the *Mazer* statuettes remain copyrightable despite their use as lamp bases, because their form is not responsive to utilitarian demands." *Idem*, at 742/3

<sup>58</sup> 35 U.S.C. § 171.

<sup>59</sup> For the definition of useful article see 17 U.S.C. 101.

<sup>60</sup> For an account, inclusive relevant cases, see Robert C Denicola, see footnote 52, at 737/8.

<sup>61</sup> *Bonito Boats v Thunder Craft Boats* [1989] 489 US 141

<sup>62</sup> For criticism, see Lindgren, *The Sanctity of the Design Patent: Illusion or Reality?*, [1985] 10 *Okla City L. Rev.* 195.

<sup>63</sup> More comments on this, including constitutional aspects, see "Constitutional Limits on Copyright Protection" in (1955) 68 *Harv. Law Review* 517; and "Protecting the Artistic Aspects of Articles of Utility: Copyright or Design Patent?" [1953] *Harvard Law Review* 877. Before the 1911 Copyright Act, this was also a valid principle in Great Britain. See Board of Trade, *Report of the Copyright Committee*, October 1952, Cmd. 8662, at 83. Although in principle protection is affordable, the right may not be enforced if it deprives

Despite the pressures from economic segments, attempts for more specialized protection have been rejected by the US Congress. A segment particularly dissatisfied with the situation has been the textile industry, to which the inadequacy of the law has motivated a widespread piracy of fabric designs. The industry has argued that its "success depends largely on ability to capitalize on the popularity of a particular pattern, which often lasts but a single season."<sup>65</sup>

Considering the issue from the social bargain viewpoint, it is highly unlikely that protection of non-novel utilitarian articles leads to a better society. This is a premise behind the American system, which nevertheless may afford protection for unpatentable useful articles to the extent that the free appropriation has such a competitive consequence that it impedes the development of an industry.<sup>66</sup> A number of arguments support the premise.

First, the cost of protection is expected to be considerably high, depending on the form of protection. In those countries where the regime of registered utility models is available for the protection of non-novel designs the number of applications tends to be higher than applications for design patent.<sup>67</sup> If protection is under registered copyright, the cost will not be lower and some inconsistency may arise, for instance, under copyright the term of protection tends to be longer than that available for patents. The disparity is apparent. Patents enjoy less protection than an unpatentable industrial design. An adjustment of duration, by lowering the period of protection, may correct the disparity. This, however, opens a door for reducing copyright standard of protection. The result of such an interference of copyright in

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consumers from the benefit of competition. See the doctrine of non-derogation from grant in *British Leyland Corp. and Others v Armstrong Patents Co. Ltd.* [1986] R.P.C. 279.

<sup>64</sup> In Great Britain, two landmark decisions illustrate the situation before the 1988 Act: the *Dorling v Honnor* and *Amp v Utilux*. The first set up that unregistered designs were eligible for copyright protection, and the second excluded functional articles, which shape was not appealing to the eye, from protection under the Registered Designs Act 1949. For a historical background about the legal protection of industrial designs in the United Kingdom, see Whitford Report, Chapter 3, March 1977, Cmnd. 6732.

<sup>65</sup> "Developments in the Law - Unfair Competition", notes published in [1933] 46 Harvard Law Review 1171 at 1196.

<sup>66</sup> See 1984 House Report No. 98-781, U.S. Code Cong. & Ad. News, 5750 at 5757/58. In a letter to the chairman of the House Committee, professor Robert C Denicola of the University of Nebraska Lincoln wrote: "Both Congress and the courts have taken pains to insure that copyright has not interfered with free access to useful articles." 1983 H.R. 1028 Hearings, p. 234/5.

<sup>67</sup> This is the case of Brazil, China, Germany, and Japan. In 1991, in these countries the number of applications for utility models far exceeded the number of applications for industrial designs. See WIPO, Industrial Statistics for the Year 1991, table at p. 9, Supp. to IP 2/1993, Publication IP/STAT 1991/A.

industrial design is the breaking of the theoretical rationale behind the intellectual property, that is, copyright protects artistic works in opposition to industrial property which traditionally protects useful articles with industrial applications.

Second, nothing suggests that the costs for producing non-novel industrial designs are high. These designs are currently considerably facilitated by computer aids. Even customized designs can be rapidly adapted to the customer's taste without significantly altering the cost of production. Computer-aided designs not only facilitate the job, but also do not require highly trained designers. Therefore, industrial activities involving non-novel designs do not require substantial investments nor intensive research. Legal monopolization is thus far less than decisive.<sup>68</sup>

Third, the meaningful social bargain rests *inter alia* on the benefits expected from a successful working of an advanced art that is not expected from non-novel designs. In this respect if the postulate of promoting innovation inherent in the industrial property is missing, there is point in the argument for non protection. The absence of novelty can only be excepted if the functional article, bearing sufficient technical merit, has resulted from substantial investments and intensive learning-by-doing activities. Otherwise, no imperative factors would justify the alteration of the terms on which the social bargain relies.

Fourth, the market for non-patentable industrial designs is at a face value presumably centred on monopolistic competition, characterized by a large number of firms,<sup>69</sup> none of them being large enough to affect the market conditions artificially. In such a competitive environment, the decisions firms take do not threaten competitors, and firms' mobility is not a problem. The suggestion based on that presumption is this. Even if not capable of meaningfully altering firms' performance, protection could upset market stability, by creating conditions which may enhance monopoly positions, thus leading to losses in welfare

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<sup>68</sup> As it was suggested by E. Mansfield, protection of intellectual property tend to be more decisive in the fields of advanced technologies. See E Mansfield, "Intellectual Property Protection, Foreign Direct Investment, and Technology Transfer", IFC/World Bank, Discussion Paper no. 19, p. 11/12, 1994.

<sup>69</sup> The bulk of the firms are in specific industries, such as textile and dress, toys, replacement parts in cars and home appliance, furniture, carpets and crockery/cutlery. See Report of the Copyright Committee, Part X, Cmd. 8662.

and efficiency by favouring a tied market, excessive pricing and curtailing consumer choices.<sup>70</sup>

These arguments concur to invigorate the tenet of the American system,<sup>71</sup> which allows free access to non-novel utilitarian articles regardless of the impact of the copying on business ethics.<sup>72</sup> It must be acknowledged that such an effect is highly likely to be competitively adverse in the field of high-tech, including microchips.

### **(iii) The social bargain under the SCPA**

As previously mentioned, mask works are non-aesthetic designs. Excluding a small number of patentable circuitries, protection relies on the arrangement of technical elements, as a product of labour skills and investments. In ensuring protection for mask-work designs, the American society had great concern for the economic utility of a functional article. The US Congress tailored a legal regime which is selective, by applying it only to a specific useful article, and in addition highly solicitous to competition. Possessing neither inventive nor artistic tenor, mask-work designs deserve protection for their technical merit, that is, for the combination of advanced, known and valuable technical elements they bear. Lack of protection would disturb competition. In the societal judgement, both technical and competitive elements justify the protection of some useful articles while denying it to others.<sup>73</sup>

Selected aspects of the *sui generis* mask work law, such as the subject matter of protection, duration, exclusive rights and exceptions, and registration are now examined. The purpose is

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<sup>70</sup> See Whitford Report on Copyright and Designs Law, paras. 136, 147 and 156, Cmnd. 6732, March 1977.

<sup>71</sup> The useful article doctrine is strong as ever. See Brown, Design Protection: An Overview, [1987] 34 UCLA L. Rev. 1341. It has also been confirmed in *Bonito Boats v. Thunder Craft Boats* [1989] 489 US 141.

<sup>72</sup> Prevention of unethical business practices is a concern of the Federal Trade Commission. In the circumstances of copying of unprotected industrial designs, which does not fall in the concept of unfair competition, the Commission's actions is limited. As part of its role, the FTC has conducted conferences for business men and encouraged the industries to formulate self regulation on ethical conducts. See notes on "Developments in the Law - Unfair Competition" [1933] Harvard Law Review 1171 at 1200-1202.

<sup>73</sup> The pitfall of the selective protection is that it could lead to a sort of economic discrimination which falls short of the liberal ideals.



to stress the argument that although any intellectual property form strikes a balance of interests,<sup>74</sup> the state needs to control or limit the exercise of proprietary rights<sup>75</sup>

### **The social bargain as to the subject matter**

As a key concept in the SCPA, the mask work is the core of the subject matter in which the technical merit, ie, the combination of technical elements, lies. In addition, originality is assessed<sup>76</sup> in relation to such combination. The public policy behind originality, as a minimum requirement to qualify the mask work, is "to prevent public domain material from being usurped and turned into proprietary rights."<sup>77</sup> Apart from this, in order to be eligible for protection the mask work has to be fixed in a permanent means, ie, not in a data base tape, but in a semiconductor product.<sup>78</sup> The fixation clause only appeared in the last bill, and its rationale is not explained by the House Committee. It is here argued that the fixation, as it is required by the SCPA, may run counter to public interest.

The permanent fixation of the mask work as a requirement for protection encourages the coupling of designing with manufacturing. The former contains some degree of intellectual work, but the latter is purely investments and management. This condition results in legal protection being extended to include manufacturing. To extend protection over manufacturing in theory sounds consistent, to the extent that *sui generis* law aims to protect investments and consequently ensure fair competition, but it seems unjustifiable.

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<sup>74</sup> It took the US Congress six years to build up the *sui generis* law in a manner which met public requirement. Such a concern was thus reported: "When creating new intellectual property rights or in expanding old rights, legislators must therefore weigh the relative equities between the rights of the property holders and the interests of the public. Where technological changes have occurred, and those changes have had an impact on the lives of millions of people (as [it] is the case for semiconductor chips), Congress must be extremely careful that its approach be reasonable and workable." 1984 House Report 98-781, at 5754.

<sup>75</sup> Against this contention, it was argued at WIPO that because reverse engineering would strike a proper balance of interests, non-voluntary licence would be not needed. WIPO, Committee of Experts on Intellectual Property in Respect of Integrated Circuits, Doc. IPIC/CE/IV/3, para. 50, September 1988.

<sup>76</sup> SCPA, §§ 901 (a)(2), 902(b) and 906(a)(2). The mask-work design consists of a combination of technical elements including arcs, lines and rectangles. 1984 House Report 98-781, at 5768.

<sup>77</sup> *Idem*, at 5768.

<sup>78</sup> This is a condition particular to the SCPA, § 901(a)(3).

The coupling of designing and manufacturing may contribute to the development of business practices which are likely to create an economic independence upon designing firms. The flourishing designing industry consists of small and medium independent firms<sup>79</sup> dedicated to the business of mask-work designs. They do not require big laboratories and plants, only labour skills and software-tools in order to process simulations of the designs they make.

Such design firms rely on manufacturing companies, firstly, for the chip manufacture and, secondly, for information related to manufacturing process. The manufacture of microchips designed by firms which are established in the majority of developing countries is generally ordered abroad. This makes the economic dependence a problem of international scale. In addition, designing requires access to technical data which is regarded as a valuable asset in the hands of the manufacturing companies. The data consists of programs and files describing technical requirements, that match specific manufacturing techniques, and which designers have to comply with. This situation affords the manufacturing companies a bargaining power over the designing firms. Relying on their economic strength, manufacturers may refuse orders to manufacture certain types of chips which might compete with their products.

It could be argued that the above situation may occur notwithstanding the scope of protection. Moreover, whether refusal to deal would have or not an effect adverse to competition would be a matter to be accordingly dealt with under antitrust rules. This argument is correct, but does not prove that to extend protection over manufacturing is necessary.

A practice in the chip industry is the transfer of the proprietary rights over the mask works, required by manufacturers as a condition to accept a manufacturing order<sup>80</sup> As a

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<sup>79</sup> Small chip-design firms play a significant role in challenging big companies and preventing them from dominating and abusing the market. The flourishing of these small firms in the 1980s, mostly in the ASIC business, in the USA and Europe, coincided with a gradual de-coupling of chip design from process technology. See Mike Hobday, "The European semi-conductor industry, resurgence and rationalisation", in "Technology and the Future of Europe, Global Competition and Environment in the 1990s", edited by C. Freeman, M. Sharp and W. Walker, p. 80 and 87, SPRU, 1991; and David Mowery, The U.S. national innovation system: Origins and prospects for change, [1992] 21(2) Research Policy 125 at 138 and footnote 32.

<sup>80</sup> Presumably, the ground for the transfer of the proprietary rights is the lack of protection for the mask works, not necessarily because they are originated from a country having no legislation on integrated circuit protection, but because the US law afford no protection to unfix mask works.

consequence, designing firms are found in a bizarre contractual position as a buyer of the manufacturing service and at the same time co-developer of mask-work designs.

The practice just described is highly detrimental to designing firms established in unprivileged countries, such as those in Latin America, which possess low level of manufacturing capacity or no capacity at all. Designing firms from these countries order almost all the manufacturing of their integrated circuits from abroad. In this circumstance, these firms face a substantial barrier to access the market.

The entry of designing firms in the chip market, which is oligopolistic and international by its nature, is especially affected by limited access to key resources, economies of scale and product differentiation, and predatory actions.<sup>81</sup> The large semiconductor chip companies control the access of designing firms to manufacturing processes, thus, determining what type of chip markets<sup>82</sup> they can or cannot share. The designing business is thus under the control of manufacturing companies.

### **The social bargain as to the duration of protection**

As far as duration of protection is concerned, the rationale is this: the owner is given an opportunity to recoup the investments. Beyond this opportunity, the society holds the expectation of bearing fruit from the work or invention once it falls into public domain. The expectation is based on the assumption that once protection has expired, access to the work or invention is still worthwhile. The shorter the term, sooner the free-of-charge reproduction of the creative matter may take place.

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<sup>81</sup> See Thomas R Howell *et alii*, *The Microelectronics Race: The Impact of Government Policy on International Competition*, Appendix B (The Economics of Semiconductor Production and Competition), p. 233, 1988, Westview Press.

<sup>82</sup> DRAM, SRAM, EPROM, Microcontroller markets. See WIPO, *Studies and Analysis Dealing with Legal Matters Concerning Intellectual Property in Respect of Integrated Circuits*, Study number seven, Annexo I, Doc, IPIC/S/7, February 1988.

A shorter duration for the protection of chip-designs was a common concern of the US Congress, which found the copyright term excessive.<sup>83</sup> Furthermore, long protection for chip-designs would be contrary to normal practices for industrial property. Examining the balance of interest objectively, the Congressional stance reflected an old principle, which is the enrichment of the public domain as a cardinal tenet of the intellectual property law. The social bargain is thus explained:

*A limited term of protection against copying is granted to an author's original expression in exchange for the dedication of that expression in exchange for the dedication of that expression to the public domain at the end of the term. The public ordinarily benefits at least twice from this bargain: once when the original expression is first created, and then again when the original expression is added to the public domain from which anyone may borrow freely to fashion a new work. Although a copyright belongs to an author during its term the ultimate purpose of this bargain is not to protect authors but rather to enrich the public domain. The cardinal principle in copyright law, then, is that any decision to extend the law or to recognize new interests ought to be based on a realistic expectation that one day the public domain will bear new fruit.*<sup>84</sup>

It may be contended that in the field of fast-moving technology, where the integrated circuit is one of a kind, once the term of protection expires there is little or no realistic prospect for the society to gain any benefit from copying a specific subject matter of protection. It follows that the law can preserve no meaningful social bargain if in the course of the duration of protection the public is given no opportunity to benefit fully from the protected work or invention. This is at the core of the challenge the law faces in properly protecting new technologies, ie, to ensure due return to investors, while preserving the intellectual property bargain.

Two parameters, patent term and the chip's commercial life circle,<sup>85</sup> could guide the Congressional deliberation. The patent term, seventeen years, would be inappropriate. The great majority of chip-designs are not eligible for patent, hence a patent-related term would appear illogical since it would put inventive and non inventive mask works on an equal footing.

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<sup>83</sup> The Bills introduced in 1983 and 1984 granting only ten years reflected the consensus reached in the House Committee's debates. 1983 House Hearings on R.R. 1028, p. 171.

<sup>84</sup> Statement of Professor David Lange, quoted in the 1984 House Report 98-781, at 5754.

<sup>85</sup> The economic life circle is defined as a period starting "with the product's introduction into the market" and ending "when there is no longer a demand" for a given product. WIPO, Doc. IPIC/S/7, p. 6, February 1988.

The length of commercial life circle varies, taking "two to five years in the normal case".<sup>86</sup> The trend, however, is that newer and more complicated chips are likely to require more time to yield a reasonable payback. Such a period may exceed seven years.<sup>87</sup> Taking two important chip families, such as DRAM and EPROM: the decline of life circle is between seven and eleven years.<sup>88</sup> A ten-year term may take twice as long as the life circle of the bulk of integrated circuits, leading to the assumptions that, firstly, after the life circle there is still a commercial value worth exploiting, and, secondly, protection extending past the life circle is not sufficient for the chip-design owner to recoup the investments he made. The question now is whether after a period twice as long as the life circle, society can possibly expect to benefit from an unprotected design. The variation of the life circles for the majority of chip families provides no secure answer, but it is realistic to suggest that a ten-year term for a fast-moving technology is unlikely to render a meaningful benefit for the public, unless access is facilitated.<sup>89</sup>

A term of protection as long as, or longer than, chip's life circle could be justified on grounds of compensation for a weak protection<sup>90</sup> with respect to relevant elements, such as the bundle of the exclusive rights accorded, the exceptions to them, and the enforcement measures and penalties against infringements.<sup>91</sup> Such an argument would consider that the life circle is a valid parameter and once it expires a prospect of commercial value still exists. It is very difficult, however, to assess the concept of weak protection. This is a too ambiguous expression to be taken as an element for comparison. Therefore, for the weak-protection argument to prevail it would have to be taken for granted that in virtue of a low but too long

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<sup>86</sup> Comment, Copyright for Integrated Circuit Designs: Will the 1976 Protect Act Against Chip Pirates?, (1983) 24 S. Tex. L. J. 817 at 850, as it was cited by Pamela Samuelson in [1985] 70 Minn. L. R. 471 at 492.

<sup>87</sup> See Thomas Dunlap's statement in the 1983 Hearings on H.R. 1028, at p. 43.

<sup>88</sup> WIPO, IPIC/S/7, Annexes I and II, February 1988.

<sup>89</sup> For instance, a non free-charge licensing scheme.

<sup>90</sup> As R. Stern suggests, "one way to compensate for more or fewer years of protection is to afford a weaker or stronger arsenal of remedies." In "The Bundle of Rights Suited to New Technology" [1985/6] 47 University of Pittsburgh L.R. 1229, at 1251.

<sup>91</sup> Infringements can be satisfactorily controlled through economic sanctions [1984 House Report 98-781, at 5774 and 5776],

and the exclusion of criminal penalties avoids the inconvenience of the criminal procedures which require a more rigorous test of evidence, and a total disclosure of information. Additionally, penalization may inhibit the legitimate practice of reverse engineering. At least one can say that criminal sanctions create expectations contrary to the nature of the access provided by the reverse engineering and to the designing psychology. It is natural that the legal system should reflect this fact.

protection the public requirement would be realistically met,<sup>92</sup> by means of greater accessibility. The more people can trade in the chip business early in the life circle, the better for the public.

In addition, provided that the weak protection makes possible the realisation of the public requirement, which would to a certain extent be translated into a compensatory level of welfare, a long protection would be acceptable as a sort of tax levied upon the society at large. Otherwise, a protection that lasts too long would stimulate an unjustifiable monopoly. The incremental protection beyond the life circle would be of little value or incentive, if any, to innovation.

### **Social bargain as to the exclusive rights**

Concerning exclusive rights,<sup>93</sup> the most sensitive aspects in the perspective of the social bargain rest on the exceptions allowed. It is important for both the owner and the State, that the scope and the number of exclusive rights granted are justifiably set for the recouping of the investments, and conform with the nature of the concerned intellectual property regime and technology. It should be noted that a determinant sense of proportion lies in the fact that the larger the set of rights, the more the risk of infringements. Having considered these features, the US Congress eventually rejected the right of use<sup>94</sup> which, although not included in the 1984 SCPA, is of some assistance in understanding the exceptions to exclusive rights.

### **The social bargain as to exceptions**

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<sup>92</sup> The vagueness of the argument does not demerit its conceptual validity which much relies on a case-by-case test and on the efficiency/welfare criteria.

<sup>93</sup> The owner of a protected chip-design has the exclusive rights to reproduce the mask work, import or distribute chip products embodying a mask work, or to induce a person to do any of these. SCPA, § 905.

<sup>94</sup> The right of use appeared in the Bills H.R. 1028 and the S. 1201. Commenting on it, an official of the Copyright Office wrote in her statement: "the 'use' right proposed here seems unrelated to anything known to any copyright system, past or present, here or abroad. It is a right found in patent law, but alien to copyright law. Such a right appears, by its terms, to give a copyright owner the right to control the manufacture of a useful article and to control in every respect how a bona fide purchaser of a chip product uses that copy." Ms Schrader, 1983 Hearings on H.R. 1028, at 110/111. See also 1984 House Report 98-781, at 5770 and footnote 40.

As an exception to the right to reproduce,<sup>95</sup> the Chip Act allows the free copying of any "idea, procedure, process, system, method of operation, concept, principle, or discovery"<sup>96</sup> and incorporation of "concepts or techniques embodied in the mask work or the circuitry, logic flow, or organization of components used in the mask work"<sup>97</sup> which are disclosed as a result of reverse engineering.<sup>98</sup>

Reproduction of a mask work for the purpose of study and analysis is a point of departure for a firm to "create another semiconductor chip product that competes with the first,"<sup>99</sup> the second chip having "the same electrical and physical performance characteristics as the existing chip (so-called 'form, fit and function' compatibility)."<sup>100</sup> Incorporated in the industry metier, this practice is deemed to foster competition, and the legislative history of the SCPA indicates that the US Congress intended to legalize and encourage it, in so far as it is not a bridge to slavish copying.<sup>101</sup>

Reverse engineering defence, however, is not an euphemism for unlawful copying. In order to stand as a legally created design, a mask work (i) has to be the product of substantial analysis and study, recorded in a substantial *audit trail*<sup>102</sup> showing how the mask work was designed, thus, reflecting the considerable time and money invested in the work; (ii) must be original, in the sense that, although incorporating portions of a previous competing product, it is not substantially identical<sup>103</sup> to this, ie, includes improvements upon, or is an alternative to, the mask work first created; and (iii) has to contain substantial variation compared to existing ones, thus, enabling the creator or owner to claim an independent creation.

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<sup>95</sup> SCPA, § 905(1) and 906(a).

<sup>96</sup> SCPA, § 902(c).

<sup>97</sup> SCPA, § 906(a)(1). Patented integrated circuit excluded, obviously.

<sup>98</sup> As it is recorded in the Whitford Report, within several industry segments there is a strong feeling that "the future health of the engineering industry depends on the right to copy (or at least emulate) being comparatively unfettered." Report of the Committee to consider the Law on Copyright and Designs, para. 150, at 40/41, March 1977, Cmnd 6732.

<sup>99</sup> 1984 House Report 98-781, at 5770.

<sup>100</sup> *Idem*, at 5771.

<sup>101</sup> *Idem*, *idem*.

<sup>102</sup> For the concept of *audit trail* see Chapter 2, subsection 2.2.1 (iii).

<sup>103</sup> It has been argued that in assessing infringement the variation between two mask works is concerned with substantial similarity, but no clear cut exists between substantial and insubstantial similarity. The boundary between the two is a matter for the courts to decide. 1984 House Report 98-781, at 5775/5776.

Clearly, the interface between reverse engineering and originality permits the contention that the audit trail is not a test of originality; it is a test of fair competition. Since the incorporation of other designs' features is permitted, originality does not imply a creation entirely independent from previous designs.<sup>104</sup> The degree of originality is thus a requirement which merely indicates a technical surplus or a contributory merit, distinguishing a mask work from others, non-inventive ones, by the particular form that techniques or concepts, and components, used or embodied in the mask work, are illustrated or organized. In total this reveals that protection of chip designs integrates a strong component of competition, which diminishes the conceptual dimension of property.<sup>105</sup>

### **The social bargain as to exhaustion of rights**

From competition law viewpoint, it is ordinarily inappropriate for a firm to control its customer's business policies. In intellectual property law, this general principle is named exhaustion doctrine, meaning that once an intellectual property asset is firstly and lawfully sold, the owner has no right to control the subsequent sales. Unless the US Congress provides otherwise, such a rule is a basic tenet of the American systems of intellectual property.<sup>106</sup> The exhaustion of right is connected with sales, not reproduction or "use".

Owners enjoy a continuing right to control reproduction of their mask works, but such a control does not apply to right to import or distribute. Once the mask work embodied in a semiconductor product is lawfully sold, the owner has no right

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<sup>104</sup> Section 901(4) of the final version, the H.R. 5525 Bill, provided for a concept of originality in these terms: "a mask work is original if it is the independent creation of an author who did not copy it from another source." The 1984 SCPA, however, does not reproduce such a concept, and the House Report 98-781 gives no explanation for the deletion.

<sup>105</sup> Serious doubts were raised at the US Congress in relation to whether or not the *sui generis* law of mask works was under the constitutional copyright-patent clause. See 1984 House Report 98-781, at 5765, footnote 36.

<sup>106</sup> 1984 House Report, 98-781 at 5772. For a legal analysis of the economics of the exhaustion of proprietary rights, see David L. Perrott, "The exhaustion of intellectual property rights as a constraint on multinationals", pp. 44-67, in *Current Issues in International Business Law*, edited by David L. Perrott & Istvan Pogany, Avebury, 1988. See *Boesch v. Graff* [1989] 133 US 697; *United States v. General Electric Co.* [1926] 272 US 476; *U.S. v. Univis Lens* [1941] 316 US 241.



over the pricing or any business conduct of the re-seller, who is free to use and re-sell the product but not to reproduce it.<sup>107</sup> The continuing subsistence of the right to control reproduction has the effect of protecting the owner against the selling and distribution of infringing chips, however such a right does not interfere with the "use" of infringing products, provided that the user has taken no part, either directly or indirectly, in illegally copying.<sup>108</sup> Therefore, the tenet of the law is to combat slavish copying for commercial gain.<sup>109</sup> The competition element is once more apparent.

### **The social bargain as to registration**

A final issue, registration serves to identify and disclose the design on which protection is granted. It contains a twofold intent: to promote access and legal certainty. The public is given the opportunity to access the technical contribution to the designing art. Such acknowledgement permits the business circle to design around, and to build up a sense of competition ethics, or to structure a business conduct by figuring out the degree of creativity or originality the industry has established as a common sense of the staple product. The rationale is this: "the disclosure and consequent contribution to the art is the quid pro quo for the monopoly rent, or the proposed shifting of resources from the pockets of users to creators."<sup>110</sup> On the side of the evidenciary policy, the registration requires the applicant to enter a description of the protected subject matter. This enables others to do a straightforward or facial verification and may consider a claim for infringement, if it is the case. In creating greater legal certainty, registration fulfils the public interest by not only reducing the risk of litigation, but in addition by avoiding or fighting a sham claim thus

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<sup>107</sup> The SCPA, §§ 905(2) and 906(b).

<sup>108</sup> If the user, as a purchaser, induces a firm to illegally reproduce the mask work, he or she may be liable. See the SCPA § 905(3).

<sup>109</sup> If the US Congress had granted "use" right, the owners of mask works would have been given "the power to sue and recover from persons who used a pirated chip, such as using it in a factory as part of a computerized machine, even though the user had not itself copied, manufactured, or sold the pirated chip." 1984 House Report 98-781, at 5770 footnote 40. The mere use of the mask work or the chip embodying it affects no exclusive rights. This is important to determine the liability of the innocent purchaser, who cannot be held liable only for the acts of purchasing and using. See the SCPA, §§ 901(a)(7), 905 and 907(a).

<sup>110</sup> Richard H Stern, *The Bundle of Rights Suited to New Technology*, [1986] 47 U. Pit. L.R. 1229 at 1248.

preserving a healthy relationship among the industry. As far as legal disputes postpone or prevent the marketing of cheaper products,<sup>111</sup> long litigations are against the public interest.

The discussion of intellectual property issues at international fora involves a great deal of varying interests. On one hand, countries respond to these issues in different ways and, on the other hand, they have legal systems which are not uniform. Despite the divergencies, there seems to exist a desire among them in formulating international standards of protection in a manner which integrates domestic requirements. This makes the intellectual property bargain a universal concern, to be considered in the international negotiations.

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<sup>111</sup> A dispute between AMD and Intel hung over the AMD's 386 and 486 clones of Intel's chips. AMD won the right to use Intel microcode in the chips. The decision brought the prospect of price falls on PCs and processors. See details in "PC DIRECT", May 1994, p. 37. Compare with the briefing in "IEEE Spectrum", August 1993, p. 47/48. See news about the first decision in [1990] 40 BNA's Patents, Trademark & Copyright Journal 444.



### **3.3 The policy of the IPIC Treaty and the Agreement on TRIPS**

#### **3.3.1 Building up the groundwork**

##### **(i) The unwritten policy**

General principles are significant both for the interpretation of legal instruments and understanding legislative policy. In the negotiating process of the IPIC Treaty certain claims which had the purpose of limiting protection were put forward and eventually rejected. These included a preferential treatment for a group of underprivileged countries and a broad statement of aims and effects of protection. The final text was approved without important elements of legal policy. The lack of such ground rules expressed the interest of leading countries, such as United States and Japan, which advocated strong protection. Perhaps, an intellectual property treaty is a too limited instrument to set broad policies.

The public policy behind intellectual property is generally forged domestically under the power of both, the Parliament through legislation and the courts on a case-by-case basis. Such a policy is a product of cultural and legal traditions formulated, construed or developed within a framework of state institutions. Domestic intellectual property policy also relies on general principles of welfare which dictate the transfer of resources on a just basis with a view to improving conditions of the national life in such vital areas, as health and education. This implies a type of solidarity among the citizens at a national level which is not true of the international context. Consequently, it seems correct to suggest that a true international public policy does not exist.

The central purpose of the international law of intellectual property is to reduce trade distortions, not expand the beneficial distribution of technology. As the public policy objectives vary from country to country, a multilateral agreement concerning economic exchanges, hence regulating trade matters including intellectual property, can only set up universal grounds. The formulators of the IPIC Treaty certainly were aware that broad principles have a considerable guiding function, but they contrasted with a desired strong

protection, and enforcing them is very difficult. Thus, it seemed wiser for the member States to insert such principles in national legislation.

### Claims and counterclaims

At the early stages of the first meeting of experts convened for the discussion of the protection of integrated circuits and drafting the IPIC Treaty, the issue of the balance between the owners' rights and the interests of the society was raised. Since the Treaty was being drafted primarily to inhibit piracy, rather than to grant monopoly, it was questioned where that balance should lie. In fact, there was not much to be balanced, it was argued, since the draft under discussion already expressed a convergence between "the interests of the society and the interests of the creators."<sup>1</sup> It was believed that to a certain degree States were allowed to limit rights, and the reverse engineering would enable competitors "to build upon existing technology without the need for an authorisation of the owner of the rights."<sup>2</sup> This contention seemed illogical for those underprivileged countries having little access to the technology of integrated circuit. There was considerable apprehension, among country representatives claiming weak protection, that the benefits of reverse engineering were confined to a small number of countries which dominated chip technology.

A proposed bargain was tabled on the basis of preferential treatment for the least-developed and developing countries,<sup>3</sup> claiming the recognition of a sort of "compensating inequalities"<sup>4</sup>, or "structural weakness."<sup>5</sup> Such special treatment, which was forcefully opposed, included facilitation of the technical progress, technology transfer in reasonable terms, control of licensing contracts, setting of appropriate measures against abusive trade practices, and co-operative arrangements in the field of technology transfer, all of which aimed at the social and

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<sup>1</sup> WIPO, Doc. IPIC/CE/II/2, p. 8, paras. 19 and 20.

<sup>2</sup> *Idem*, para. 20.

<sup>3</sup> For the concept of least-developed, developing and developed countries, see GATT, International Trade 88-89 (Technical notes at the Appendix I), V. I, at p. 45/46, Geneva, 1989.

<sup>4</sup> A concept of "compensating inequalities" includes legal measures discriminating in favour of developing countries which, assuming they were discriminated in the past, now believe that "under the usual terms of free-trade market they would never be able to reap profits so large as to enable them in the foreseeable future to fulfil their ambitious development plans by their own means." Ignaz Seidl-Hohenveldern, *International Economic Law*, p. 7, Kluwer, 1992.

<sup>5</sup> See "Legal Aspects of the New International Order" edited by Kamal Hossain, specially: Introduction (p. 9-22) and Part II, no. 9, p. 156-159, Frances Pinter, 1980.

economic development of developing countries.<sup>6</sup> The claim for preferential treatment was not considered by the WIPO International Bureau in detail, and was apparently abandoned. Nevertheless, as the historical evolution of the draft Treaty records,<sup>7</sup> significant efforts were carried out with a view to settling general commitments.

### **The would-be preamble**

A short preamble prepared by WIPO intended to capture the views of the negotiating parties. It indicated both the reasons for and the aims and effects of the protection. The former were of a social and economic nature.

The aims of the Treaty consisted of firstly the "equity" associated with the social reasons, secondly, the technological and economic progress associated with the incentive for creation, thirdly, the promotion of international exchange of technological achievement, and finally a balance of private and public interests at an international level. As to the effects envisaged by protection, it was intended that the framework would provide for dissemination of chip products, and "transfer of technology towards developing countries in particular."<sup>8</sup> The wording of the third paragraph carried an element of preferential treatment. Consequently, perhaps, the preamble was not reproduced in the official text of the Treaty.

The history background to the Treaty hence clearly unveils diplomatic effort of a group of countries willing to set up the foundations for multilateral protection for intellectual property in respect of integrated circuits. The deletion of the would-be preamble need not necessarily be regarded as a total failure of commercial diplomacy. The policy not included in the IPIC Treaty was introduced in the Agreement on TRIPS concluded under the GATT framework.

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<sup>6</sup> [1986] IP 373, at 375. For details about the discussion of the proposed "preferential treatment" see WIPO, Doc. IPIC/CE/IV/3, paras. 119 to 127, September 1988.

<sup>7</sup> See the last draft Treaty and companion explanations (notes on the preamble) prepared by the Director General of WIPO and brought to the Diplomatic Conference in Washington, IPIC/DC/3, paras. 12 to 29, 31 January 1989.

<sup>8</sup> *Idem, idem* - for the explanations of the preamble.

## (ii) General disciplines and comities

As aforementioned, a major objective of the Agreement on TRIPS is to reduce trade distortions resulting from uneven levels of protection of intellectual property. This defines the scope of its underlying policy, which does not intend to eliminate such distortions. In approaching the groundwork of the Agreement, the analysis is limited to those principles relevant to the study of the legislative policy as far as the protection of integrated circuits is concerned.

From the outset of the GATT negotiations on trade-related aspects of intellectual property rights, the position of the member states were clearly defined.<sup>9</sup> The primary concern of those willing to raise the level of protection was to define the amount and duration of exclusive rights, and the conditions for limiting them under state discretion through neat provisions. Conversely, those countries believing that through the Agreement could loose their obligation for protecting intellectual property nationally,<sup>10</sup> relied largely on broad principles. These were chiefly designed to soften the standards of rights by undertaking not only to discourage piracy and trade restrictions at international level, but also domestically to fulfil special needs and promote social and economic development.

### **A welfare-and-efficiency charter?**

The final text of the draft Agreement on TRIPS, reflecting the views of all member states, eventually became a framework of not only intellectual property provisions, but also a charter

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<sup>9</sup> The United States, Japan, and the European Community as an economic institution, here identified as First Group, had similar positions, distinguishing from the position of the 14-country group, or Second Group, formed by Argentina, Brazil, Chile, China, Colombia, Cuba, Egypt, India, Nigeria, Peru, Tanzania and Uruguay, later joined by Pakistan and Zimbabwe. See the GATT documents series MTN.GNG/NG11/G numbers 14 (20.10.87) and 14/Rev.1 (17.10.88) presented by the USA; 17 (23.11.87) and 17/Add.1 (23.9.88) originating from Japan; 16 (20.11.87) and 26 (7.7.88) from the E.C.; 30 (31.10.88) tabled by Brazil; and 71 (14.5.90) circulated at the request of the 14-country Group. And NUR 036, at p. 9, 1.6.90. Although holding concerns of their own, the other countries were remained somehow attached to one or other group.

<sup>10</sup> Compare the draft Treaty presented by the 14-country Group and that one presented by the United States. GATT documents MTN.GNG/NG11/W/71, 14 May 1990; and MTN.GNG/NG11/W/70, 11 May 1990. Substantially, the 14-country Group eventually cropped very little. However, their contribution to the conceptual structure of the Agreement should not be neglected.

of welfare and efficiency principles.<sup>11</sup> Designed to regulate proprietary rights, the text include important competition rules. This is a singular and prominent feature of the Agreement not encountered in any multilateral treaty of the kind. Recognising the limitation of rights based on competition goals, the Agreement on TRIPS provides for a conceptual development of the intellectual property law at international level.<sup>12</sup>

Insisting on a framework of general principles which addressed a balance of interests through political commitment, the second group of countries relied on the nature of the GATT framework, the mandate of the Uruguay Round, and the large scope of the trade-related aspects of intellectual property rights (TRIPS).

Although nothing could conceptually bar the discussion of beneficial distribution of technology at WIPO, the negotiations there on the protection of chip-designs were expected to be primarily concerned with the matter of intellectual property. Therefore, the GATT seemed to be a more appropriate forum for dealing with the overall implications of TRIPS.<sup>13</sup> As a trade forum, the GATT was given a mandate which, although arguable, could render the discussion of the "trade related aspects of intellectual property rights in the context of the promotion of growth and development"<sup>14</sup> possible.

When putting forward their arguments, negotiators from the second group shared the apprehension that if a balance of interests was not considered, expanded protection could

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<sup>11</sup> This is perceived from the preamble, Articles 7, 8 and 31 of the Agreement on TRIPS. In respect of the insertion of these principles and rules the second group played a vital role. See also the provisions of Section 8, dealing with the control upon the use of intellectual property rights.

<sup>12</sup> The conceptual development is perceived from the evolution of competition policies and laws over the last two decades in the OECD countries, the structure of their competition mechanism being reinvigorated considerably. See Chapter 6.

<sup>13</sup> In the outset of the negotiations, the Second Group of countries contended that WIPO would not be the right forum to deal with substantial matters of intellectual property. See Frederick Abbot, *Protecting First World Assets in the Third World: Intellectual Property Negotiations in the GATT Multilateral Framework*, [1989] 22(4) *Vand. J. of Trans'l Law* 689 at 713. In turn, there is a good faith basis in the argument that once the GATT was chosen as an acceptable forum the negotiations on TRIPS should contemplate the full consequences of a GATT-based solution for the issue of intellectual property.

<sup>14</sup> Linking intellectual property and economic growth, a submission from the Brazilian representative proposed to read in this extension the mandate of the Uruguay Round concerning TRIPS. See GATT note MTN.GNG/NG11/30, 31.10.88. As it was highlighted in further discussions, the intention was to re-introduce the claim for a "favourable treatment". See notes released by the Media and Relations Division of the GATT, NUR 034, at p. 5, 23.2.90; NUR 035, at p. 14, 19.4.90; and NUR 036, at p. 8/9, 1.6.90.



amount to more difficulties in accessing technology, and increase abusive or anti-competitive use of intellectual property rights. It was asserted that "only few countries are in a position to take greater advantage of a very strict protection of IPRs. That is so because these countries maintain a monopoly of technological knowledge, dispose of a long tradition in managerial capacity as well as of wide financial resources."<sup>15</sup> Protection thus required "that abuses or restrictive practices are eliminated and punished."<sup>16</sup> Otherwise, it was added, stronger protection would ironically cause "restrictions and distortions in international trade."<sup>17</sup>

Differing from the agenda on the drafting of the IPIC Treaty at WIPO, negotiations of the Agreement on TRIPS at GATT included the whole range of the intellectual property issues. This would render the dimension of the divergence far larger, requiring the opposing groups of country representatives to strengthen their views. Whether the approved text of the Agreement on TRIPS satisfies the many concerns of all trade partners, is difficult to judge. As far as the discipline of general commitments is concerned, however, a number of principles were introduced in the final text which is quite different from the drafts presented by the major opposing interest groups.<sup>18</sup> Most of these principles and disciplines<sup>19</sup> are relevant to the structuring of national policy.

### **A private right tempered with public policy**

The clause which recognises the intellectual property as *private rights* has the effect of entitling right holders to sue against uncompensated and unauthorised reproductions which violate an enforceable law. Being created by legislators,<sup>20</sup> the rights of authors and inventors

<sup>15</sup> MTN.GNG/NG11/30, 31.10.88 (Submission from Brazil).

<sup>16</sup> *Idem, idem*. The argument here is correct, as far as the need to control abusive use of intellectual property rights is the case. Nothing in the international trade regulation suggests, however, that any country cannot take the appropriate measures to cure unjustifiable restraint of trade.

<sup>17</sup> *Idem, idem*. See also GATT, "News of the Uruguay Round", NUR 041, at p. 5, 9 October 1990.

<sup>18</sup> See the draft Treaties, GATT notes MTN.GNG/NG11/70, 11.5.90; and MTN.GNG/NG11/71, 14.5.90. Apart from those traditional principles of trade regulations, such as national treatment, most-favoured nation, and transparency, the US draft contained no ground rules nor specific provisions concerning the control of the IPR use, which only appeared in the draft presented by the Second Group of countries.

<sup>19</sup> These principles and disciplines are: (a) the principles of private rights, national public policy, and freedom of implementing methods; (b) causal statements - reasons for, aims and effects of the protection; and (c) meaningful limitations - proper measures to promote public interests accordingly, and to curb unreasonable restraints of trade. See the Agreement, preamble, Articles 1, 7 and 8.

<sup>20</sup> Even considering copyright as deriving from natural law, it does not prevent legislators in recognizing and developing the author's rights from subjecting them to social obligations, as it is the case of Germany

are only those expressly granted, and confined to the national boundaries. The very nature of such a principle (private rights), which did not appear in the previous drafts, is to convey a sense of power (control) over the rights conferred. Nevertheless, the right holder is given the duty to exercise his right in a certain fashion. It is a property right<sup>21</sup> albeit limited by a social function<sup>22</sup> qualified by a public policy. The underlying theory is that intellectual property consists of "statutory rights given by the State, and the State is entitled to see that the advantages so given are exploited in such a way that the benefits can be enjoyed by the general public, and not withheld from them."<sup>23</sup>

The *public policy* principle claims due respect for national objectives which intellectual property, as a potential instrument of state policy, is designed to serve. One such legitimate objective is social and economic development, which relies heavily on the technological paradigm as a modern developmental factor. When building up its policy, each State has the freedom to choose the most appropriate method of implementing the Agreement at the domestic level. The principle of *freedom of implementing methods* entitles the Contracting Parties to set up the proper mode to combat anti-competitive use of intellectual property rights. To this end, states need to improve and from time to time check their defensive legal mechanisms. This assertion is part of the lesson from industrialised States, which have a long experience in limiting proprietary rights. Over many years they have developed an antitrust or competition system which has worked as an indispensable tool in assuring that the society is benefiting properly from intellectual property. While failing to follow the same track, i.e., not establishing domestically an efficient legal control of competition, developing countries have

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copyright theory (1965 Act) which accommodates an extensive series of compulsory licences. See W. Nordemann, A Right to Control or Merely to Payment? - Towards a Logical Copyright System, [1980] 11 IIC 49.

<sup>21</sup> As a private right committed to a social function, the intellectual property is based on Parliamentary acts not on natural law, and complies with the old liberal idealism. The concept is in agreement with the British law, to which the patent is "a personal property without being a thing in action" and copyright is a property subsisting in accordance with the law. See 1977 Patents Act, S. 30(1), 1988 Copyright, Designs and Patents Act, S. 1(1).

<sup>22</sup> The recognition of the social function of property in the international economic law is indisputable. See Ignaz Seidl-Hohenveldern, *International Economic Law*, 2nd revised edition, at p. 4, 29-30, and 72. As it applies to intellectual property, social function is therefore a limited concept rather than an unfettered State discretion.

<sup>23</sup> UK/Board of Trade, Report of the Copyright Committee, para. 179, Cmnd. 8662, 1952.

insisted on a type of international competition law<sup>24</sup> which industrialised States have not yet developed.

It can therefore be concluded that any State wanting to discourage abusive exercise of proprietary rights at international level will not succeed unless such measures are introduced in domestic law where the reasons for, and the aims and effects of, protecting intellectual property have to be established and consolidated. In this respect, it is important to consider that one of the functions of the Agreement is to encourage member states to improve national legislation on competition.

### **The scope of protection and the underlying quid pro quo**

Protection and enforcement of intellectual property rights form a central objective of the Agreement. As a result, member States are under the obligation to protect the right holder interest by enabling him to prevent others from unlawfully copying, thus protecting creativity and the return on the investment. From the private interest viewpoint, the function of the protection is

thus twofold: offering the right holder an opportunity of reaping a just return, and providing an incentive for creation.

Protection has four contributory aims inserted in the general disciplines:

- *promotion of technological innovation,*
- *transfer and dissemination of technology,*
- *mutual advantage of producers and users of technological knowledge, and*
- *a balance of rights and obligations.*<sup>25</sup>

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<sup>24</sup> See the structure of the draft Treaty presented by the 14-country Group. In the preamble (part I) it is stated the desirability "to ensure competition in international trade and to prevent arrangements which may restrain such competition." GATT, MTN.GNG/NG11/W/71, p. 2.

<sup>25</sup> Agreement on TRIPS, Article 7. Similar provision was found in the draft presented by the Second Group of countries (Part II, chapter I, Article 2), and nothing alike in the US draft.

By assuring protection, the Agreement and national legislation create an environment of confidence, as it makes right holders relatively certain that their technology will not be unlawfully appropriated.

Content with the expected remuneration, right holders will thus be ready to invest in creative activities and to make the result of such activities available to others. In this way, transfer and dissemination of advanced technologies will not only be feasible, but faster and more secure. This expectation is based on the assistance and co-operation which are part of the duty of right holders. This is the result of the quid pro quo which the assurance of protection implies, i.e., the conferment of rights to a reasonable return and the obligations of promoting the transfer or exchange of the technical knowledge to meet local demands and, consequently, benefiting the development process. Such a balance of rights and obligations<sup>26</sup> is a very sensitive concept, and in practical terms requires of the government surveying permanently the conditions of the intellectual property market in order to eliminate or reduce distortions.

### **Elimination of distortion, an unrealistic suggestion**

If the aims are achieved, two effects can be envisaged from the Agreement and the legal framework implementing it:

- the reduction of distortions in - or impediments to - international trade, and
- the realisation of social and economic welfare.<sup>27</sup>

It seems incorrect to suggest that the Agreement on TRIPS is a basis for eliminating all distortions derived from the unevenness of the national systems of intellectual property.<sup>28</sup> The

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<sup>26</sup> It is also part of the rightholder's obligations to distribute his technology in fair conditions, i.e., not resorting to abusive or anti-competitive practices.

<sup>27</sup> See Agreement on TRIPS, Article 7 and preamble (first paragraph). The social and economic welfare function was also included in the draft circulated by the 14-country Group, MTN.GNG/NG11/W/71, at p. 7. The same draft envisaged to reduce trade distortions by discouraging anti-competitive use of intellectual property. Reflecting the view of the First Group, the US draft set out to reduce "distortions and impediments to legitimate trade," and makes no specific reference to the welfare matter. See MTN.GNG/NG11/W/70, preamble, at p. 2.

desire for harmonisation of the laws, which would be necessary to eliminate all distortions, is both unrealistic and impractical. It presupposes that all countries enjoy equal economic conditions, which is untrue. Furthermore, distortions exist also in other areas, resulting in trade barriers. This reality led member States to claim reduction, rather than elimination, of IPR-originating distortions. Precisely because of the distinct economic reality of each country, the pursuit of the social and economic welfare - achieved essentially by offering wider choices to the consuming public - requires resorting to practical measures which are likely to vary in scope from country to country.

### **The public interest exception**

In order to pursue the realisation of social and economic welfare, member States have the discretionary right to apply necessary and proper measures on the grounds of public interest, namely, protection of health and nutrition, promotion of other public needs in sectors of vital importance, and prevention of abusive IPR exercise and unreasonable trade practices.<sup>29</sup> These principles are a recognition that the structure of protection (that is, the set of exclusive rights, exceptions, remedies against infringement, and enforcement mechanism) is not itself effective in ensuring respect for the social and economic welfare goals.<sup>30</sup>

States are in a position to make available a workable and meaningful mechanism, intrinsic or extrinsic to the framework of intellectual property, making intervention possible either to rectify a situation resulting from anti-competitive behaviour, or to promote the working of protected technology for the improvement of social welfare.<sup>31</sup> In formulating such a mechanism, the discretionary power of the state is, nevertheless, limited. Although free to choose whatever method or legal measure it wishes, the State is committed to adopting a

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<sup>28</sup> For an account about IPR-originating distortions, see the joint submission (EC, Japan and US) on "trade problems encountered in connection with intellectual property rights." GATT note MTN.GNG/NG11/W/7, 29 May 1987.

<sup>29</sup> Agreement on TRIPS, Article 8, and Articles 31, 37(2) and 40 for further provisions. Similar provisions only appeared in the draft made by the 14-country Group, GATT note MTN.GNG/NG11/W/71, Part I, Article 5, and Part II, Article 2(4).

<sup>30</sup> This, again, confirms the point already made that out of the context of the competition goals intellectual property makes little or no sense.

<sup>31</sup> In the case of technology relating to integrated circuits, measures with purposes other than remedying an anti-competitive situation are limited to official and non-commercial use.

practice or mechanism which is consistent with the Agreement, e.g., that creates no barriers to legitimate trade or adversely inhibits technology transfer.

In the framework of the Agreement, the wording of the general principles and disciplines contrasts with detailed provisions concerning rights, enforcement and related arrangements. The general principles and disciplines reflect a sense of temperance and a balance of interests resulting from a long and complex negotiating process. To read these provisions with disregard to that sense would be to discredit the Agreement.

### **3.3.2 Substantive multilateral standards and related issues**

#### **(i) Critical aspects of the scope of protection**

Apart from a few alterations regarding the term of protection, extension of infringing acts, and conditions for granting non-voluntary licences, the IPIC Treaty remains an important source for the legal protection of chip-designs.<sup>32</sup> Despite a general wish to limit the regulatory powers of the Contracting States as little as possible,<sup>33</sup> changes in the scope of protection set up in the Agreement on TRIPS reveal the ultimate stage of the evolution of a legislative policy marked by an increasing restraint upon national discretion<sup>34</sup> related to key aspects of the scope of the chip-design protection.

#### **The degree of originality**

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<sup>32</sup> In the GATT negotiations, the Contracting Parts were aware of the importance in saving those provisions as to which consensus had already reached during the negotiations of the Treaty. To neglect entirely the laborious compromises taken in WIPO would be a risk and mistake that negotiators were not prepared to incur. Thus, it was politically wise not only to confirm those points on what there were general agreements, but also to incorporate into the GATT framework the IPIC Treaty as an Intellectual Property Convention, together with the essential conventions on intellectual property administered by WIPO. See Article 2 of the Agreement on TRIPS and the submission made by EC, GATT Note MTN.GNG/NG11/W/26, 7.7.88. (Guidelines).

<sup>33</sup> See GATT note ICIC/CE/IV/3, at p. 15 (reflections of the International Bureau of WIPO, para. 27). See also Agreement on TRIPS, Article 1(1).

<sup>34</sup> The range of agreements concluded as a result of the Uruguay Round, under the GATT framework, is illustrative of the restrictive trend. As to the intellectual property in particular, the structure of the IPIC Treaty and Agreement on TRIPS are the case, differing from the traditional multilateral standards as to the objectivity of the rights conferred, and tighter discipline (e.g., Agreement, article 31), and denying or limiting considerably the possibility of making reservations.

Apart from the layout design which is required to be the result of the creator's own intellectual effort,<sup>35</sup> no concept for originality or degree of intellectual effort is established.

National legislation may vary on the matter. The US *sui generis* approach adopts a low level of originality<sup>36</sup> acceptable under the multilateral standards. As no particular form of protection is mandatory,<sup>37</sup> countries can even require a degree of originality near to novelty, ensuring no protection for a large number of layout-designs, or adopt a liberal interpretation with a reverse effect.<sup>38</sup> Countries are not obliged to define the degree of intellectual effort required. The relevance of this element, therefore, is attached to reverse engineering. The higher the degree of intellectual effort, the less the designer is allowed to benefit from reverse engineering.

### **Subject of protection and designing**

Representing the three-dimensional disposition "however expressed" of the IC elements prepared for the manufacture of a chip,<sup>39</sup> the topography of a layout-design does not need to be permanently fixed in order to be eligible for protection. It is sufficient that the chip-design be encoded in any form, a magnetic tape for instance. Therefore, the topography does not have to be manufactured. A legal regime which provides otherwise encourages the coupling of designing with manufacturing. Such tying is an invitation to anticompetitive practices, and provides no security for the IC-designing business, which is a fast-growing area. It would not foster creative innovation if the designing firm is not given protection to its layout-design independently of the manufacture.

The right to protection is legally established under certain conditions which imply the emergence of a need. Protection is apparently needed at least in two situations. Firstly, when

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<sup>35</sup> The IPIC Treaty, Article 3(2)(a).

<sup>36</sup> According to the practices established by the US Copyright Office, a mask work contribution may be less than twenty percent. See 37 C.F.R. 211 (1986).

<sup>37</sup> IPIC Treaty, Article 4.

<sup>38</sup> As a result, countries may adopt diverging standards. See R. J. Hart, High Technology 'Reverse Engineering': The dual standard, [1987] 5 EIPR 139.

<sup>39</sup> The IPIC Treaty, Article 2(ii). As a result of the debates in WIPO, the permanent fixation as a condition for protection was rejected. See IPIC/CE/II/2, at p. 12, March 17, 1986.

the integrated circuit is commercially exploited, thus exposed to competitors. Secondly, when the topography, fixed in a magnetic tape or encoded in a digital form, is sent by a designing firm to a manufacturing enterprise. In the course of the manufacturing service, usually hired confidentially, the topography is exposed to the risk of copying. Not to ensure protection to the topography encoded in digital form would be a failure in fostering the designing activity.

Independent design firms need access to details about the manufacturing process, i.e., technical information belonging to the manufacturer. Allowing protection of layout-designs regardless of manufacturing, the Treaty therefore fails to clarify the relation between the designing firm and the owner of a manufacturing process.<sup>40</sup> As such processes in the form of software are normally patented, the manufacturing industry controls the access to it, exercising a controlling power over the designing business and the chip market. Such a control is exercised in different ways. One example is where the manufacturing company limits the types of chips the designing firm can design and market by selecting the manufacturing process the designing firm can access or has access to (each type of chip corresponds to a specific manufacturing process). The order of manufacturing service can be accepted under the condition that the property right is fully transferred to the manufacturing company, which may regard the chip as being developed jointly, the ownership being thus transferred to the owner of the manufacturing process.

### **Duration of protection**

During the negotiations in WIPO, a minimum term of both five<sup>41</sup> and ten years were strongly considered. Despite the divergence, it was recognised that at the expiration of a five-year period, from either the first exploitation or registration, the integrated circuit may retain some commercial value.<sup>42</sup> On this ground, a balanced term of eight years was established in the IPIC Treaty with no specification as to the date of commencement.

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<sup>40</sup> For some accounts, see WIPO note IPIC/CM/1, at p. 8.

<sup>41</sup> It was argued that "a minimum term of five years would be sufficient as the effective life span of most layout-designs was four to five years and was likely to decrease in future." See WIPO, Report of the International Bureau [1986] IP 373, at p. 375.

<sup>42</sup> See IPIC/DC/3, at p. 52



No national legislation grants less than ten years. Therefore, a term of this duration would not be seriously objected to in the GATT. The duration provided by the Agreement on TRIPS, commencing from the filing of an application for registration or the first commercial exploitation suggests that if a country is willing to protect the topography which is not incorporated in an integrated circuit, a longer period of protection has to be asserted in order to comply with the minimal term and to allow the owner a lead time to test the layout-design<sup>43</sup> before registration takes place.

Since the market for integrated circuits is of an international nature, excessive protection nationally implemented tends to be distortive and may lead to discriminative effects in so far as it is granted with the sole purpose of attracting investments. Higher protection may also affect the structure of the intellectual property bargain, if further assertion is not justified in the light of specific circumstances. Nevertheless, extended and variable<sup>44</sup> terms of protection may be a valid alternative for those countries mastering capability or having no capability in chip design and manufacture. In this connection, any provision will have no meaningful result without additional measures, such as a plan for technological development, including a sound scheme to survey imported "pirated" chips, although such an enforcement measure is not a part of the States' obligation.<sup>45</sup>

### **Innocent end purchaser**

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<sup>43</sup> As it was clarified by the WIPO International Bureau, "it is in the public interest – and particularly in the interest of competitors – that registration should occur as soon as possible because registration is a source of information. On the other hand, it is generally believed to be necessary to allow creators of layout-designs a period of time during which the market acceptability of the layout-designs may be tested and any necessary modification of the layout-designs may be carried out before registration is sought." IPIC/CE/IV/3, at page 26.

<sup>44</sup> Variable periods of protection could be set. For instance: (1) ten years from the filing of an application for registration, or the first commercial exploitation, wherever in the world any of the events occur first; (2) twelve years from the first commercial exploitation if the integrated circuit is manufactured in the country; (3) fifteen years from the creation if an application for registration is entered accordingly before the layout-design is permanently fixed or manufactured. In the circumstances (2) and (3), the law could provide that the incremental protection granted by means of supplementary certificate could only be considered to specific types of layout-designs classified by density, speed and multi-functionality, and subject to the monopolistic situation and competitive practice of the rightholder.

<sup>45</sup> Obligation related to border measures is only confined to the importation of counterfeit trademarks and pirated copyright goods. See Agreement on TRIPS, Article 51. However, as illegal computer programs protected under copyright most often are found fixed on semiconductor microchips, for example, in 'read only memory', the ROM chips are also subjected to customs procedures.

Allowing the importation of an article incorporating a chip with a layout-design unlawfully reproduced may discourage creative activities and, hence, is incompatible with the idea of adequate protection. Based on this assumption, a case was put forward to extend the exclusive right conferred to the chip-design's owner under the Agreement on TRIPS. The extension was to grant the right holder the power to stop the importation, selling, or distribution for any commercial purposes of an article incorporating an integrated circuit which contains a layout-design unlawfully reproduced.<sup>46</sup> The provision cannot efficiently be enforced unless a mechanism for actions at the border is put in place. Moreover, enforcing such a provision will probably raise a question involving the liability of the end user which needs to be clarified.

It must be acknowledged that the dynamics of legitimate businesses, carried out in bona fide, might be disrupted as purchasers (importers) are obliged to investigate if the imported articles concerned contain pirated chips. Such an importer may be a small company with limited finances unable to afford an expensive lawsuit, and such firms cannot satisfactorily resort to the reverse engineering defence. Even more delicate is the position of an innocent importer of an end product, who purchases a machine solely for his own use, not for commercial purposes.<sup>47</sup>

Within the Agreement, once the innocent purchaser is noticed that he has purchased a machine containing an infringed microchip, he is not permitted to sell or deal in that article without the payment of appropriate compensation.<sup>48</sup> The Agreement does not elaborate on the circumstance that the owner claimed and received compensation from the actual infringer. Has the owner the choice to sue the infringer or the innocent purchaser, or has he to sue the

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<sup>46</sup> The Agreement on TRIPS, Article 36. Under the IPIC Treaty, Article 6(a)(ii), the illegality covers only the topography or the integrated circuit embodying it, not the article incorporating the chip.

<sup>47</sup> Noteworthy to refer to the US Congress debates. Both, the Bill S. 1201 and H.R. 1028 provided for a compulsory licence to enable the innocent purchaser to commercially deal with the articles in stock. In simplifying things, the SCPA allows the dealing with reasonable pay negotiated with the owner. In this fashion, the SCPA provides for an automatic non-free licence. In those bills, the provision related to compulsory licence was silent as to the situation of the end purchasers. They could not use the articles because the bills intended to give the owner of the mask work an exclusive right to "use" that the US Congress eventually rejected.

<sup>48</sup> See comment in IPIC/CE/IV/3, p. 34 para. 113.

former first before asking the latter for compensation? Furthermore, in the situation that the end purchaser takes no part in the chip illegal reproduction, nor carries out any form of commercial distribution, but only use the chip or the article containing it, there is no legal ground for compensation.<sup>49</sup> National legislation may address all these questions.

## Registration

The issue of registration and disclosure may give rise to inconsistency. Where it is required, registration is a source of information. The requirement to disclose details concerning the electronic functions, that the layout-design represents and the integrated circuit is intended to perform, may not amount to an obligation of disclosure equivalent to that the law impose upon a patentee.<sup>50</sup> However, registration does in principle discourage secret integrated circuits. By allowing national legislation to exclude part of the identifying material related "to the manner of manufacture of the integrated circuit",<sup>51</sup> the Treaty limits the extension of the disclosure, hence, affecting the intellectual property bargain.<sup>52</sup>

Additionally, the manufacturing process normally is covered by the patent, for which the patent owner has a general and relative obligation of disclosure.<sup>53</sup> If the manufacturing

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<sup>49</sup> One may argue that the end purchaser importing an article containing a pirated chip is committing an act, i.e., to import, which falls in the set of the owner's exclusive rights. To import, therefore, is an equivalent action to buy. There should be no discriminatory consequences, as to exemption from liability, between who buys locally (without importing) from who buys abroad, in both situations the purpose being solely for one's own use.

<sup>50</sup> The ordinary function of the registration is to identify the subject of protection, and ensure greater certainty of rights, both to the public and the owner. However, depending on the scope of the bargain construed under the domestic law and policy, national legislation may attach to the requirement of registration an extended obligation of disclosure. Compare Article 7(2)(a) of the IPIC Treaty with Article 29(1) of the Agreement on TRIPS.

<sup>51</sup> The IPIC Treaty, Article 7(2)(a). If the information regarding the manufacturing process does coincide with the description accompanying the patent application, the exclusion does not make much legal sense.

<sup>52</sup> The conflict between the chip-design law and patent was accused in WIPO document IPIC/S/6 at p. 21.

<sup>53</sup> The extent of the patent disclosure may vary, and the scope of compatibility between patent and manufacturing and business secrets is rather narrow. Compare Article 29(1), 34(3) and 39(2) of the Agreement on TRIPS. For instance, as the disclosure of the "best mode" required is that known by the inventor at the time of the application, supervenient refinements may be kept in secret.

process, as a non-patentable software, is protected as a trade secret the inconsistency remains since the secret information is accessible through reverse engineering.<sup>54</sup> Prevention of abuses stemming from conflicting matters of this kind may be addressed properly through a system of non-voluntary licensing.

## (ii) Non-voluntary licensing: pros and cons

### Driving a hard bargain

In the debates of the IPIC Treaty, views differed on whether compulsory licensing in the field of chip-designs was necessary or not. Opposing voices argued that the weak protection afforded by the Treaty, allowing the copying of the layout-design through reverse engineering and without the owner's authorisation, made such a licence unnecessary. Some delegates contended that the Berne and Paris Conventions permitted non-voluntary licences as these were the only means of copying a copyrighted work or a patent. Chip-designs were considered to be different:

*non voluntary licences are not necessary since the effect of the minimum protection provided for in the proposed Treaty is quite different from the effect of the minimum protection provided for in the Paris and Berne Conventions and the typical national patent and copyright laws. The effect of the latter is that the patented invention or work protected by copyright cannot (except for a non-voluntary licence) be copied, etc., without the proprietor's permission, and the same technical or aesthetical effect cannot be obtained without copying, etc. The effect of the protection of layout-designs is fundamentally different.*<sup>55</sup>

Arguing with reverse engineering, it was emphasised:

*that non-voluntary licences are never necessary, not for reasons of public interest, non-working, excessive contractual licence fees, or any other reason. The protection of layout-designs cannot hamper transfer of technology, the development of science and technology, etc., since, as already stated, reverse engineering will result in the same technology guarantees the desired and desirable development of science and technology.*<sup>56</sup>

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<sup>54</sup> Once the chip is commercialized trade secret is not available. *People v Gopal*, 522 F. Supp. at 369. See also Donald L. Wensky, Intellectual Property Protection for Neural Networks, [1990] 3 Neural Networks 229 at 235.

<sup>55</sup> WIPO, IPIC/CE/II/2, at p. 20.

<sup>56</sup> *Idem, idem.*

An additional argument put forward was that the short term of protection was a second reason for denying non-voluntary licences.<sup>57</sup> All of these were open to debate

In view of opposing experts, non-voluntary licences were a proper vehicle for a country to safeguard national security and other vital interests<sup>58</sup> In the case where "a refusal to allow the working of a layout design had the effect of hampering technology transfer,"<sup>59</sup> the non-voluntary licence was the right remedy as well.

Objectively, manufacturers of electronic products, such as television sets, washing machines, watches, and radios, need a constant supply of microchips. If there is an interruption in the supply, for whatever reason, the users have to find another supply source in order to avoid disruption of businesses. To reduce such a risk, compelling measures towards the availability of second sources of supply have to be instruments at the States' hands.<sup>60</sup>

There are also considerable doubts about the capability of many countries, chiefly least-developed and developing ones, to benefit from reverse engineering. Furthermore, there is the fact that manufacturers may encase layout-designs in material in a manner which makes access to the topography rather difficult. Contemplating such a prospect, a country delegate stated:

*a developing country which does not possess the resources nor the technology to engage in the manufacture of articles involving high technology when faced with the question of whether or not to support and ultimately adhere to a treaty, as in this case, which would grant direct benefits to entities and nations other than itself and only to a limited extent or perhaps incidentally to its nationals, has the duty to find a solution with deliberate care.*<sup>61</sup>

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<sup>57</sup> *Idem, idem.*

<sup>58</sup> In summary, non-voluntary licences were held on grounds, such as, the need to prevent abuse of rights; lack of technical capability in a country to advantage of the reverse engineering; precedent in patent and copyright under which framework compulsory licences are available; necessity of accessing the integrated circuit technology, and short life cycle of an integrated circuit. See IPIC/CE/IV/3, at p. 17.

<sup>59</sup> See Report of the International Bureau [1986] IP 373 at 375.

<sup>60</sup> See IPIC/CE/IV/3, at p. 17.

<sup>61</sup> See document IPIC/CM/1 Add.4, at p. 8.

Once again, considering the consumers' interests, the country may be in a position to decide whether to foster the national chip industry or to rely heavily on supplies from abroad. Whatever choice is made, it would be incorrect to believe that consumers need no safeguard to protect their interests.

In the view of these developments in the WIPO negotiations, the prohibition of non-voluntary licences was decided to be unsustainable; such a restriction would be a constraint on the power of the member States which could not be justified. The strong wording "prohibition" which appeared in the early draft Treaty seemed illogical. If the weak protection afforded by the Treaty coupled with the reverse engineering clause provided sufficient and free access to the topography, thus making non-voluntary licence unnecessary, anticipation of such a licence would not result in harm to chip-design owners. This would be a simple but adequate reason for rejecting the prohibition of compulsory licence, as an inappropriate restriction on the discretion of the member States. Additionally, if by means of reverse engineering considerable access to chip technology was allowed, automatically and free of charge, no explanation was possibly given for not allowing access under compulsory licensing and for reasonable royalty. On this basis, the owner may not only exercise some sort of control over the access, but also capture some financial return. Consequently, the licensees' satisfaction based on a non-free licence will not cause the owner to be worse off compared to a situation where compulsory licensing were not allowed.<sup>62</sup>

At a certain stage of the negotiations in the WIPO, it became clear that it was not possible for the United States to insist in the prohibition of non-voluntary licences. As several industrialised countries<sup>63</sup> came into line with developing ones, the USA worked out a draft<sup>64</sup> to the compulsory licence provision; the corresponding provision of the IPIC Treaty, nevertheless, reflected otherwise.

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<sup>62</sup> This is a typical welfare-based argument.

<sup>63</sup> As Thomas Dreier points out, "the absolute prohibition of non-voluntary licences which still existed in the third version was supported only by the experts from the USA, while the United Kingdom, Australia and also the Commission of the EEC, on behalf of its Member States, indicated that it would not be possible for them to abandon non-voluntary licences providing for equitable remuneration in certain very specific cases to prevent abuses of the proprietary right." *L'évolution de la protection des circuits intégrés semiconducteurs*, [1989] 142 R.I.D.A. 21 at p. 50.

<sup>64</sup> See WIPO document IPIC/CE/IV 10, 10 Nov 1988.

### **Safeguarding mechanisms: limited beneficial effects**

The non-voluntary licensing, as it is provided for in the Agreement on TRIPS and in the IPIC Treaty, reflects the judgement that, against the early proposition, the technology of integrated circuits, as much as any other technology, requires due accessibility to fulfil the intellectual property bargain, hampered by potential problems to which different countries or regions, lacking or possessing uneven levels of technical capability, give varied responses.

In this respect, it seems proper to suggest that only a few countries are prepared to benefit from the availability of non-voluntary licences in the field of integrated circuits. It is clear that such an advantage requires certain degree of technical capability and a sound regulatory policy.

The effectiveness of non-voluntary licences in the field of integrated circuits requires, firstly, a capability to reproduce the layout-design. Although the designing business is growing fast, this business may be highly limited by the lack of a country's manufacturing capacity. The more complex the layout-design is, the bigger the manufacture difficulties are. It implies that for the great majority of developing countries, lacking capability in manufacture, the utility of non-voluntary licences will rely a great deal on collaboration from abroad. Additionally, the chip market is of international nature and the chip industry relies considerably on accumulated technical experience (learning by doing). These aspects are major barriers to enter the chip business, which needs to be competitive in order to survive. It follows that in the first place non-voluntary licensing will favour most those countries which already have a developed chip industry. And given the fact that only isolated cases of non-voluntary licences are brought up at times, any developing country willing to develop a domestic industry based on non-voluntary licensing is unlikely to succeed. The need for a regulatory policy is a considerable challenge as well.

Various aspects related to the legal administration of non-voluntary licensing, such as, substantive conditions, adjudicatory process, and the definition of the role of official bodies,<sup>65</sup> require the member States to set up a reliable legal infrastructure which not only should comply with multilateral disciplines,<sup>66</sup> but also encourage private enterprises to apply for proper relief. To this end, streamlined mechanisms and procedures, which breed confidence and work as a bridge to business, seem to be a particular challenge, chiefly for developing countries traditionally not keen on legal enforcement.

Adjudication on public policy unfortunately tends to be opaque by its nature. The discussion of the merits of a case may involve concepts of economic substances not well defined which leads to instances of uncertainties, and for this reason the perceived views of the majority quite often inspire criticism and disagreements.<sup>67</sup> The same applies to the adjudicatory proceedings of non-voluntary licensing, which involve entertainment of rules on intellectual property and competition. The precision of decision criteria, most welcome in the business circle, requires the employment of the logic of experience, by comparing ideas and principles long developed by courts to found the intellectual bargain. Such an ideal can only be sought within a country's enforcement traditions supported by a managerial capacity<sup>68</sup> and legal infrastructure able to address the problems of a pressing need for a sound protection. All of these are part of a safeguarding policy identified and discussed in Part Two.

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<sup>65</sup> See chapter 7.

<sup>66</sup> See Agreement on TRIPS, Article 37(2) combined with 31(a)-(k).

<sup>67</sup> Cf. J. D. Heydon, *The Restraint of Trade Doctrine*, especially pp. 34/35, 275-277, Butterworths, 1971.

<sup>68</sup> In the GATT Uruguay Round, it was argued that tighter IPR protection was difficult to comply with due to, *inter alia*, lack of financial resources and "managerial capacity" necessary for a country to take greater advantages from an intellectual property system and get access to technology. GATT note MTN.GNG/NG11/W/30, at p. 3. The managerial capacity should include the management of an equipped legal infrastructure which only a few countries have.





**PART TWO**

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**CONSTRAINTS ON INTELLECTUAL PROPERTY, THE EMERGENCE OF  
AN INSTITUTIONAL POLICY**

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## CHAPTER FOUR

### INTRODUCTION: EVOLUTION OF INSTITUTIONAL DISCIPLINES

It was concluded in Part One that it is necessary to limit the exercise of intellectual property in the perspective of welfare and efficiency objectives, and in connection with the nature of the innovative process. Addressing the legal mechanisms for limiting the use of proprietary rights, Part Two is concerned with the identification and analysis of the evolution of a safeguarding policy as a legal institution developed to ensure that the social bargain is followed, and adverse effects against it are prevented and corrected. The institutional safeguarding policy<sup>1</sup> is defined as the manner in which the law defines the mandate of incumbent authorities, the rights and obligations conferred to or inflicted on individuals and the state, and relates them to the enforcement and legal structuring of remedies intrinsic to intellectual property and competition laws, these being designed to limit the exercise of copyright, designs, and patents. It would be erroneous to view the limitation on intellectual property as a set of legal measures isolated from other policies, such as technology and trade and industrial policies. As seen in chapter two, the safeguarding measures, together with these policies, are in fact part of a multifaceted reality.<sup>2</sup> The availability of a legal mechanism of non-voluntary licensing is not expected to work satisfactorily if the industry and commerce are not provided with the necessary means<sup>3</sup> to use that mechanism. Supporting the argument of the emergence of such an institutional policy for intellectual property, evidence will be brought forth to reflect three elements: the legal structuring, the competition, and the adjudication factors shaping the legal formation of this policy.

In chapter five, the focus will be on the safeguarding measures (eg, compulsory licences, and Crown use) intrinsic to the intellectual property law in the United Kingdom. It examines the origins of safeguards, their relationship with changing economics, and the evolution of the legislation to modern time. Chapter six outlines the legal development of competition law and

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<sup>1</sup> The expression safeguarding policy is applied throughout the text, and some times it is replaced by the expressions safeguarding measures, remedial law, remedial safeguards or simply safeguards.

<sup>2</sup> Ch. 2.3.2 (iv).

<sup>3</sup> These means include not only an effective and workable enforcement mechanism, but also government support as a catalyst force to keep the pace of the economic development and technical leadership or to catch up with the technology.

policy in selected jurisdictions in the post-World War II period, as a reflex of the "new competition" phenomenon.<sup>4</sup> It additionally assesses the ability of modern competition thoughts and concepts, as influential sources of commitments, to govern the competitive process and thus order the exercise of intellectual property rights. Finally, approaching the delicate issue of public policy arguments inherent in the reasoning process and discretionary power, chapter seven undertakes the analysis of the institutional process of adjudication of unauthorised use over UK patents.

#### **4.1 The legal structure of remedial measures**

As far as UK law is concerned, a safeguarding policy is, firstly, stated in Government reports and, secondly, in legislation which is periodically revised. In fact, the policy stated in those reports tends to reflect a balance of the views of different concerned sectors.<sup>5</sup> In reflecting the variety of these competing interests, the safeguarding policy is not a unilateral act of Government, on the contrary, it expresses a harmonisation of claims and counterclaims arising from society. Taking these into account, the Government reports (laid down in the Parliament) amount to a significant instance of decision-making. Moreover, the law and the policy it contains entail a vast consensual element.

Updating the legal safeguards, by reviewing periodically the relevant legislation and adjusting it to developing technology, is a permanent concern. As a second instance of discussion of those competing interests, the Parliament seals a society covenant, i.e., institutionally it turns into statutory form a legal machinery agreed upon between the State and members of a consuming, productive and trading society. This makes the societal policy an instrument designed to attend actual needs.

Keeping up with technological and economic developments, the safeguarding policy tends to live with the changing needs of society and the challenging pressure from abroad. In connection with the technological element, it attempts to adjust society's needs to new opportunities of consume and the prospect of welfare by facilitating the use of benefits

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<sup>4</sup> Ch. 2.3.2 (ii)

<sup>5</sup> Authors' and inventors' associations, users, individual experts, and commerce and industry representatives.

provided by creative works and inventions. As to the economic aspect, the safeguarding policy makes wider availability of these benefits possible despite or in respect of the economic circumstances affecting production, trade and consumers' interests. Ultimately, the safeguarding policy is designed to ensure that the intellectual property is protected for the best benefit of society and in accordance with legal commitments taken at an international level.

The influential impact of the international agreements on the legal structuring of a safeguarding policy shows that the effects of such a policy go beyond the thresholds of the domestic law and policy. The international conventions on intellectual property and related trade confer to the contracting states the discretion to regulate limitation on proprietary rights. For instance, by providing for an exception to the exclusive right, the Paris text of the Berne Convention allows compulsory licensing over copyright to be imposed by domestic legislation.<sup>6</sup> Similarly, the Paris Convention for the Protection of Industrial Property permits contracting states to act accordingly where patents are not sufficiently worked.<sup>7</sup> The extent of involuntary reproduction under copyright and patent regimes is now limited by the Agreement on TRIPS, which recognises the discretion of States to limit the exercise of intellectual property rights within the framework of competition law.

#### **4.2 The competition factor**

The resurgence of competition legislation in the post-World War II period is a step ahead in the reluctant world-wide philosophy on competition. Furthermore, the growing legislation lends credit to the legitimacy of the State regulatory intervention, based on the presumption that controlling the competition process is needed and desirable regardless of the profile of any domestic economy. Thus, limiting the exercise of intellectual property by controlling competition seems a mandatory policy in an open economy.

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<sup>6</sup> Articles 11bis (2) and 13(1).

<sup>7</sup> Article 5A.

Apart from some formal variations, national laws have points in common. They condemn cartel behaviour<sup>8</sup>, discourage monopolists from either abusing their power in an exclusionary way or taking action to strengthen their position. The legislation also proscribes anti-competitive collusion through mergers and acquisitions. However, competition law and policy do not provide universal standards, nor straightforward answers to competition problems. Each country has a particular response when facing the complex and diverse nature of the market structure. For this reason, countries are likely to disagree on enforcement practices, and, in this respect, the manner in which the law is enforced may even disservice competitive purposes. In general, the concentration of public enforcement at government hands, for instance, may favour protectionism resulting from pressures on public authorities to deviate from the policy underlying competition law for the benefit of one group or another.<sup>9</sup> To the extent that enforcement with a protectionist<sup>10</sup> end could possibly be ironic, this does not deny the strength of competition law and policy as meaningful instruments with which to strike a balance of interests that intellectual property is, at least theoretically, committed to.

There is a common view that applying competition law and policy has always been an uneasy task because, political reasons apart, the "correct application of a free market policy requires a sophisticated understanding of the economic analysis of the ways in which markets and competition do or do not operate."<sup>11</sup> As a result, the legal test on matters of competition

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<sup>8</sup> Cartel behaviour includes price-fixing, restrictions of output amongst competitors and market allocation with no efficiency grounds.

<sup>9</sup> See F. M. Fisher, "Industrial Organization, Economics and the Law", p. 289/90.

<sup>10</sup> James Atwood suggests that competition law is developed and enforced in a protectionist style. Cf. Positive Comity - Is it a Positive Step?, in "Fordham Corporate Law Institute", p. 79 at 87, 1993 edition. Guillermo Cabanellas writes that the antitrust limitations are "sometimes enforced through conceptual acrobatics which hide their real scope." The author uses the expression "conceptual acrobatics" to refer to the American misuse doctrine, and he casts doubt about the "real scope" of the *existence exercise* divide applied by the Court of Justice of the European Community. According to him, such a distinction seems to be "logically unattainable." "Antitrust and Direct Regulation of International Transfer of Technology Transactions", IIC Studies, vol. 7, p. 42/43 and footnote 145, Max Planck Institute, 1984. A reference about protectionism in US antitrust law is made by John Haley, Administrative Guidance versus Formal Regulation: Resolving the Paradox of Industrial Policy, in Law and Trade Issues of the Japanese Economy, p. 107 at 115. Harvey Applebaum stated that American "ITC has generally disregarded Justice Department and importer antitrust allegations against domestic industry." Paper prepared for distribution at the "17th Annual Advanced Antitrust Law Seminar - International Trade and the Antitrust Laws", p. 139, Practising Law Institute, N. York, October 18, 1977.

<sup>11</sup> F. M. Fisher, *loc. cit.*

is carried out with a degree of obscurity. Improvements, however, have been implemented in the way the law is drafted, construed and enforced.

Apart from being a fact of incontestable importance in itself, developments in competition law and policy reflect modern thoughts and concepts which from the legal stance address problems of regulation and construction. The prominence of these concepts relies on their contribution for the understanding of the dynamic character of the economic matters underlying the legal rules on competition and intellectual property.

Thoughts and concepts have shown great sensitivity to the reality of market and competition in many senses. Resorts to guidelines as supplemental regulation have been made to give broad rules a narrower sense, or to tackle the problem of legal rigidity. At an evidential level, courts have adapted their reasoning to consider fresher thoughts, so as reviewing, for instance, the presumption of economic power for patent and copyright-related products in tying arrangements.<sup>12</sup> Developments in anti-trust law point to the erosion of the *per se* rule, apparently a short judicial answer to certain competition issues.<sup>13</sup> Under considerations of economic nature, courts have admitted a degree of investigation into the merit of those legal categories of trade practices normally regarded unlawful in themselves, thus, providing a fresher sense of the due antitrust process.<sup>14</sup> As another key concept, "workable competition" has become a valuable tool used to exclude pure economic concepts, placing the regulation of the competitive process in a feasible context. That is, in the legal field, the dimension of welfare and efficiency objectives is ultimately reduced to formal considerations. In short, notions such as guidelines approach, prohibition principle, workable competition and rule of reason are all attempts to subordinate substantial matters into legal forms. As common ground, they all express a permissible degree of discretion in the treatment of legal methods, and manifest a common guise in which they do not take competition for its own sake. The application of these theoretical elements is controversial, and not often

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<sup>12</sup> About the rise and negation of the presumption of economic power solely based on intellectual property, see William Montgomery, *The Presumption of Economic Power for Patented and Copyrighted Products in Tying Arrangements*, [1985] 85 Columbia Law Review 1140.

<sup>13</sup> Non-price vertical restraints, for instance. See Thomas E. Kauper, *Antitrust in 1992: The Year of the Storyteller* [1993] 61(2) Antitrust Law Journal 347.

<sup>14</sup> For a recent decision, see *Business Electronics v Sharp Electronics* 485 US 717 (1988)

suggests the existence of a paradoxical character arising, above all, from an incongruence of competition goals, as the legal enforcement shows.

As it now stands, enforcing competition law and policy will continue to be an exercise of approximation of results. The administration of the law on a trial fashion suggests that no perfect testing of welfare and efficiency exist. This is so because of the limited ability of the legal test to warrant an essential correctness and so to control the competitive process within which the exercise of the intellectual property rights is qualified. In providing a type of solution, or an accommodation of conflicting interests, the legal machinery at hand remains, therefore, desirable.

#### **4.3 The adjudication factor**

As an indispensable part of the institutional disciplines, regulations on adjudication and adjudicatory agencies (i.e., courts and administrative bodies concerned) play a distinct role in policing the bargain behind the intellectual property theory. While they test the law, the agencies build up a legal tradition based on accumulation of experience and expertise, and serve a catalyst function by supplying the Parliament informative data with which to improve statutory provisions. Such tradition is necessary for the consolidation of reliable safeguarding rules and procedures, without which the business circle might lose confidence in the whole system. This is an observation of major importance. Countries, such as United Kingdom and United States, which have great traditions in enforcing protection of intellectual property rights, apply safeguards with the same strength. It suggests that a sound enforcement system of protection may lead to a strong enforcement of safeguarding provisions intrinsic either to intellectual property law or competition law. This makes a huge difference, in terms of the benefits derived from the legal system already in place, between those countries which have a workable and those which have a poor legal machinery, which is structured under domestic law and limited by international conventions.

The key aspects of international standards governing enforcement of intellectual property rights are transparency of procedures, cost and expediency and reasoning of decisions, independence of adjudicators, and unnecessary hindrance to intellectual property rights and



trade.<sup>15</sup> With regard to safeguarding measures in particular, proceedings on unauthorised use of patents and chip designs are required to give due considerations *inter alia* to the individual merits of non-voluntary licences, and temporary circumstances characterising notions such as "national emergency" and "extreme urgency", prior negotiations between would-be licensors and licensees, anti-competitive practices ascertained under fair process in the legal meaning, guarantee of reviewal jurisdiction by a distinct authority, adequate assessment of remuneration and correction of anti-competitive practices.<sup>16</sup> Read in conjunction with those principles delineating the social bargain,<sup>17</sup> these requirements claim a streamlined process for the implementation of the safeguarding policy.

Although facing inherent imperfections which permeate legal methods and process, a regulatory approach of the adjudicatory system plotted in the Agreement on TRIPS is featured as follows:

- A satisfactory statement of conditions on which the safeguarding measures are implemented (the more the legal conditions are narrowed down, the more the discretionary power of the adjudicatory body will be);
- A balance between the degree of details of these conditions and the amount of discretion conferred to the adjudicatory body. This departs from the premise that this balance is fundamental to the establishment of a streamlined process through which the courts can give their best response to the implementation of the delicate intellectual property bargain;
- Avoidance of general rules for which there is no sound guidance on how to practically assess them with regard to welfare goals, presuming that an obscure welfare policy may unreasonably restrict legitimate owner's interests;
- Availability of procedures designed to allow the pursuit of a satisfactory degree of efficiency defence.

In its conceptual framework, the adjudicatory system relies on rules, and discretion. That is, in implementing legal policies with discretion, policy-makers tend to not use a particular rule

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<sup>15</sup> Agreement on TRIPS, Articles 41 to 49.

<sup>16</sup> Agreement on TRIPS, Articles 13, 14(6), 26(2), 31, 37(2).

<sup>17</sup> Ch. 3 3.1; Agreement on TRIPS, Articles 7 and 8.

to bind themselves in advance, to a particular course of action. Whereas under the theory of rule, policy-makers are mandated to act in accordance with binding commitments reflected in clear descriptions of legal circumstances.<sup>18</sup> The British system of statutory adjudication gives the adjudicator a mandate which is exercised under specific duties. Constraints on him are set up either by the patent statute or created judicially (self-constraint). In fact, the adjudicator follows rules which are not designed to be totally free from a degree of imprecision. This is inherent in the nature of legal regulation. Such a nature results in an opportunity for the adjudicator to resort to discretion and construction, even relying on rules drawn with a degree of detail. Nevertheless, the more imprecise or broad the rules are, the wider the exercise of discretion and construction is. By means of discretion, the adjudicator selects the best action which should fit a given situation, and through the statutory construction, he has the duty to search for the right answer to a particular case. In performing his office, the adjudicator inevitably brings into consideration elements of public interests. Stressing either on the theory of rule or on discretion, the structuring of the system has obvious implications concerning the pattern of decision suffused with public policy arguments.

In principle, specifications of public policy which emerge from Parliamentary debates inspire transparency, and are subject to a considerable political control. Whether the delegation of these specifications to administrative or judicial authorities is or not a valid scheme depends on a country's enforcement traditions. In general, however, if an administrative authority does not enjoy legal independence, he is likely to suffer from the influence of the short-term political mood. Nothing suggests that this is the case of the British system of legal adjudication. As a general observation normally referred to the enforcement of competition legislation, competition objectives may serve interests of groups and put a long-run policy in jeopardy. Although not entirely warranted, the best prospect of transparency and control still lies in a judicial approach.<sup>19</sup> Nevertheless, the State, again, is free to organise its own policy-making process, and auto-limits under international agreements.

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<sup>18</sup> For an account of theory of regulation in general, see: R. J. Barro, *Macro Economic Policy*, 1990; and George L. Priest, *The Origins of Utility Regulation and the 'Theories of Regulation' Debate* [1993] XXXVI *Journal of Law & Economics* 289.

<sup>19</sup> It does not mean that the judicial approach is the most efficient one, nor desirable for all. Criticism states that the judicial policy-making is "profoundly anti-political and anti-democratic." Richard A. Maidment, *The Judicial Response to the New Deal - The US Supreme Court and Economic Regulation 1934-1936*, p. 145, Manchester Press, 1991.

Based on the analysis of the exercise of discretion by the comptroller general, the concept of "useful discretion" is proposed as a general criterion to examine the discretionary power. Useful discretion is here described as one that, once authorised or not prohibited, is reasonably necessary, by the nature of the relevant facts and circumstances, to satisfy the policy which is drawn from the statutory rules, and, with regard to the same facts and circumstances, is reasonably acceptable as it does not unnecessarily hinder proprietary rights. Firstly, the useful discretion implies a type of commitment to fundamental assumptions.<sup>20</sup> In practical terms, the concept is confined to those decisional criteria implicitly or explicitly derived from, or consistent with, the statutorily fixed policies.<sup>21</sup>

The analysis of the adjudication process about non-voluntary licensing over British patents suggests that there will always be a grey area (eg, whether a particular procedure does hinder or not legitimate exploitation of the proprietary right, or yet is regarded as a disguised restriction on trade) where compliance with international standards will remain a debatable matter.

#### **4.4 A matter of comparison**

The two following chapters will deal with two broad groups of safeguarding measures, intrinsic to intellectual property and to competition law frameworks respectively. While the first is based on individual grievances, the second does not necessarily need an individual claim to operate, i.e., the latter does not rely on a particular complaint against abusive exercise of intellectual property, or the non working of an invention in the country.

It has been suggested that compulsory licensing does not "provide an effective redress against the abuses of patent monopolies,"<sup>22</sup> perhaps, due to the lack of know-how.<sup>23</sup> Despite this alleged ineffectiveness, non-voluntary licensing under intellectual property law is an

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<sup>20</sup> See the discussion of social bargain in Ch. 2.3.1.

<sup>21</sup> Examples of valid criteria are those purposes and matters described in s. 50 of the 1977 Patents Act, and s. 84(1) of the 1973 Fair Trading Act.

<sup>22</sup> DIT, Intellectual Property and Innovation, p. 26, Cmnd. 9712 (1986).

<sup>23</sup> It has been "recommended that the existing powers to set licence terms should be used to require the patentee to transfer associated 'know-how' to the licensee." Cmnd. 9712, p. 26/27. (1986).

available mechanism kept in British law. It does have its deterring role to play apart from the safeguards operated within the framework of competition law and policy. As a fashionable apparatus distinct from that mechanism and designed to control the competitive process in the OECD countries, competition law has its importance recognised by the Agreement on TRIPS.

The competition law mechanisms have a value apart for the intellectual property order. Having a comprehensive ability to tackle the improper exercise of proprietary rights, such mechanisms are distinct from the remedial measures intrinsic to intellectual property law. The estimation is that the existence of these remedial measures alone operates as an influential basis for private bargaining, but they are less than effective in curbing the improper exercise of intellectual property rights. Given the growing tendency for industrialised countries to rely on competition law mechanisms, it is suggested that, in effect, taking into account the objectives of the social bargain, to protect these rights makes little or no sense without an effective control of the competitive process.<sup>24</sup> In this connection, the examination of the Monopolies and Mergers Commission's reports<sup>25</sup> shows the significant role of these mechanisms in maintaining intellectual property order, i.e., the extent of the control of competition ensures an alignment of market conditions concerned with the licensing and exercise of intellectual property rights. Intellectual property order is defined as the way intellectual property rights are exercised in relation to market forces. It is assumed that the exercise of these rights is responsive not only to the rules of supply and demand (the market self ordering), but also to state regulatory intervention on competition.

Paradoxically, while the industrialised world has successfully pressed for a higher level of intellectual property protection, it has failed to agree on a body of rules governing international competition. For their own benefits or advantages, industrialised countries apply, at a national level, a developed set of competition rules which have transnational effects. In this way, competition rules and policy have been implemented in industrialised countries with a protective sense, amounting to a comparative advantage over those countries who have not been able so far to put into place the same competition mechanisms which prevent effects

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<sup>24</sup> Ch.1.

<sup>25</sup> Ch. 7.2.4.

(adverse to public interest) from arising due to anti-competitive exercise of intellectual property rights. As far as international trading is concerned, this suggests an imbalance at a regulatory level.

## CHAPTER FIVE

### COPYRIGHT & PATENT: EVOLUTION OF UK LAW ON UNAUTHORISED USE

#### 5.1 Introduction: expansion of legal regulation on safeguards

Awareness of the importance of a body of rules on intellectual property rights (IPR) designed for the benefit of the country goes back to seventeenth-century England when a sense of safeguards of interests was introduced in the early legislation. Along with it, legislative and judicial control over undue IPR exercise related effects was raised and has become a permanent concern since then. In this respect, two legal indications could be cited: the Statute of Anne 1709 regarding copyright, and the Statute of Monopolies 1623 regarding letters patent. The legislation in fact reflected the emergence of an intellectual property policy strongly supported by the contemporaneous legal thoughts central to common law that recognised a "public utility" function in copyright,<sup>1</sup> and viewed the patent as a grant for the public benefit,<sup>2</sup> and thus it was not supposed to be worked as a basis for restraint of trade.

From those early days to modern law and policy, the development of safeguarding provisions has formed a body of regulation distinguished from the general framework of intellectual property law by the ends it pursues. The purposes are various, such as to encourage industry and learning, in war and peace times and in economic growth and hardship, to promote the proper exploitation of intellectual property rights, to protect trade and create conditions for catching up with technology. The utmost aim has always been to strike a balance of owners', producers' and consumers' interests. All of these are within the very core of the Government policy.

In the 1986 White Paper, the legal policy was stated in terms of promoting competition and wider availability of technology, and serve properly the needs of all users.<sup>3</sup> The policy equally

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<sup>1</sup> *Millar v Taylor* [1558-1774] All E.R. (Rep) 119 at 120/121 [for extended discussion, see 98 E.R. 201-267]; and *Donaldson v Beckett* [1774] 1 E.R. 837.

<sup>2</sup> *Attorney-General of the Commonwealth of Australia v Adelaide Steamship Company Limited* [1913] A.C. 781 at 793/794 (Lord Parker of Waddington).

<sup>3</sup> The 1986 White Paper, Intellectual Property Rights and Innovation, Cmnd. 9712, pp. 3/4, 35/36 (prefaces).

applies to the whole range of intellectual property rights, including copyright and designs which have played an increasing role in the economic context and on them relies "the livelihood of the multitude of firms and organisations."<sup>4</sup> More than to ensure reward to intellectual efforts, the central concern is, in parallel, to recognise the distinct value of remedial measures without which the system of intellectual property rights would be seriously impaired by merely allocating ownership, granting "unrestricted monopolies"<sup>5</sup> and stifling innovation.<sup>6</sup>

This chapter sets out to discuss safeguarding measures intrinsic to intellectual property (copyright and patent), and the principles governing them. These safeguards and principles are described and classified from an historical perspective. Based on the British experience, it seems realistic to suggest that no country is prepared or can afford to protect intellectual property rights without a meaningful regime of remedial measures to balance competing interests. This suggestion is made on the ground that legal evolution has proved these safeguards constitute not simply an exercise in describing, as precisely as the incumbent bodies can do, the detailed conditions in which protection is balanced, but also to be authorised sources of an official policy on intellectual property. Policy-makers are fully aware of the undisputed role of these safeguards related to the incentive for innovation and promotion of competition as a means of improving public welfare and efficiency. Moreover, the safeguarding mechanism is continually evaluated and adjusted in the context of new technical developments, maintained over years and in different economic stages. Presumably, such a mechanism is worth<sup>7</sup> maintaining, despite some criticism.

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<sup>4</sup> The 1981 Consultative Document on the Reform of the Law relating to Copyright, Designs and Performers' Protection, Cmnd. 8302, p. 1/2, paras. 3 & 5.

<sup>5</sup> The 1983 Green Paper, Intellectual Property Rights and Innovation, Cmnd. 9117, at p. 7. According to the Chief Scientific Adviser (Cabinet Office), "Rights should be available where they would support commercial exploitation... Exploitable ideas should not lie dormant." *Loc. cit.*, p. 2.

<sup>6</sup> In a press release of 11 July 1991, Sir Leon Brittan, vice-president of the E.C. Commission then in charge with competition policy, stated. "Companies cannot unreasonably sit on their intellectual property in order to stifle enterprise and prevent the emergence of new forms of competition."

<sup>7</sup> In the field of patents, the number of applications made by third parties for compulsory adjudications, i.e., dispute settlements in the context of compulsory licences and licences of right, in the period between 1975 and 1982, exceed one thousand. For an overall picture, see the Annual Reports of the Comptroller-General from 1950 to 1989.

### **Copyright-related safeguards**

As the effect on competition of copyright exploitation remained obscure for a long time, a balance of interests has always relied a great deal upon exceptions on the exclusive rights. These exceptions include fair dealing and other specified provisions, designed to respond to scientific and technical developments, and educational or training purposes. Unauthorised use of copyright by means of non-voluntary licences focusing on exercise of copyright only appeared in 1911 in respect of, e.g., musical works of increasing industrial application. For this reason, a distinction is made between the role of exceptions from the role of limitations.

The emergence of provisions limiting such an exercise reflected the influential technical developments, such as sound recording. In this connection, the conflicting interests between copyright owners and users have been solved in a less contentious manner compared to patent safeguards. For instance, since it was established in 1911, the collective administration of copyright through licensing schemes has in practice been operated in a fairly satisfactory manner.<sup>8</sup> The application of such experience in respect of proprietary rights upon high-tech assets, such as computer programs, is a significant trend not only for the potential economic value of those assets, but also for their industrial application.

As long as the commercial use of copyright works has largely been left to the competitive market forces, the application of safeguards is moving towards a competition issue, as much as to patents.

### **Unauthorised use over patents**

Submitted to complex regulation, the unauthorised use of patent is divided into two periods, from 1883 to 1946, and from 1949 to 1988. The first set of provisions emerged at a time of remarkable increase in patented inventions in the chemical and electrical industries. It was a period of depression followed by years of technological adaptation and slow growth,<sup>9</sup> and

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<sup>8</sup> Provided the recommendations made by the MMC are observed, collective licensing continues to play a significant role. See the MMC Reports on "Collective Licensing", Cm 530 (1988), and on the merger situation Warner/Chappell, Cm 301 (1988).

<sup>9</sup> A. Tylecote, *The Long Wave in the World Economy*, pp. 65/66, 214, 216-218, 222.



distracted by wars which brought some technical impetus but also caused some stagnation. In general, Great Britain experienced a decline in its economy which was both affected by industrial concentration and governed under the influence of a reluctant philosophy of a competitive ideal.<sup>10</sup> This picture together with the British aspiration to be a world power explains the country's defensive attitude in adopting protective measures, including mechanisms to benefit from "the technology of other countries."<sup>11</sup> As a matter of legal policy, patent safeguards fit conspicuously in this context. It starts with defence safeguards which rely on a set of rules and practices based on war motives.

The point of departure of the second period of patent safeguard regulation coincides with three elements: new technical paradigms, new ideas in international trade, and a move towards a more competitive market structure.

Five years after World War II a new upsurge in the systematic use of innovation took place. A new technological style was characterised by advancements in microelectronics and biotechnology. Microelectronics in particular gave rise to new obstacles in terms of "methods of organisation, and attitudes within organisations".<sup>12</sup> These represented not only a difficulty in the catch-up policy shared by countries in general,<sup>13</sup> but also a matter of concern from a competition stand point.

Together with new technical paradigms, early in the post-war period prospects for economic growth emerged and were fostered by the idea of economic integration and trade

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<sup>10</sup> By the end of the 1930s British exports had fallen significantly. Capie & Collins, *The Inter-War British Economy - A statistical abstract*, p. 71. For General accounts, see: C. Barnett, *The Audit of War - The illusion & reality of Britain as a Great Nation*, Ch. Fourteen (Papermac, 1987); J. Turner (ed), *Britain and the First World War*, Ch. 4 (Hyman, 1988); D. H. Aldcroft, *The Inter-War Economy: Britain 1919-1939*, Ch. 1 (Batsford, 1970). Report by Mr Justice Devlin, J. concerning the cotton industry, in *Re The Yarn Spinners's Agreement* [1959] 1 All E.R. 299 at 310 *et seq.* may be found instructive.

<sup>11</sup> J.H. Dunning & C.J. Thomas, *British Industry: Change and Development in the Twentieth Century*, p. 35 and 37-62, 1963 edition. In post-war periods the UK industries also benefited from the conclusion of thousands of licensing agreements. See also D. Reynolds, *The Creation of the Anglo-American Alliance 1937-41*, p. 291/2.

<sup>12</sup> Concerning, for instance, process of production and distribution of commodities. See A. Tylecote, *ob. cit.*, pp. 55-60, 65/66, 252-55.

<sup>13</sup> Some theorists believe that in the early stage of new technical paradigms there is a discontinuity in technical progress where leader countries are required to adapt to new situations, reflecting in the dynamics of competition.

liberalisation which did not go far enough.<sup>14</sup> In parallel with this move, Government policies sought economic reconstruction and markets abroad.

The third factor was the legal development in competition law. The dimension of this factor is studied in the next chapter. For now, it should be said that as a key factor in the formation of an institutional safeguarding policy, the impact of the legal regulation of the competition process was not only perceived in the ordering of the exercise of intellectual property rights, but also reflected in the development of concepts associated with the remedial measures intrinsic to intellectual property. Assuming that intellectual property rights operate or tend to do so in line with the circumstances of the national interests, the regulation on patent safeguards was deemed to reflect those factors.

### **The principles and the needs of particular sectors**

A basic principle concerning copyright and derived from a statutory policy gradually improved is that protection is afforded by the State as far as the users' interests are properly safeguarded. As the same principle is read in the field of inventions, the patent is granted as far as it works to the fullest extent in the country for the benefit of the public. As a corollary, copyright and patent mischief do not prevail against competition law, i.e., both copyright and patent are not supposed to be worked as a basis to restrain trade nor distort competition.

As far as the State's use of intellectual property is concern, the formal boundary of the Crown's prerogative is unclear as to copyright use. As to patents, the use by the State may become inconveniently intrusive in the extent of the involvement of the State in industrial affairs. A predominant principle is that no Government department is to be hindered in the discharge of its duty by the existence of a patent.

More than describing the conditions in which protection is balanced and unauthorised use is allowed, the legal development relating to these safeguards has evolved aiming to improve

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<sup>4</sup> While Economic Powers failed to approve the ITO (International Trade Organisation) bringing back a protectionism mood, the setting of the GATT was only a small step towards a freer World economy. The event did little to resolve the tensions among countries.

public welfare and efficiency. A remedial measure on grounds of efficiency is here designed to require a default or competition mischief committed by the owner. In the absence of such a requirement, the safeguard may be justified on public welfare grounds. Since the legal mechanism is less than effective, the achievement of these goals is not always clear. This was particularly the case, for instance, of licences on works of deceased authors and licences to republish copyright works. Concerning patents, the revocation purely for not working had no apparent benefit. Moreover, legislation has addressed the needs of particular sectors, such as statutory licence on sound recordings and their broadcasting, and on rental (copyright), or non-voluntary licences over medicine and food-related inventions (in the patent field), or over inventions making a substantial contribution to the art.

### **Changing concepts**

The law has changed concepts in several senses. The basis for compulsory licensing evolved from "public requirement" to "abuse of monopoly right" and then to general grounds, which necessarily do not include a true default of the patentee. Rather, they define detailed conditions on which the justification for state intervention lies. Revocation as a remedial measure was abandoned. The definition of non-working of an invention in the country to the fullest possible extent has been re-worded. Conditions governing patent use for the service of the Crown have also been clarified, and today admit limited compensation for loss of manufacture.

Remedial measures in the public interest and intrinsic to intellectual property law may rely on a "competition report." The major effect associated with these changes is the real dimension of the obligation (or duty) of the patentee to exploit an invention as much as it would be desirable from the point of view of the development of British production. Minor effects that the changes in law have provided include more transparency of the regulatory framework, and respect to the proprietary rights by avoiding, for instance, measures unnecessary for the aim intended; increasing observance of competition rules (including in the fields of designs and copyright), so as reducing State intervention, and more participation of private initiatives, by resorting to the framework of competition law.

To examine in detail the developments of the several types of legal measures concerning the unauthorised use of copyright and patents, the chapter begins with an outline of the historical foundations.



## 5.2 Unauthorised use of copyright

### 5.2.1 The threshold between exceptions and limitations

#### (i) Statutory underpinnings

The foundations of safeguards in copyright rely on the early perception of the need for copyright protection. The oldest legal basis is the 1709 Statute of Anne. Before this Act, "it was usual to purchase from authors the perpetual copyright of their books, and to assign the same from hand to hand for valuable considerations, and to make them the subject of family settlements."<sup>1</sup> As it was stated in its preamble, the Statute intended to encourage the "learned men to compose and write useful books", and this purpose was pursued in two ways: by reducing the period of the monopoly right conferred to publishers and authors, and providing the authors with printing control of their works. In prescribing a non-perpetual<sup>2</sup> term of protection, the Statute of Anne<sup>3</sup> created conditions for changes of the bargaining basis in the flourishing art of printing, in the way that publishers and printers would have to renew the consent of authors to new printing after the end of fourteen years.

As they had more control over their writings, authors could not only entertain brighter a prospect of return, but also contribute to increase the number of diversified literary works. It is illustrative that to encourage the production and availability of literary works the statutory copyright came out to reduce the extent of privilege, as a form to accommodate the interests involved.

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<sup>1</sup> [1558-1774] All E.R. Rep. 119 at 120. With the Statute of Anne the common law copyright in published works was extinguished. See *Donaldson v Beckett* (House of Lords) [1774] 1 E.R. 837

<sup>2</sup> The point of perpetual copyright was raised before the Gregory Committee. It was argued that "property in the product of a man's brain deserves as much protection as property in the product of his hands and that, unprotected, it is more open to subsequent mutilation." The force of this argument, however, did not prevail upon the historical tendency of limiting the period of copyright protection, so as to better serve the social welfare and competition purposes. If there had been no commitment to the Berne Convention, it would be reasonable to speculate that the UK would have chosen a copyright term on basis of an exact number of years running from the first publication. Gregory Report, paras. 16 to 23.

<sup>3</sup> The Statute of Anne was repealed by the Copyright Act 1842 (5&6 Vict. 45) enacted equally "to afford greater encouragement to the production of literary works of lasting benefit to the World."

Reviewing the foundations of copyright, the Whitford Committee recognised the existence of a conflict between public and private interests, and accused "the need in certain cases for the exclusive right of the author to be limited."<sup>4</sup> As a general view beyond any doubt, the Committee observed that exceptions in favour of copyright users *is about right*,<sup>5</sup> as part of the balance of those interests. It implies that protection is afforded by the State as far as the users' interests are properly safeguarded. To this end, over centuries a number of exceptions have been provided in favour of art and education, by different legal formulas.

## **(ii) Strategic responses to scientific and educational purposes**

### **Universities and colleges' copyright**

For over two centuries universities and colleges enjoyed the right of copyright of books donated to them.<sup>6</sup> This old perpetual right was saved by several statutes for the advancement of learning and education, but ceased to exist as a result of the enactment of the current law.<sup>7</sup>

By the time of the last copyright law review, no university or college pressed for the retention of the said right, which was found by the *Whitford Committee*<sup>8</sup> to be of little commercial interest and, as a matter of principle, unacceptable in modern law. This type of privilege was both discriminatory and anomalous. Only a few universities and colleges were entitled to it,<sup>9</sup> and an unrestricted enjoyment of copyright for an unlimited period of time seems incompatible with a modern theory of copyright.

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<sup>4</sup> The Whitford Report, para. 16 *in fine*.

<sup>5</sup> *Idem*.

<sup>6</sup> For the origin of this right granted in 1775, see *Donaldson v Beckett* [1774] 1 E.R. 837 at 849.

<sup>7</sup> The right was repealed by the 1911 Copyright Act which therefore allowed some universities and colleges to keep the right already enjoyed. See Sch. 1, para. 13(1) of the 1988 Act.

<sup>8</sup> Report of the Committee to consider the Law on Copyright and Designs, Cmnd. 6732, para. 648. The Report recommended the repeal of the copyright of universities and colleges. The recommendation was accepted by the Government. Reform of the Law relating to Copyright, Designs and Performers' Protection, A consultative document, Cmnd. 8302, at pages 43/44, HMSO, 1981.

<sup>9</sup> See 9 Halsbury's Laws of England, Fourth Edition, para. 804, at p. 511.

As an specific privilege, "universities and colleges' copyright" today has only a historical importance. The focus on it, included as an old form of safeguard, is to emphasise a particular feature in the evolution of IPR safeguards, that is the departure from individual privileges to a system designed to ensure that the benefits from the market is fairly distributed.

### **Fair dealing**

Modern law makes provisions allowing restricted use of specific works for limited purposes, namely research and private study, criticism, review and reporting of current events, and subject to some restrictions.<sup>10</sup> Fair dealing was firstly regulated by the 1911 Copyright Act, which made no restriction as to either the number of copies permitted or the types of works affected. The regulation has therefore moved to limit the works affected, and make fair dealing subject to specific conditions,<sup>11</sup> such as the acknowledgement of the author and restriction in copying.

The changes in law have reflected both the degree of conflicts emerging from time to time amongst users, authors and publishers and the stage of technological advancement enabling or making easier the reproduction of works. Taking account of such a phenomenon, the Gregory Committee regarded the contemporaneous "technical developments such as contact photography and micro-photography" as a changing factor of copying conditions, making possible the transcripts and extracts of copyright works in a scale which could affect the expectation of return.<sup>12</sup> The Committee referred to the need of the scientific community which the Royal Society stated as follows:

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<sup>10</sup> The main current legislation is the Copyright, Designs & Patents Act 1988, whose sections 29 and 30 prescribe the conditions under which copying is regarded as fair dealing. Fair dealing for purposes of research or private study involves a single copy of literary, dramatic, musical and artistic works and published editions; there is no need for acknowledgment. Criticism and review involve all works, and multiple copies are permitted provided that the copyright owner is given sufficient acknowledgment. Reporting current events may involve all works less photographs; although multiple copies are permitted, sufficient acknowledgement is required except reporting through sound recording, film, broadcast or cable programme.

<sup>11</sup> To establish intelligible and systematic conditions under which copying could be statutorily permitted was a concern held by the Gregory Committee which preceded the 1956 Copyright Act. This Act was found to be complex, confusing and ambiguous by the Whitford Committee, which was aware of that an extensively detailed legislation would be unworkable. Gregory Report, preliminary and §§ 27 & 47; Whitford Report, §§ 11 & 27, and Considerations submitted by the Council for Educational Technology for the United Kingdom.

<sup>12</sup> Gregory Report, para. 43. Before the development of mechanical reproduction, transcript through the laborious process of hand-copying had never been regarded as an infringement of copyright.



*Science rests upon its published record, and ready access to public scientific and technical information is a fundamental need of scientists everywhere. All bars which prevent access to scientific and technical publications hinder the progress of science and should be removed. Making of single copies of extracts from books or periodicals is essential to research workers, and the production of such single extract copies, by or on behalf of scientists, is necessary for scientific practice.*<sup>13</sup>

The fair dealing provision fundamentally caters for that need which is contrasted with the right of exploitation the owner is entitled to. The statute reflects an attempt to reconcile those contrasting interests and to establish an acceptable basis for a *modus vivendi* between users and owners.<sup>14</sup> But the law has no dogmatic provision as to either the amount of material allowed to copy, or the concept of fairness. It is left to the court to decide the extent of the copying. The criteria the courts provide cannot always be applied to all situations. The judge looks at a range of elements, including the nature of the work, the purpose of the use and its effect upon the market.<sup>15</sup>

### Qualified exceptions

Apart from fair dealing which is treated as a general exception, there are other permitted acts performed for purposes other than those referred to above and regarding a range of qualified entities, purposes and works including educational use, copying by libraries and archivists, administrative proceedings, reading or recitation in public, scientific or technical abstracts, artistic works, broadcasts and cable programmes. The increasing number of these exceptions is due to the expansion of the copyright regime to cover new subject matters.<sup>16</sup> In order to

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<sup>13</sup> The quotation of the original statement was inserted in the Whitford Report, para. 213.

<sup>14</sup> The balance of the interest of copyright owners to control the reproduction of their works and the interest of those committed to research servicing in pursuing wider dissemination of information is universally concerned. See Whitford Report, para. 222.

<sup>15</sup> It is not appropriate to undertake here further study on the subject. It suffices to say that the dealing, i.e., the use, "does not conflict with normal exploitation of the work and does not unreasonably prejudice the copyright's legitimate interests." Berne Convention, Article 9(2). This guidance was agreed by the Whitford Committee, Report, para. 219, but it is still imprecise. For some court guidance, see *Independent Television Publications Ltd. v. Time Out Ltd* [1984] F.S.R. 64 and at p. 21; *Sillitoe v. McGraw-Hill Book Co. (UK) Ltd* [1983] F.S.R. 545, *Beloff v. Pressdram Ltd* [1973] 1 All ER 241; and *Hubbard v Vosper* [1972] 2 QB 84.

<sup>16</sup> In the 1911 Copyright Act, s. 2(1), these special exceptions included publication in a collection of passages from published literary works for *bona fide* use in schools, publication in newspapers of lectures given in public, and reading and recitation of any reasonable extract from published works. The items added by the 1956 Copyright Act s. 6(4), 7, 41, 42, included use in judicial proceedings, reproduction of works for the purpose of broadcasting, in respect of libraries and archives, and public records.

meet the statutory conditions, the implementation of these exceptions may involve a degree of bureaucracy<sup>17</sup> and thus discourage authorised access to works.

### **Copying for educational purposes under licensing**

A good cause does not necessarily give grounds for free-of-charge copying. This rationale is inherent in those provisions which withdraw some specific exceptions where "licensing schemes"<sup>18</sup> are available under reasonable remuneration. Instead of granting a blanket licence, the Statute encourages authors to seek opportunities for reaping some return at affordable costs by way of licensing schemes, which emerged as a solution acceptable by book and recording industries.

Under the legislation preceding the 1988 Act, educationalists had to refrain from copying copyright material to satisfy their daily needs which could easily be met by making use of the technical facilities at hand. The legislation then in force which favoured the interests of authors restricted the potential benefit of photocopying. Discussing the problem, educational establishments recognised the authors' right to an adequate remuneration for their works, but claimed a reconciling and unambiguous support for educational institutions. In this respect, a suggestion was made to extend the fair dealing provision for educational purposes, and to confer freedom of copying within agreed limits statutorily prescribed on behalf of educational users.<sup>19</sup>

The widening scope of fair dealing as it was suggested would amount to a "free-for-all" basis which was reasonably accepted for literary works but highly opposed by the recording industry.<sup>20</sup> It was argued that, in the case of audio and video recording, individuals may easily

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<sup>17</sup> The 1988 Copyright, Designs and Patents Act, part I, chapter III, sections 38 to 43. About the formalities required by law see the Copyright (Copyright by Librarians and Archivists) Regulations 1989.

<sup>18</sup> The schemes cover (a) recording of broadcasts and cable programmes, (b) reprographic copying of passages from published works, and (c) subtitled copies of television broadcasts or cable programmes. Situations (a) and (b) apply to educational establishments, and (c) to people in special care. 1988 Act, S. 35(2), 36(3) and 74(4).

<sup>19</sup> Evidence to the Committee to Consider the Law on Copyright and Designs, submitted by the Council for Educational Technology for the United Kingdom, undated. [KD 1281 COU, QMW College's library] See also Whitford Report, para. 415, 416.

<sup>20</sup> Whitford Committee, paras. 319, 320.

afford the acquisition of equipment enabling copying in considerable proportion. This background in principle favoured a "blanket licence" approach with a levy upon the sale price of all products which were sold. Practical issues associated with mass-production of electronic equipment<sup>21</sup> and involving the interests of consumers, manufacturers or sellers and authors gave rise to doubts about the efficiency of the levy scheme which was less than welcome.<sup>22</sup> A licensing scheme was therefore preferred instead.

By definition, a licensing scheme gives the licensing body the discretion to choose the works or classes of works under which a licence is available.<sup>23</sup> It encourages incumbent bodies to organise licensing schemes,<sup>24</sup> including as many works as possible, and deciding about the charging for the copying. In this respect, the "scheme" regime gives educational establishments and licensing agencies a significant role in the operation of the copyright law, without prejudice to the mandate conferred to statutory authorities concerned,<sup>25</sup> which may act accordingly to settle disputes or to order remedial measures.

### **Non-voluntary licence for educational purposes**

If copying copyright material for the purposes of instruction is not free, and general licences or "schemes" are not available for educational establishments,<sup>26</sup> then the Secretary of State may intervene in two situations. He may issue an order to extend the coverage of existing schemes or general licences to similar works unreasonably excluded,<sup>27</sup> provided that the compulsory inclusion is not incompatible with normal exploitation and does not impair the owners' legitimate interest unreasonably

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<sup>21</sup> *CBS Songs Ltd v Amstrad plc* [1988] 2 All ER 485 at 499.

<sup>22</sup> A levy system is provided by German law and was recommended by the Whitford Committee, with diversified treatment for private and educational audio-and-video recording. Whitford Report, paras. 230, 231. The Parliament, nevertheless, has given no effect to the recommendation.

<sup>23</sup> 1988 Act, s. 116(1).

<sup>24</sup> 1988 Act, s. 36(3).

<sup>25</sup> The Copyright Tribunal and the Secretary of State The 1988 Act, Sections 137-141, 149.

<sup>26</sup> 1988 Act, sections 32 to 36.

<sup>27</sup> 1988 Act, s. 137.

A second situation involves works not similar to those already covered by a scheme or general licence,<sup>28</sup> and requires a two-step measure which consists of a recommendation preceded by a proper inquiry. To the extent that the recommendation is not implemented within one year, a statutory order is set up treating the reprographic copying of the prescribed works as licensed free of charge.

### **Distinguishing exceptions from limitations**

As already stated, traditional exceptions, such as fair dealing and restricted use of material by educational establishments and libraries, make part of the structure of copyright. As copyright has increasingly interfered with industrial applications (e.g., software, sound recordings, or even chip-designs), these exceptions have varied. For instance, a copyright regime may not afford the same sort of exceptions to books and software, although these elements pertain to the same class of works.<sup>29</sup>

The variation of the scope of the exceptions suggests that in order to pursue a proper balance of interests (intellectual property bargain) the structure of protection may vary to suit the competitive features of some types of works.<sup>30</sup> Such accommodation, one has to emphasise, does not interfere with the need to maintain a safeguarding policy applying to the control of the exercise of copyright. While the exceptions affect the bundle of exclusive rights, the limitation or control by means of unauthorised use affects the exercise of these rights.<sup>31</sup> The former, whatever the amount, are not sufficient to preserve or fulfil the intellectual property bargain. It follows that limitations to copyright, by means of unauthorised use and under specific legal conditions, remain a legal mechanism triggered off, when necessary, to safeguard either a broad public interest or to secure a degree of competition.

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<sup>28</sup> 1988 Act, s. 140 and 141.

<sup>29</sup> Following the worldwide legal tendency, Article 10(1) of the Agreement on TRIPS classifies computer programs as literary works.

<sup>30</sup> For the discussion of exceptions concerning copyright protection of computer programs, see notes on "New Exceptions to Copyright Infringement for Computer Programs" by David Bainbridge and Simon Chalton, [1993] 9 C.L.S.R 113; The Copyright (Computer Programs) Regulations 1992: comments from FAST, BSA and SPA, [1992] 8(5) C.L.P. 157; and Guy Vandenberghe, Copyright Protection of Computer Programs: An unsatisfactory proposal for a Directive, [1989] 11 E.I.P.R. 409.

<sup>31</sup> The distinction follows the scheme of the Agreement on TRIPS. Compare Articles 13, 14(6), 30 and 31.

## 5.2.2 Limitations on copyright

### (i) Official use

No statute contemplates the use of copyright works for the service of the Crown. The matter was twice considered, first by the *Gregory Committee*<sup>32</sup> which recommended the statutory grant of a power for the Crown to reproduce copyrighted material for purposes of civil defence and communications, in lines with the right of patent use. More recently, the matter was considered by the Whitford Committee. This Report pointed out that the previous recommendation was never rejected, nor translated into law. The Committee, nevertheless, saw no case to make a positive recommendation.<sup>33</sup>

Since that the 1911 Copyright Act abolished the old common law copyright,<sup>34</sup> any right over works and related exceptions and limitations are supposed to rely only on statutory provisions. In view of this, there would be a question open for contention whether there is a non-statutory safeguard, i.e., a limitation not specifically covered by the Copyright Statute. This point is considered only for the sake of speculation; further discussion on it is beyond the scope of this chapter. It could be argued, however, that a government department, acting under statutory authority, may have a compelling reason of public good<sup>35</sup> to use a copyright work for the services of the Crown.<sup>36</sup> Provided that it is not found against an express<sup>37</sup>

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<sup>32</sup> Report of the Copyright Committee (Gregory Report), 1952), Cmnd. 8662, para. 75.

<sup>33</sup> The Commission pointed out that the compulsory use of cinematographic film to entertain British troops could make a case to extend the copyright safeguards, but would not seem to be enough for a recommendation of that kind. Whitford Report, paras. 691-694.

<sup>34</sup> Section 31.

<sup>35</sup> The 1988 Copyright, Designs and Patents Act recognises the public interest defence, s. 171(3). But there is doubt whether the provision cover issues other than disclosure of information relating to public interest as it was dealt with in *A-G v Guardian* [1988] 3 All ER 545.

<sup>36</sup> The use's right on behalf of the Crown may be sustainable in the light of the rule that says the Crown's interest cannot be prejudiced by the application of a statute unless it enacts so. There is also a presumption in law according to which in the absence of express words the Crown is bound by an Act of Parliament. *1947 Crown Proceedings Act*, s. 40(2)(f).

<sup>37</sup> "In the absence of express words the Crown is bound by a statute only if the purpose of the statute would be 'wholly frustrated' if the Crown were not bound." Cf. Wade & Bradley, "Constitutional and Administrative Law" (1988), p. 693/4, which in footnote 8 cites supporting cases.

statutory provision,<sup>38</sup> the protection of the Crown's interest would make a strong point. Even statutorily bound, the Crown may not be sued for breach of copyright duty any way.<sup>39</sup>

The Crown use, necessary to mobilise resources for the national interest, can also be held on grounds of emergency, in peace or war time.<sup>40</sup> In such a situation, the formal limit of the Crown's prerogatives is by nature unclear, and therefore cannot be precisely stated. As far as the Crown's right is sustainable, it could be assumed that it cannot be exercised in a manner to destroy the individual right, consequently the owner would have sound basis to claim compensation in line with the patent law.<sup>41</sup>

## (ii) Take-and-pay licences

In two situations, the 1911 Copyright Act allowed the reproduction of a work for sale, without the author's consent and by way of an automatic statutory licence:

- *regarding a work in general, after the expiration of twenty five years of the copyright term; and*
- *in respect of a musical work or an adaptation of it, to make records in the United Kingdom subsequently a lawful exploitation of the work in the country.*<sup>42</sup>

In both cases, two basic conditions were observed: written notice to the copyright owner of the intention of reproduction, and payment in prescribed manner and time of statutory royalty rates.

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<sup>38</sup> Section 50(3) of the 1988 Act does not rule out a Government use under "any defence of statutory authority."

<sup>39</sup> Crown Proceedings Act 1947 (c. 44), s. 3(1), as it was amended by the 1988 Copyright, Designs and Patents Act, Schedule 7(4)(1). In this case, how much does the lack of statutory licence matter?

<sup>40</sup> See Patents, Designs, Copyright and Trade Marks (Emergency) Act 1939; 1988 Act, S. 303(1) and Sch. 7(3); and The Emergency Laws (Re-enactment and Repeals) Act 1964. Under emergency legislation, in 1949 and 1951 the Comptroller made nearly 2,000 compulsory grants over copyright works. See the 67th Report of the Comptroller-General for the years 1949 and 1951, [1950] 8 Reports Commissioners & c., p. 9; and 69th Reports [1951-52] 10 Reports Commissioners & c. p. 11. If a private firm is allowed to use a work under a non-voluntary licence, the Crown would have no less right.

<sup>41</sup> The Crown is entitled to use any invention for its service against which the inventor has only a right to claim compensation, which may include loss of profit. See s. 55 to 59 of the 1977 Patents Act and s. 3 & 40(2)(f) of the 1947 Crown Proceedings Act.

<sup>42</sup> 1911 Copyright Act, s. 3 and 19; 1956 Copyright Act, s. 8.

Unauthorised reproduction of works for the remaining period exceeding 25 years was to make available cheap versions of published works upon payment of a statutory fee. The legal purpose was pre-empted by lack of commercial interest, i.e., few books remain in demand after 25 years, and therefore the provision proved to be useless in the context of market conditions.<sup>43</sup>

The statutory licence to record musical works was a suggestion which originated from gramophone manufacturers<sup>44</sup> in response to illegal copying of sound recordings which was a general of concern. Reflecting on the problem, the 1909 Committee stood in line with the Berne Convention<sup>45</sup> which prescribed the exclusive right of owners to authorise the reproduction of copyright works. The sensitiveness of the industry, however, prevailed over the Committee's recommendation.

The statutory sound recording licence, adopted by other countries,<sup>46</sup> was saved for a long period. Largely justified, the licence was introduced "to encourage the growth of the then infant British recording industry."<sup>47</sup> The conditions of the industry changed over years, but the provision continued in force operating as a legal basis for a consolidated practice widely welcome within business circles. Both music copyright owners and recording manufactures were found to be entirely satisfied with the provision which, nevertheless, had little practical application. The significance of the statutory procedure was assessed more as a bargaining element, rather than a crucial necessity, on which the interested parties relied to reach an agreement voluntarily. Its retention by the current law encountered several obstacles.

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<sup>43</sup> See Gregory Report, paras. 20 to 23. The provision was not saved by the 1956 Copyright Act. Suggestion to reintroduce it was rejected by the Whitford Committee which alleged a second ground, that was, disposition on contrary of the Brussels text of the Berne Convention. Whitford Report paras. 875 and 876.

<sup>44</sup> The suggestion was nevertheless rejected by the 1909 designated Copyright Committee. Gregory Report, para. 80.

<sup>45</sup> The 1908 Berlin version, article 13. The improvement of British copyright was much influenced by external pressures. The Adherence of Great Britain in 1887 to the Berne Convention was a stimulus not only to revise and consolidate the "unintelligible" national law, but also "to provide foreigners with adequate protection". MMC Report Cm 301 (1988), App. 1.1, p. 57, item 4.

<sup>46</sup> As noted by the Whitford Committee, countries having a compulsory recording licence provision include the USA, Japan, Australia, New Zealand and other British Commonwealth countries. Whitford Report, paras. 340 and 341.

<sup>47</sup> The 1986 White Paper. Intellectual Property and Innovation, p. 57, Cmnd. 9712.

On account that the statutory recording licence was well accepted by the business community, the Whitford Committee recommended its retention with some alterations. The recommendations consisted of the calculation of royalty rate and its revision by a tribunal, and the insertion of permission for importation of "matrices" or tapes to be manufactured in the United Kingdom. The importation of matrices would expand the scope of the licence, but the manufacture of the products would take place only in the UK territory. As to the royalty fee, it would be set by means of a flexible procedure which would replace the existing fixed statutory rate, which was found to be incompatible with market conditions and allegedly contrary to the negotiated scheme in force in rest of the EC countries.<sup>48</sup> It was argued that the fixed rate provided for low royalties contrasting with higher fees paid in other EC countries, and in effect the British statutory rate could differentiate price areas for copyright royalties, and adversely affect the balance of movement of goods from low-price areas to high-price areas.<sup>49</sup> To protect the Community goals was the major reason for the statutory sound recording licence not being saved in the 1988 Act.<sup>50</sup> Notwithstanding, a statutory licence on broadcasting of sound recordings was recently put in place on the grounds of fair use of copyright monopoly under the management of collective licensing bodies.<sup>51</sup>

### **(iii) Compulsory licence to republish**

This was a licence to reproduce literary, dramatic or musical works of deceased authors in the event that republication was impeded by the owner of the copyright.<sup>52</sup> Similar to the automatic licence over 25-year old works, the compulsory licence to republish did not produce the desired effect either,<sup>53</sup> and was confined to the 1911 Copyright Act. Its purpose was to secure wider availability of a literary, dramatic or musical work after the author's death, in the event that the copyright owner had failed to republish or allow the republication of the work or its performance in public. The safeguard was established on behalf of users,

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<sup>48</sup> A fixed statutory rate existed only in the UK and Ireland. In the other EC countries, a negotiated scheme was regulated by an agreement entered into by a pool of societies of composers and music publishers which under this system normally reaches higher royalty rate.

<sup>49</sup> *Musik-Vertrieb Membran BmbH v. GEMA* [1981] 2 C.M.L.R. 44.

<sup>50</sup> 1981 Government Green Paper, Reform of the Law relating to Copyright, Designs and Performers' Protection, Cmnd. 8302, at pages 18/19.

<sup>51</sup> Section 95 and 175 of the Broadcasting Act 1990. See MMC Report Cm 530 (1988), para. 7.18 and 7.49.

<sup>52</sup> 1911 Copyright Act, s. 4.

<sup>53</sup> Gregory Report, para. 23.



from whom the work had been withheld. The licence was granted upon application and on conditions the Judicial Committee of the Privy Council deemed fit.

#### **(iv) Statutory licence on rental**

Whilst rental, rather than sale, has become a significant means of distribution to the public of video-grams, the recording and entertainment industries realised that this growing practice is detrimental to their interests. As members of the public have the facility to rent video tapes and records for entertainment at home, they tend to buy fewer of these products. Relying on this assumption, the industries made a case to claim an "explicit right for a video or audio copyright owner to control or to obtain remuneration from commercial rental of his products."<sup>54</sup>

In the Government's view, the introduction of a new right "could result in anti-competitive effects on the market."<sup>55</sup> In fact, little evidence was brought to show the gravity of the problem raised by the industry. The reluctance of the Government did not impeded the creation of the rental right,<sup>56</sup> based on a presumed compensation for alleged damages. As a deal of caution, nevertheless, the Statute provided for two safeguards: (a) a remote licence, i.e., to be implemented by means of a statutory instrument subject to Parliamentary approval,<sup>57</sup> and (b) a statutory licence on rental concerning the issue to the public of computer programs in electronic form, after 50 years from the first distribution.<sup>58</sup>

Apart from the licence (b), which needs no implementing measure, the efficiency of the licence (a) depends on how quick the Government is on the trigger. An order made by the Secretary of State treating rental as licensed by copyright owner may likely not be needed. The availability of the legal mechanism, however, which may be put in operation at any time,

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<sup>54</sup> D.T.I., Government's Green Paper, Intellectual Property and Innovation, p. 74, Cmnd. 9712, London, 1986.

<sup>55</sup> *Idem, idem.*

<sup>56</sup> Rental ("arrangement under which a copy of a work is made available") relating to sound recordings, films and computer programs is a new exclusive right to issue copies to the public, either for commercial purposes or to meet interests of public libraries and museums. 1988 Act, s. 18(2), 178, and Schedule 7(6)(8)(34).

<sup>57</sup> 1988 Act, s. 66(4).

<sup>58</sup> 1988 Act, s. 3(5).

is itself a deterrent against abusive exercise of the exclusive right of issuing copy to the public of prescribed material. The statutory authority does not need to justify the order on specific grounds, such as anti-competition conditions or refusal to licence on reasonable basis. However, if a default of such kind is present, the Government has the alternative of seeking remedial measures based either on Section 66 (subsections 1 to 4) or 144. The latter depends on a competition report and follows different proceedings carried out by different department. It is up to the Government of the day to choose the more expedient and proper method, having regard to political circumstances. Nevertheless, as the modern regulation concerning the control of IPR use tends to rely on competition principles, the Section-66 licence (unimplemented) may well fall into disuse.

#### **(v) Licences of right to secure competition**

In cases reported by the Monopolies and Mergers Commission (MMC) an anti-competitive practice is expected to operate or has operated against the public interest, involving a specified copyright matter, the owner is subject to ministerial measures (i.e., either to vary licensing conditions or provide for the availability of licence of right or both).<sup>59</sup> The power to grant licences of right in order to eliminate a violation against competition law was only introduced by the 1988 Act.<sup>60</sup> Before that, the limited power of the Secretary of State to provide for remedies in respect of the anti-competitive exercise of copyright did not include the ability to grant non-voluntary licences.<sup>61</sup>

These provisions indicate that a copyright mischief does not prevail against competition. The principle is the same as that which applies to patents. Although limited in scope, the preceding legislation<sup>62</sup> also supported this principle.

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<sup>59</sup> The measures include the cancellation or modification of the anti-competitive conditions; additionally or alternatively, a licence of right in respect of the copyright may be made available on terms settled by the Copyright Tribunal by default of agreement and on request. 1988 Act, s. 144.

<sup>60</sup> To this effect, recommendation was made by the Monopolies and Mergers Commission. MMC Report, para. 6.70, Cmnd. 9437 (1985).

<sup>61</sup> See section 10(1) of the 1980 Competition Act.

<sup>62</sup> 1956 Copyright Act, s. 27(2)-(5) only applied to performing rights. Earlier in emergency legislation, compulsory licence of copyright is available on a par with patents. Patents, Designs, Copyright and Trade Marks (Emergency) Act 1939.

The effect of the exercise of copyright on competition was obscured for a long time. The history of copyright shows that in eighteenth-century England the publishers' control of the book trade was a real source of monopoly, but the problem was not obvious. Copyright was granted to encourage the development of art and learning. In order to pursue this undisputed cause, it was fundamental, as Parliament recognised, that all rights derived from the author. Protection, however, was in fact granted against competition for the benefit of publishers. The consequential effect on monopoly in the beginning was not perceived by the courts.<sup>63</sup> Having to apply a copyright law heavily influenced by private groups, judges ended up protecting entrepreneurial interests. That was because:

*from the beginning, copyright was a statutory concept, not one of common law. And the judges in copyright cases felt themselves bound by the language of the statutes. There was, in the light of history as they understood it, little room to make careful distinctions, analyse problems, and define function. Their task was to resolve disputes under the statute, not to formulate guiding principles.*<sup>64</sup>

Obviously, the courts later played some role in construing the statute towards the need to reconcile competing interests - authors, publishers and the society.<sup>65</sup> The dimension of these interfacing interests is most conspicuous in the advent of technical developments, enabling individuals to copy copyright material in greater scale, and motivating claims for protection of new category of works (e.g., photographs, films or motion pictures, sound recordings, and more recently computer programs). The growing of copyright-based industry has given rise to matters on competition. Reflecting this concern, the 1956 Copyright Act introduced a non-voluntary licence limited to the area of performing rights. The measure was available on the grounds of unreasonable refusal to licence or refusal to licence on reasonable terms or conditions.<sup>66</sup>

The current legislation contains wider statutory power and gives the Government the authority to compel owners to deal on reasonable terms or conditions. This keeps the law

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<sup>63</sup> For a historical account, see Patterson, L.R. "Copyright in Historical Perspective", chapter 12, 1968. Nevertheless, at common law judges had a perception of copyright as "public utility", that was, "productions of the mind should be diffused as wide as possible." *Donaldson v. Beckett* [1774] 837 at 840.

<sup>64</sup> *Ob. cit.*, at p. 229.

<sup>65</sup> See, for instance, the discussion of some copyright cases by P. S. Atiyah, "The Rise and Fall of Freedom of Contract", at p. 107-109.

<sup>66</sup> Section 27 (2)(3).

abreast with modern business ethics in respect of the exercise of copyright. Due to refinements introduced to non-voluntary licensing system, the intellectual property bargain tends to rely on more detailed legal conditions, and is translated into rules and principles of competition. There has been no change in the essence of the law, that is, the use of intellectual property is subjected to statutory controls. Such control or limitations, which have existed for over two hundred years, may vary in forms or methods or opportunity, characterising a generalised non-voluntary licensing<sup>67</sup> or a system growingly based on individual merits, i.e., in the light of actual circumstances and sound proceedings. Despite the number of "copyright exceptions", the types of limitations on the exercise of owner's rights have a role apart

### 5.2.3 The non-volitional element in licensing schemes

#### (i) Historical background

The origins of the licensing scheme, which did not exist before the 1956 Copyright Act, lay on the confluence of competing interests in copyright. Firstly, there was the interest of the author of a literary, dramatic or musical work. Traditionally, writers and composers have given the right, *inter alia*, to make any adaptation, reproduce in any material form, and authorise the performing in public of their works.<sup>68</sup> Secondly, there was the interest of performing artists, including singers and musicians. Although having merit of their own, performers always had a precarious right, difficult to enforce and protection by the early legislation was made in a defective and incomplete manner.<sup>69</sup> Protection was considerably improved in a period of four decades, from the 1956 Act<sup>70</sup> to the 1988 Act,<sup>71</sup> market by

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<sup>67</sup> A generalized type of licensing includes those serve-yourself licences (in respect of sound recording and after-25-year licence), licence to republish works of deceased authors, and licence on rental of computer programs after 50 years of exploitation.

<sup>68</sup> These rights have invariably been recognized by the UK copyright law. 1911 Act, s. 1(2); 1956 Act, s. 2(5); and 1988 Act, s. 16(1).

<sup>69</sup> The 1906 Musical Copyright Act and the 1925 Dramatic and Musical Performers' Protection Act only made criminal provisions; there were difficulties to prove the offenses and these Acts did not give any civil right. See also the MMC Report on the merger situation (Warner and Chappell), Cm 301 (1988), App. 1.1, p. 57, item 3.

<sup>70</sup> The 1956 Copyright Act, as the Whitford Committee reported, gave "to the owner of the copyright in a musical, dramatic or literary work the sole right to reproduce such work in the form *inter alia* of records (including tapes and discs) and to the owner of the separate copyright in a sound recording, the sole right to control the making of further records from that recording. The maker of a cinematograph film is protected against copying for any purpose. Broadcasters are protected

interrelated technical and social concerns. For instance, technical advancements in the transmission, reception, recording and reproduction of sounds and signals, originally used in war and espionage,<sup>72</sup> have for the past half-century been employed, *inter alia*, for mechanical reproduction of musical works largely through magnetic tape and recording equipment, marking the emergence of the entertainment and recording industries. This industrial and technological expansion created social and legal problems.

Parallel to lawful trading, an increasing number of contrivances took place through illicit copying of sound recording and commercial exploitation of performances, live or broadcast. As an attempt to curb the illicit activities, legal measures were enacted to penalise those who embarked into contravening reproduction of performances and films or broadcasting of both.<sup>73</sup> Because of the easy fixation of sound and images through electronic means, the deterrent measures were difficult to enforce and thus they were found of little effectiveness. There were, for instance, practical difficulties as to the control of the basic right to produce, reproduce or publish a work or perform it in public.<sup>74</sup> The ease of technical reproduction, legally or illegally, caused considerable concern to both authors and performers.

Whilst technical developments led to a wider mechanical diffusion of public performances, authors were becoming more and more separate from their works, and performing could no longer be an unlimited right. One of the consequences, for performing artists, was that the increasing use of recorded popular music put jobs of singers and musicians in public houses (cafes, discotheques and alike) at risk.<sup>75</sup> The fear was that the progress in methods of acoustic and visual reproduction could cause the number of artists practising their art professionally to reduce.<sup>76</sup> Despite the prospect of trade expansion at international level, industrial development, for instance in broadcasting and recording, was also at stake. Through the apparatus of the electronic media performances were brought to the eyes and

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against the making of recordings or copies of their broadcasters other than for private purposes." Whitford Report, para. 295.

<sup>71</sup> Part II, Section 180 *et seqq.*

<sup>72</sup> *CBS Songs Ltd v Amstrad plc* (Lord Templeman), [1988] 2 All ER 484 at 486.

<sup>73</sup> See, for instance, the 1958 Dramatic and Musical Performers' Protection Act.

<sup>74</sup> The problem was reported in the Gregory Committee, paras. 141, 174, and considered by the Whitford Committee, para. 410.

<sup>75</sup> Whitford Report, paras. 398, 399; Gregory Report, para. 154.

<sup>76</sup> Gregory Report, para. 180.

ears of the public. Contemplating this background, the Gregory Committee faced a fundamental question, that was, "how to secure for the general public the maximum benefit of these scientific and technical developments, while at the same time providing adequate protection for those who make these developments possible."<sup>77</sup>

Reflecting on the problem, the Committee had a clear view that under all known rules "dramatists and composers were entitled to derive their income from the power to control performance."<sup>78</sup> They needed a sufficient degree of protection to produce works. However, plays and musical works are written to be performed; in being written, they attract other rights. The Committee then moved to the argument that to restrict the control of the copyright owners was inescapable.<sup>79</sup> This gave rise to the conception of a "cumulative" performer's right: a right of performers derived from public performance<sup>80</sup> and a right on behalf of the broadcasting and recording companies.<sup>81</sup>

It was the coexistence of separate but interrelated copyright interests that created the needs for the availability of licence. Refusal by any rightholder to make the due authorisation would prevent the general public from achieving maximum benefit from copyright works, and the development of the copyright-based industry would be impaired. As to the recording issue in particular, a proper balance of interests would include assistance to the industry which needed to continue to produce and sell records.<sup>82</sup> Trade expansion, however, required the tackling of piracy. In this respect, and as a practical matter, it became urgent to allow easy access on a fair basis for those firms willing to enter the sound recording market. A legal mechanism which met such a purpose would also encourage those firms which were running recording businesses illegally to compete fairly.

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<sup>77</sup> Gregory Report, para. 179.

<sup>78</sup> Gregory Report, para. 178.

<sup>79</sup> *Idem*, para. 179.

<sup>80</sup> The performer would have "protection against copying the characteristics of his performance, and [...] to control the use made of his performance, for example its recording and the purpose to which the recording are subsequently put." Gregory Report, para. 168.

<sup>81</sup> Gregory Report, para. 177.

<sup>82</sup> For an account on the features of the UK music industry and the bargain between publishers and singer/songwriters, see: MMC Report on the Warner/Chappell merger, Cm 301 (1988); MMC Report on Collective Licensing, Cm 530 (1988); *AIRC and Another v PPL and BBC* [1994] R.P.C. 143 at 159.

## (ii) Residual compulsoriness

Under the 1956 Copyright Act, the Performing Right Tribunal had the ability to confirm or vary licensing schemes,<sup>83</sup> in a given situation, e.g., when a licence to perform the work in public, in the statutory meaning, in respect of the copyright in a musical work was unreasonably refused, or the terms made available were not reasonable.<sup>84</sup> Expanding the statutory jurisdiction, the 1988 Act altered the Tribunal's mandate and the scope of the licence, but determined that licences have to be operated predominantly by collecting societies.<sup>85</sup> The licensing scheme, however, is a legal refinement of non-voluntary licensing in the way and to the extent that it retains an element of compulsoriness.

The legal policy underlying the licensing scheme is this: (a) as a general principle, access to intellectual property on a fair basis cannot be denied unless the rightholder has a reasonable excuse; (b) in exercising control over reproduction in any material form and over performance of works in public, authors have the right to establish in first place the reasonable terms and conditions under which that access is made available for a plurality of willing licensees or users; (c) where the interested parties fail to operate these rules accordingly, a statutory body may act upon reference or be compelled by duty to intervene.

A first observation is that a licensing scheme is in its origin a private agreement. This, however, by no means follows the general proposition, adverse to compulsory licensing, that individual owners should be allowed to contract with whoever they wish.<sup>86</sup> Objection, however, has to be taken to an outmoded unfettered freedom of trade, mainly in intellectual property where rightholders, committed to a social bargain, are not absolute masters of their consent. In this connection, the private element is rather overridden "either in the interests of

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<sup>83</sup> Article 25(5).

<sup>84</sup> Licences covered "copyright in literary, dramatic or musical work, or in a sound recording or a television broadcast." 1956 Act, S. 24(2).

<sup>85</sup> The Performing Right Tribunal was replaced by the Copyright Tribunal. The jurisdiction covers "licences to do, or authorise the doing of, any of the acts restricted by copyright." The mandate include an order about the proposed scheme deciding either "generally" or upon the points the reference relates to. The licensing scheme can also be operated by an individual person. See 1988 Act, ss. 149, 145(1), 143, and 118(3).

<sup>86</sup> Although authors or collecting societies may exclude works from licensing schemes, the exclusion has to be at least reasonable or justifiable otherwise it may be challenged. 1988 Act, ss. 66 (not in force), 137, 138, 140, 141 and 144.

a majority, or to give effect to values which a majority believe to be of overriding importance."<sup>87</sup>

As an instrument of intellectual property order, the licensing scheme attracts interests from the business community, represented either by the licensing body, which operates the "scheme", or by a representative organisation of willing licensees. It is therefore in the very notion of licensing schemes that the scope of the collective agreement is in the first place offered or open to a community assessment. At the heart of the legal structure of the "scheme" lies the assumption that the collectivity of commercial organisations gathers the best judges about the reasonableness of the "scheme". If in the interest of them the "scheme" is reasonable, it is presumed to be so in the public interest. This has the effect of rejecting the individualism as a central element of free consent.<sup>88</sup> In this respect, the conceptual structure of the licensing scheme goes beyond its practical purpose, that is to facilitate copyright market between a plurality of users and owners.<sup>89</sup>

In reducing the rightholder's freedom to licence, the licensing scheme by its nature differs essentially from the classical sense of private agreement, which is normally associated with the idea that, natural market conditions apart, dealers have a wide freedom of choice to contract. To what extent such a freedom can reasonably be, it cannot be suggested. However, it is certainly correct to argue that a limited freedom of trade has to accord with the conflicting interests involved, and in accordance with them the reasonableness of the scheme is assessed.

The anti-competitive exercise of intellectual property is incompatible with a sense of social bargain. This general proposition makes unsuitable a proposed licensing scheme which in effect does or may potentially lead to disruption of competition. In this connection, a refusal to license is primarily a matter of statutory concern. Unless otherwise justified, the refusal is anti-competitive, and thus unreasonable, as far as it leads to preventing prospective entries,

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<sup>87</sup> See Atiyah, P. S. (1988) *The Rise and Fall of Freedom of Contract*, p. 726. The importance of the interests of the majority has determined the decline of the freedom to contract.

<sup>88</sup> *Idem, idem.*

<sup>89</sup> In the area of performing rights, the experience shows that individual negotiations are unpractical. Collecting organisations have proved to be greatly handy, instead, making the user/owner relation easier. Concerns, however, have been raised as to operational practices of collecting societies, which have been involved in allegations of monopoly and collection of excessive tariffs. Whitford Report, paras 389-401.



eliminating or hampering competitors or discriminating among them. In regard to these criteria, the Tribunal has to apply the "social bargain" test, by answering the question - does confirming or varying the scheme make society better off? In searching for a proper answer, the Tribunal has the opportunity to consider efficiency criteria informed by competition principles and economic concepts, but the Statute rules out no "relevant considerations,"<sup>90</sup> implying that arguments on grounds of social welfare or public policy may apply. This suggests that adjudication on a licensing scheme does not necessarily have to follow rigid concepts of competition or economics.

State intervention either through the Tribunal or reference made by licensing body or representation of licensees, is symptomatic of the residual compulsoriness of the licensing scheme. More significant yet is that representation of rightholders cannot block a reference to the Tribunal made by a representation of willing licensees.

As a refinement of non-voluntary licensing, the licensing scheme is a remarkable legal improvement in many senses. As it is formulated statutorily, the licensing scheme allows a great deal of involvement of the business community. This makes the scheme a quasi self-regulated arrangement<sup>91</sup> designed to make copyright works readily available on request and on fair grounds. As a consequence, state intervention is minimal.

As a legal tool suitable for addressing practical problems of competing interests related to copyright and high technology, licensing schemes seem to be very desirable for the achievement of the social bargain. Such an achievement is a major concern in the field of patent law.

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<sup>90</sup> 1988 Act, s. 135.

<sup>91</sup> The statutory copyright licensing scheme may have drawn inspiration from private patent policy adopted by industry associations after the Second World War. Arrangements were made by, for instance, the Cable Makers Association, the Covered Conductors Association, and the Independent Cable Makers Association, for the purpose of making patents available for their members and non-members on equal conditions and terms. For information, see The Monopolies and Restrictive Practices Commission Report on the Supply of Insulated Electric Wires and Cables, [1951-52] 10 Reports Commissioners & c., pages 23, 24, 50, and 88.

## 5.3 Unauthorised use of patents

### 5.3.1 Fundamentals of patent safeguards

#### (i) The early foundation

The immediate scope of patent is to protect inventors against infringements. In Britain, statutory protection came about under the premise that a patent was a singular monopoly granted for the public benefit. From this rationale, theoretical justification gradually supported unauthorised use of inventions as a means to secure technical catch-up and trade development. Therefore, statutory protection was, as it has always been, very linked to a sense of safeguards, in the way that protecting inventions against infringements and safeguarding the public interest were a twofold function of the patent as a complex concept.

In seventeenth-century England all monopolies were declared void, but an exception was made as to the validity of letters patents granted to the "true and first inventor" for a limited term.<sup>1</sup> The 1623 Statute discouraged but did not prohibit the formation of monopolies which would be supervised and examined under common laws. At that time the existence of monopolies was a matter for concern and, nevertheless, a fact of the country's economic life.<sup>2</sup> In such a context the association of patent with the idea of monopoly was a point of legal contrast. Although largely tolerated in practice, monopolies were statutorily disallowed. While a formal ban made monopolies unpopular, patents were a valid monopoly excluded from the official bar.

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<sup>1</sup> The Statute of Monopolies 1623, Articles 1, 2, 6.

<sup>2</sup> The 1503 Statute of Henry VII, Ch. X, struck at those letters patents granted for term of life making them void and of no effect. They were an element of privilege rather than individual rights. An introductory explanation to the Article 1 of the 1623 Statute informs that despite the King in 1610 had declared all monopolies contrary to his laws unduly monopolies had been granted. It has been reported that abusive granting of patents were more pronounced in Tudor times (Mr. Justice Ackner, J. in *Hoffmann-La Roche & Co. A.G.'s Patents* [1973] R.P.C. 130, at p. 137). Royal grants of monopolies in consideration of grace or favour, or to increase the royal revenue were a matter for attrition between Her Majesty and the Parliament which was keen on observing the constitutional principle of freedom of trade which the King had no power to alter. In this respect see 77 E.R. 12 Co. Rep. 74 *The Zamora* (1916) 2 A.C. 77 at 90.

As an exceptional monopoly, patents were to be, nevertheless, under control. This command was part of the foundation of the statutory protection. Although the 1623 Statute did not set up specific measures as to the use of inventions, it limited the scope of the patent and provided a legal basis for its control. In this respect, the Statute established that the patent could last no longer than fourteen years and only for the working and making of a "new manufacture", and that the patent could not be used as a pretext to raise "prices of commodities", hurt trade or otherwise be inconvenient.<sup>3</sup>

As it entailed a sense of limitation to the patent-monopoly, the 1623 Statute became an inspiring theoretical source, supporting the perception that it was legitimate to get from the patent the best benefit for the public. This leads to another ground rule underlying patent safeguards: a patent is granted on the understanding that it will, without undue delay, be worked on a commercial scale to the benefit of the public as a whole. This legal principle comes from ancient common law. According to it, with no consideration to the public benefit there was no valid monopoly. This principle has been recognised a number of times. In an illustrative case,<sup>4</sup> the House of Lords confirmed that the substantive right of letters patent conferred by the Crown was "generally described as a monopoly" regulated by the Statute of Monopolies but limited at common law. *As a derogation from the common right of freedom of trade, [a monopoly] could not be granted without consideration moving to the public.*<sup>5</sup>

As an exception to the principle of freedom of trade,<sup>6</sup> the patent monopoly was designed much more to encourage manufacture within the country than to encourage creation of inventions. It was concerned with the disclosure of information about new and useful articles or processes. As an institution founded in the interest of the public, the patent was granted also on the assumption that it was not to be used as a basis for restraint of trade, nor was not to be operated unreasonably to the public injury.

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<sup>3</sup> The 1623 Statute, Article 6.

<sup>4</sup> *Attorney-General of the Commonwealth of Australia v. Adelaide Steamship Company, Limited* [in short A-G Australia], (1913) A.C. 781, statement of Lord Parker of Waddington at p. 793.

<sup>5</sup> A-G Australia, (1913) A.C. at 794.

<sup>6</sup> It has been suggested that a free trade sentiment has its primary source in the Magna Carta, and had two-legged defence. It was either in favour of merchants in those days oppressed by feudal barons, or of interest of the later who encouraged foreign traders. See T. Plucknett, *Taswell-Langmead's English Constitutional History*, 11th ed., p. 83.

The notion of public benefit to which the patent should serve has always been part of the law of the land. It derived from the wording of the "Form of Patent" attached to the 1883 patent statute.<sup>7</sup> The principle was also introduced in the text of 1919 patent statute<sup>8</sup> in a provision which was later repealed, but its matrix is still in force.<sup>9</sup> As a ground rule, the principle today stands as a comprehensive proposition underlying those provisions<sup>10</sup> governing statutory safeguards.

## (ii) The technical connection

As far as inventions are concerned, safeguarding provisions has long been part of the country's catching-up policy, aiming at keeping the pace of industrial progress. In this respect, Great Britain seemed to lag behind the Continent at different points in time, from the Middle Ages to the current century. The superiority of neighbouring nations apparently caused the country to build up an attitude of competing ambition.<sup>11</sup>

As H. Fox points out, during the Middle Ages the Continent experienced superior material progress than that of England, which moved from an agricultural society to the textile industry fostered by regulations aimed at self-sufficiency.<sup>12</sup> More recently,<sup>13</sup> reports show

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<sup>7</sup> The relevant portion of the Form reads as follows: *and also if the said patentee shall not supply or cause to be supplied for our service all such articles of the said invention as may be required by the officers or commissioners administering any department of our service in such manner, at such times, and at and upon such reasonable prices and terms as shall be settled in manner for the time being by law provided, then, and in any of the said cases, these our letters patent, and all privileges advantages whatever hereby granted shall determine and become void notwithstanding anything hereinbefore contained.* Excerpt from the "Form D" attached to s. 33 of the 1883 Patents, Designs and Trade Marks Act repealed by the 1907 Act.

<sup>8</sup> The principle was clearly stated in s. 27(2)(e) of the 1907 Patents and Designs Act, as it was amended by the 1919 Act, reading: *it shall be taken that patents for new inventions are granted not only to encourage invention but to secure that new inventions shall so far as possible be worked on a commercial scale in the United Kingdom without undue delay.* The whole 1919 Act was repealed by the 1949 Patents Act (sch. 2).

<sup>9</sup> The matrix is the Statute of Monopolies s. 6. This provision embodies the concept of invention, and was confirmed by (a) the 1949 Patents Act, s. 101, and (b) the Patents and Designs Act 1932, s. 3 [or 1907 Act, s. 25(2)(d)]. These provisions are not listed as repealed by the 1977 Patents Act, sch. 6.

<sup>10</sup> Since the 1949 Act the safeguard regime was expanded, so as a range of more detailed rules furnishes a large basis for the public benefit principle, assessed under the discretion of the comptroller. See 1949 Patents and Designs Act, s. 18(1)(a), and 1977 Patents Act, s. 50(1)(a).

<sup>11</sup> Owing to the lack of sufficient data, it is hard to establish that the patent safeguards came up as a result of an ambition to compete with neighbouring nations, such as France and Germany. The fact that technologically Great Britain has always lagged behind those countries, however, suggests that at least there was a state of need to justify the enactment of patent safeguards.

<sup>12</sup> Harold G. Fox, *Monopolies and Patents: a study of the history and future of the patent monopoly*, p. 30, 1947.

that Great Britain was behind rivals in keeping pace with development. Such performance is reflected, for instance, in patenting. In the 1880s, when the numbers of patents grew rapidly, the trend was one of gradual growth, but the picture changed considerably by the turn of the century. In the chemical industry in particular, which accounted for a large proportion of patenting, Britain had a set back in comparison with Germany. In the decade after the turn of the century, in the overall level of the US chemical patenting in the ten most significant classes "Germans had taken out 1754 patents [against] only 212 British."<sup>14</sup> Although it cannot be concluded that this background led to the creation of patent safeguards, as legal tools to foster technical progress, the existence of a technological gap together with that competing attitude at least suggests an association of the development of patent safeguards with a catching-up policy.

The link between patent safeguards and the desire to catch up with technical development is further suggested from the attitude of the Government before the increasing violation of competition. Before the turn of the nineteenth century, a monopoly-led widespread mood was evident both in America and Europe. The alarming scale of the phenomenon caused great astonishment to economists and politicians, who supported responsive measures. The US Congress passed the 1890 Sherman Act, which was designed to penalise those engaged in anti-trust practices. In the same period, Britain was to some extent being affected. The British chemical industry, for instance, was severely impaired as a result of an astute patent policy carried out by German chemical firms which relied on patents as an extension of cartel arrangements. Despite these facts, the example of the US Congress was not convincing to the British Government. Perhaps the Country had a distinct perception of the problem, tackling it in its own way. Intriguingly enough, nevertheless, the Government continued with no clear policy against competition violations, making its mind up only after the Second World War.<sup>15</sup> Instead, the Government preferred to set out a safeguarding policy whose effect was to allow

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<sup>13</sup> During the period from 1870 to 1913, the difference in growth and technological levels is mainly contrasted with those of Germany and the USA. Tylecote, *The Long Wave in the World Economy*, pp. 218 and 226. The commercial rivalry with those two countries is also accused by David Reynolds, *The Creation of the Anglo-American Alliance 1937-1941*, p. 291.

<sup>14</sup> Jonathan Liebenau (also editor), "Patents and the chemical industry: tools of business strategy", p. 139, in *The Challenge of New Technology, Innovation in British Business Since 1850*, GOWER, 1988.

<sup>15</sup> The 1948 Monopolies and Restrictive Practices (Inquiry and Control) Act was an initial step taken on a trial basis.

firms to capitalise on foreign patents. Was it a subtle understanding of a short cut to pursue technical innovation? There is no evidence of such a link, but the facts are obvious. Economic and political circumstances, as well as an increasing claim for state interference, provided for the right opportunity to set out a general policy against the increasing tendency to competition violations. A specific statutory control over patents was put in place, instead.

### **(iii) From thoughts to statutory control**

Prior to the last quarter of the nineteenth century the idea of patent safeguard as it is here applied was inconceivable. There was a statutory concept of patent limited by its own function, but no provision existed to allow in practical terms the compulsory use of an invention for purposes such as domestic industrial progress, and wider availability of a product at reasonable price for the benefit of the public as a whole. The dominant legal thought of the time was founded on a dual scheme of privileges or exclusiveness and a broad and ambiguous principle of freedom of trade.<sup>16</sup>

It took some centuries from the time protection for inventions was made available in Europe to the statutory recognition of the interest of third persons in a patent. Only in 1852 a provision was for the first time introduced into an amendment to the patent law which determined that:

*Notwithstanding any Proviso that may exist in former Letters Patent, it shall be lawful for a larger number than Twelve Persons hereafter to have a legal and beneficial Interest in such Letters Patent.*<sup>17</sup>

The patent law, nevertheless, provided no practical measures either for one to exercise that interest, or to question the patent's exclusive right. It was only in 1883 that the conduct of a patentee in the exercise of his monopoly right could be challenged on statutory grounds.<sup>18</sup>

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<sup>16</sup> It was an infant legal stage based on a mixture of protectionism and move towards a free economy. To a certain extent, this thinking basis has an influential impact on the regime of patent safeguards.

<sup>17</sup> S. XXXVI of the 1852 Patent Law Amendment.

<sup>18</sup> The challenge of the patentee conduct was made possible as a result of the 1883 Patents, Designs and Trade Mark Act, s. 22 (main provision). See statement of Mr Justice Luxmoore J. in *Browne Wireless Co. Ltd's Patent*, [1929] XLVI R.P.C. 457 at 469.

The event coincided with the emergence of changing thoughts and attitudes which influenced the economic and political life of the country.

The introduction of statutory provisions allowing third persons to use a patent without the consent of the owner was a contribution to the problems raised by monopolies and anti-competitive behaviour in the last two decades of the nineteenth century. At that time, the safeguarding move in patent law was distinct in the way it contrasted with a laissez-faire state and a freedom of contract strongly reflected in the legal infrastructure of the time. These doctrines were regarded as failures on several counts. For liberal forces, they did not respond to contemporary problems, such as social inequality and market disarray. Moreover, they were found to be lacking by social and political theorists when put to the test. In addition, they allowed monopolies to prosper freely. Therefore, the mood of the time was conducive to the emergence of a safeguarding policy.

Growing industrial concentration took place in England during the latter half of the nineteenth century. It involved practices of restrictive arrangements, such as market sharing, quota and price fixing, and resale price maintenance. As this monopolist tendency moved beyond national frontiers, the formation of transnational corporations led to "squeeze out competitors almost anywhere."<sup>19</sup> Two theoretical elements were blamed for such development: the laissez-faire doctrines and the principle of freedom of contract, which to a certain extent worked as restricting forces against state interference.

In a time of visible social inequality, politicians and social theorists started demanding social reforms, which required state interference, using legislation as a means of distribution, in order to protect underprivileged. In their efforts to turn the scale, they undertook to remove those theoretical obstacles. They considered freedom of trade as an instrument which tended to perpetuate inequalities.<sup>20</sup> The criticism also included laissez-faire doctrines, to the extent that they supported a non-interference policy. Describing this development, Atiyah observes:

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<sup>19</sup> P. S. Atiyah, *The Rise and Fall of Freedom of Contract*, at p. 617

<sup>20</sup> Joseph Chamberlain and Alfred Marshal were prominent politicians who forcefully argued that in many situations "laissez-faire did not actually produce the maximum public advantage." Atiyah, *ob. cit.*, p. 615.

*It came to be said that liberty was not merely a negative concept, but had also a positive side to it. Traditional freedoms, like freedom of contract, had over-stressed the negative side, but for those who could not benefit from these freedoms, freedom of contract was no better than freedom to starve. Positive freedom, by contrast, was not freedom from restraint, or indeed, freedom from anything; it was the freedom to do something worth doing, to achieve the self-fulfilment of which the individual was capable.*<sup>21</sup>

Moving on to the legal system, the criticism was that while restraints in trade were made unenforceable, the policy then in place allowed entrepreneurs to merge, and that it was a paradox of English law to have "a restraint of trade doctrine, but no anti-monopoly doctrine."<sup>22</sup> The most aggressive spirits came to regret the "lack of common sense and knowledge of business"<sup>23</sup> of the legal members of the House of Lords. This in some sense denounced the judicial policy embodied in "the idea that all contracts should in principle be enforceable, at least in the absence of plain illegality."<sup>24</sup> Assuming that "free competition required them to abstain from interference in what they saw as a mere move in a competitive struggle, [judges] did not see how they were to draw a line between fair and unfair competition, or normal and abnormal competition."<sup>25</sup> The unsteady judicial attitudes reflected the ambiguity of doctrines in transition.

Concerning the 1880s laissez-faire, a distinguished politician wrote: "Trade was free. But hunger and squalor and cold were also free and the people demanded something more than liberty."<sup>26</sup> While political thinking shifted from negative to positive freedom, the role of the State was to be modified. Changes in attitudes would lead to legitimate State interference, making easy the passing of liberal legislation.<sup>27</sup> If such an age of laissez-faire existed, it had then come to an end.<sup>28</sup> In tune with these changing attitudes, a safeguarding policy was born in the right time to respond to the unscrupulous use of the patent system by German firms.

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<sup>21</sup> P S Atiyah, *The Rise and Fall of Freedom of Contract*, p. 586.

<sup>22</sup> *Idem*, at p. 617.

<sup>23</sup> The reference found in *Memorial of Alfred Marshall* has been quoted from Atiyah, *ob. cit.*, p. 617.

<sup>24</sup> See Atiyah, at p. 697.

<sup>25</sup> *Idem*, at p. 698.

<sup>26</sup> Winston Churchill, passage from the biography of his father, Lord Randolph Churchill, written by the former. Quoted from Atiyah, *ob. cit.*, p. 587.

<sup>27</sup> For instance, in the late 1880s the rights of landlords were overrode in the interests of tenants, in 1903 taxes were imposed on riches to pay old age pensions. Atiyah, *ob. cit.*, p. 587

<sup>28</sup> The laissez-faire doctrines were propagated by A V Dicey. Dicey's critics strongly regard these doctrines as a myth and a misconception. By the end of the First World War the faith in the laissez-faire state had faded. For more information, see Atiyah, *ob. cit.*, at p. 231-247 and 625.



The monopolist strategy of German chemical industry became part of the patent history. They used "the patent system as weapon in their attempt to secure the markets by blocking domestic competition from American manufacturers. Along with this strategy, they used their powerful market position to compel foreign firms to join them in international control or cartel agreements in which patents played an important role."<sup>29</sup> Apart from taking out patents, the strategy also was to claim "closely related patents", [thus exercising a] "tight control over a product area or production process."<sup>30</sup> Giving a historical account of this business strategy, J. Liebenau observes that:

*In the USA this strategy took advantage of the patent law which tolerated patents as instrument for monopoly and cartels, while other forms of anti-competitive behaviour had been ruled illegal. In Britain most of the practices covered by the American anti-trust Act violated no law, but patents were seen as one of the most useful means of maintaining control over foreign selling and licensing arrangements.*<sup>31</sup>

Within this overall background, it was not surprisingly that the 1883 Patent Act was held, overtly, as an instrument to guard against the unfair German tactic of protecting but not manufacturing their products.<sup>32</sup> Not manufacturing their patents nor allowing Britons to do so, German chemical firms were blamed for "the premature ruination of the British dye industry."<sup>33</sup>

The point of view that the British industry was being destroyed by unfair behaviour led Parliament to introduce legislation for the compulsory working of foreign patents in the country<sup>34</sup> as an obligation of the patent owner. Since then the legal framework about patent safeguards has been gradually developed and adapted to new legal conditions, suggesting an expansion in parallel with technological paradigms. The legal development<sup>35</sup> has moved

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<sup>29</sup> See Jonathan Liebenau, *The Challenge of New Technology*, p. 144. By 1890, the three leading German firms (Bayer, BASF, and Hoechst) owned together 66 per cent of all German-held US chemical patents.

<sup>30</sup> *Idem, idem.*

<sup>31</sup> *idem, idem.*

<sup>32</sup> *Idem, idem.*

<sup>33</sup> *Idem, idem.*

<sup>34</sup> *Idem, at p. 146.*

<sup>35</sup> Legislation relevant to the development of patent safeguards: 1852 Patent Amendment Law; 1859 Patent Amendment Law; 1883 Patents, Designs and Trade Marks Act; 1902 Patents Act; 1907 Patents and Designs (Amendment) Act; 1919 Patents and Designs Act; 1932 Patents and Designs Act; 1938 Patents (International Conventions) Act; 1939 Patents, Designs, Copyright and Trade Marks (Emergency) Act; 1942 Patents and Designs Act; 1946 Patents and Designs Act; 1949 Patents Act; 1949 Registered Designs Act; 1977 Patents Act; 1988 Copyright, Designs & Patents Act, Sch. 5, paras. 12 to 16.

toward the setting of appropriate conditions on which patent safeguards rely. The degree of detail of these conditions implicitly unveils an attempt to define and redefine a standard of public interest in the exercise of patent rights, and organise a legal machinery<sup>36</sup> for the enforcement of the relevant safeguarding provisions which have undergone considerable elaboration. In this respect, the legislation has departed from a broad public interest test to the establishment of more specific conditions, under which individual firms and the Crown are entitled to make use of patents without the consent of the patentees.

Through government assistance, the underlying policy has invariably been to subject patents to societal control for industrial development, improving exports, and supporting welfare-state programmes, by encouraging entrepreneurs to increase domestic production and promote technical innovations and technology exchange, and "making food, medicine and surgical or curative devices available to the public at the lowest possible price."<sup>37</sup>

Next sections will cover different categories of statutory measures in two periods of time,<sup>38</sup> with the purpose of showing the evolution of a safeguarding policy, and its essential principles and features.

### **5.3.2 Remedial measures 1883-1946**

#### **(i) Crown use: legal rules and practices**

In principle the Crown was bound to comply with patent law. However, in practice it was a fairly flexible provision,<sup>39</sup> aimed at securing compensation to the patentee against the right conferred to the Crown to use a patent for its service.

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<sup>36</sup> The development of the enforcing machinery is of independent value for the improvement of safeguards, not only in terms of improvement of quality decision-making but also for the reason that cases can be used as a catalyst element for political review.

<sup>37</sup> Board Of Trade, Patents and Designs Acts - Second Interim Report of the Departmental Committee, p. 14, Cmd. 6789, 1946.

<sup>38</sup> Each set of statutory measures issued in successive periods of time suggests a degree of complexity and an impact of circumstantial elements (e.g., economic, technological and war factors, and competition problems), which intend to affect specific interests such as patent use and enforceability.

<sup>39</sup> Section 27 of the 1883 Patents, Designs, and Trade Marks Act.

Prior to the 1883 Patent Act, the Crown was entitled to use any invention without compensation. As a matter of practice and *ex gratia* the patentee, nevertheless, was paid for such use. There was a sense of justice according to which individuals could not be simply deprived of the right upon their properties. Reflecting the old practice, the statute affirmed the Crown's right to take the invention and pay. Ordinarily, this right applies in times of peace and in emergencies and periods of hostility.<sup>40</sup>

### Legal principles

On account of the Community's needs and war affairs, detailed provisions were made on grounds of public interest to justify the patent use for defence and related purposes. From the legislation a number of legal rules stand out to define the public interest related to an invention. It included:

- *an invention which, by reasons of its particulars and the manner it is performed, represented a valid contribution for improvements of war instruments and munitions;*<sup>41</sup>
- *inventions necessary for or in connection with the production of any article essential for the needs of the community in the event of war;*<sup>42</sup>
- *the supervenience of war does not make invalid, null or void an existing IPR licence involving an enemy right holder, unless specific rules provide otherwise;*<sup>43</sup>
- *provided that the interest of the Crown is satisfied, the authority may grant limited licences under proprietary right of enemies;*<sup>44</sup>
- *provided that the interest of the Crown is satisfied, the authority may grant patents for the benefit of the enemy inventor;*<sup>45</sup>
- *under conditions deemed fit by the authority, time limited under the patent regime may be extended on war circumstances;*<sup>46</sup>
- *prohibition of publication of patent specifications, where an application has been abandoned by enemy applicants, shall not apply during the war period;*<sup>47</sup>
- *the authority may refuse an application for a patent or registration of a design invented or designed by the enemies in an enemy territory during the period of hostility.*<sup>48</sup>

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<sup>40</sup> About period of hostilities, see "period of emergency" or "war period" in Patents and Designs Act 1942, s. 2(1B); Patents and Designs Act 1949, s. 30(2); and Patents Act 1949, s. 49(2).

<sup>41</sup> 1859 Patent Law Amendment Act, s. 1, 3; 1907 Patents and Designs (Amendment) Act, s. 21; 1907 Patents and Designs Act, s. 30.

<sup>42</sup> 1939 Ministry of Supply Act, s. 2(3) and 19(c); 1942 Patents and Designs Act, s. 2(1).

<sup>43</sup> 1939 Patents, Designs, Copyright and Trade Marks (Emergency) Act, s. 1.

<sup>44</sup> 1939 Patents, Designs, Copyright and Trade Marks (Emergency) Act, s. 2. 1914 Patents, Designs, and Trade Marks (Temporary Rules) Act, s. 1.

<sup>45</sup> 1939 Patents, Designs, Copyright and Trade Marks (Emergency) Act, s. 4. 1914 Patents, Designs and Trade Marks (Temporary Rules) Act, s. 1.

<sup>46</sup> 1939 Patents, Designs, Copyright and Trade Marks (Emergency) Act, s. 6; 1942 Patents and Designs Act, s. 1; 1946 Patents and Designs Act, ss. 1, 6.

<sup>47</sup> 1946 Patents and Designs Act, s. 5.

<sup>48</sup> 1946 Patents and Designs Act, s. 3, 4.

Although the circumstances of war, characterising a situation of national emergency or extreme urgency, entitled the United Kingdom to use a patent, the obligation to pay was on several occasions put under discussion. In the singular event of hostility, the use of the invention is a lawful act exercised by the Crown under the royal prerogative<sup>49</sup> statutorily regulated. The legal consequences of this act depend upon the qualification of the inventor, whether he is a British national, an enemy or non-enemy.

Ordinarily, both national and foreign (non-enemy) inventors have the right to compensation as to patented inventions. In principle, the enemy has no such right. To the satisfaction of the Crown, however, the authority may confer a limited right to the enemy patentee. Whatever the qualification of the inventor, his right to compensation against the Crown, if any, is a precarious one in two senses. Firstly, the amount due to the inventor for the use of the Crown in the period of hostility does not fall into the concept of full compensation, that would be the amount offered by a willing licensor to a willing licensee bargaining on an equal footing. The amount paid for the compulsory assignment of the invention rather represents an arbitrary and a notional remuneration assessed under the discretion of the Crown. Secondly, in practical terms the claim put forward by the applicant is classified as an equivalent petition seeking a payment *ex gratia*, rather than a legal challenge against the Crown submitted to the court entertainment.

The principles governing the use of a patent by the Crown in war time were, in summary:

- *in war time the use of an invention by the Crown on grounds of defence gives to the inventor right to compensation as an ex gratia award without any right to sue the Crown;*<sup>50</sup>
- *the national courts have no power to review the amount assessed under the discretion of the Crown for awards to inventors and as a result of claims arising out of war.*<sup>51</sup>

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<sup>49</sup> Prerogative is applied with the meaning of a statutory power conferred to the Crown with exclusivity. The use in war time of a foreign invention under the command of the Crown could be legally classified as an act of state. As such, the foreign patentee would have no right against the Crown to claim compensation. For some legal thoughts on royal prerogatives see: *Nissan v. Attorney-General* [1970] AC 179 and [1967] 2 All E.R. 200; *Burmah Oil Co. v. Lord Advocate* [1964] 2 All E.R. 348.

<sup>50</sup> This principle is supported by authorities in similar cases, such as *Burmah Oil* and *Nissan* (see previous footnote), and *Attorney-General v. de Keyser's Royal Hotel* [1920] AC 508. The court had, indeed, limited power to declare rights and quash any abuse or excess of power committed by officials on behalf of the Crown whose discretion, nevertheless, to assess the amount of compensation through an administrative tribunal was left untouched. In the *Burmah* case, for instance, the amount payable was left undecided.

<sup>51</sup> *Idem*.

These principles were mainly supported by the controversial section 29 of the 1907 Patents and Designs Act as it was amended by the 1919 version.<sup>52</sup> After some doubts arising from the wording of the head (2) of the ambiguous section, the court established that no private party had the right to challenge the Crown, and the court had no power to entertain any substantial dispute without the consent of the parties. The mere right of compensation due to the patentee or inventor was to be exercised by means equivalent to a petition of right.<sup>53</sup>

The alteration in law referred to above was applied retrospectively<sup>54</sup> and was deemed to confer to the Crown the discretion to refuse or give jurisdiction to the court, which eventually was substituted by a special tribunal<sup>55</sup> which had to report to the Treasury. Ultimately the Treasury was the adjudicating authority, and that purposely reduced, as one may suggest, the consideration to compensation for the use of invention by the Crown during the war periods. The Crown, in effect, was made judge in causes of its interests; the impact of that, nevertheless, was smoothed by the creation of two Royal Commissions to hear claims regarding the use by the Crown of patented and unprotected inventions, designs and processes arising out of the World Wars I & II.<sup>56</sup>

### **Practices of the Royal Commissions on Awards to Inventors**

Setting the first Royal Commission after the First World War, the 1919 Royal Warrant in practical terms confirmed the principles specified above. The Warrant dealt with the power conferred to the Commission and the basic standards governing its office. Acting upon the request of the Treasury, the Commission had limited power in the sense that it consisted of: (a) enquiry into the circumstances of the case, and (b) making recommendations as to the proper remuneration to pay. Later and *viz* the 1920 Royal Warrant, the Commission was

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<sup>52</sup> The 1919 Patents and Designs Act, s. 8.

<sup>53</sup> *Rowland and Kennedy v. Air Council* [1927] XLIV R.P.C. 453 at 461.

<sup>54</sup> Against the retrospective application see opinion of Sargant J. in *Hale's Patens* [1920] XXXVII R.P.C. 171 at 175.

<sup>55</sup> The tribunal was the Royal Commission on Award to Inventors referred to below. And as a result of the substitution, there are today only a few law cases reported.

<sup>56</sup> Sitting for over 17 years, the 1919 Royal Commission was referred 1,834 claims. The 1946 Commission worked for 9 years and in all received 729 claims. See 1919 Commission Final Report, 1937: Cmnd. 5594, and Address delivered on 18th March 1960 by Lord Cohen, the Chairman of the 1946 Royal Commission, after the Annual Dinner of the Holdsworth Club, University of Birmingham, 1960.

given authority to investigate and settle disputes, including power to decide on questions of infringement and patent validity under consent of the Government Department concerned.<sup>57</sup>

Owing to the fact that the majority of the inventions used for the purpose of defence was under secrecy, the Commission had no liberty to disclose its opinion. The chairman was allowed only to report the proceedings under the Commission, and from time to time to report to the Treasury the Commission's opinions under hand and seal.<sup>58</sup> Whether that circumstance had any consequential impact on the assessment of the compensation for the use of inventions is unknown.

The discretionary character of the rewards derived primarily from the explicit terms of the Royal Warrants. The payment *ex gratia* was made on a voluntary basis<sup>59</sup> and in a sum asserted entirely within the discretion of the Crown. The 1919 Royal Warrant stipulated a compensation as a strict right for patented inventions (head 1), and *ex gratia* payments for the use of unpatented inventions of exceptional utility (head 3). In the later situation in strict legal terms no monopoly against the Crown existed, and the proviso of the head 3 did not fall into section 29 of the then patent regime which dealt with the remuneration of patented invention. Nevertheless, there was no essential difference, apart from academic, in the treatment by the Commissions of the two situations described in heads 1 and 3.

The *ex gratia* reward was not only followed by the practices of the Royal Commissions. The principle was also consistent with the 1946 Agreement between the United Kingdom and the United States of America on Interchange of Patent Rights and Information.<sup>60</sup> Concerned with patent procurement, the Treaty did not recognise any right on any nationals of either

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<sup>57</sup> 1920 Royal Warrant, s. 3. The 1946 Royal Warrant creating the Royal Commission on Awards to Inventors after the World War II was drafted *mutatis mutandis* in the line with the two previous Warrants.

<sup>58</sup> For that reason there are no data available as to the precise number of awards recommended by the Commissions.

<sup>59</sup> Ordinarily the award was limited up to the sum of £50,000 (1919 Royal Warrant, s. 1). As to the nature of the rewards, the Warrant reads: "... though not conferring any monopoly against the Crown or any statutory right to payment or compensation, may nevertheless appear from their [the inventions] exceptional utility or otherwise to entitle the inventor, author or owner thereof to some remuneration for such use... the Commission may, on the request of the Treasury, enquire into the circumstances of the case and may make recommendation." (Section 3.) See Royal Commission on Awards to Inventors, First Report, Cmnd. 1112, 1921 and Second Report, Cmnd. 1782, 1922.

<sup>60</sup> The 1946 US-UK Patent Interchange Agreement

country to sue the respective Government to assert any claim,<sup>61</sup> and made no distinction as to the condition of the inventions, whether patented or not, used by both countries in both periods of hostilities.

### **The interest beyond the war spectrum**

For several reasons, it was in the interest of the Crown to pay for the use of non-patented inventions which were the majority.<sup>62</sup> Above all, there was a moral aspect in some way to compensate the efforts of those who to a certain extent had contributed to the prosecution of the war. Beyond this, there was an interest in tracing the inventions with potential application to industry, and protect them against foreign appropriation.

Many inventions certainly had great commercial prospects. It was vitally important for the country to exploit them as soon as possible in competition with, or even against the will of, the inventors.<sup>63</sup> In this connection, one might look again at the patent arrangement made by United Kingdom and the United States. As a basis for patent procurement via Governments, the 1946 UK-US Treaty limited the use by either country of patents rights, including non-patented information. The Parties were allowed to make use of each country's inventions and technical information only for exclusive war purposes.<sup>64</sup> The effect of the disposition was to discourage the United Kingdom to benefit from American inventions on a basis not compatible with normal transactions. That insertion suggested that the two allied countries were aware of how valuable was the technical stocks resulting from the war efforts, and whose exploitation to the full extent was a matter for common concern.

The trade aspect was, at last, favoured by the flexible character of those rules vesting the defence safeguards stated above, which gave Government authorities a broad discretion in dealing with enemies' inventions. Such discretion served the development of the country

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<sup>61</sup> *Idem*, Article X(a) *in fine*.

<sup>62</sup> For some figures, see Royal Commission on Awards to Inventors, Final Report, Cmnd. 5594, 1937.

<sup>63</sup> The legislation moved to give to the Crown the right not only to use, but also at any time to vend the articles made in pursuance of the rights on inventions assigned to it. As it was pointed out in *Hale's Patents* [1920] XXVII R.P.C. 171 at 175, that legal modification increased the rights of the Crown against the patentee's. Much more, it made the Crown legally equipped to better exploit the inventions in its possession.

<sup>64</sup> Article II.

which, after the war, needed to reconstruct its economy then affected by the overwhelming consequences of the war. The legitimate effort of reconstruction in the post-war periods, thus, far justified a legal policy on unauthorised use of patent. Reflecting the war events, the use of inventions by the Crown on grounds of defence is a dominant factor during the first period, but legal developments in the regulation of unauthorised use for private and commercial purposes are also considerably significant.

### **(ii) Revocation and compulsory licensing**

Under the 1902 Patents Act, the remedial revocation and compulsory licence were available on the grounds of lack of fulfilment of the "reasonable requirements of the public with reference to the patented invention."<sup>65</sup> Although applied in the event that the compulsory licence was not suffice to cure the patentee "default",<sup>66</sup> the revocation was a drastic measure to the extent it worked as an absolute deprivation of the patentee from his monopoly right. Furthermore, while the revocation curtailed a secure exploitation by the patentee, doubts are raised whether the measure was an efficient one as to the purposes pursued.

The ground for either compulsory licence or revocation has swung from the concept of public interest (or public requirement by means of, e.g., the working of the patent within the country) to abuse of monopoly.<sup>67</sup> The reasonable requirements of the public was at first understood in terms of the satisfactory working of the patent by the patentee or/and through licensing under reasonable terms. This notion implied the manufacture of the patented articles in the United Kingdom and that the demand was properly met,<sup>68</sup> so as to favour the establishment of new industry or the fair running of existing one.

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<sup>65</sup> Section 22(3) of the 1883 Patents, Designs and Trade Marks Act as it was amended by the section 3 of the 1902 Patents Act.

<sup>66</sup> Under the 1907 Patents and Designs (Amendment) Act, s. 15, the manufacture of the patented article or the use of the process exclusively or mainly outside the United Kingdom was a proper ground for the straight revocation of the patent, unless the patentee gave satisfactory explanation for his default.

<sup>67</sup> Unauthorised use of patents under the legislation cited in the previous notes required *inter alia* the manifestation of an individual interest and proof of patentee's default (e.g., lack of fulfilment of the reasonable requirements of the public).

<sup>68</sup> Section 22(6) of the 1883 Patents, Designs and Trade Mark Act as it was amended by the 1902 Patent Act, sections 24, 25(2)(b), and 27. This was a considerable development compared to the wording of the section XXXVI of the 1852 Act. The wording



The 1907 version of the patent regime expanded the scope of the reasonable requirements of the public. In describing the circumstances of the default of the patentee in respect of the patented invention, the Statute included the conditions imposed by the patentee to "the purchase, hire, or use of the patented article or to the using or working of the patented process"<sup>69</sup> made in a manner which unfairly prejudiced any British trade or industry. The unfairness of such conditions could be taken in the sense that, for instance, they could make difficult either the entry of new comers or the expansion of existing competitors.

### **Legal characterisation of abuse of monopoly right**

Under the 1919-to-1932 version, the reasonable public requirement as a ground for revocation and compulsory licensing was replaced by the notion of abuse of monopoly right.

It was characterised as an abuse:

- *the non-working unreasonably of the patent in the United Kingdom on a commercial scale;*
- *the importation from abroad of the patented article so as to prevent or hinder the proper working of the patent in the United Kingdom;*
- *the failure to meet properly the demand of the patented article in the United Kingdom;*
- *the detrimental effect against an existing or new trade or industry in the United Kingdom caused by the unreasonable refusal to licence a patent;*
- *the unfair conditions attached by the patentee "to the purchase, hire, licence, or use of the patented article, or to the using or working of the patented process", in a manner to prejudice unfairly any trade or industry in the United Kingdom;*
- *the utilisation of a patent of chemical substance or process (including those intended for food or medicine) in such an unfair manner which prejudiced the manufacture, use or sale of related materials in the United Kingdom.*<sup>70</sup>

The legal description of abuse of monopoly right under a patent put together (i) trade defaults derived from the mischievous utilisation of a patent by raising prices of commodities, or trade hurt,<sup>71</sup> and requiring unfair conditions; (ii) and non manufacture or manufacture in

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of the original s. 22 distinguished reasonable requirements of the public from the non-working of the patent in the United Kingdom and from a situation in which any person possessing an invention was prevented from working or using it to the best advantage.

<sup>69</sup> The 1907 Patents and Designs (Amendment) Act, s. 16(2), or s. 24(5) of the 1907 Patents and Designs Act.

<sup>70</sup> Sections 24 and 27 of the 1907 Patents and Designs Act as they were amalgamated as s. 27 by s. 1 of the 1919 Patents and Designs Act, and amended by s. 4(a) of the 1932 Patents and Designs Act.

<sup>71</sup> Sections 3 (reference to s. six of the Statute of Monopolies) and 4 of the 1932 Patents and Designs Act amending both s. 25(2)(d)(n) and s. 27(2)(f) of the 1907 Patents and Designs Act.

the United Kingdom on inadequate scale. Although apparently comprehensive, the list gave rise to doubts faced by those intending to apply for a compulsory licence.<sup>72</sup> The greatest inaccuracy brought to attention was the characterisation of abuse of monopoly.

Since the legal definition of abuse was in line with the description of the previous "reasonable public requirements", no essential change was made. The legal shift, however, seemed to put the wording of the domestic law in line with international commitment,<sup>73</sup> rather than a step ahead to characterise the patentee default with reference to a patent on the strict basis of competition standards (i.e., conditions of economic efficiency). That would be to confine the default to the context of undesirable competitive behaviour regarded as such by reasons of its predatory, coercive or exclusionary effects, thus, contrary to efficient market performance. In this connection, the description of some grounds for granting a compulsory licence and revoking a patent denotes a sort of malpractice (e.g., unreasonable refusal to licence and the use of patents in a manner to secure markets by blocking domestic competition). However, it could be argued that a patentee's failure to exploit an invention in full, as it would be desirable from the point of view of the development of British production and trade, could not be described as an abuse, unless licences were denied unreasonably.

The grounds listed above reveal a protectionist character as far as they intend to compel foreign patentees to develop new industry in the United Kingdom, or penalise them for not making efforts to develop the industry in this country, without any scrutiny of injury for not working the invention. The penalty could be a "licence of right" endorsement, a compulsory licence<sup>74</sup> upon the patent with or not exclusivity or, more drastic, revocation.<sup>75</sup> The proviso departed from the presumption that the mere non-working of the patent would amount "to

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<sup>72</sup> Expressions such as "new trade or industry", "demand" and "public interest" were interpreted in a narrow way. See Patents and Designs Acts, Second Interim Report of the Departmental Committee, Cmd. 6789, p. 8/9.

<sup>73</sup> See Article 5A of the Convention for the Protection of Industrial Property.

<sup>74</sup> A compulsory licence under a patent (simply compulsory licence), and an entry in the patent register of endorsement of a licence of right (simply licence of right) are both compulsory categories, in the sense that their adjudication is given regardless the will of the patentee. The distinction between them is a matter of level of legal implementation. The compulsory licence is an individual adjudication with full effect. The licence of right is dispensed *erga omnes*, i.e., is made available for any entitled person and cannot fully operate before an individual adjudication is made, or a private arrangement is agreed.

<sup>75</sup> Section 24(4) and 27(1) of the 1907 Patents and Designs Act; s. 27(3)(a)(c)(d) of the same 1907 Act as it was amended by the s. 1 of the 1919 Patents and Designs Act.

favour the development of industries abroad at the expense of industries in the United Kingdom."<sup>76</sup>

Referring once again to the list above, the potential of injuries to the trade of the country would vary. Although the injury could possibly occur in the circumstances of the grounds (d) to (f), under the grounds (a) to (c) the hampering would be less unlikely. The assumption of abuse of monopoly under presumed circumstances could lead to a situation where the remedy available failed to cure the alleged mischief.<sup>77</sup> If there was an efficient result from the application of those rules of abuse, it was less obvious regarding revocation.

As law reports record only a few cases on patent revocation as a remedial measure,<sup>78</sup> it is difficult to establish the impact of that remedial safeguard in business circles. Perhaps the revocation had no more than a bargaining effect. Or it could be argued that in a situation of abuse of monopoly, in the statutory sense,<sup>79</sup> the benefit that the revocation could render was uncertain, and disproportionately small in comparison with the scale of the moral impact of the revocation on the patentee.

A revocation order would be considered in the event that compulsory licence (which could be on an exclusive basis) at reasonable royalties was not suffice to cure a patentee default in particular. If in a specific case compulsory licence could not effectively remedy a mischief, one would wonder in which way the revocation could do any better. One possible reason for a compulsory licence not to work would be that the market for the concerned invention was not attractive enough for domestic or foreign entrepreneurs to embark into it,<sup>80</sup> or that the prospective licensees would lack the necessary know-how to exploit the invention. Neither would the Government have an interest in promoting the particular business related to the patent. In any of these hypotheses, it would be unlikely that the revocation would render any

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<sup>76</sup> *Hatschek's Patents, In Re* [1909] 78 L.J.Eq. 402 at 405.

<sup>77</sup> That was the case of *Hatschek's Patents*, previous footnote.

<sup>78</sup> The statement is based on the cases published in the "Reports on Patents, Design and Trade Mark Cases" (R.P.C.).

<sup>79</sup> See 1907 Patents and Designs Act, s. 27 & 25(2)(d), as they were amended by the 1919 Patents and Designs Act, s 1; and 1932 Patents and Designs Act, s. 3 & 4.

<sup>80</sup> For the entrepreneurs the decision to establish an industry is supposed to be governed by market conditions rather than by the particular event of a judicial or administrative patent revocation.

assistance to a third firm, or would upset the market position of the patentee in the short or medium term.

The revocation has the effect of putting an invention in the public domain. Subsequent to the revocation of a patent the invention could be worked by third firms free from royalties. However, if this hypothesis could apply in practice, a compulsory licence on reasonable terms would be an effective and alternative remedy. In this case the revocation would deny the institutional *quid pro quo* behind the patent. In destroying the patent right blessed for centuries, the cessation of protection offered no apparent or immediate gain to the public. It is realistic to suggest that the revocation was an unnecessary<sup>81</sup> or inefficient legal constraint having a rather obscure objective.

### Food and medicine patents

For chemical patents and patents related to substances intended for foods and medicines, the granting of licences followed specific statutory conditions. Designed to meet the availability of food and medicine to the public *at the lowest possible price*, compulsory licences were granted regardless of abuse of monopoly, and the remuneration fixed would secure "to the inventor due reward for the research leading to the invention."<sup>82</sup> Inspired in welfare ends, the compulsory licence was limited to preparation or production of food or medicine, but the grant was to a great extent governed by the discretion of the comptroller.

The provision of licensing upon food and medicine-related inventions was introduced in 1919 concerning existing patents. At the same time, claims for patent on "inventions relating to substances prepared or produced by chemical processes or intended for food or medicine"<sup>83</sup> were excluded. The denial of protection<sup>84</sup> apparently suggests that the

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<sup>81</sup> In the event of the working of a patent on basis of a licensing policy extremely anti-competitive, and the patentee having market power, the revocation could have an adjusting effect of the competitive process bringing some benefits to the public. But compulsory licence would be a remedy equally efficient, and revocation would be a too strong order.

<sup>82</sup> Section 38A(2) of the 1907 Patents and Designs Act as it was inserted by s. 11 of the 1919 Patents and Designs Act.

<sup>83</sup> Section 38A(1) of the 1907 Patents and Designs Act as it was inserted by s. 11(1) of the 1919 Patents and Designs Act. The denial of protection prevailed for three decades before protection was restored by the 1949 Patents and Designs Act, second schedule.

safeguarding policy had not been effective to revert the tendency of abusive behaviour in the particular field of chemical-related trade.

### **Unenforceability (deprivation of actions)**

Apart from abuse of patent monopoly, separate provisions were set out to prevent restrictive conditions attached to licences.<sup>85</sup> Being in restraint of trade and contrary to public policy,<sup>86</sup> these conditions are null and void, but they may be included in a contract if, despite them, the licensee is able to exercise some sort of choice. This flexibility could open room for the parts to circumvent the purposes of the legal policy.<sup>87</sup> Additionally, the comptroller had, as he has today, no power to act in relation to these provisions, unless a licence application is brought before him in connection with a particular restrictive practice.

As an attempt to strengthen the statutory safeguards, it was created a defence on behalf of any party who, sued for infringement, knew of a contract in force containing illegal conditions related to the patent allegedly infringed. This unenforceability as a safeguarding measure was designed to work against the patentee, but the public knowledge of these conditions was not favoured since the lack of registration of patent transactions has never been subject to meaningful penalty. Thus, deprivation of actions has had no significant effect to prevent restrictive trade. This concludes the discussion of unauthorised use of patents in the period prior to the first half of this century.

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<sup>84</sup> The denial of protection was followed by many countries in Europe, establishing a set back in the patent law world-wide. This was a mistake of some leading industrialised economies that developing countries not only repeated, but also have failed so far to redress entirely.

<sup>85</sup> For instance, tying purchase of unpatented materials as a condition to licence a patented process. Patents and Designs Act 1907, s. 38.

<sup>86</sup> 1907 Patents and Designs Act, s. 38(1)(b).

<sup>87</sup> Cmd. 6789, para. 35.

### 5.3.3 Remedial measures, 1949-1988

#### (i) Crown use of patented inventions

Three legal aspects concerning Crown use are now discussed: the right of the Crown, the right of the patentee and third parties, and the proceedings concerning disputes on compensation.

#### The Crown's right revisited

From 1949 to 1977, the legal position of the Crown in relation to a patent changed along with the obligation of a British patentee to working his invention. Under the 1949 patent regime, in the event of the patentee failure to comply with a request from a Government department to work the invention for the service of the Crown, the patent was subject to revocation. The principle underlying the statutory provision<sup>1</sup> was that a patent was granted under the presumption that it shall work accordingly, at the request of a Government department, to the service of the Crown. This principle, now overturned, was not taken in absolute terms. A revocation depended on a court ruling, a service of the Crown coming under statutory authority, and the reasonableness element in regards to the cause of the failure and the terms of working.

A prerogative of withholding a grant<sup>2</sup> is conferred to the Crown which, nevertheless, has been bound to the patent statute.<sup>3</sup> The current legislation confirms this principle and excludes the Queen in her private capacity.<sup>4</sup> In contrast, the patent use by a Government department under statutory authority has never been affected. Today the Crown's position is clearly established as having a statutory prerogative to a non-free use. This right to use is based on the principle that "Government departments should not be hindered by the existence of

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<sup>1</sup> S. 32(3) of the Patents Act 1949 read as follows: "... a patent may be revoked by the court on the petition of a Government department, if the court is satisfied that the patentee has without reasonable cause failed to comply with a request of the department to make, use or exercise the patented invention for the services of the Crown upon reasonable terms."

<sup>2</sup> 1949 Patents Act, s. 102(1).

<sup>3</sup> 1947 Crown Proceedings Act, s. 3 which has been updated by 1977 Patents Act, Sch. 5(1), and Copyright, Designs and Patents Act 1988, Sch. 7(4)(1).

<sup>4</sup> 1977 Patents Act, s. 129.

patents in the discharge of the statutory duty."<sup>5</sup> The recognition that a concurrent right in the use of the invention is conferred to the Crown reduces the patent right to a claim for payment in relation to the use, not infringement, of the invention. The Crown's prerogative, nevertheless, falls within statutory confines.

The 1949 Act allowed any Government department and any person authorised by a department to "make, use and exercise"<sup>6</sup> any patented invention for the services of the Crown. Although the statute did not confer to the departments a general power to "vend" patented articles, selling was permitted in circumstances arising from supply of defence articles to foreign governments, and articles no longer needed for the purposes they were originally made. A general right to vend has only been conferred during a period of emergency when the powers of the Crown to use a patent is rather wide.<sup>7</sup> These statutory powers, in peace or war time, have been used largely to supply equipment to the armed forces, but the use for civil purposes has not been unusual. In this context, it has been argued that "Crown rights over patents are wide and are liable to become more intrusive if the involvement of Government in industrial affairs continues to increase."<sup>8</sup> Regardless this argument and giving expressions to existing practices, the 1977 Patents Act regulates the Crown use to allow:

- *where the invention is a product, the making, use, importation or keeping of the product, or the selling of it where to sell would be incidental or ancillary to any of the said acts; and the selling of it for purposes of foreign defence, or for the production or supply of specified drugs and medicines, or the disposal of it (except by selling) for any purpose whatsoever;*
- *where the invention is a process, the use of the process or any of the actions set out above performed in relation to a product obtained directly by the process;*
- *where the invention, or any product related to a process, is a specified drug or medicine, the selling of it;*
- *the supply or offer of any means regarded as an essential element to put the invention into effect;*
- *the disposal or offer of anything which is no longer needed for the purposes it was made, used, imported or kept by virtue of the exercise of the Crown use within the meaning of this section.<sup>9</sup>*

Connected with the allowed acts, some expressions are brought to attention. These are:

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<sup>5</sup> Banks Report, Cmnd. 4407, p. 124/125.

<sup>6</sup> S. 46(1).

<sup>7</sup> Sections 46(6) and 49.

<sup>8</sup> Banks Report, p. 124, Cmnd. 4407 (1970). Earlier, in 1947, there was a similar apprehension that the exercise of "exceptional powers by the Crown [resulted] in competition with the patentee or his licensed manufacturers." Swan Final Report of the Departmental Committee, p. 16, Cmd. 7206 (1947).

<sup>9</sup> S. 55(1).

- "the services of the Crown"<sup>10</sup> (including the supply of anything for foreign defence purposes, production or supply of specified drugs and medicines, and such purposes related to atomic energy affairs);
- "sale for foreign defence purposes"<sup>11</sup> (products required for the defence of foreign countries supplied under an agreement in respect of defence matters, including operation to comply with a resolution of the United Nations or any of its organ); and
- "specified drugs and medicines"<sup>12</sup> (drugs and medicines required for the provision of pharmaceutical, medical or dental services, and other as specified by the Secretary of State).

The statutory evolution made necessary the inclusion of indicative elements which, by clarifying these concepts, contributes to the better understanding of the legislation. These concepts are not fully developed, and their construction depends on the limits of the Crown's right to use a patent, and in the event of disputes, the conditions within which claims are properly laid. In practice, to what extent the Crown's prerogative can be challenged successfully is always a matter for debate. As a result, due compensation is the most significant point connected with the right of the patentee and third parties.

### **The patentee' and third parties' right**

An effect derived from the concurrent right of the Crown to use an invention is that the patentee or legal substitute has no legal power to prevent or stop such use. As interested parties, the patentee, exclusive licensee or assignee is only entitled to claim payment. The right to payment, nevertheless, presumes the existence of an enforceable right over a protected invention. In this respect, if before the priority date the invention has, for instance, been recorded by, or tried by or on behalf of a Government department, the inventor will be entitled to no payment.<sup>13</sup> For use taking place at any time after the publication of a patent application, payment is only recoverable after the patent is granted.

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<sup>10</sup> Such an expression is defined by the House of Lords as consisting of any act "done for the purpose of the performance of a duty or an exercise of a power which is imposed on or vested in the Executive Government of the United Kingdom by statute or by prerogative" *Pfizer Corporation v The Ministry of Health* [1965] 8 R.P.C. 261 See 1977 Patents Act, s. 56(2).

<sup>11</sup> 1977 Patents Act, s. 56(3).

<sup>12</sup> 1977 Patents Act, s. 56(4).

<sup>13</sup> 1949 Patents Act, s. 46(2)(3), 47(1)(b), 57(1); and 1977 Patents Act, s. 55(3)(4)(5).



Ordinarily, the proprietor is the right person in title to receive payment in relation to use made or anything done for the services of the Crown. Variation may occur.<sup>14</sup> When an exclusive licence (not only for running royalties) exists, the proprietor is replaced by the licensee, who receives all the payments. In case of assignment running for royalties, the payment is shared accordingly by proprietor and assignor. If an exclusive licence is in force for running royalties, the licensee is entitled to receive such a sum to recover expenditure for developing the invention, and other payments (other than royalties) made to the proprietor who cannot enter into agreement with the Government department concerned without the licensee's consent. In the event of disagreement on Crown use, and after a patent is granted, any interested party has the right to refer disputes to the court.

### **Disputes on compensation**

Under the 1949 Act, a Government department could change the course of the proceedings concerning the Crown use by applying for revocation, including on the ground (now overturned) of failure to comply with a Government request for the working of the invention for the services of the Crown upon reasonable terms.<sup>15</sup> Today the counter-claim for revocation is only available on the ground of patent validity.<sup>16</sup> The failure to use a patent on request for the services of the Crown can, nevertheless, be considered by the court in entertaining a reference of dispute or arbitration as to the terms of compensation for Crown use.<sup>17</sup>

No provision has been made as to the basis of assessment of compensation. Considering the matter, the Banks Report observed:

*Notwithstanding the Ministry of Technology's view that patentees are generally satisfied with the payments they receive, it has been contended that in some circumstances the present law operates unfairly against patentee's interests, and that it should therefore be amended to allow for more generous payment to be made for the Crown use of patents, where justified.*<sup>18</sup>

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<sup>14</sup> Cf. 1977 Patents Act, s. 57(3) to (8) and 1949 Patents Act, s. 47.

<sup>15</sup> S. 48(2)(a), and 1977 Patents Act, Sch. 1(1), Sch. 4(2).

<sup>16</sup> 1977 Patents Act, s. 58(7).

<sup>17</sup> 1977 Patents Act, s. 58(3)(b).

<sup>18</sup> Banks Report, Cmnd. 4407, p. 126

To what extent a payment can be justified is at the gist of the statutory right of the Crown to use a patent. In being exercised, this right may lead to displace a contract from the patentee-manufacturer which in consequence may experiment financial hardship. The consideration of such loss of contract, nevertheless, in some way weakens the Crown's position of "a user having concurrent rights in the use of the invention."<sup>19</sup> Similarly, the assessment on the basis of a private bargain, as a deal between willing licensing and willing licensor, would bring the Crown to a position akin to that of a private licensee. This, additionally, would award the patentee the opportunity to make profit with no consideration to the willingness to provide patented articles at a reasonable price, and total disregard to reasons of national security.<sup>20</sup>

Because Government departments are guided in their actions by the public interest, a balance should be struck in the assessment of compensation, therefore avoiding the rigid application of the willing licensee/willing licensor approach. In this respect, guidance has been set out in case law, which broadly indicates the terms of existing licences, the normal rates in relevant field, and (if it is the case) involvement of know-how to be taken into account, but excludes assessment of payment on basis of damages.<sup>21</sup>

As the current law stands, compensation for loss of manufacture, which the court used to exclude, is now possible. Provision has been made for the Government department to pay the proprietor or exclusive licensee, if any, for loss of profit not been made due to loss of contracts for the services of the Crown, and to the extent of under-utilisation of industrial capacity.<sup>22</sup> Claims for relief in relation to compensation are, nevertheless, subject to several other limitations. The most important is that which deprives the proprietor or exclusive licensee from any compensation for failure of recording a transaction or instrument from which the actual right holder derives his title,<sup>23</sup> before the Crown use. In sum, owing to the bargaining power in the Government's hands, and the legal framework governing its actions on the basis of public interest, one can never expect that compensation for Crown use will be assessed entirely on a private bargain fashion resulting from a private licensing.

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<sup>19</sup> Banks Report, Cmnd. 4407, p. 127.

<sup>20</sup> *Idem*, at p. 128.

<sup>21</sup> See *Patchett's Patent* [1967] 9 R.P.C. 77 and 237.

<sup>22</sup> 1977 Patents Act, s. 57A as it was introduced by the 1988 Copyright, Designs and Patents Act, Sch. 5(16).

<sup>23</sup> 1977 Patents Act, s. 58(11), amended by the 1988 Copyright, Designs and Patents Act, Sch. 5(16)(2)(3). Similar provision is not found in the 1949 Patents Act.

## (ii) Compulsory licensing

### Unauthorised use: legal grounds and patentee's duty

The tenor of today's policy for compulsory licensing is that the invention is protected on the assumption that it works in the country "to the fullest extent that is reasonably practicable." It may not be to the satisfaction of the patentee to work the invention for the time being, but he cannot impede others to do so in specific circumstances and on a royalty basis. In order to fulfil that policy, the patentee is not specifically liable to work the invention in the country by himself, but once he does so he, as well as any licensee or assignee, is bound to use all his best efforts in order to develop the commercial and industrial activities of the country, to meet national demand on reasonable terms, and meet a demand abroad. The law establishes in which circumstances these purposes are not achieved; and once such circumstances are present in relation to a patent, a licence should be available.

The fullest possible working of an invention is not fulfilled if:

- *being the demand partially or fully met by importation, the working of the invention in the country, when it is capable of being commercially done, is being prevented or hindered;*
- *by refusal of a licence on reasonable terms, a market for the export of any patented product made in the UK is not being supplied;*
- *by refusal of a reciprocal licence on reasonable terms, the working or efficient working in the UK of any other patented invention which makes a substantial contribution to the art is prevented or hindered;*
- *by refusal of a licence on reasonable terms, the establishment or development of commercial or industrial activities in the UK is unfairly prejudiced;*
- *by reason of conditions imposed by the patentee on the grant of licences, or on the selling or use of patented product or process, the manufacture, use or disposal of unpatented materials, or the establishment or development of commercial or industrial activities in the UK is unfairly prejudiced.<sup>24</sup>*

These grounds do not substantially differ from those of the previous legislation. They do not imply necessarily the existence of a fault or reparable negligence from the patentee. As far as the non-working of an invention in the country is concerned, no real injury to any person nor against the public in general is in principle incurred.

### A touch of improvement

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<sup>24</sup> 1949 Patents Act, s. 37(2); 1977 Patents Act, s. 48(3).

It may be that this apparent lack of injury explains why the 1977 Act eliminated the revocation as a remedial measure.<sup>25</sup> As has been argued, such a revocation was an inefficient safeguard, since no transparent interest could justify such a drastic remedy for merely not working the invention. Even the idea of preventing or stopping the patentee from an unintended benefit could hardly be an acceptable justification. In the 1950s, the United Kingdom was already equipped with competition mechanisms able to redress any serious mischief relying on a patent. As it seemed to be an inappropriate remedy, revocation represented the breach of the quid pro quo behind the legal concept of patent. At least on the theoretical level, the banishment of revocation was one of the most notable alterations among the few changes of the 1977 patent reform.

Another minor alteration worth noting concerns the expression *substantial contribution to the art*, which is a legal commitment to the promotion of technical development. Construed as being the outstanding merit of the inventive step properly assessed in regard to its technical character and exceptional application,<sup>26</sup> the expression and the provision containing it call for the due access to the art, as a convergence of interests in high technology and related to intellectual property and competition.

### **Compulsory “licence of right”**

A compulsory endorsement of a patent with a licence of right has the effect of securing anyone’s interest in working the invention in future, and a “compulsory licence” purports to meet an actual and specific demand of particular applicants. Both compulsory grants rely on the same legal grounds. Two aspects worth entertaining which involve these remedial orders

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<sup>25</sup> The utmost legal consequence against the patentee who did not work his patent accordingly was the subsequent revocation of the patent either by the court on request of the Crown, or by the comptroller on request of any interested person. While maintaining the remedial revocation, the 1949 Act progressed in the sense that it required the elapsing of a period of time subsequently to a compulsory licence before a revocation (other than that requested by the Crown) order took place. 1949 Patents Act, s. 42 and 48(2)(a).

<sup>26</sup> The way the outstanding merit is calculated may be affected by the circumstances of the day, or by strategic character of the technology. Three examples of inventions regarded of substantial contribution to the art were: the air craft engines and the air craft powered by them called “Harner Jump Jet”, *Rolls-Royce (1971) Limited's Patent* [1975] R.P.C. 292; the antibiotic named Cephalosporin C, *National Research Development Corporation's Patent* [1972] R.P.C. 829; and that related to steel reinforcement in reinforced concrete, *E.V.G. Company's Patent* [1969] R.P.C. 307.

are the circumscribed comptroller's power and the legal meaning of the expression compulsory endorsement for "all purposes."

To the extent that compulsory licensing is a lawful although limited invasion of a private right, it shows the relative nature of the intellectual property. In this respect, modern legislation places a great deal of emphasis upon this right, with the exhortation of not to harm it unnecessarily, or deliver the rightholder from undue burden which may discourage enterprise. Reflecting these trends, grounds on which relief is established and criteria on which adjudication may rely have gradually been made more specific.

Once at least one of the statutory grounds is established, an order may be granted by the comptroller general either for a licence on the patent, or an endorsement of a licence of right, as it is applied for.<sup>27</sup> In the case of a licence involving export, the order may restrict the countries where the product relating to the patent is to be sold or used by the licensee. The comptroller may also cancel or vary an existing licence when the applicant already holds a licence on unreasonable terms, but the comptroller's order has no effect of revoking existing licences, depriving the patentee of the power to work the invention concerned nor granting licences.<sup>28</sup> Therefore, the comptroller's discretion follows guiding principles.

For nearly a century,<sup>29</sup> the comptroller has retained the exclusive jurisdiction, subject to appeal, upon the grant of compulsory licences, and no change has been made as to the 1949 directions under which he is allowed to exercise a degree of discretion in settling the terms of a licence. It is a matter of legal certainty<sup>30</sup> that such a discretionary power rely on a great deal of accumulated experience and statutory guidance. Pleas for extended use of a patent and applications relating to abuse of patent rights are governed by statutory principles. In short, these principles aim at securing:

- *the fullest possible working in the UK of the invention in the public interest and without undue delay;*
- *reasonable remuneration to inventors having regard to the nature of the invention;*

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<sup>27</sup> 1949 Act, s. 37(3)(4) and s. 38(1)(2); 1977 Act, s. 48(4) to (8) and s. 49(1)(2).

<sup>28</sup> This power conferred to the comptroller by the 1949 Act, s. 38(3), and 1977 Act, s. 49(3), is no longer available. 1988 Act, Sch. 5(13).

<sup>29</sup> Since the 1907 Patents Act.

<sup>30</sup> Swan (Second Interim) Report, Departmental Committee, p. 13. Cmd. 6789 (1946).

- *fair consideration to the interest of any person engaged in the working or development of an invention in the UK.*<sup>31</sup>

When entertaining an application, the comptroller is bound to these principles and may take into account certain matters, such as the diligence put forward by the patentee to work the patent, the ability of a willing licensee to work an invention for the public good, and the risks undertaken by any interested person for providing capital and working an invention if a licence is granted.

Under the 1949 Patents Act, a private agreement which precluded the patentee from applying for a voluntary endorsement would not prevent the comptroller from making a compulsory order which, once made, would "for all purposes"<sup>32</sup> have the same effect as it were a voluntary endorsement. This could raise expectations, eliminated by the 1977 Act,<sup>33</sup> concerning some effects such as the cancellation and partial exemption of fees which in principle are akin to voluntary rather than compulsory endorsement.

The point is that no statutory provision allows cancellation of compulsory endorsement. The equivalence to a voluntary endorsement is only for the purposes of enforcement. As the 1977 Act makes clear,<sup>34</sup> the licensee under a licence of right may in his own name institute proceedings for patent infringements, as if he were the patent owner. In such a situation, the patentee is not liable for any costs, unless he takes part in the proceedings. No other effects can be expected from the legal expression "for all purposes." Only a licence of right voluntarily endorsed is subject to cancellation.

### **The safeguarding effect of a voluntary "licence of right"<sup>35</sup>**

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<sup>31</sup> 1949 Patents Act, s. 39(1); 1977 Patents Act, s. 50(1). Allowing a compulsory licensee to compete with an importer who has established in the UK in preparation for the manufacture of the invention is not necessarily unfair. See *Fette* [1961] R.P.C. 396.

<sup>32</sup> S. 45(2).

<sup>33</sup> S. 49(4).

<sup>34</sup> S. 49(4) combined with S. 46(4)(5).

<sup>35</sup> Voluntary endorsement have some effects, such as: the risk of application for a compulsory licence or compulsory endorsement is reduced (1949 Patents Act, s. 35(2)(c), 1977 Patents Act, s. 46(2)(c), 1988 Act, Sch. 5(12); the patentee pays only half the amount of renewal fees, but in the event of cancellation he has to pay the balance (1977 Act, s. 46(3)(d) and 47(2); and the licensee is entitled to sue against infringement if the patentee fails to do so (1977 Act, s. 46(4)).

As the law stands, a “licence of right” under a patent may be available as a result of an application made by a third person (compulsory endorsement) or as a result of an application made by the patentee (voluntary endorsement). Although the owner may apply for cancellation of voluntary endorsement, an opposition to the cancellation may be lodged by an interested person. Such an opposition has a safeguarding effect and is an element of limitation on the proprietary right.

The ability to apply for voluntary endorsement or its cancellation is in principle based on the owner’s exclusive right to use and dispose of the subject matter which constitutes his property. The law, nevertheless, has been developed to subject patent to public interest on which third-party opposition<sup>36</sup> against cancellation relies. To what extent opposition may be considered is only assessed on a case-by-case basis. Contractual restrictions apart, good reasons may disallow cancellation of voluntary endorsement. For instance, it sounds fair that those investors (licensees) which took the initiative to market a product based on a patent endorsed with a licence of right are not hampered with the cancellation which, if required only for the sake of the patentee’s interests, may put at risk the commercial feasibility of investments already made by pioneering licensees for the working of an invention that the owner was not either willing or able to do.

Apart from remedies intrinsic to intellectual property law, a ministerial application for relief made on grounds of public interest and relying on a competition report may be entertained under distinct procedure.

### **(iii) Reliefs in public interest**

When in 1949 the comptroller was conferred power to issue an order in public interest in consequence of a competition report and to remedy monopoly conditions associated to a patent, the procedures were unnecessarily complex. Within the framework of competition law, it required the concurrence of four statutory bodies to exercise a power to limit the use of a patent, while under patent law the comptroller for nearly a century had, as he still has, the

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<sup>36</sup> 1949 Patents Act, s. 35(1) and 36(1); 1977 Patents Act, s. 46(2) and 47(2).

power do make similar order. This suggests that although a compelling force has indicated a trend towards limiting intellectual property based on competition standards, at the same time the system has resisted making any transfer of the almost exclusive power of the comptroller to deal with the matter. To preserve such a power has been a policy which favours a quicker procedure and avoids lengthy inquiry into economic and commercial matters. In this respect, while the patent legislation makes void certain conditions, such as tie-ins and non-competition clauses, with the effect, for instance, to deprive the patentee from action in case of infringement,<sup>37</sup> the Act does not entitle the patentee to justify the conditions on grounds of any technical virtue.

It has argued that the public interest test, under the 1948-to-1968 competition legislation, proved to be an ineffective deterrence against abusive use of patent. It may be that the leniency of competition law and policy and the lengthy inquiry carried out by competition bodies are the main reasons. The proceedings for compulsory licensing under the authority of the comptroller always seemed to render more results. To discuss the matter, firstly, the focus is on the interaction of the 1949 Patents Act with the competition Acts in force until 1968, and secondly the similar legislation currently in force.

### **The legal mechanism from 1948 to 1968**

The Monopolies and Mergers Acts 1948 to 1965 empowered the Government to refer monopoly conditions in the statutory meaning and mergers to the Monopolies Commission, later Monopolies and Mergers Commission (MMC)<sup>38</sup>. The reference was made through a Department which had a wide discretion (e.g., it could declare agreements unlawful and

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<sup>37</sup> 1977 Patents Act, s. 44. Before 1948 (a period of undeveloped competition law) competitive conditions in public interest were not apparently well understood. For instance, in *Brownie Wireless* high production at a high price was not necessarily in the public interest. [1929] R.P.C. 457 at 474. In contrast, in *the Yarn Spinners* case the court took the view that to keep the industry in an inefficient state, rather than cutting costs and improving innovation, in long run would be against public interest. [1959] 1 All E.R. 299.

<sup>38</sup> Named as such by the 1973 Fair Trading Act, s. 4(1).



prohibit price discriminations).<sup>39</sup> The MMC was and still is an independent body which has only power to make recommendations.<sup>40</sup>

The Department exercised specific statutory powers to remedy mischief found by the MMC contrary to the public interest. Although the Department could *inter alia* declare agreements unlawful and prohibit discriminatory conditions, a departmental order could not affect any condition attached to a patent licence.<sup>41</sup> Such a power was conferred in 1949 to the comptroller based on a rather complex and, therefore, unworkable procedure.

Under the 1949 Patents Act, before an order was made effective by the comptroller, five steps were observed: firstly, the Department referred the competition matter to the Commission. Secondly, the Commission declared that a supply of goods of any description consisting of or including patented articles, or in respect of exports of such goods, or in respect of an application to goods of any description consisting of or including a patented process operated or which could operate against the public interest. Thirdly, the Commission's report was laid before the House of Commons which passed a Resolution confirming the Commission's recommendations. Fourthly, the Department could apply to the comptroller for an appropriate order. Fifthly, if upon the application it appeared to the comptroller that the matter referred to in the Parliamentary resolution operated or could be expected to operate against the public interest, he then would do either or both (a) to cancel or vary conditions contained in any relevant patent licence restricting the use of the invention or the exercise of the patent right; and (b) to endorse the relevant patent licence of right.<sup>42</sup>

Apart from the complex procedure, a number of restrictive conditions involving an invention for product or process were not expected to come to public knowledge because the legislation on competition, in many senses, did little to force the disclosure. Under the Restrictive Trade Practices Acts 1956 to 1968, agreements entered by persons carrying on business within the United Kingdom, and including restriction as to the production or supply

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<sup>39</sup> The Department concerned was the Board of Trade. The 1965 Monopolies and Mergers Act, s. 3.

<sup>40</sup> 1948 Monopolies and Restrictive Practice (Inquiry and Control) Act, s. 2(1); 1965 Monopolies and Mergers Act, s. 1 and Sch. 1; 1973 FTA, s. 5(1).

<sup>41</sup> 1948 Monopolies and Restrictive Practices (Enquiry and Control) Act, s. 10(5).

<sup>42</sup> 1949 Patents Act, s. 40(3)(4).

of goods had to be registered. Registration was to be made with the Registrar of Restrictive Trading Agreements, and the conditions were those as prices for goods, conditions of sale, persons to whom goods may be sold, and quantities and kinds of goods which could be made or sold. The same legislation excluded from its scope patent deals (licences, sub-licences and assignments), except restrictions in respect of the invention to which the patent (or patent application) related or articles by the use of that invention.<sup>43</sup> Before 1968, no penalty existed for failure to register. The law, nevertheless, made it unlawful for any person carrying on business in the United Kingdom to enforce restrictive conditions contained in unregistered registrable contracts.<sup>44</sup>

These contracts could be submitted to the scrutiny of the Restrictive Practices Court with the purpose of establishing whether the relevant restrictions were or were not contrary to public interest. A number of patent related contracts, however, were exempted from registration, unless they included unpatented goods. Contracts covered by the exemption were to be registered with the Patent Office,<sup>45</sup> but the comptroller had no compelling force to order registration, nor could he take any action other than that taken on an application made by a third person. No penalty was imposed for failure of registration with the Patent Office, except that an unregistered licence or other document could not be admitted in court as evidence.<sup>46</sup>

Regarding the prohibition of resale price maintenance, which was also referred to the Restrictive Practices Court, the relevant legislation was designed to apply to articles relating to patents. Provision had been made, however, to the effect that the legislation could not impair the right of licensors or assignors to regulate the price at which a licensee or assignee sold products made or processed under a patent.<sup>47</sup>

The way the legal mechanism (expressed in the legislation cited above) is designed has favoured the keeping of conditions attached to a patent out of public knowledge, i e., out of

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<sup>43</sup> 1956 Restrictive Trade Practices, s. 8(4).

<sup>44</sup> 1968 Restrictive Trade Practices Act, s. 7.

<sup>45</sup> 1949 Patents Act, s. 74.

<sup>46</sup> 1949 Patents Act, s. 74(6).

<sup>47</sup> 1964 Resale Prices Act, s. 1(2).

reach of the incumbent authority Government. In this context, a number of conditions adverse to competition could never be challenged. While arrangements have been allowed to exist quietly under competition legislation, and to the extent that they could contain conditions *per se* void under the patent legislation, grounds have been provided for any firm willing to work a patent without the owner's consent to apply for a non-voluntary licence. At least a favourable bargaining position would be created for any firm interested in the patent to negotiate better terms and conditions of licences. Such an outcome in some ways could meet the purposes of the safeguarding policy in place.

### **The current legal mechanism**

Before considering the subsequent evolution of the legal mechanism relevant to the assessment of the public interest element associated with the exercise of the patent right and the taking of remedial action to curb competition violations, a few points should be made about the character of the current law.

Although in the past three decades or so the legislation has visibly evolved, the efficiency of the system to redress competition mischiefs (mainly relating to patents) is still subject to criticism. It is commonplace to say that the anti-monopoly legislation has been considerably flexible (nothing in itself is unlawful until the Secretary of State at his discretion declares so), the anti-competitive practices regulation has been too formalistic (catching many inoffensive agreements), but has little deterrent effect due to lack of appropriate penalties.<sup>48</sup> To the extent that this character of the competition legislation relates to remedial measures on intellectual property implemented on grounds of public interest and based on competition standards, such a safeguarding policy tends to reflect the historical leniency of the UK competition law. The result is that patent law still plays a major role in safeguarding public interest. The next part explains the main elements in connection with an MMC report in consequence of which the comptroller is called upon to set up the appropriate patent safeguard, and the changes introduced in the current patent regulation.

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<sup>48</sup> Green Paper Report on Abuse of Market Power, chapter 2, Cm. 2100.

## The role of competition mechanism

Under the patent legislation,<sup>49</sup> the comptroller is no longer required to pass a judgement on the public interest requirement, as previous legislation suggested he do. Such a judgement is exclusive of the Commission, whose opinions are laid down before the Parliament but not formally confirmed by Parliamentary resolution. The power to formulate an application to the comptroller is given to a Minister or ministers concerned, not the Secretary of State. Also, the range of anti-competition matters the MMC may deal with is now of wider scope,<sup>50</sup> and a competition report has been made prima facie evidence of referred matters (unlawful conditions attached to a patent)<sup>51</sup> for the effect of compulsory licensing on request of any person.

As far as the public interest is concerned, investigations carried out by the Commission are thus central, as evidence, for specific actions contemplated in current patent law. The comptroller's order is designed to strike adverse effects of conditions contained in patent licensing and refusal to licence, which have been included in the matters identified in a Commission's report issued in consequence of one of the four qualified elements: monopoly reference, merger reference, competition reference, and public sector reference. These elements are now explained.

The control of monopolies is today governed by the 1973 Fair Trading Act (1973 FTA) which empowers the Director General of the Office of Fair Trading (DGFT) to watch over the activities of British industry and at first hand assess abusive conducts. When a monopoly situation is identified, the DGFT may refer the matter (monopoly reference) to the MMC. A monopoly reference may also be made by a Minister concerned. The Commission is asked to investigate a specific matter in the light of particular circumstances, and establish on the basis of the finding whether the situation exists and operates, or may be expected to operate, against the public interest. A monopoly situation may be of two types: *a scale monopoly situation* (e.g., at least 25% of goods of any description is supplied in the United Kingdom by

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<sup>49</sup> 1977 Patents Act, s. 51 as it was amended by Sch. 5(14) of the 1988 Act.

<sup>50</sup> The 1980 Competition Act contemplates other anti-competitive practices not caught by the 1973 F.T.A.

<sup>51</sup> Amended s. 53 of the 1977 Patents Act.

a person or company), and *a complex monopoly situation* (e.g., in the former situation the goods are supplied by two or more companies who by agreement or otherwise conduct their respective affairs in a way to prevent, restrict or distort competition). The Commission's report contains conclusive opinions on questions raised in the reference, and, if it is the case, considers measures to remedy or prevent adverse effects on the public interest assessed on account of relevant matters and having regard *inter alia* to the promotion or maintenance of competition, consumers' interests, development of new products, balance of distribution of industry and employment, and competitive activity abroad by companies in the United Kingdom. The report is made to the Secretary of State who decides the appropriate course of action. This may include application through a minister concerned to the comptroller to take action under the patent law, and in relation to licensing conditions or a refusal to licence a patented invention.

The control of mergers is also regulated by the 1973 FTA under which the Secretary of State may consider, whether appropriate, to refer a particular matter (merger reference) to the MMC for investigation. In principle, a merger may proceed, unless the Secretary of State decides otherwise upon the evidence of significant adverse effects on competition, in regard to the volume of market share and assets, examined on a case-by-case basis and recognised by at least two-third majority of the Commission. A merger is qualified for investigation when two or more enterprises cease to be distinct. The role of the Commission is, firstly, to establish whether the merger qualifies or not for investigation. If it does, secondly, to determine whether it does or does not operate, or the merger may be expected to operate or not to operate against public interest. Only a positive MMC conclusion may be overturned by the Secretary of State who, in a case of a merger found against the public interest, decides whether to block the merger or impose conditions. From this, and if no suitable undertakings are being accepted, a ministerial application may arise for the comptroller to take proper action.

A competition reference arising under the 1980 Competition Act (1980 CA) follows the discretion of the Director General of Fair Trading (DGFT). Where, as a result of a conducts inquiry, the DGFT finds that an anti-competitive practice exists, which operates or might potentially operate against public interests, the party concerned may be asked to give

undertakings to remedy the anti-competitive effects of practices such as exclusive purchasing contracts, selective distribution systems, tie-ins, refusal of supply of parts required by competitors, and restrictive licensing policies. The possible competitive effects may eliminate competition, prevent the emergence of new firms, and, thus, distort competition between firms. If undertakings are not given to revert the possible anti-competitive effects of these practices, the DGFT may ask the Commission for further investigation. If in the MMC's opinion it is found that the practices carried out are against the public interest, the Commission may make recommendations. Once the Secretary of State has decided on action, and suitable undertakings are not carried out, he may make an order. Additionally, the Secretary, through a minister concerned, has the power to apply to the comptroller.

Finally, the public sector reference under Section 11 of the 1980 CA covers investigation of possible abuse of a monopoly situation carried out mainly by nationalised industries, as well as privatised companies. The reference addressed by the Secretary of State is for the Commission to investigate and report on relevant matters<sup>52</sup> concerning efficiency and costs of the services provided, and, if it is the case, to make recommendations for the improvement of the performance of the public sector body, and prevent adverse effects of any abusive conduct. The company is required in general to give its response to the Commission's recommendations, and it may do so on a follow-up scheme completed in plenty of time. An application to the comptroller to remedy an abuse of patent rights, if the circumstances justify it, is at least a remedy made available by the legal mechanism.

From the 1950s on, the legal mechanism reinforced or made available an improved method to deal with the anti-competition exercise of intellectual property rights. Such a legal move has not been confined to the United Kingdom. As a by-product of the post-war period, competition legislation and policy has spread world-wide, mainly in the OECD countries. While this move points towards an unparalleled political determination to force a change in the ethics of trade relations, this legal intervention inevitably comes to influence the way the intellectual property right is exercised. As a result of its gradual interaction with intellectual property, competition law has then affected the safeguarding policy which is *per se* a

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<sup>52</sup> Excluding aspects relating to Government policies like ministerial financial obligations imposed on the undertaking.

concurrent mechanism of control attracting a general consent.<sup>53</sup> This seems to be a sign of defeat of the absolute concept of property, but - very importantly - it does not mean the surrender of property owners. They have claimed the establishment of greater transparency concerning the grounds on which intellectual property may be limited. Competition rules are intended to meet such a claim. As a valid mechanism to govern the safeguarding policy, competition law has apparently become of immense value to guide both the legal control upon the use of intellectual property and the intervention on efficiency grounds from intervention on a welfare basis.<sup>54</sup> Further discussion on this point is to be found in next chapter.

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<sup>53</sup> Agreement on TRIPS, Article 40; IPIC Treaty, Article 6(3) (b).

<sup>54</sup> Agreement on TRIPS, Article 31 (patent use without the patentee's consent by the government or third parties authorised by the government); IPIC Treaty, Article 6(3)(a). See the previous note.

**CHAPTER SIX**  
**INTELLECTUAL PROPERTY ORDER AND THE ROLE OF COMPETITION**  
**LAW**

**6.1 Introduction: the IPR exercise and the competitive process**

As was shown in chapter two, technical innovation in the theory of economic growth as well as in market dynamics is a significant element in the modern economy. Intellectual property rights, which protect innovation-related products, confer exclusivity upon their owners and, in contrast, competition law usually strives to keep markets open. Therefore, tension between these two matters is inevitable. As a result, competition law has increasingly been applied as a general instrument to order the market by governing the exercise of proprietary rights. The consequences of this are twofold:

- the discouragement of certain safeguarding measures intrinsic to intellectual property law, such as remedial revocation and compulsory licensing granted on non-working of patents, and consequential emergence of remedial safeguards which rely on competitive grounds and on individual merits;<sup>1</sup> and
- the stress on an institutional policy more responsive to efficiency and welfare claims.

The resort to unauthorised use of intellectual property rights, or compulsory exchange of intellectual property assets, suggests that the market does not run naturally. Although market organisation freed from regulatory constraints has at all times been defended by liberal ideas, historical reality has shown that the market itself, through self-adjusting forces of competition, has failed to provide for a sound discipline of the exercise of intellectual property in a manner so as not to stifle competition and thus satisfy the social bargain.

While legal protection for the sake of private exploitation is a major concern, the role of the law is equally addressed to encourage an efficient exercise of proprietary rights and ensure competitive access to intellectual property.

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<sup>1</sup> The combination of the Articles 37(2), 31 and 40 of the Agreement on TRIPS reflects the tendency of the legal policy applied in leading industrialized countries and Great Britain in particular.



As was seen in the previous chapter, some remedial measures adopted in the past were apparently inefficient, and in being so unnecessarily oppressed the private autonomy of exploitation. Today, there is a belief in the function of competition rules to order the exercise of intellectual property rights. Evidence in support of this remark is the resurgence of competition law, and increasing resort to its mechanisms to curb the effects arising from the use of intellectual property in a manner adverse to competition.<sup>2</sup> The gradual application of such mechanisms coincided with the abandonment of remedial safeguards<sup>3</sup> which unnecessarily restricted private exploitation of proprietary rights. Within the framework of competition law, efficiency and welfare arguments seem to be a legitimate tool against a "sacrosanct" freedom of exploitation of proprietary rights. Where restrictions to this private exploitation are allowed on grounds other than economic efficiency, a desirable legal policy moves towards the establishment of tight conditions and transparent procedures, thus suggesting an intervention on efficiency grounds distinct from an intervention on a public welfare basis.<sup>4</sup> The question now is this. Have thoughts and concepts on competition the ability to provide for a satisfactory assessment of efficiency and welfare as preferable criteria to limit the exercise of intellectual property rights?

It is suggested that competition law and policy do offer a basis for a welfare/efficiency defence. Although incomplete, i.e., of relative value, the set of rules on the basis of which welfare and efficiency are claimed inflict a commitment on the adjudicator. It is also suggested that the resurgence of a competition phenomenon corresponds with the belief that the working of a free market, and along with this a lawful private exploitation of intellectual property rights, depends on sound control of the competitive process. Consequently, as far as the market for intellectual property is concerned, what is best for society cannot be left entirely up to market self-regulation or the choices of individual firms.

The second section of this chapter sets out to establish the evolution of competition legislation and policy, as a post-war trend, and their contribution towards the ordering of

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<sup>2</sup> Agreement on TRIPS (Articles 7, 8, 31 and 40) and IPIC Treaty (Article 6).

<sup>3</sup> Patent revocation on the ground of non-working is an example, which was a safeguarding measure intrinsic to the UK intellectual property law.

<sup>4</sup> Cf. Article 31 of the Agreement on TRIPS on regulatory conditions for the unauthorized use of patents by the government and private firms, in.

intellectual property. It will be seen that over the past three decades or so a number of countries have improved competition law and policy. Against a reluctant philosophy of the past, this move itself is evidence of how desirable it is to improve competition. Different reasons may compel countries to do this, such as to combat inflation, strive for wealth distribution, and pursue a balanced market structure. Such improvement is in response to a global economic reality of which intellectual property is only a part of the issue. In practical terms, the advantages of that improvement include the strengthening of a safeguarding policy on intellectual property, and the creation of a better environment for technical progress and economic welfare.

The legislation, by addressing the interests of both foreign and national traders, envisages a variety of purposes. It is designed to strive for gradual changes in the market structure, by preventing firms from operating practices adverse to competition, and making sure that market concentration does not lead to undue manipulation of the market. Nevertheless, provided they do not impede competition, restraints may be tolerated. As to concentration, the concern is that while joint ventures may be a vehicle to promote innovation and legitimate creative businesses, they should not lead to a cartel so as not to stifle competition. By pursuing these aims, the legal development has a great deal of impact on intellectual property ordering.

In keeping the competitive process under surveillance, the working of the legislation has the effect of balancing the role of intellectual property rights as a matter of public interest, i.e., while assuring the freedom of private exploitation, a set of legal measures is available to make sure that intellectual property rights are not used as a basis for restraints incompatible with the scope of the protected rights. To this end, the way the legislation operates is significant.

There are basic concerns, as to legal implementation. These include the withdrawal of state patronage concerning sanctioning of unlawful practices, the facilitation of voluntary compliance, the contribution of lay men, and a degree of discretion exercised by government authorities. Relying on government agencies and individuals, enforcement also resorts to guidelines as valid regulatory practices. Although precarious, guidelines may be useful as

regulatory means to reach flexibility and transparency of procedures, which ultimately are required to observe the particulars of individual countries and legal cultures

The third section examines the role of the thoughts and concepts on competition to limit the exercise of intellectual property rights by controlling the competitive process. A question open to discussion is to what extent competition law ensures the achievement of welfare and efficiency gains associated with the exercise of intellectual property. Having a relative value, regulatory and judicial principles inform the legal activities and command the pursuit of efficiency and welfare. To what degree these are achieved is an other story. As a legal tool, thoughts and concepts provide a basis for the process of reasoning, and express general commitment to which competition bodies and courts are bound.

To some extent, the legal framework recognises the capacity of policymakers, government bodies and courts, to promote public welfare relying not only on efficiency. While entailing some degree of flexibility, the "workable competition" and "useful effect" principles are based on the assumption that efficiency should not be pursued for the sake of efficiency. Similarly, under the "existence/exercise of right" divide, the exercise of intellectual property rights is lawful to the extent that the owner does not expand his right beyond the boundaries of the legal grant. The "per se rule" and the "rule of reason" are part of a scheme to approach the problem analytically, allowing, however, a grey area between what is considered lawful and unlawful. In addition, the principles of "prohibition" and "abuse control" are part of the legal framework governing the competitive process. These principles tell little about the ability to provide effective control of that process. The same can be said as to the use of guidelines. The gist of these legal instruments is that the concern with achieving efficiency and welfare goals put the legal format and the process of decision making in the same focus.

In its international dimension, limitations on the exercise of intellectual property rights are addressed through co-operation based solely on limited comities. This causes a gap between, on one side, the international regulation of the existence and enforcement of intellectual property rights and, on the other hand, the international regulation on the exercise of intellectual property rights through competition rules. International regulation shows how

much countries are committed to protecting intellectual property. On the contrary, governments are not sure about the degree of commitment they are prepared to make on matters of international competition. As a result, competition regulation on the exercise of proprietary rights internationally is rather poor. Such a contrast may turn into a source of distortion.

This chapter starts with an overview of the legislation on competition in seven major OECD jurisdictions.<sup>5</sup> It is not a comprehensive survey, nor does it intend to answer why competition legislation became fashionable in the post-war period. The main purpose is to give an account of the growing development of the legislation within the region, and establish the main legal features.

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<sup>5</sup> Canada, France, Germany, Japan, United Kingdom, United States of America and European Union. The expression "European Union" created by the Treaty on European Union, (Maastricht Treaty) signed on 7.2.1992, is often replaced in the text by European Community, or simply "EC" or "EEC" interchangeably used.



## **6.2 Resurgence of competition law and policy**

### **6.2.1 Main features of selected jurisdictions**

#### **(i) Canada**

Canada has long considered the competition matter with due concern. Its first antitrust law was passed in the last century,<sup>1</sup> but like other countries, such as England and France, before the Second World War competition law had no significance. From 1959, the country has formally kept antitrust co-operation with the United States as a result of its concern with the extraterritorial effect of antitrust law.<sup>2</sup> The country has also held a policy of compulsory licensing as to patented drugs adopted as a consequence of excessive drug prices in the 1950s and 1960s.<sup>3</sup> The policy has been retained because it "has promoted increased competition and reduced drug prices."<sup>4</sup> A proposed law presented to the Parliament provided that:

*a patent holder would be given an exclusivity period of 10 years from generic drugs imports, or 7 years if the generic company were to manufacture in Canada. A Patented Medicine Review Board would be set up to monitor drug prices on the basis of comparison with prices of similar drugs elsewhere in the world, the consumer price index, and the evolution of manufacturing costs. If the Board finds that a drug price is excessive, it would be empowered to set price ceilings and revoke the exclusivity rights. The legislation also provides for a review by Cabinet in 4 years and by Parliament in 10 years.<sup>5</sup>*

Before passing new Acts, both the Government and Parliament have traditionally investigated matters of intellectual property and competition,<sup>6</sup> perhaps because they are

<sup>1</sup> The Dominion antitrust statute of 1889 is prior to the US Sherman Act of 1890; the Canadian statute is only preceded by the English Statute of Monopolies of 1624, and the French Law of 1791.

<sup>2</sup> See Foreign Extraterritorial Measures Act of 1984. Scherer & Ross, *Industrial Market Structure and Economic Performance*, p. 12, 13, 3rd ed., 1990; OECD, *Competition Policy in OECD countries 1984-5*, p. 50, 53/54.

<sup>3</sup> Patent Act 1969, s. 41(4). As a result of an inquiry undertaken in 1985 reporting favourably the retention of the compulsory licensing policy (OECD, *ob. cit.*, p. 57), the 1987 Patent Act (Bill C-22) was introduced; it saves compulsory licence for domestic manufacture of drugs, accords protection for drug products (previously only processes were subject to protection), and empowers a surveillance body either "to direct the reduction of prices to a specified level, or declare that specified products are no longer covered by the statutory exclusivity periods." OECD, *Competition Policy in OECD Countries 1987-88 Report*, p. 79.

<sup>4</sup> OECD, *Competition Policy in OECD Countries 1985-86 Report*, p. 63.

<sup>5</sup> The pending Bill C-22 was expected to be enacted by June, 1987. OECD, *Competition Policy in OECD Countries 1986-87 Report*, p. 56/57.

<sup>6</sup> The concerned authorities largely explore the implications of the protection of intellectual property to competition. This is the case of the 1984 copyright reform launched by the Government to review the Copyright Act of 1924, extending copyright protection to new subject matter including computer programs.

aware of the fact that the Canadian economy is characterised by having a "high level of concentration and significant international competition."<sup>7</sup> The current legislation on competition reflects such an awareness.

The new legislation passed in 1986 is the result of long preparation initiated in 1969<sup>8</sup> In an introductory exhortation, Parliament outlined the general purpose of the Act, that is, "to maintain and encourage competition" so as to:

- *promote the efficiency and adaptability of the Canadian economy,*
- *expand opportunities for Canadian participation in world markets while at the same time recognising the role of foreign competition in Canada,*
- *ensure that small and medium-sized enterprises have an equitable opportunity to participate in the Canadian economy, and*
- *provide consumers with competitive prices and product choices.*<sup>9</sup>

Similar to a trade pact, the Act is a modern piece of legislation where the interests of both foreign and national traders are addressed. One merit of the Canadian Competition Act is its departure from the rigid system which characterised competition legislation of the post-war period.<sup>10</sup>

The 1986 Act provides a guiding non-exhaustive list of anti-competitive practices. Moreover, it updates the level of fines, provides for the use of negotiated settlements and relies on administrative law process and on non-criminal remedies. The flexible approach of the enforcement process is designed to facilitate voluntary compliance. The adjudicative function of the Competition Tribunal, made up of judicial and lay members, is kept separate from the investigation and research inquiries activities.<sup>11</sup>

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Once the discussion was opened, a great deal of inputs was brought on the need "for checks and balance against possible abuse of market power." The reform was made effective in 1987. OECD, Competition Policy in OECD countries 1984-85 Report, p. 54; Report 1985-86, p. 62; and Report 1986-87, p. 57.

<sup>7</sup> OECD, Competition Policy in OECD Countries 1986-87 Report, p. 52.

<sup>8</sup> Competition Act and Competition Tribunal Act of June 19, 1986. See OECD, Competition Policy - 1986-87 Report p. 52.

<sup>9</sup> Competition Act, Section 1.1, OECD, Competition Policy - 1986-87 Report, p. 52.

<sup>10</sup> The previous Canadian competition law had been passed 75 years before and had limited enforcement mostly due to the constraints of the burden of criminal evidence the old law embodied, a feature commonly found in the contemporaneous competition legislation.

<sup>11</sup> Ob. cit., p. 52-60.

Particular attention is drawn to Section 32 of the Competition Act which provides for remedial measures against undue restraints as to the use of patent and copyright.<sup>12</sup> The provision reflects the Government's perception of the interface between intellectual property and competition. In a statement issued by the main competition body, it is said that "where the exercise of such rights [intellectual property] involves the undue restraint of trade, competition policy can balance the role of intellectual property rights."<sup>13</sup> All the leading OECD countries share this awareness.

## (ii) France

By the end of the 1970s, France had put a new policy in place. Its priority goal was gradually to replace price control by free competition which pushed firms out of vicious practices affecting supply conditions and industrial prices. One of the purposes of the legal measures<sup>14</sup> was to strike the structural causes of inflation by eliminating trade restraints, inducing firms to take full responsibility on the market, particularly regarding prices, and exposing themselves to sharp domestic competition as a step to facing international markets. The measures also included the setting of new enforcement bodies.<sup>15</sup> The Competition Commission was charged with the control of cartels, advising the Government on competition issues, and delivering opinions on concentration operations.<sup>16</sup>

In 1985 France amended its 1977 Act.<sup>17</sup> The amendment Law established new forms of competition, provided the concerned authorities with the necessary decision-making power,

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<sup>12</sup> The 1988 Amendment Copyright Act (Bill C-60) provided an amendment to Section 32 of the Competition Act 1986 in order to contemplate copyright-related anti-competitive restraints. Similar provision is found in the Bill C-57, regarding the protection of the integrated circuit topography. OECD, *Competition Policy in OECD Countries 1987-88 Report*, p. 58; *1988-89 Report*, p. 54; and *1989-90 Report*, p. 89.

<sup>13</sup> Canada, *Canadian Competition Policy: Its Interface with other Economic and Social Policies, A Framework for Discussion*, p. 27, Bureau of Competition Policy Consumer and Corporate Affairs, September 1989.

<sup>14</sup> Law No. 77-806 of 19th July, 1977, on the Control of Economic Concentration and Prevention of Unlawful Cartels and Abuse of Dominant Positions. Regulations followed to bring the Act into operation: Decrees of 25th October and 23rd November, 1977; Circular of 10th January and 14th February, 1978. The previous legislation was passed as early as 1791, but in Scherer's words "was largely ignored." Scherer & Ross, *ob. cit.*, p. 13.

<sup>15</sup> The General Directorate for Competition and Consumer Affairs, and the Competition Commission.

<sup>16</sup> OECD, *Annual Reports on Competition Policy in OECD Countries 1979*, p. 29-39

<sup>17</sup> The Law No. 77-806 was amended by the Law of December 30, 1985.



made procedures less legalistic, and subjected the power of investigation to court supervision. As to anti-competitive practices, the new provisions focused on refusal to sell, price discrimination, cartels and the abuse of dominant positions; provided that they do not impede competition, such practices are acceptable as far as the result stemming from them is positive<sup>18</sup>

Taking the reform a step further, the 1986 Ordinance<sup>19</sup> consolidated and defined restrictive practices, and improved the institutional structure by assigning responsibilities to administrative and judicial authorities, and simplified procedures. The principles behind the reform are summarised as follows:

- *The withdrawal of the State patronage concerning the sanctioning of unlawful behaviour;*
- *The strengthening of surveillance of competitive structures in the economy with a view to controlling concentration;*
- *The predominant role of civil courts in curbing unlawful practices between enterprises.*<sup>20</sup>

Other features of the French reform included the role of the civil courts, which may hear matters on competition and apply Articles 85-1 and 86 of the Treaty of Rome; and the implementation of a system oriented to the depenalization of abusive trade practices. This is a trend followed by OECD competition authorities, which have limited the use of penalties to those obvious horizontal violations intentionally designed to restrict output and raise prices.<sup>21</sup>

Overall, the aim of the French reform was to encourage technical progress and improve market structure. This trend is essentially followed by Germany.

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<sup>18</sup> OECD, *Competition Policy in OECD Countries*, Report 1985-86, p. 109

<sup>19</sup> Ordinance No. 86-1243 of December 1, 1986.

<sup>20</sup> OECD, *Competition Policy in OECD Countries*, 1986-87 Report, p. 98/99. Reaffirming a liberal policy, the reform goes ahead to frame a system where the State has no patronage role in dealing with competition matters, but it ensures that an adequate structure is provided to safeguard the private interest. An independent body, the Competition Council, is created and undertakes some functions previously committed to the Competition Commission.

<sup>21</sup> OECD Secretariat, *Competition and Economic Development*, p. 15, OECD, Paris, 1991. An exception is the United States which has increased the level of criminal sanctions.

### (iii) Germany

Apparently, in the last century, Germany faced great difficulties in developing a free trade economy.<sup>22</sup> The notion of freedom of trade was judicially construed to admit the legality of cartels that the Imperial Court considered as a necessity (1897), and as such served war purposes.<sup>23</sup>

After a long history of cartelized economy, in 1957 Germany passed its Cartel Act (Act Against Restraints of Competition), amended several times.<sup>24</sup> A more liberal position was addressed as to the regulation of unfair practices. Inspired by classical liberalism, the Act Against Unfair Competition of 1909 provided abstract rules which have required a great deal of work for the courts to construe on them.<sup>25</sup> Over the two last decades, German competition legislation has been subjected to amendments,<sup>26</sup> in order to comply with the current European sense of economic modernisation.

The challenge the country faced in the 1980s was to inhibit anti-competitive practices, and to strike a gradual change in the market structure. Such adjustment over the years resulted in the increasing need for both changing structural conditions and promotion of technological progress.<sup>27</sup> One of the available legal measures designed to push that progress is the legal possibility<sup>28</sup> of an IPR licence agreement to be declared ineffective or unenforceable, if it is used as a basis for restraints incompatible with the scope of the protected right

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<sup>22</sup> This difficulty is accused by Beier, when refers to the passage of the Freedom of Trade Act of 1869. *In Patent Protection and Free Market Economy*, [1992] 23(2) IIC 161.

<sup>23</sup> Under Nazi policies, the formation of "compulsory cartels" was legally regulated (Law of July 15, 1933). *In Competition Laws, Documents on Politics and Society in the Federal Republic of Germany*, p. 7/8. Code No. 700 Q 5716, 1990. Now called Documents.

<sup>24</sup> The Cartel Act was amended in 1965, 1973, 1976, 1980, and 1989 (the fifth amendment came into force in 1 January 1990). *In Documents*, p. 11.

<sup>25</sup> *Documents*, p. 16. The Act on Price Reductions (Rebates Act) of 1933 is an ancillary statute as part of the law against unfair competition.

<sup>26</sup> The 1989 Cartel Act amendment aims at redefining the criteria on assessment of market position, implementing measures for the merger control, and making an exception related to joint dealing. *OECD, Competition Policy in OECD Countries 1989-90 Report*, p. 163.

<sup>27</sup> See *Competition Policy in OECD Countries - 1984-85 Report*, p. 104; *1985-86 Report*, p. 117; *1986-87 Report* p. 114; and *1987-88 Report*, p. 118.

<sup>28</sup> The Section 20(1) of the Cartel Act reads: *Agreements concerning the acquisition or use of a patents, utility models, or protected seed varieties shall be ineffective in so far as they impose upon the acquirer or licensee any restrictions on his business conduct which go beyond the scope of the protected right; restrictions pertaining to the type, extent, quantity, territory or period of exercise of such right shall not be deemed to go*

The extent to which a restrictive arrangement is held unlawful is to be assessed under the statutory exceptions. In any case, no illegality is recognised in the absence of perceptible or potential effects of the agreement on market conditions. According to the court interpretation and the discretion exercised by the competition authority,<sup>29</sup> these effects are disregarded on different grounds, such as absence of market power, existence of alternative sources of supply, minimal restriction, and safety and health considerations.

Although with different legal traditions, Japan also shares with Germany a past history of economic concentration.

#### (iv) Japan

The experience of Japanese competition law is half as long as that of the United States. The main statute is the Anti-Monopoly Act.<sup>30</sup> Its original text was written with the assistance of the Allied Forces. Prior to World War II, the Japanese economy largely relied on business conglomerates (*zaibatsu*) and "the concentration of economic power was not necessarily regarded as a negative phenomenon."<sup>31</sup> As soon as the occupation ended, the Anti-Monopoly Act was found too restricting, and for this reason was amended. A second amendment occurred in 1977 as a result of business practices performed by major corporations.<sup>32</sup>

Following complaints of the inefficiency of the Fair Trade Commission,<sup>33</sup> Japan and the United States moved into negotiation aimed at relaxing the rigid bar to the entry of foreign

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*beyond its scope*. In Documents, p. 32. The Section 21 makes similar provision, concerning exploitation of uncoded technical assets considered as trade secrets. Limitations to these provisions apply in specified situations.

<sup>29</sup> Cf. Oliver Axster, *Joint Ventures and Antitrust with Particular Emphasis on the Development of German Antitrust Theory and Practice*, 1991 Corporate Law Institute, Chapter 24, p. 599. See [Documents, p. 7, 8]

<sup>30</sup> Act No. 54 on Prohibition of Private Monopoly and Maintenance of Fair Trade 1947 (Anti-Monopoly Act). Other laws are: Act No. 120 Against Delay in Payment of Subcontract Proceeds 1956, Act No. 134 Against Unjustifiable Premiums and Misleading Representations 1962. OECD, *Competition Policy in OECD Countries 1984-85 Report*, p. 125.

<sup>31</sup> Hiroshi Oda, *Japanese Law*, p. 343, Butterworths, 1992. The concentration was a consequence of the model of industrialization adopted by the Government in the late 19th century.

<sup>32</sup> H. Oda, *ob. cit.*, p. 344. The first amendment to the Anti-Monopoly Act was passed in 1953, and the second in 1977 during the oil crisis and it was designed to strengthen market democratisation.

<sup>33</sup> Federal Trade Commission (FTC) is the main Japanese competition body with exclusive mandate to carry out investigations. The public enforcement is put forward provided that a public interest reason is established.

firms.<sup>34</sup> As a result of American pressure, the Japanese FTC is carrying out tougher enforcement measures.<sup>35</sup> Guidelines are also part of the enforcement programme. The *administrative guidance* is a type of informal enforcement very peculiar to Japanese culture,<sup>36</sup> and is expected to serve the development of competition policies.

The Japanese experience is interesting in the sense that it shows how the country, known as having a highly concentrated market,<sup>37</sup> has managed to emulate antitrust rules and adapt them to the Japanese legal culture patterns.<sup>38</sup> In this respect, the Guidelines on unfair trade practices related to patent and know-how licensing<sup>39</sup> are very illustrative. Introductory notes recognise as a matter of principle the procompetitive effect of the patent, and that licensing arrangements could also have procompetitive effects if they do not hamper market entry of new traders, thus, increasing the number of competing entities, and "technology can be utilised more efficiently." In the scrutiny of individual cases, the guidance is tested under the surveillance of the FTC.<sup>40</sup>

Three detailed and indicative lists of restrictions have been elaborated. Restrictive practices are classified as follows: (a) restrictions in principle lawful; (b) restrictions which may be found unlawful; and (c) restrictions highly likely to be found unlawful. The restraint is regarded lawful under consideration of *efficiency* and that it has no apparent negative effect

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Only in 1991, nearly two decades after the oil crisis, did the FTC start criminal proceedings against illegal cartels.

<sup>34</sup> The Structural Impediments Initiatives Talk started in 1991.

<sup>35</sup> The actions include criminal prosecution against cartels. See Hideki Ogawa, "The FTC's Tougher Position Confirmed in Tokyo for Price-Fixing Cartel, A Symbolic Food-Wrap Case?", [1993] 17(1) *World Competition Law & Economics Review* 155.

<sup>36</sup> In the past, administrative guidance (*Gyohsei-shidoh*) served to assist domestic investors to achieve greater economies of scale through concentration. See John O. Haley, *Administrative Guidance v Formal Regulation: Resolving the Paradox of Industrial Policy*, in "Law and Trade Issues of the Japanese Economy, An American and Japanese Perspectives" (1985) pages 107-123, edited by G Saxonhouse & K Yamamura.

<sup>37</sup> See John O. Haley, *ob. cit.*, p. 107.

<sup>38</sup> Traditionally, Japanese culture is well-known to be based on "the primacy of the group" rather than individual freedom, so as "the individual interest is merged in the group interest." And it has been identified by its "aversion to law", logical thinking and legal process. All of these contrast with the competitive rationale behind the antitrust law. For accounts on the Japanese concept of law, see Chin Kim & Craig M Lawson, "The Law of the Subtle Mind: The Traditional Japanese Conception of Law", [1979] 28 *The Int'l and Comp. L. Quarterly*, 491; and F. K. Upham, *Law and Social Change in Postwar Japan*, p. 205/206, Harvard Univ Press, 1987.

<sup>39</sup> See the 1989 FTC Guidelines for the Regulation of Unfair Trade Practices with Respect to Patent and Know-how Licensing Agreements. [The Guidelines] The text is published in [1990] 21(5) *IIC* 662-679.

<sup>40</sup> The Guidelines, Preamble, note 3. According to Para. 2 of Section 6 of the Antimonopoly Act, international arrangements are filed and examined by the FTC.

on trade. The possible unfair restraint of those practices described in list (b) is examined in the light of the nature of the market, the position of both licensor and licensee related to the market conditions, and the length of the arrangement. In list (c) a specific reason has to justify the restraint, otherwise it will be held unlawful. A clearance made by the FTC has no perpetual effect.<sup>41</sup> After a clearance has been effective, the competition Agency may declare a restriction unlawful in view of actual circumstances

Apart from the FTC enforcement activities at both criminal and civil levels, Japan is considering or is conducting new developments in its law.<sup>42</sup> An amendment to the Monopoly Act has been drafted, mainly to address higher criminal fines, and the Government has promised a broad review of the cartel law for 1995. Guidelines have been and are being developed with a view to striking more transparency in the distribution system and business practices, and joint research and development. They now start looking at deregulation and privatisation, a matter which may raise much domestic debate. The announced policy seems to follow the British path, that is, to enhance competition first and deregulate later on.<sup>43</sup>

## **(v) The United Kingdom**

### **The legislation from 1948 to 1968**

Before the introduction of monopoly and merger control in 1948, the problem of anti-competition behaviour in Britain was addressed only by common law, but it is unclear to what extent it contributed to controlling the competitive process. Above all, a trader was entitled, "in all matters not contrary to law, to regulate his own mode of carrying it on according to his

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<sup>41</sup> The Guidelines, Section 3.

<sup>42</sup> See Mr Yamada's statement on the Panel Discussion "The United States and Japan", in 1992 Proceedings of the Fordham Corporate Law Institute, *International Antitrust Law & Policy*, Chapter 6, p. 107 at 113, edited by Barry Hawk, 1993.

<sup>43</sup> Deregulation is associated with privatisation and trade liberalization. As a result of the implementation of such a policy, state-owned companies are transferred to the private domain, and entry of transnational companies is allowed or facilitated, consequently there is a risk of aggregation of capital at private hands with impact on market structure. Thus, a workable competition policy is necessary to make markets competitive in their structure and in the conduct of suppliers. The point now made may give room for some contention. In this regard, see Gordon Borrie's comments, p. 331 at 333, and debates on competition in developing market economy, chapters 17, p. 385, 20, p. 533, and 21, p. 539, of the 1992 Fordham Corporate Law Institute proceedings, *International Antitrust Law & Policy*, Barry Hawk (ed.), 1993.

own discretion and choice."<sup>44</sup> In the case of monopolies, there was a hostile attitude to them. Monopolies were despised because of the stifling effect they had on freedom of trade. However, it was believed that the results of monopolistic co-operation would not last for long; under pressure of reactive market forces, sooner or later they would be eliminated by competition between individuals. On these grounds, contracts in restraint of trade could generally be upheld in the classical period.<sup>45</sup> Moreover, once a licensee accepted a licence he was not allowed to challenge the validity of the patent in an action under the licence. This was a restriction usually held at common law.<sup>46</sup>

Albeit of limited scope, a significant element of the common law was the doctrine of restraint of trade, according to which a restriction would be upheld as far as it was necessary to protect the legitimate interest of a party to an agreement. There was no objective criteria to assess the legitimacy of interest, except that the restriction had to be reasonable between the parties. There was a presumption that the restriction was unreasonable and thus void, and the burden to prove otherwise rested on the plaintiff. In general, the reasonableness required proper consideration by the courts to circumstances of time, space and subject-matter. The restriction also had to be reasonable as to the public interest, the burden of proof being of the defendant, but the courts were reluctant to declare a restriction void under this requirement.<sup>47</sup>

It has been argued that at common law there was also a sort of economic tort, enabling "a plaintiff whose economic interests have been injured by the behaviour of the defendant to recover damages."<sup>48</sup> From this, it has been suggested that to a certain extent, there appeared to be a generalised unfair competition doctrine capable of preventing "one firm from appropriating valuable commercial ideas from another which [did] not themselves qualify for protection under intellectual property law."<sup>49</sup> Nevertheless, it is unclear to what extent

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<sup>44</sup> *Hilton v. Eckersley* [1855] 119 E.R. 781 at 792 (statement of Alderson, B.).

<sup>45</sup> *Wickens v. Evans* [1829] 148 E.R. 1201 at 1206 (statement of Hullock, B.). As it is referred by Atiyah, the classical period is around 1800 to 1870. Atiyah, *ob. cit.*, p. 410.

<sup>46</sup> Cf. William Aldous *et al* (1982) *Terrell on the Law of Patents*, p. 258-260. The estoppel against the licensee was limited to actions under a licence. See *Fuel Economic Co. Ltd. v. Murray* [1930] 47 R.P.C. 346 at 353.

<sup>47</sup> For an account about restraint of trade at common law, see John Bell, *Policy Arguments in Judicial Decisions*, ch. VI, Clarendon Press, 1983. See also *Mogul Steamship v. McGregor* [1892] AC 25; *Nordenfelt v. Maxim Nordenfelt* [1894] AC 535; *Schroeder v. Macaulay* [1974] 1 W.L.R. 1308.

<sup>48</sup> Richard Whish, *ob. cit.*, p. 58, 59. See this work for bibliography and cases on the matter.

<sup>49</sup> *Idem, idem*.

common law is reflected in contemporary competition law which, emerging after the Second World War, relies entirely on statutory controls

In the second half of the 1940s, there was great concern about the growing concerted practices formed in the inter-war recession. In contrast to the leniency of the Government and the industry, political economists expressed hostile reactions against that monopolist and anti-competitive behaviour, regarding it as detrimental to society and to economic productivity.<sup>50</sup> The 1948 Monopolies and Restrictive Practices (Inquiry and Control) Act (1948 Act) was a response against that growing tendency.

The 1948 Act established a system to investigate dominant firms. No illegal conduct from which duties or rights could arise was defined. The Board of Trade had the discretion to require the investigation of a concrete monopoly situation (e.g., the supply by or to the same, or two or more persons, of at least one third of goods). If a restrictive practice was found to prevent or restrict competition, remedies were exercisable with Parliamentary approval. In 1956 changes were made to include the control and investigation of other types of agreements (e.g., market share and price fixing), to require the registration (without sanction until 1968) of certain agreements, and to prohibit maintenance of collective resale prices.<sup>51</sup> In 1965 the control of services and mergers was introduced.<sup>52</sup>

It is unclear how significant these Acts were to the control of both restrictive agreements and monopolies relating to intellectual property rights. Under the 1948 Act, as a result of a report of the Monopolies and Restrictive Practices Commission, Government authority had no power to take any direct action against a restrictive condition relating to a patent or design, or limit the exercise of the patent right. However, based on a competition report and upon application made by the competent authority, the comptroller could issue an adequate order. The report could also render prima facie evidence of a stated matter in relation to which a licensing condition was considered void, thus depriving the patentee from action against infringement. Moreover, restrictive agreements relating to patent pooling, or

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<sup>50</sup> 1944 White Paper on Employment Policy, Cmnd. 6257, para. 54.

<sup>51</sup> 1956 Restrictive Trade Practices Act. The 1968 Act of the same denomination (s. 7) made unregistered registrable agreements void and unenforceable.

<sup>52</sup> 1965 Monopolies and Mergers Act.

restrictions on prices and customers related only to patent and/or designs were not covered by the 1956 Restrictive Trade Practices. Nevertheless, the influence of this legislation for the competitive exercise of intellectual property rights cannot be underestimated. Published in 1951, the Report on the Supply of Insulated Electric Wires and Cables found that the licensing policy on patent and exchange of technical information was very liberal. Such a policy was held by associations of manufacturers of telephone and mains cables. Arrangements among affiliated manufacturers made patents readily available in conditions such as:

- *members having a patent made it available to any other member on request of a licence;*
- *no discrimination between members was permitted;*
- *with permission of the association, licences were granted to non-members on terms and conditions not less favourable than those to members;*
- *permission to licence non-members could not be unreasonably withheld.*<sup>53</sup>

There was an extensive practice of co-operation between cable manufacturers, and no case of refusal of licence to non-members was found. Although this isolated industrial attitude cannot sufficiently support a suggestion that a competitive culture was being formed as a result of the existence of the cited legislation, one should not ignore the value of the law as a catalyst, and as such it may contribute to the competitive process generally.

The early legislation has now been replaced by the 1973 Fair Trading Act (1973 F.T.A.), 1976 Restrictive Trade Practices Act (1976 R.T.P.A.), 1976 Resale Price Act (1976 R.P.A.) and the 1980 Competition Act (1980 C.A.) which comprise the main current laws.<sup>54</sup>

### **Monopoly and merger under the 1973 F.T.A.**

The 1973 F.T.A. was designed to improve the legal system of the competitive process put in place by the previous legislation on monopoly and merger control, mainly focusing on a particular industry and product, excluded the bulk of monopoly situations in services dealt

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<sup>53</sup> The Monopolies and Restrictive Practices Commission [1951-52] 10 Reports Commissioners & C., p. 23, 24, 50.

<sup>54</sup> For the whole range of legislation, see Butterworths Competition Law, edited by Freeman and Whish, 1993.



with under the restrictive practice legislation.<sup>55</sup> The Act enables the Secretary of State to refer a merger situation to the MMC as he thinks fit. I also created the Office of Fair Trading which plays a central role in the implementation of the competition policy, and reduces the threshold requirement of market share to 25% in terms of the buying or selling power of relevant goods or services.

It should be noted that the arbitrary figure of 25% does not necessarily imply market power in the economic sense, but has only the purpose to define the relevance of the situation to be investigated, thus, to unleash the jurisdictional duties of the referring agencies.<sup>56</sup> The statutory policy is this. A market share in the legal meaning less than 25% is not relevant from the point of view of the public interest.

Pricing arrangements not falling under the 1976 R.T.P.A may be investigated under the provisions dealing with the complex monopoly of the 1973 F.T.A. In this respect, it has been argued that problems may arise sometimes as to the system, whether the F.T.A. or the R.T.P.A, applicable to a particular type of anti-competitive behaviour.<sup>57</sup>

Apart from the possibility of some action against the owner of intellectual property to be followed after an MMC report,<sup>58</sup> the 1973 F.T.A. reduces the exemption concerning anti-competitive agreements which may relate to intellectual property falling outside the Act.<sup>59</sup>

### **Anti-competitive practices under the 1980 C.A.**

Apart from the provisions abolishing direct price control and concerning the efficiency of the public sector, the 1980 C.A. is mainly concerned with control of anti-competitive practices outside the scope of the 1973 F.T.A.<sup>60</sup> Compared with the latter, the former was designed to

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<sup>55</sup> See exceptions in Part II, ss. 107-117, of the 1973 F.T.A.

<sup>56</sup> See criticism to these terminologies in Richard Whish, *ob. cit.* p. 68-70.

<sup>57</sup> R. Whish, *ob. cit.*, p. 71, 155, 156.

<sup>58</sup> 1977 Patents Act, s. 51; 1988 Act, s. 144, 238.

<sup>59</sup> Section 101.

<sup>60</sup> For an anatomy of the 1973 F.T.A. and the reasons for the enactment of the 1980 C.A., see Liesner Reports: A Review of Monopolies and Mergers Policy, Cmnd. 7198 (1978), and A Review of Restrictive Trade Practices Policy, Cmnd. 7512 (1979).

speed up the investigative process of anticompetitive conduct of single dominant firms or corporate groups with an annual turnover of not less than £5 million. The practices investigated include refusals to supply and those which raise barrier to entry and consequently restrict, distort or prevent competition. Despite the link with the market position, anti-competitive practices do not require market dominance.<sup>61</sup> The practices may be preliminarily investigated by the DGFT who may or may not proceed with a reference to the MMC which has no mandate to make recommendations about agreements falling within the jurisdiction of the Restrictive Practices Court.

The systems of the 1973 and 1980 Acts show a variation in competition policy. While the control of monopolies and mergers are submitted to a more exhaustive investigative process under the 1973 F.T.A.,<sup>62</sup> the investigative process of anti-competitive practices of dominant firms is swifter and the investigation can also be made by the DGFT. More severe yet is the control of restrictive trade practices scrutinised by the Restrictive Practices Court.

### **Restrictive trade practices under the 1976 R.T.P.A.**

The R.T.P.A. is concerned with agreements in any form affecting the buying and selling of goods and services, containing restrictions on conduct accepted by two or more parties carrying on business in the UK<sup>63</sup> The restrictions are related to prices or charges, market shares, business conditions or terms, quantity or description of goods, manufacturing process to be used, and amount of goods to be manufactured. The parties are required to send to the DGFT particulars of the agreements to which the Act applies. The legislation excludes some agreements from the need to be registered, as well as those dealing with patent, copyright or trademark. If the DGFT establishes that the agreement is a registrable one, i.e., contains a significant restriction, he refers it to the Restrictive Trade Practices Court for examination.<sup>64</sup>

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<sup>61</sup> See Richard Whish, *ob. cit.*, p. 102.

<sup>62</sup> As a result of an exhaustive investigation sometimes the MMC is able to discover mischiefs which fall outside its jurisdictional power. See R. Whish, *ob. cit.*, p. 71-72, 170-171.

<sup>63</sup> Sections 6, 7, 11 and 12 of the 1976 R.T.P.A. contemplate four categories of registrable agreements: restrictive agreements as to goods, information agreements as to goods, restrictive agreements as to services, and information agreements as to services.

<sup>64</sup> Reference may not be made if it may cause a conflictual problem arising from the operation of a specific provision of the Community Law.

The restriction will be prohibited if the Court finds it contrary to public interest. Yet under the 1976 R.T.P.A. collective resale price maintenance is prohibited; the DGFT must take proceedings in respect of registrable agreements, unless he is allowed to do otherwise;<sup>65</sup> and some restrictions are presumably against public interest.<sup>66</sup> These make the control comparatively rigorous. Perhaps such rigorous control, mainly affecting market share and price-fixing agreements, contrasting with the two flexible systems previously described, is justified on the basis that the scrutiny and prohibition of restrictions of that nature is a mechanism which *per se* discourages monopolies.

The Act has been criticised for being too formalistic (regarding the description of agreements and arrangements), thus making enforcement difficult and failing to tackle harmful cartels.<sup>67</sup> Nevertheless, the system has impeded several restrictive agreements to proceed and discouraged the formation of similar ones.

For over four decades, the whole competition system<sup>68</sup> has been gradually improved. Reform has been discussed<sup>69</sup> with a view to *inter alia* encouraging private enforcement,<sup>70</sup> and putting the system in line with EC law.

## **(vi) The United States of America**

### **Legal framework and competition bodies**

Designed to promote a competitive open market, the main US antitrust laws comprise the Sherman Act and the Clayton Act,<sup>71</sup> amended a number of times.<sup>72</sup> Additional legislation

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<sup>65</sup> Sections 1(2)(c) and 21.

<sup>66</sup> Sections 10, 19.

<sup>67</sup> See Richard Whish, *ob. cit.*, p. 170, 171.

<sup>68</sup> Including the 1976 R.P.A. which also applies to goods related to intellectual property, s. 10.

<sup>69</sup> Green Paper on Abuse of Market Power, Cm. 2100 (1992).

<sup>70</sup> Although private actions are not prohibited, damage is limited. Cf. Protection of Trading Interests Act 1980, s. 5.

<sup>71</sup> The Sherman Act 1890, and The Clayton Act 1914. 15 USC 15. The latter has specific provisions, and the former - basically a criminal statute - employs a broad wording.

<sup>72</sup> The Robinson-Patman Antidiscrimination Act 1936 and the Hart-Scott-Rodino Antitrust Improvements Act 1976 amended the Clayton Act.

brought substantive improvements,<sup>73</sup> and other supplements provide for exemptions or reduce restrictions.<sup>74</sup> In order to fulfil the policies behind the law, the Federal Trade Commission (FTC) was created and given authority<sup>75</sup> to policy anticompetitive practices, enjoying the power to deliver interpretative rules, and state general policies concerning unfair or deceptive practices affecting commerce.

In broad terms, the legal framework prohibits practices in restraint of trade, involving actions of a single person or group of persons possessing monopoly power, and consisting in price fixing or market division, combination or conspiracy to monopolise and attempts to monopolise, and price discrimination in sales of goods. It also makes tying arrangements unlawful as well as take-overs and mergers having anti-competitive effects. The impacts of these prohibitions on trade are pervasive, and their effectiveness is to rely on public and private enforcement.<sup>76</sup>

As far as recent legal developments<sup>77</sup> are concerned, three events merit consideration: the statutory provisions on joint research, the Department of Justice's Guidelines, and the statutory limitation on the patent misuse doctrine.

### **The National Co-operative Research Act**

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<sup>73</sup> The Wilson Tariff Act 1894 makes illegal combinations and contracts involving importers into the United States. The Federal Trade Commission Act 1914 created the body of the same name and provided for unfair methods of competition.

<sup>74</sup> The Webb-Pomerene Act 1918 exempts from the Sherman Act export business from the USA with no domestic competitive harm. And sector exemptions are made by the McCarron-Ferrugson Act 1945 and the Newspaper Preservation Act 1970. The Export Trading Company Act 1982 was passed to increase US exports by reducing restrictions on trade financing and provides for clearer regulation concerning antitrust application.

<sup>75</sup> Besides the mandate conferred by the Federal Trade Commission Act 1914, the FTC was given additional power as a result of the Wheeler-Lea Amendment Act 1938 and the Magnuson-Moss Act 1975. The Department of Justice and State Attorney-Generals also are made antitrust authorities.

<sup>76</sup> The number of private litigations, *i.e.*, suits brought to US courts by private firms or individuals is ten times higher than the number of claims presented by public agencies. See Janet D. Steiger, *Effectively Enforcing Competition Laws: Some Aspects of the US Experience*, p. 1 at 25, in "EC and US Competition Law and Policy", Fordham University School of Law, 1992.

<sup>77</sup> Other relevant legal measures include the Local Government Antitrust Act (Pub. L. No. 98-544), which relieves antitrust officials from onerous financial penalties, and the deregulation of the passenger airline industry. The deregulation is a result of the Civil Aeronautics Board Sunset Act of 1984 and implementation of the Airline Deregulation Act of 1978, and yet of the Surface Freight Forwarder Deregulation Act (Pub. L. No. 99-521). See OECD, *Competition Policy in OECD Countries 1984-85 Report*, p. 201/2; *1986-87 Report*, p. 237/8. Another development is as to antitrust violations; the fine and sentencing systems was improved under the Sentencing Reform Act of 1984. *Idem*, *1987-88 Report*, p. 238; *1989-90 Report*, p. 276/7.

The fear that joint research could hamper antitrust laws led the American Congress in 1984 to pass new legislation<sup>78</sup> designed to limit the potential damage posed by co-operative research and development to competition. This limitation is made effective by means of excluding from the concept of "joint research and development ventures" some activities which would amount to illegally anticompetitive practices. The effect of the Act in practice is a matter of fact, whose assessment judicially follows the "rule of reason" test. The mandatory application of such a judicial standard introduced into the legislation confers on it a flexible character. This element, as opposed to strict legal formality, also gives great discretion to the competition authorities.

The Act requires the involved parties to give information about the establishment of a joint-research deal. General details of the co-operation agreement are disclosed to the public. The interested parties have prior access to the content of the publication which is made under the initiative of concerned authorities,<sup>79</sup> who take appropriate actions in order to discourage the agreement, or do not take any measures under their discretion. Although the publication may confer a degree of transparency on the operation, the fact of that discretionary power being immune from judicial review confers on the monitoring bodies a considerable role in assessing and protecting public interest.

### **The Department of Justice's Guidelines**

Considerably important for the legal development have been those Guidelines<sup>80</sup> issued by the Antitrust Division of the US Department of Justice, covering vertical restraints, antitrust enforcement regarding international operations, and horizontal mergers. They form a framework designed to strengthen logical steps for the analysis of antitrust-related facts. For instance, the 1992 version of the Horizontal Merger Guidelines, released jointly with the

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<sup>78</sup> The National Co-operative Research Act (Pub. L. No. 98-462), 1984.

<sup>79</sup> The competition authorities are the Attorney General and the Federal Trade Commission [Sec. 6(a)]

<sup>80</sup> Some guidelines issued by the Antitrust Division of the US Department of Justice include the Guideline Concerning Vertical Restraints, the Antitrust Enforcement Guidelines for International Operations (the 1988's is currently being revised), and the Horizontal Merger Guidelines (versions 1968, 1982, 1984, and 1992), the latest version being issued jointly by the Department of Justice and Federal Trade Commission. See OECD, Competition Policy in OECD Countries 1985-86 Report, p. 221; 1986-87 Report, p. 238; 1987-88 Report, p. 238; 1988-89 Report, p. 269/70; [1993] 61(2) Antitrust L. J. 505.

Federal Trade Commission, set up standards of concentration designed to evaluate the post-merger effects. The scheme takes into account three degrees<sup>81</sup> of concentration, and is based on the principle that anticompetitive behaviour is likely to occur as concentration increases beyond a safe zone.

As far as intellectual property licensing arrangements are concerned, a four-step analysis<sup>82</sup> applied by the Department of Justice has today abandoned the presumption that intellectual property rights create monopolies, so conflicting with antitrust laws, as was thought in the past. Unless the arrangement is a sham, a test of procompetitive benefit is carried out in order to establish whether a relevant anticompetitive risk presented by a restriction (tie-ins, package licences and such like) could be off-set.

### **Statutory restriction on patent misuse doctrine**

According to the judicial doctrine of patent misuse, the court may refuse to enforce a patent if in the course of an infringement the owner is engaged in any business practice or conduct considered a "misuse" of the patent to the extent that the mischief violates the anti-trust law or in any way is contrary to public interest.<sup>83</sup> In the past, if the claimant alleged an existing misuse (e.g., tied purchasing of goods) he was not required to prove that the patentee was a dominant firm. However, as a result of the 1988 Amendments to the Patent Law,<sup>84</sup> the misuse patent standard does not apply, unless the patent owner has power in the relevant market, which is assessed in the light of all circumstances. The misuse standard, nevertheless, is established as a means of defence in patent infringement suits. The Act goes further, making

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<sup>81</sup> Assessed under an economic index (HHI), concentration is classified as (a) HHI below 1000 points, a "safe harbour" where an increase in concentration raises no competitive concern; (b) HHI between 1000 to 1800, moderated concentration where a 100- point increase requires attention; and (c) HHI above 1800, high concentration where a raise of more than 50 points potentially represents a significant concern, and increase superior to 100 points brings room for a presumption of anticompetitive effects. See item 1.51 - General Standards of the Guidelines.

<sup>82</sup> These steps inquiry into (1) the conditions of the technology licensing market, (2) other markets, (3) the harm, if any, of a vertical restraint, and (4) if an anticompetitive risk is present, how an offsetting efficiency benefit can be held. According to particular circumstances, some steps may be found unnecessary. See the 1988 Antitrust Enforcement Guidelines for International Operations, pages 22-29.

<sup>83</sup> United States Gypsum Co. v. National Gypsum Co. [1957] 352 US 457, 465.

<sup>84</sup> The Omnibus Trade and Competitiveness Act 1988, Pub. L. No. 100-703, 35 U.S.C. 271(d).

it unlawful to use, sell, or import products manufactured by patented processes involving infringement of patent.

The legal restriction on the misuse doctrine seems to assuage the formalism of old US court decisions which did not require a violation of antitrust law. This is a point of contrast with the formalistic approach taken by the European Court of Justice much criticised<sup>85</sup> in analysing agreements under Article 85(1).

### **(vii) The European Union**

The experience of the European Community in competition law is singular in that it pursues the expansion of a single market, which is the essential goal of the Treaty of Rome. The uneven economic conditions and imbalance market structure encountered in the member-States posed the most crucial challenge<sup>86</sup> for the implementation of the ground rules<sup>87</sup> governing competition. Such implementation did not come out until a two-decade period elapsed from the time the Treaty came into being. At that time, the original member-States<sup>88</sup> did not even have a fully-developed legislation on competition.<sup>89</sup> At the Community level, legal developments were speeded up only in the 1970s.

The development of the Community competition law is the result of a convergence of events. Firstly, there has been influence from outside the Community. Secondly, new

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<sup>85</sup> See Korah, EEC Competition Policy - Legal Form or Economic Efficiency, [1986] 39 C.L.P. 85; and the Advocate-General opinion in *Consten and Grundig v Commission*, [1966] ECR 299, at 358, 370, 376, 377.

<sup>86</sup> In general, in less developed economies, the Government is reluctant to a certain extent to adopt and enforce sound competition legislation and policies. A dominant view shared by Government and industry is that some degree of concentration is regarded as beneficial to industries in a developing stage. Due to cultural background, in the short or medium term no significant response to any legislation towards a free competition-based market can be expected.

<sup>87</sup> Treaty of Rome of 1957, Articles 85 and 86. The European Coal and Steel Community Treaty of 1952 also provided for control of restrictive practices and mergers, Articles 65 and 66.

<sup>88</sup> France, West Germany, Italy, Belgium, the Netherlands and Luxembourg. These countries were also members to the European Coal and Steel Community (ECSC).

<sup>89</sup> As Gaspari points out, the Treaty of Rome does not cover the control of concentration. The reason is that when the Treaty was drafted there was no experience in this respect, nor the law of member countries developed. OECD, *Twenty Five Years of Competition Policy: Achievements and Challenges*, p. 10, Paris, 1987.

members have entered. The outside influence originated from the OECD,<sup>90</sup> which has played a significant role in the legislative improvement since it was installed.<sup>91</sup> One contribution with major impact was the Organization's Recommendation issued in 1979,<sup>92</sup> which made several members review their legislation. As to the entry of new members to the Community in 1973,<sup>93</sup> it increased the prospect of conflicting interests in competition. These additional elements urged the implementation of the relevant rules of the Treaty of Rome. The response to these challenges required not only appropriate regulation to cope with the new competitive environment, but also to build up a strong Community competitively equipped to face the existing industrial structure over the Community's territory.

To a certain extent, the EC law forms a supranational order with which the Union's Members are bound to comply. The Treaty prohibits quantitative restrictions on the free movement of goods, and makes provision for the control of anticompetitive agreements.<sup>94</sup> Individual clearance and block exemptions, however, may apply. Intellectual property rights may be limited if their use is in disagreement with those provisions. There are also a number of secondary regulations<sup>95</sup>, some of them with direct effect in the field of intellectual property.<sup>96</sup>

As to patent licensing agreements, the main objectives of the block exemption regulation was to strike "at removing the need for individual notification and exemption for most patent licences and to provide a method for obtaining a quick reaction from the Commission in borderline cases."<sup>97</sup> These aims have been successfully achieved.<sup>98</sup> Another development was

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<sup>90</sup> Organization for Economic Cooperation and Development (OECD), which came into being in 1961 and replaced the Organization for European Economic Cooperation (OEEC) established in 1948. The OECD was founded by those original OEEC members plus Canada and United States of America. Later Finland, Japan, New Zealand and Australia also became members.

<sup>91</sup> Since it was set up in 1961, the OECD Committee of Experts on Restrictive Business Practices has contributed to strengthening competition policy and legislation among its members. OECD, *Twenty Five Years of Competition Policy: Achievements and Challenges*, p. 10.

<sup>92</sup> The 1979 OECD Council Recommendation. Virtually every OECD country, including EC members, in some way reviewed its competition legislation after the Recommendation. OECD, *Competition Policy in OECD Countries 1984-85 Report*, p. 125.

<sup>93</sup> On 1 January 1973, the Republic of Ireland, the United Kingdom and Denmark became full EC members.

<sup>94</sup> The Treaty of Rome, Articles 30, 34, 36, 85 and 86.

<sup>95</sup> See "Butterworths Competition Law Handbook", third edition, edited by G Lindrup, 1993.

<sup>96</sup> Commission Regulation 1983/83 (exclusive distribution agreements); Regulation 2349/84 (patent licensing); Regulation 556/89 (know-how licensing agreements).

<sup>97</sup> *Idem*.

<sup>98</sup> OECD 1985-86 Report, p. 253. As a result of the regulation, the number of notifications of patent licences reduced from 100 in average to a dozen in 1985.



in know-how licensing agreement. The Commission recognised the procompetitive effects of these agreements, to the extent that they may promote the dissemination of know-how throughout the Community, so as to increase the competitiveness of the industry in EC territory. Concerns, however, have been raised owing to the nature of unpatented know-how.

As it was pointed out, know-how licensing without appropriate regulations could easily lead to abusive practices against competitive rules. Moreover, "the fact that the confidentiality between partners in a know-how transfer relationship does not enjoy the degree of legal protection as patents."<sup>99</sup> The Commission showed concern and recommended a control similar to that of the patent.

Joint ventures have become another concern. The Commission found that a competitive environment requires both great flexibility to facilitate co-operation between firms, and permanent adjustment to structural changes. Joint ventures fit these objectives. They have been a favourable form of co-operation among industry in Europe. However, not being necessarily a cartel nor a merger, joint ventures could possibly either lead to a cartel without being caught by competition rules, or be subject to rigid rules and thus impair legitimate creative businesses.<sup>100</sup> Amongst the positive effects, the promotion of innovation and transfer of technology, as well as the strengthening of the competitive position of small and medium sized firms are included. Nevertheless, joint ventures can have anticompetitive effects in circumstances leading "to market sharing, raising of barriers to entry, and the intensification of market power."<sup>101</sup>

The evolution of competition law and policy is a world-wide phenomenon. All countries under the OECD umbrella have improved their legislation or enacted new laws over the last four decades. To a certain degree, this move has inevitably influenced other countries, developing ones, which, nevertheless, are not prepared to face the cost of regulating the

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<sup>99</sup> *Ob. cit.*, p. 253.

<sup>100</sup> A OECD report on the matter says: "In the absence of adequate legal standards for assessing joint ventures there is a possibility that they will either escape antitrust review altogether or, at the other extreme, be subjected to excessively rigid tests which stifle new creative and desirable business activities." OECD, *Competition Policy and Joint Ventures*, p. 93. 1986.

<sup>101</sup> OECD 1985-86 Report, p. 254 5.

competitive process, or have no political determination to implement their laws. They are at the same stage that the majority of the industrialised countries were before the Second World War. This disagreement in policy, i.e., each country having its own competition policy and others in practical terms having no policy at all, suggests a source of conflict in the field of trade and technical exchange which has become increasingly international.

In addition to the evolution of competition law and policy, in those systems really committed to the implementation of the legislation, principles have been developed or construed; these benchmark rules reflect modern thought, and are forged to accommodate local and regional interests. These legal and judicial principles form the basis of modern competition law, regulates the competitive process and inevitably guide, affect and limit the exercise of intellectual property rights.



### **6.3 The role of modern competition thoughts and concepts**

#### **6.3.1 Regulatory and judicial principles**

##### **(i) Competition goals**

States have the right to adopt appropriate measures in order to promote technological innovation and disseminate technology for social and economic welfare. This general assertion forms the basic of a competition policy, which is designed to safeguard public interest by controlling monopolies and anti-competitive practices relating to *inter alia* the exercise of intellectual property.<sup>1</sup> As a statement this is of little assistance for the development of intellectual property order and the regulation of the competitive process. Transparency and practical operation of objectives require specific and clear rules. This is fundamentally what a country should consider. A first step in this direction is to establish the regulatory goals of the competitive process that a country is determined to pursue.

In a strict sense, competition primarily strikes a balance of allocative and productive efficiencies. However, more than these there are interests worth protecting. The "Chicago School" states that:

- *A society in which allocative efficiency, or welfare, is maximized is better than one in which it is not; or alternatively, more welfare is better than less;*
- *Policymakers are capable of creating and implementing a policy of maximizing total social wealth without regard to the way in which wealth is distributed;*
- *Policy concerns about wealth distribution, on the other hand, reflect purely political conflicts between interest groups and cannot be justified in any rigorous, scientific manner;*
- *Efficiency goals and distributional goals or, alternatively, efficiency effects and distributional effects can be segregated from each other.<sup>2</sup>*

These statements underlie the theory of regulation of the competitive process, but they cannot be taken for granted. The only and simple assumption arising from them undoubtedly is that the regulatory mechanism can be designed to improve efficiency and welfare. The

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<sup>1</sup> See Articles 7, 8, 31 and 40 of the Agreement on TRIPS.

<sup>2</sup> Herbert Hovenkamp, *Antitrust Policy After Chicago*, [1985-86] 84 Michigan L. R. 213 at 245.

capability of policymakers to maximise total social welfare with no regard to the way wealth distribution is made has never been proved in practice. Moreover, to rely on distributional effects by only pursuing efficiency goals would be an ideal for a society where all members have the same capacity to consume, and all firms have similar capacity to produce, but in reality some members or firms have less capacity than others, and yet others members have no capacity at all. History shows that the law, while harmonising conflictual interests, has consistently varied according to these circumstances and pursue distributional goals which may or may not meet efficiency criteria. This is universal. The regulation of the competitive process and, connected with this, the intellectual property order reflect such a background.

It is thus inherent in the nature of the regulation of the competitive process that welfare concerns go beyond efficiency<sup>3</sup> effects. Welfare is primarily concerned with criteria of wealth distribution, and may include *inter alia* increase of employment, promotion of small business, and (equal) access to the benefits brought up by technical improvements.<sup>4</sup> The choices made by the appropriate body represent a matter of public policy committed to wide social objectives.

The goals of competition legislation may be to pursue discouragement of aggregation of capital, protection of small and local business against powerful rivals, efficient gains or "consumer welfare description".<sup>5</sup> This is drawn from statements of the US Supreme Court whose policy is briefly summarised in terms of "efficient allocation of resources and the maximisation of consumer welfare."<sup>6</sup>

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<sup>3</sup> "Efficiency" in itself may be conceived in different ways. A concept is formulated by Eleanor Fox "in terms of serving consumers' long-run interests and implemented by protecting the competition process", and intending to harmonize efficiency and non-efficiency goals, so as to suit the modern antitrust policy. Eleanor M Fox, *The Modernization of Antitrust: A New Equilibrium*, [1981] 66 Cornell L. R. 1140.

<sup>4</sup> The narrow concept claimed by the so called "Chicago School" for economic welfare limits competition "effects on prices and consumer choice." But it seems highly unlikely that such a guidance much influences worldwide competition law. See Herbert Hovenkamp, *Antitrust Policy After Chicago*, [1985-85] 84 Michigan L. R. 213; and a statement of Prof. Eleanor Fox against the syndrome of economic efficiency says that "on whole the courts are slow in accepting the Chicago School's belief in the self-sufficiency of the market forces." Quoted by Louis A. Schapiro, in "Great Expectations for Intellectual Property Licensing under the Future DOJ Antitrust Guidelines for International Operations," 1987 Fordham Corporate Law Institute, Chapter 3, p 45 at 54.

<sup>5</sup> Cf. *United States v Aluminum Co. of America* [1964] 377 US 271; *Brown Shoe Co. v United States* [1962] 370 US 294; *Continental T.V. Inc. v GTE Sylvania Inc.* [1977] 433 US 36; *Reiter v Sonotone Corp* [1979] 442 US 330.

<sup>6</sup> Department of Justice's Guidelines for International Operations, 1988.

The large range of goals include policies such as economic balance, regional and industrial development, economic adaptability, public security, utilisation of society's resources, wealth and environmental protection, incentive to innovation, consumer well being, and export expansion. The problematic meaning of these terms encountered in a variety of legislation<sup>7</sup> discourages any rational classification.

Although of little practical importance from the point of view of judicial construction, the value of stated goals cannot be overlooked. As an ideal normative, they provide a competition rationale which does not segregate welfare from efficiency. Indeed, competition laws substantiate a purpose that is not only to deliver freedom of trade from unreasonable restraint, but also and ultimately to entail a sense of determination and political justification of public policies<sup>8</sup> underlying the intellectual property bargain. It is a major challenge to formulate the regulatory principles in such a way as to harmonise the interests concerned.

#### **(ii) Principles of prohibitions and abuse control**

There has been an attempt to group the format of competition laws into two broad categories: one is based on the prohibition principle, and, in contrast, the other is based on the abuse control principle. In terms of systematisation, these are only methods to organise the legislation and, to a certain extent, may affect the way the law is implemented. They may also express the attitude of policymakers, i.e., rendering more or less severe treatment, towards monopolies and cartels.

In essence, however, these principles at some point may show a logical approximation. This requires an explanation. A legal framework of competition contains substantive provisions which describe pattern of wrong conducts. In defining the scope of these provisions, the method of the prohibition system suggests a scheme of the kind - every restraint is prohibited (declared illegal). According to the system of abuse control, rules are formulated in a fashion giving effect to the statement - everything declared illegal is under control to the extent that it

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<sup>7</sup> See the Australian, Canadian and European (e.g., French, Danish, Irish and Norwegian laws) legislation on competition.

<sup>8</sup> The Preamble of the Agreement on TRIPS recognizes "the underlying public policy objectives of national systems for the protection of intellectual property, including developmental and technological objectives."

means an abusive practice. Exceptions apply to both systems, and what is ultimately wrong depends on legal interpretation and how further investigation is required by the interpreter. Although having different denominations, both systems are similar. The difference between each other may be only a matter of form.

In practical terms, there is no pure legal system of automatic prohibitions. There are always exceptions. Nor can one say which system, whether abuse control or prohibitions, is the best to fit the needs of a particular country. What actually does matter is how satisfactory a regime, whatever its format might look like, works. The law operates as a process which needs to be fuelled continuously. Thus there is no finished legal system.

To make a business conduct automatically unlawful, i.e., without further investigation to be carried out by the authority concerned, may not facilitate enforcement. Looking at the US approach, the legislation on anti-cartel and monopoly is typically a "prohibition" one.<sup>9</sup> However, it does not seem correct to associate the prohibition approach with the strong reputation of American antitrust law. The 1914 reform carried out by the US Congress and subsequent amendments, and the development of case-law, prove rigid rules to be less than the most effective ones to implement a competition policy. The effectiveness of the system is a complex matter which should not rely only on a particular format of the legislation. The historical evolution of competition legislation proved it.

Before the 1970s, many OECD countries had passed some sort of competition legislation, but regardless of the appearance of the laws, i.e., whether in the form of prohibition or abuse control, excepting the USA, they failed to enforce their legislation satisfactorily. To explain this failure is outside of the scope of this dissertation, but at least one may assume that there must be some benefit to a country, like Germany and Japan in the past, to adopt a monopolistic policy. The general observation points to a lack of political determination as the most obvious reason for that failure. It follows that a theoretical reference may be of some assistance for the analysis and formulation of a legal framework on competition, and such a reference may relate to the stage and features of the market structure of a particular country,

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<sup>9</sup> See Green Paper, table at p. 31, Cm. 2100 (1992)

i.e., at some stage of a country's development a legal system of automatic prohibitions may be found inappropriate<sup>10</sup> This, again, is a matter of perception and political determination. These principles give no guarantee of working effectively in practice. With regard to the nature of the competitive process and the political discretion surrounding its regulation, one could suggest that the combination of the two may render better results.

Bearing in mind the variation in the way legal provisions are formulated, in that their features are exchangeable and their formats indistinguishable, one may find it more interesting not to define the principles, but say what they are and what they are not in respect to enforcement, types of deterrents, level of statutory specificity and merger control.

A prohibition-based system in particular may provide for a general prohibition, or a ban on specific conducts. But an illustrative list of practices liable to violate the law may be adopted under any of the systems, and applied to the whole domestic market or part of it. A binding statutory list may be a considerable choice, but guidance notes, albeit precarious, may work as well. The way the lists are organised, whether indicating practices likely to be lawful (general permissions) or unlawful (general prohibitions), may be governed only by arbitrary options, in the form of exemptions or safe-ways, and they follow no rigid or scientific criteria.

None of the principles in particular can be associated as having more effective deterrents, or favouring most an efficient enforcement. An aspect which prohibition system may stress is a separate or independent body having quasi-judicial duties and invested with power to investigate infringements. Nothing suggests, however, that this cannot also be found in abuse control oriented systems. Deterrents as well, such as fines, relief for injured or threatened parties, divestment and price control, can also be accommodated in both systems. Whether financial penalties are extended to past conducts is not, once more, a feature incompatible with a regime drafted in the abuse control fashion.

Abuse control is not to be taken as designed to fit necessarily a small country. A competition philosophy linking a flexible approach with abuse control has recommended this

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<sup>10</sup> The UK policy has been one of abuse control. Only now Government authorities are contemplating moving towards a prohibition system in line with the EC design.



system as the most suitable one for small countries, such as Greece and Denmark, which are also supposed to need no merger control. The reason given is that in those countries a high concentration is needed to foster international competitiveness, and would not necessarily lessen competition.<sup>11</sup> Nevertheless, two points have to be made. Firstly, the Irish Competition system, relying on abuse control, has merger control, and Belgium, as well as other small EC-countries, has adopted a prohibition system and introduced merger control. Secondly, those European countries under the EC-umbrella are governed by Community Law anyway, which to a certain extent fills the lack of domestic regulation. In such instances, it would be incorrect to regard the size of country or market and the lack of merger control as being features particular to the abuse control system.<sup>12</sup> The best results depend on the political determination and the management of the system, whatever the format of that system.

### **(iii) The guideline approach**

#### **Enforcement planning**

As far as the administration of the control system of the competitive process is concerned, resorting to guidelines is also a point worth considering. Because of lack of coercion, guidelines are not binding rules. They bear, however, a considerable value as to the development of law, and the transparent administrative enforcement. While reflecting an enforcement policy, guidelines state categories and rules, and design legal tests with a view to instructing business circles, and advancing an interpretative model that judges may follow.<sup>13</sup>

As an instrument of enforcement policy, the Guidelines state an attitude of the administration towards targeted legal situations. The duties of authorities are made less

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<sup>11</sup> See Kurt Stockmann, Trends and Developments in European Antitrust Laws, 1987 Fordham Corporate Law Institute, Chapter 18, p. 441 at 457, 459.

<sup>12</sup> If one looks at the firm's size as a function of market dimension, one has to consider the firm's response to the demand within overall opportunities in the open market. The range of opportunities may go beyond the country's boundaries, and then neither the national territory nor the dimension of the domestic market may be a valid reference to answer how large a firm should be suitable for competition.

<sup>13</sup> See Steven A Newborn & Virginia L Snider, The Growing Judicial Acceptance of the Merger Guidelines, [1992] 60 Antitrust Law Journal 849.

burdensome by the application of the principle of efficient means (*l'économie des moyens*), which requires the enforcement body to let the interested people know when it is prepared to act. By applying a more efficient way, the authority is required to pursue a balance of gains and costs. In this respect, guidance specifications normally limit the discretion of the incumbent body, allow it to organise a sensible training programme and claim adequate levels of funding support, as well as enable staff to undertake realistic and co-ordinated enforcement activities.

It is uncertain how much the guideline approach contributes to a planned enforcement, since planning is not an immediate legal concern. As a theoretical element, however, the planning arguments put forward a demand to organise enforcing activities as a requirement for more effective enforcement as well as to rationalise the competition body's performance. In establishing priorities or alternatives, deciding what to challenge, and what to leave for further analysis, the authority is urged to set up a pattern of operation which reflects a problem-solving activity, and avoids unnecessary interference in the market forces.

One may argue that planning is not exclusive to the guideline approach. That is true. What seems appropriate to point out is that such an approach arises in the context of an activism of the competition body which is supposed to apply work methods very distinct from those normally applied by judicial bodies. In order to perform its duty efficiently, the competition authority, while keeping its independence, has close or proper connections with other government agencies, business circle, consumer associations, international bodies, and with the media for public information and education. Such an interface requires responsive actions taken within a planned background. The ability of the competition agency to act efficiently has to envisage an improved role of government bureaucracy.<sup>14</sup> This ultimately reflects positively on the expectations created by the business circle.

### **Instructive role**

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<sup>14</sup> A desired new face is contrasted with that image the members of the public normally have of government bureaucracy as a nuisance and negligent.

As far as private businesses are concerned, the guidelines have an instructive role. They help businessmen and trade associations to comply with the relevant legislation. That may encourage traders to engage in non-risk activities, deter commercial adventures, and may create a strong expectation of being on the lawful track, so as to avoid fines, high-costly litigation, and the risk of having an agreement declared invalid.<sup>15</sup>

An interpretation advanced by guidelines is primarily of assistance for the issuing body. They may clarify obscure points of vague provisions, or establish conditions where strict rules do apply or do not, undoing inappropriate restrictions and promoting discussions of competition matters among professionals and members of academia. The interpretation intends to meet a demand for complex choices statutorily allowed and which may be observed by courts. In this way, guidelines not only facilitate counselling, but also may be used as a catalyst and channel to address practical thoughts brought by representative of interested groups. This leads to transparency.

### **Transparency**

Another point to note is that the guideline approach avoids enforcement practices based on unguided or informal standards (known only among officials) drawn from unwritten experience. Learning from past situations may be valuable as far as it helps to establish paradigms which may serve as a basis for future and informed decisions. However, without institutionalised guidelines, unwritten criteria remain confined to the knowledge of a few officials who may keep valuable data not shared by their superiors.<sup>16</sup> Key information on a particular market or a whole industry sector and regulated practices run, as indicators of performance, may be important to identify the anti-competitive exercise of intellectual property rights, so as guidelines may have an impact on policy and choice of legal strategy. It is fundamental sometimes to have guided criteria about the production and management of

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<sup>15</sup> For the importance of compliance programmes, see David H Marks, "Setting up an Anti-trust Compliance Programme"; and Clive Standbrook & John Ratliff, "EEC Anti-trust Audit", both in [1988] ECLR 88 and 334.

<sup>16</sup> This example is referred by Daniel Gifford as one typical occurrence in Police Office. "Discretionary Decisionmaking in Regulatory Agencies: A Conceptual Framework", in *Making Regulatory Policy*, p. 233 at 253-4, K Hawkins & J Thomas (ed.), Univ of Pittsburgh Press, 1989.

relevance data, because as a result of data being ill-treated or not disseminated properly, the regulatory body may face the risks of taking decisions and adjustments on the basis of limited information.

The discussion about the function of guidelines has been to focus on their merit as an element in the control of the competitive process and with this the implications to the intellectual property order. As practical methods put in place for the pursuit of efficiency and welfare goals, guidelines may change at times to focus on structural elements or to implement a new policy. This sense of flexibility is a feature which suits modern competition law and policy, that is, a competitive process which keeps working in pursuit of its goals.

#### **(iv) Workable competition and the useful effect principles**

There is a political element in the question of how much society at large is prepared to pursue efficiency and enforce competition. The concern requires a degree of consensus about affordable costs at which it is believed that public welfare will be improved, and a level of creative innovation will be sustained or increased.

Whatever the degree of competition the country is prepared to pursue, there might be a presumption that such a degree ensured by the competition system is what society at large deserves.

Although the perception of the political will at times may be unclear,<sup>17</sup> what benefits society most depends on the judgement, accurate or not, made by the institutional bodies or the government of the day about the role of a competition policy.<sup>18</sup> The political inspiration,

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<sup>17</sup> Between 1971 and 1986, Canada experienced long debates on legislative initiatives: Bill C-256 (1971), Bill C-227 (1973), Bill C-42 (1977), Bill C-13 (1977), Bill C-29 (1984), and Bill C-91 which rendered the Competition Act 1986. During that period there had been fierce disagreements on the antitrust model which would best suit the country's interests. The Canadian legislative saga is also illustrative of the political sense of workable competition. For accounts on the historical perspective of the Canadian Laws, see J William Rowley, *The New Canadian Antitrust Laws - Reflections from the Private Sector*, Chapter 9 of the 1987 Corporate Law Institute, p. 157.

<sup>18</sup> On the occasion the Brazilian Minister of Justice addressed the Bill No. 3.712 (1993) on the reform of the Brazilian competition law, he stated that the draft legislation was based on the "presumption that in a changing world, and particularly for the so-called developing countries, a legislation to safeguard the competitive process is not *per se* a fundamental instrument for the efficient and just working of the market economy." Explanatory

inherently cyclical,<sup>19</sup> in some way intends or pretends to follow fashionable economic thoughts which may not gather consensus. This initial remark illustrates the sensitive issue behind the economic and formal senses of the principle of workable competition.

The debate about competition and its function on economic performance brings two broad theoretical arguments into consideration.<sup>20</sup> The first is that under conditions of perfect competition consumers are better off. They are supplied with the right quantity of goods and services they need at a price they are prepared to pay. It is believed that the output level of goods and services necessary to meet demand and supply is produced by utilising the least number of inputs and at the lowest possible cost. As a result of perfect competition, not only the overall society's wealth is maximised and the price of goods and services is the lowest possible, but also profit is limited to a marginal level. Diametrically, under pure monopoly firms are free from competitive pressures and thus have no incentive to reduce costs nor to make the best use of resources. They have the capacity to set high prices, control output and pursue above normal profits. These two static models, perfect competition and pure monopoly, are unrealistic. In practice, the market is rather dynamic. But the larger the number of competitors, the more efficient and competitive the firms tend to be. Conversely, the fewer the number of competitors, the more firms tend to monopolisation.

If perfect competition is an unrealistic model never encountered in practical terms, it should be still be discussed whether rigid efficiency should be a desirable policy. It is argued that less than perfect efficiency is, to a certain extent, acceptable and even beneficial to society, although a more competitive market is better than a less competitive one. The question now is which competitive configuration is practicably workable from which a beneficial effect on firms' conduct and performance is worth saving.

With criticisms, analysts have discussed a range of elements (minimal requirements) forming a workable competition. These criteria are grouped in three categories:

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statement No. 184 (24/4/93) of the Ministry of Justice, accompanying the Message No. 213/93 from the Executive branch.

<sup>19</sup> See Herbert Hovenkamp, *Antitrust Policy After Chicago*, [1985-86] 84 Michigan L. R. 213.

<sup>20</sup> See Chapter 2 (subsection 2.3).

- *structural* (e.g., a minimal number of traders, and no artificial inhibition on firms' mobility and entry),
- *behavioural* (maintenance of some freedom to rivals as to price initiative and pursuance of independent goals, and no inefficient suppliers to be shielded permanently), and
- *performance* (e.g., pricing policy not to intensify cyclical instability, and some opportunity for introduction of technically superior products).<sup>21</sup>

Criticism of these criteria focus on the difficulties of formulating norms in advance which tell "how much competition is needed to achieve desirable economic performance."<sup>22</sup> To make competition workable, not necessarily perfect, has become a policy based on an exercise of balancing detrimental and beneficial effects. In this respect, competition restrictions are carried out in circumstances which favour social objectives and outweigh the adverse effects arising from the mischief.

The assumption behind the workable competition principle is that the competitive process does not pursue efficiency for the sake of efficiency, nor that perfect competition is the ultimate goal, but provided that a reasonable degree of competition is saved, a restraint potentially adverse to competition may be allowed on beneficial grounds. Three basic conditions are required:

- the existence of a benefit resulting from an improvement of production or distribution, or promotion of technical or economic progress;
- the restriction should be indispensable for the objectives pursued by the related agreement or concerted practice; and
- the restriction eliminates no substantial part of competition in the market concerned.<sup>23</sup>

The principle has been employed by competition authorities with the function to uphold crisis cartels and restructuring agreements "whereby firms in industries suffering from recession or depression attempt to shield themselves for a period of time from the full rigours of the competitive process."<sup>24</sup> In these agreements, for reasons such as recession and over-capacity, firms agree to reduce their production to specified amounts by fixing production quotas. As a consequence, prices are likely to be increased artificially.

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<sup>21</sup> See Sosnick's Scheme of Workable Competition in Scherer & Ross, *Industrial Market Structure and Economic Performance*, p. 53/54.

<sup>22</sup> *Idem, idem*.

<sup>23</sup> See Article 85(3) of the Treaty of Rome. R.T.P.A. s. 29.

<sup>24</sup> Richard Whish, *ob. cit.*, p. 229.

The problem of overcapacity, sometimes resulting from technical advancement, is that a demand trend falls behind the level of production, and in the long term it becomes economically unsustainable in terms of efficiency and cost. An adjustment is thus needed, which is operated by market forces at a level of individual judgement. When these forces fail to make such an adjustment, the Commission is prepared to allow manufacturers to take the necessary steps collectively, pursuing a planned rationalisation of the production.<sup>25</sup> Nevertheless, in other cases the Commission has denied exemption under the consideration that the restrictive provisions were either incompatible with the objectives pursued, or inflicted an unnecessary or yet excessive burden on the competitors.<sup>26</sup>

In the *Metro* case,<sup>27</sup> the Court of Justice of the European Community made direct reference to the principle of workable competition. Examining the effect of a "selective distribution systems", the Court stated:

*The requirement contained in Articles 3 and 85 of the EEC Treaty that competition shall not be distorted implies the existence on the market of workable competition, that is to say the degree of competition necessary to ensure the observance of the basic requirements and the attainment of the objectives of the Treaty, in particular the creation of a single market achieving conditions similar to those of a domestic market. In accordance with this requirement the nature and intensiveness of competition may vary to an extent dictated by the products or services in question and the economic structure of the relevant market.*<sup>28</sup>

The Court ruled that a selective system of distribution aimed at providing retail trade supplies does not infringe Article 85(1) of the Treaty, provided that the selection of re-sellers is made taking into account qualitative criteria relating to technical qualifications and suitability of trading premises. In regard to its discretion, the Court was satisfied that the uniform application of these conditions met the Treaty, which was interpreted in the light of the useful effect doctrine.<sup>29</sup>

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<sup>25</sup> See *inter alia* Re Stichting Baksteen, Case IV/34.456, [1993] 4 C.M.L.R. 385; Re Enichem SpA and ICI, Case IV/31.846, [1989] 4 C.M.L.R. 54; Re A Synthetic Fibres Agreement [1985] 1 C.M.L.R. 787; Re I.C.I. and B.P. Chemicals [1985] 2 C.M.L.R. 330. For a similar question under UK legislation, see Re Distant Water Vessels Development Scheme [1966] 3 All E.R. 897.

<sup>26</sup> Bureau National Du Cognac v. Aubert [1988] 4 C.M.L.R. 331; Re Rolled Zinc Products [1983] 2 C.M.L.R. 285. A similar decision under UK legislation, see Re Yarn Spinners' Agreement [1959] 1 All E.R. 299.

<sup>27</sup> Case 26/76, *Metro v Commission* [1977] II E.C.R. 1875.

<sup>28</sup> The *Metro* case, at 1876.

<sup>29</sup> As a method of interpretation, the doctrine is briefly stated as follows: "the rules laid down by an international Treaty or a law presuppose the rules without which that treaty or law would have no meaning or

In practical terms, the useful effect doctrine works as prescriptive advice to direct the interpretation in a manner to uncover the policy behind the legislation. It is a judicial duty to ensure the Treaty's useful effect, that is, to seek the achievement of the Treaty's policies or objectives.<sup>30</sup> Thus, the competitive impact of a trade restriction is interpreted according to its effects rather than its literal meaning. And this is particularly significant in ordering the exercise of intellectual property rights.

#### (v) The existence/exercise of right divide

The distinction between the existence and exercise of intellectual property rights raises the essential question of the inviolability of legal monopoly, which has a large dimension in the context of the European Community.<sup>31</sup> The distinction was firstly established in the *Consten* case.<sup>32</sup> The exercise of an enforceable intellectual property right is not unlawful as far as the holder does not expand his right beyond the boundaries of the legal grant. But when two or several parties, regarding their position in a particular market, prevent or limit the competition of one of the contracting parties or third parties by creating an unjustified advantage at the expense of the consumer or user, then the restrictions go beyond the property right.

The Court went on to argue that the Commission Law does not interfere with the existence of the national intellectual property rights. It may only operate against an agreement "capable of constituting a threat, either direct or indirect, actual or potential, to freedom of trade between Member States in a manner which might harm the attainment of the objectives of a single market", as well as against improper exercise, so as, to limit the right "to the extent necessary to give effect to the prohibition under Article 85(1)."<sup>33</sup>

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could not be reasonably and usefully applied." Case No. 8/55 *Fédération Charbonniere de Belgique v High Authority of the ECSC* [1956] E.C.R. 245 at 299.

<sup>30</sup> See Baastian van der Esch, *The Principles of Interpretation Applied by the Court of Justice of the European Communities and their Relevance for the Scope of the EEC Competition Rules*, 1991 Corporate Law Institute Proceedings, Chapter 12, p. 223, Barry Hawk (ed.), 1992.

<sup>31</sup> In the ambit of the EU, the existence/exercise divide has been discussed with respect to State-owned industries, legal monopolies conferred on state bodies and other undertakings, and free movement of goods. See *Deutsche Grammophon GmbH v Metro* [1971] 10 C.M.L.R. 631; Case C-260/89, *ERT v DIMOTIKI* [1991] ECR I-1915; Case C-18/88 *GB-INNO-BM* [1991] ECR I-5941.

<sup>32</sup> *Consten & Grunding v Commission* [1966] E.C.R. 299.

<sup>33</sup> *Loc. cit.*, p. 341 & 345.



The ECJ has found the exercise of intellectual property rights in a manner contrary to the free movement of goods within the Community to be illegal. This provision may be derogated to the extent that the proper exercise of a patent right prevents an import from one member State to another. However, this is not the case "where the product has been put onto the market in a legal manner, by the patentee itself or with its consent, in the member State from which it has been imported, in particular in case of a proprietor of parallel patents."<sup>34</sup> The principle has been affirmed in a variety of precedents, which instigated a doctrine of exhaustion within the Community.<sup>35</sup>

Another aspect involving the exercise of intellectual property rights examined by the Commission is in regard to agreements of minor importance. In this respect, a clause dealing merely with royalties was found unable to affect inter-state trade. A minimum royalty clause was found not to be offensive to Article 85(1).<sup>36</sup> Adversely, clauses such as non-competition and no-challenge ones have been repeatedly rejected as an unlawful exercise.<sup>37</sup> This is an illegal case *per se* where little room is left for exception.<sup>38</sup>

Respect for the exclusive right conferred by intellectual property is a central issue conceptually settled. The tension arising from that exclusivity in contrast with competition no longer affects the subsistence of that right,<sup>39</sup> which in the European Community is "without prejudice to the application of the competition rules under Articles 85 and 86 of the Treaty."<sup>40</sup>

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<sup>34</sup> Case 15/74 *Centrafarm BV v Sterling Drug Inc* [1974] 2 C.M.L.R. 480 para. 11.

<sup>35</sup> The move in the international trade law is to deter exhaustion of intellectual property rights, but confirming it in the boundaries of trading blocs. [See GATT Agreement on TRIPS, Article 6] Such a move is of significant distorting effect on world trade, and is likely to impair a demand for open market, unless a multilateral agreement on competition takes place.

<sup>36</sup> See *Re Raymon & Co.* [1972] 11 CMLR D45; *AOIP v Beyrard* [1976] 1 CMLR D14.

<sup>37</sup> See *Velcro SA Aptix SA* [1989] 4 CMLR 157.

<sup>38</sup> *Bayer AG v Sullhofer* [1990] 4 CMLR 182.

<sup>39</sup> See Glen P Belvis, "Computers, Copyright & Tying Agreements: An Argument for the Abandonment of the Presumption of Market Power", [1987] 28 *Boston College L. R.* 265; William Montgomery, "The Presumption of Economic Power for Patented and Copyrighted Products in Tying Arrangements", [1985] 85 *Columbia L. R.* 1140.

<sup>40</sup> Council Directive on the Legal Protection of Computer Programs of 14 May 1991, recitals para. 27 (91/250/EEC).

In the “Magill case”,<sup>41</sup> the ECJ reaffirmed the principle of existence/exercise of right. Magill TV Guide Ltd. (‘Magill’) had been prevented from publishing a comprehensive weekly list of TV programmes (received by more than 30% of households in Ireland and Northern Ireland) broadcast by RTE, ITV and BBC, which claimed copyright protection for their programme listings. These television stations allowed daily and periodical newspapers to publish their programme schedules on basis of a free-of-charge licence and subject to conditions relating to the format of the publication. However, there was no substitute for weekly magazine making available in advance full information on TV programmes.

Confirming a decision of the Court of First Instance of the European Communities, the Court of Justice of the European Communities (‘ECJ’) held, *inter alia*, that:

- *although mere ownership of an intellectual property right does not amount to a dominant position, third parties such as Magill wishing to publish programme information were facing a situation of economic dependence, and in this way the television stations, the only sources of such data, were hindering the emergence of an effective competition on the information market;*
- *the refusal to provide programming information relying on national copyright would lead to exclude potential competitors from geographical market, thereby being capable of affecting commercial exchanges between Ireland and the United Kingdom.*<sup>42</sup>

Protection of copyright under national law is compatible with the European Union (‘EU’) law. The existence of domestic copyright and its exercising is not in itself an abuse. Nevertheless, such a right cannot be exercised on a discriminatory basis, thus hampering free movement of goods or services, or perverting rules governing competition. The ECJ accepted that the copyright owners (appellants) had economic strength enough to put Magill in a situation of unnecessary economic dependence. This suggests a flexibility in the assessment of a dominant position (EEC Treaty, Article 86). Such a flexible approach was in effect applied to spare a potential trade flow intra Community.

An implication from the *Magill case* is that limiting the exercise of copyright on competition grounds does not amount to an unreasonable prejudice of the author's right. Therefore, no conflict exists between this proposition and Article 9(2) of the Berne

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<sup>41</sup> RTE and ITP v Commission (Jointed cases C-241/91 P and C-242/91 P), as “Magill Case”, judgement of 6.4.1995. [1995] I E.C.R. 743.

<sup>42</sup> *Idem*.

Convention. Although highly reasonable, this point was not specifically established by the ECJ.

A fundamental consideration in the ECJ ruling is that it legitimates a duty upon the owner to exercise his right according to competition rules, thus confirming the assertion that protection of intellectual property rights requires a proper control of anti-competitive practices.

As far as the exercise of the right is concerned, the remaining question, crucial in a number of cases, is essentially a matter of evidence. The standards namely *per se* rule and rule of reason are only a manner of addressing such a matter.

#### (vi) *Per se* rule versus rule of reason

Originating from the US antitrust experience, the judicial standards *per se* rule and rule of reason are directly associated with Section 1 of the Sherman Act which loosely makes every trade restraint in contractual form, *combination or conspiracy* illegal.<sup>43</sup> Early on the American Supreme Court sensed that the literal interpretation of the provision would make the Act unworkable, because the essence of every agreement or regulation on trade is to restrain those who have an obligation to comply with it. The Supreme Court, thus, asserted that the Act, which did not derogate common law, would not condemn reasonable restraints, otherwise it would destroy the entire freedom of trade doctrine extolled by common law, "and the courts could not avail themselves in interpreting it [the Act]."<sup>44</sup> With disagreements, the Court went on to read the statutory provision prohibiting every restraint of trade as actually being every "unreasonable" restraint of trade, and pointed to the need to discern between illegal contracts, combinations, and partnerships which by their effects stifled competition and raised prices, from those regarded useful for the development of trade that the Act did not intend to outlaw. The US Congress made no such a distinction, since the Act provides no concept of restraint.

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<sup>43</sup> Section 1. "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among several States, or with foreign nations, is hereby declared to be illegal." (First part.)

<sup>44</sup> For accounts on the interpretation of the Sherman Act and the early cases, see Letwin, (1967) "Law and Economic Policy in America", especially Chapter Five

The next step was to establish the nature of the test of reasonableness. Under the rule of reason, an agreement might fall outside the Act for their procompetitive effects assessed within qualitative considerations. In this connection economic analysis is to play an appreciable role in order to scrutinise the competitive effects. In another more simplistic test, the reasonableness is assessed in a formalistic manner. Under the *per se* illegality rule, an agreement is *prima facie* to violate the Act. The assessment is carried out with disregard to any beneficial effect the contract might have upon economic efficiency. The party only needs to prove the existence of the agreement or restraint. Two points should now be made. Firstly, there is no clear distinction between the situations to which the tests apply. The case-law has shown that the presumption that a particular agreement, such as price-fixing and market-sharing arrangements, is *per se* unlawful has at times been tempered by either developments in economic analysis, or simply as a result of the court's experience.

A second point is that there has been an increasing number of cases where the application of the rule of reason has prevailed, so the courts have rejected the mechanical application of the formal test of *per se* violations of which many of them involve licensing in intellectual property rights.<sup>45</sup> The trend partly relies on the change of attitude towards intellectual property, in the past normally regarded as leading to a monopoly situation. This old stance, now being reviewed, created a direct conflict between intellectual property and antitrust goals, and consequently restrictive licensing practice was always held *per se* anti-competitive.<sup>46</sup>

The change of perception concerning the connection between monopoly and intellectual property led the US Department of Justice to advocate beneficial effects stemming from patent and know-how licensing, mainly "when it is international in scope."<sup>47</sup> In this regard, what matters is an injury effect on the US commerce, which could be interpreted as an injury

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<sup>45</sup> Charles Rule, USDJ Assistant Attorney General, traces the points of change over a 10-year period, from the *Continental T.V. Inc. v GTE Sylvania* [1977] 433 US 36, to *Matsushita Elect. Indus. Co. v. Zenith Radio Corp.* [1986] 475 US 574. "US Enforcement Policy and Jurisdiction", 1987 Fordham Corporate Law Institute, Chapter 1, p. 1.

<sup>46</sup> *Idem.*

<sup>47</sup> Whether the position of the Department of Justice claimed distinctive policy, one involving IPR-related restrictions with international scope and other for domestic impact, one has no elements to affirm it. See details in Charles Rule's article, previous footnote.

to an industry rather than to competition.<sup>48</sup> Moreover, by means of proposed legislation, the Department urged the US Congress to clarify points in law, including that "restrictive provisions in intellectual property licenses should be judged by antitrust courts under a rule of reason, and to limit antitrust liability based on antitrust practices to actual damages."<sup>49</sup> The guidance, however, has not been converted into a bill. It was not surprising, then, that the courts became sensitive to that conceptual change. They started applying the rule of reason to patent misuse.<sup>50</sup>

The mood extended to the US Congress which passed new pieces of legislation absorbing conceptual evolution, despite the scepticism manifested by the American Bar Association.<sup>51</sup> The Congress established that tying of a second patent, or a separate product "cannot constitute 'patent misuse' unless, in view of all the circumstances, the patent owner has power in the relevant market."<sup>52</sup> These are an equivocal departure from the *per se* rule approach. Additional illustrative indications follow the tendency.

The categories of arrangements traditionally regarded *per se* illegal included price-fixing arrangements, horizontal division of markets or customers, boycotts and refusal to deal, and tying agreements.<sup>53</sup> In the *Trenton* case, a price-fixing restraint was charged as unreasonable in itself for its intended effect. In the Court's assertion, that sort of agreement always intends to eliminate competition. To look into its reasonableness would also require the Court to monitor price-fixing continuously as its effects may change with the dynamic of market conditions. This would be a task incompatible with judicial duty. A more flexible view, however, is seen in the *Sharp* case.<sup>54</sup> In this precedent, the Supreme Court held that "in order

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<sup>48</sup> See *McElderry v Cathay Pacific Airways Ltd*, 678 F. Supp. 1071 (S.D.N.Y.), and *USX Corp. v United States International Trade Commission*, 682 F. Supp. 60, both commented in the OECD 1988-89 Report, p 288/9.

<sup>49</sup> OECD 1988-89 Report p. 272.

<sup>50</sup> See *Windsurfing* case cited by Luis A Schapiro, ob. cit., p. 45 at 51.

<sup>51</sup> The National Cooperative Research Act 1984; Report of Section of Antitrust Law, Patent, Trademark, and know-how Committee on H.R. 4070 (1986), at p. 17.

<sup>52</sup> OECD, 1988-89 Report, p. 269. See the Omnibus Trade and Competitiveness Act of 1988, Sections 1341, 1342 (Pub. L. No. 100-703).

<sup>53</sup> See *US v Trenton Potteries*, 273 US 392; *US v Socony-Vacuum Oil Co. Inc.* 310 US 150; *California Retail Liquor's Assn. v Midical Aluminum Inc.*, 445 US 97; *US v Topco Assoc.* 405 US 596; *Eastern States Retail Lumber Dealer's Assn. v Pacific Stationary*, 234 US 600; *International Salt Co. v US* 332 US 392; *Fortner Enters Inc. v United States Steel Corp.* 394 US 495.

<sup>54</sup> *Business Electronics Corp. v Sharp Electronics Corp.* [1988] 485 US 717, 108 S. Ct. 1515.

to establish a *per se* violation of Section 1 for vertical price fixing, there must be proof of some agreements on prices or price levels."<sup>55</sup>

As to horizontal restraint in the division of markets, an exception was established to consider the essentiality of the restraint for the availability of the product.<sup>56</sup> Doubts regarding boycotts and refusal to deal have been raised from the *Northwest* case.<sup>57</sup> The Court asserted that "a plaintiff seeking application of the *per se* rule must present a threshold case in which the challenged activity falls into a category likely to have predominantly anticompetitive effects. The mere allegation of a concerted refusal to deal does not suffice because not all concerted refusals to deal are predominantly anticompetitive. When the plaintiff challenges expulsion from a joint buying co-operative, some showing must be made that the co-operative possesses market power or unique access to a business element necessary for effective competition."<sup>58</sup>

Patent or copyright alone (as a legal entitlement) no longer supports the presumption of market power. A tying agreement involving intellectual property, for instance, is examined in the light of competition criteria. It is a matter for inquiry whether the owner is using his right to capture market power, and whether such a power, if it does exist, is being used abusively. In this connection, to what extent extended examination is needed in order to establish whether the tie-in is or not permissible is not so clear. In general, the tying *per se* rule test requires the existence of a tying arrangement, an appreciable share of market power, and that the arrangement affects a considerable amount of commerce in the tied market. The application may open room for extended discussion.<sup>59</sup>

The application of the *per se* rule seems to foreclose full adjudicatory exploration of reasonableness. A possible implication is to deprive the plaintiff of having trial-type hearings about the actual competitive effects of the restraint or monopoly behaviour. In deciding which

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<sup>55</sup> The quotation is from the comment in OECD 1989-90 Report, p. 274.

<sup>56</sup> *US v Topco Assoc.*, 405 US 596.

<sup>57</sup> *Northwest v Pacific Stationary*, [1985] 472 US 284

<sup>58</sup> *Idem*, 472 US 298.

<sup>59</sup> For an account on recent precedents and further development of the US case-law see the [1993] 61(2) *Antitrust Law Journal*.

technique to apply which would be consistent with the conditions of a particular case, the court passes a judgement of adequacy of proceedings. In contrasting recent cases with previous ones, one has the impression that the court now recognises past errors. The correct observation, however, is that judges are cautious to construe in a very dynamic matter about which consensus is difficult to reach. Some perceptive judges may find a way to create a convincing ruling about complex subjects, others not. The individual expertise, therefore, does indeed matter. This leads to the undesirable effect of the rule of reason involving the myth of numbers.

The rationality required to support a conclusive economic inquiry over competitive effects may drive talented people to manipulate empirical parameters, or forge theoretical models in order to produce figures to support technical arguments or assumptions which only specialists are able to comprehend and refute.

In the *IMB* case,<sup>60</sup> a point was made about misleading measure of the economic rate of return to infer profitability. The case was illustrative because it also raised other live issue of testing price predation (pricing below cost) involving "IBM's production and pricing of the 306/90 CPU series in the early 1960s."<sup>61</sup> Referring to the use of statistics in the context of a structural regression model, IBM's expert witness warns: unless care is taken to explain how the precision of estimation is measured, a judge or jury can be readily confused by objections raised by the relatively untrained or the unscrupulous."<sup>62</sup>

The question of safe evidence under the rule of reason is to a certain extent subject to debate. Generally unwilling to deal with figures, judges may not have the taste or sufficient skills for scrutinising economic analysis. If the expert fails to pinpoint the gist of the legal matter in contention, the court may arrive at a conclusion which lacks economic sense. The question, then, of adequacy of proceedings will always be a controversial matter.

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<sup>60</sup> *United States v IBM*, [1982] 69 Civ. 200, US District Court, Southern District of New York. The case was cited and commented (the analytical aspect) by Franklin M Fisher, in "Industrial Organization, Economics, and the Law", p. 79, John Monz editor, 1990.

<sup>61</sup> F. Fisher, ob. cit. at 140. Here one has no ability to comment on the technical aspect of the case, and that seems to be unnecessary, but for details see Fisher's book. The author was involved with the case. As an economist-expert, he worked for IBM serving as a witness.

<sup>62</sup> F Fisher, ob. cit., p. 453.

While none can expect that logical premises flow from the legal principles governing the competitive process, the economic tests of efficiency by its nature also allow a margin of error. As a result, the sense of appropriateness of means to assess efficiency and welfare effects does not go beyond an exercise of approximation. Exchange of information and experience between governments may not only encourage an approximation of procedures at international level, but also provide for a consensual legitimacy by the adoption of similar means.

### **6.3.2 Principles of international co-operation**

#### **(i) Avoiding conflicts between governments**

It is assumed that a freer market potentially leads to increasing economic transborder activity and accelerates international trade. As a result, questions may arise involving specific issues such as intellectual property law, government procurement, investment, trade and antitrust policies. There is a possibility that the application of competition law and enforcement direct or indirectly affects the global competitive scene. This conflictual tendency is obviously a natural aspect of interdependent world trade. In this context, it is appropriate to address the competition problems on the basis of co-operative efforts towards, if not the improvement of means of assessing economic efficiency, at least the setting of similar procedures.

Given the fact that the impact of these laws on competition is not always predictable, two preventive measures are welcome. Firstly, where there is a potential situation of conflict, those governments involved should have an opportunity to engage in consultation. Secondly, the conflictual prospect should command attention, permanent surveillance and prompt action taken by competent authorities in an attempt to either avoid unnecessary conflict or redress distressing retaliatory actions.

Regarding antitrust enforcement in particular, a policy carried out by a government (e.g., control of merger or export cartel) may have adverse effect on the interest of another. When an unavoidable conflict is caused, the best way to annul divergence is to seek a mutually



agreed compromise, which the law does not give advice on how to attain. Negotiation is the only influential rule for adjustment of interests, and avoidance of "hostile reactions." Apart from avoidance of conflicts, two other principles informing the antitrust co-operation are the discouragement of anti-competitive practices and the sharing of information.<sup>63</sup>

### **(ii) Redressing anti-competitive practices**

The efforts of national authorities to table their interests fall under the assumption that both have a common objective, which is to bring an end to anticompetitive practices. A key ingredient in determining a reasonable outcome is the supply of detailed information, but access to this information is frequently hindered by national laws. In order to overcome this kind of obstacle, some principles on co-operation have been developed.

### **(iii) Learning by sharing experience**

Opposing ideas, different expertise and perspectives — all of these make it to reach consensus on the manner competition should work rather difficult. In this respect, countries may benefit from the diversity of approaches they apply. By sharing information and experience, they have the opportunity to learn with each other, and may thus contemplate actions dictated by a sensitive response to common problems.<sup>64</sup>

These ideas have been incorporated in bilateral agreements and guiding competition policies among OECD countries.<sup>65</sup> One of the measures provided by these co-operative instruments

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<sup>63</sup> D. Ginsburg, *International Antitrust Cooperation*, p. 26, in "Twenty Five Years of Competition Policy: Achievements and Challenges", OECD Report W.00050/D.390 (2473), Paris, 1987.

<sup>64</sup> *Ob. cit.*, pp. 27/28. Ginsburg's ideas have been developed in the context of the OECD countries, where a sense of integration is massively shared. From them those less privileged countries gathered in blocks such as American Economic Organization and MERCOSUL may have much to learn.

<sup>65</sup> Some bilateral instruments include the Australia-United States Antitrust Co-Operation Agreement of June 1982, EEC-USA Competition Laws Co-Operation Agreement of 1991, the North American Free Trade Agreement (NAFTA) of 1992, and Memorandum of Understanding between US and Canada on Procedures Governing Antitrust Matters of 1984. As an unilateral and protective act, see US Foreign Trade Antitrust Improvement Act of 1982; it follows US Department of Justice's Antitrust Enforcement Guidelines for International Operations of 1988, Foreign Extraterritorial Measures Act of 1985 (Canada), and Japan Fair Trade Commission's Draft Guidelines for the Regulation of Unfair Trade Practices in Sole Import Distributorship Contracts, Etc. (Import Guidelines) and Antimonopoly Act Guidelines Concerning Distribution Systems and Business Practices (Distribution Systems Guidelines) of 1991. The US Department of

is that the country is given the opportunity to notify the other about any policy that it has adopted and may have competitive implications for the other. Following this initial step, further actions are expected to be taken at co-operation and co-ordination levels, and on good faith and a transparency basis.

These principles form an intangible infrastructure and a good will basis to improve regulation of free markets between States. As a moral force, they may encourage the development of an international competition law. To what extent these principles are observed in practical terms, depends on the dimension of the interests involved and how much a particular country is prepared to co-operate.

The weakness of co-operation lies in the situation where a few countries join to procure advantages which are suspect in the light of, or incompatible with, multilateral ends. In this respect, it is worth mentioning the 1986 Arrangement Concerning Trade in Semiconductor Products between Japan and the United States. The agreement raised much concern among third countries, for the possible detrimental effects on competition<sup>66</sup> and anti-dumping implications. The issue was relevant also in view of paragraph 11 of the 1986 OECD Recommendation on Competition and Trade, which "calls on governments, when negotiating export restraint arrangements, to take into account the interests of their trading partners and to give consideration to the effect of such arrangements on competition in the market concerns."<sup>67</sup> Several interested parties, most of them outside the OECD, argued against the

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Justice has also cooperation agreement with Germany and Australia [1976] 4 Trade Reg. Rep. # 13,501 and [1982] 4 Trade Reg. Rep. # 13,502.

<sup>66</sup> The US-Japan Chip agreement came out as a result of an anti-dumping investigation undertaken in 1985 by the US Department of Commerce (DOC). It was alleged that Japan was selling a variety of memory chips at prices below a "fair value" in the United States, and then violating American antidumping law. Reconciling their interests, both countries agreed to regulate the quantity of the products exported from Japan, to control and set export prices at a market value assessed by the DOC according to US company-specific cost. The arrangement was found inconsistent with the GATT Article XI:1 (Report of the Panel adopted on 4 May 1988, L/6309, GATT/BISD, 36th Supp. 1990, p. 116). Studies undertaken by Andrew R. Dick, University of California, say that there was only little dumping evidence. The "fair value" was based on current-period costs, rather than "shadow cost of production" which in semiconductor industry "lies below current-period costs [] because of the presence of a learning curve that allows firms to lower their unit costs tomorrow by acquiring production experience today." [1991] XXXIV(1) *The Journal of Law and Economics* 133.

<sup>67</sup> OECD 1986-87 Report on Competition Policy in OECD Countries, p. 37.

anticompetitive effect caused by the agreement<sup>68</sup>, chiefly an increase in the price of memory chips.

This event apart, modern agreements<sup>69</sup> not only incorporate the principles above, but also contain provisions to some extent significant to the process of international competition. They are the North American Free Trade Agreement (NAFTA) on a regional level, and the Agreement on TRIPS on a multilateral basis.

#### **(iv) Co-operation policy under NAFTA**

Despite the general character of its provisions, NAFTA is relevant from the point of view of competition regulation. This agreement, signed by the United States, Canada and Mexico, establishes long-term co-operation in trade and related areas. It is important not only in terms of the prospect of growth, mobilisation of resources and market expansion, but also for the impact on domestic law involving a vast range of trade-related subjects. As far as competition policy is concerned, NAFTA:

- *includes provisions on anticompetitive government and private business;*
- *calls on each party to cooperate on issues of competition law, enforcement and other competition issues, including intellectual property;*
- *lay down ground rules to limit business practices of State enterprises and legal monopolies;*
- *provides for each country to ensure that such monopolies do not use their positions to engage in anticompetitive practices outside the non-monopoly market; and*
- *anticipate that a trilateral committee will consider issues regarding the relationship between competition laws, policies and trade.*<sup>70</sup>

Although of regional scope, these rules are a significant manifestation of the modern attitude towards the phenomenon of competition and the importance paid to the competitive process

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<sup>68</sup> The agreement allowed US firms to compete with Japanese firms. In this respect, the agreement was beneficial to chip producers, but severely detrimental to those chip importing countries. In its statement, Brazil argued that since the United States and Japan came to agreement, "an increase of between 10 and 25 per cent in the price of integrated circuits of 256K memory type, which Brazil imported from various sources, had been observed. Brazil was also encountering difficulties in importing several types of components from alternatives sources other than Japan and the US." GATT/BISD, 36th Supp. 1990, pp. 150/151.

<sup>69</sup> See the "Agreement on the European Economic Area" and the Agreement by the E.F.T.A. States on the Establishment of a Surveillance Authority and a Court of Justice, of 2 May 1992. The 1993 GATT Agreement on TRIPS has also a number of ground rules affecting international competition.

<sup>70</sup> NAFTA Treaty, Article 1501.

on transnational level.<sup>71</sup> The main purpose of the legal co-operation is to strike some convergence in administrative practices, look at closer enforcement procedures, and enable the Parties to call at other country's discretion to address the problem of export cartels.

Although of limited scope, legal co-operation seems to be initial steps towards a multilateral agreement<sup>72</sup> on competition law which, nevertheless, is still far from reality.

#### **(v) Co-operation under the Agreement on TRIPS**

Co-operation on matters of control of anti-competitive practices and conditions under the Agreement on TRIPS is specifically concerned with adverse effects of intellectual property on trade, transfer and dissemination of technology. The relevant provisions of the Agreement<sup>73</sup> indicate the nature of the adverse effects which may give rise to co-operative activities, the scope of the consultations, and the terms of the commitment required from the member-States. The provisions seem to be a minor step under the GATT framework towards co-operation against international cartels. This is an area of great conflict mainly because while each State adopts its own law, the competitive process increasingly expands beyond frontiers. Furthermore, the existence of international standards in intellectual property contrasts with the lack of equally developed standards in competition internationally. Against this background, Article 40 of the Agreement on TRIPS is expected to have little impact.

For the provisions to be invoked, it is necessary that the requesting State establishes the probable existence of an abuse of intellectual property rights, consisting of anti-competitive licensing practices or conditions (e.g., exclusive grantback non challenge to IPR validity, coercive package licensing) specified in national laws. The mischief should be in violation of the competition law at least, and detrimental to the industry, of the requesting State. The infringing firm, the owner of an intellectual property right, should be a national or domiciliary

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<sup>71</sup> Pointing to the same direction, see the "Agreement on the European Economic Area" and the "Agreement by the E.F.T.A. States on the Establishment of a Surveillance Authority and a Court of Justice", of 2 May 1992.

<sup>72</sup> Among specialists, the tenor of the speeches is of disbelief in a multilateral agreement on private competition. See 1991 Corporate Law Institute, p 87 and 107. (ed) Hawk.

<sup>73</sup> Part II, Section 8, Article 40.

of the addressed State. Another situation that the Agreement contemplates is when a national or domiciliary of a State is being prosecuted in a second State for violating the competition law (anti-competitive exercise of intellectual property rights) of the latter. The second State is committed to grant the former an opportunity for consultation under the conditions above.

The purpose of the consultation is primarily for exchange of information relevant to the investigation of illegal export cartels, and to minimise conflict between States. The host country is asked to:

- *accord full and sympathetic consideration;*
- *afford adequate opportunity for consultation with the requesting Member;*
- *co-operate through supply of available information relevant to the matter in question.*<sup>74</sup>

In principle, the request is to supply only public information. The exchange of confidential information is normally curtailed by specific rules. Nevertheless, confidential information available to the Government may be exchanged provided that mutually satisfactory agreement is concluded concerning the safeguarding of confidentiality.

The ultimate interest of the requesting State is to secure compliance with its legislation. Although the addressed State by no means is not obliged to take enforcement action, it may be asked to do so. This is a possibility which is not contemplated in the Treaty.<sup>75</sup> But if such a request is made, conflictual interests of legal significance are likely to arise. Firstly, the host country is not supposed to take any enforcement action if the alleged mischief is excluded from prosecution under its law. Secondly, as the application of competition law is predominantly confined to the national territory, the matter of jurisdiction is inevitably open to question.

Problems concerning co-operation in dealing with export cartels have emerged in the context of the US/EC Co-operation Agreement of 1991.<sup>76</sup> A prominent issue in this respect

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<sup>74</sup> Agreement on TRIPS, Article 40(3).

<sup>75</sup> In this respect the scope of the Agreement on TRIPS is not as large as that of the US/EC Co-operation Agreement.

<sup>76</sup> The USA has concluded agreements of the kind with several countries, including the European Communities, Germany, Australia, Canada.

is whether the prosecution of an export cartel on request of an interested country (party to the agreement) is a matter of law (a legal defence to the requesting State) or a discretionary comity.<sup>77</sup> The latter has the acceptance of the predominant view.<sup>78</sup>

On the basis of sympathy to a request made by a trading partner or fearing retaliatory attitude, a country may be willing to challenge at home an export cartel started abroad. Legal problems of jurisdiction may be circumvented by the application of the controverted effects doctrine (meaning a country has jurisdiction to enforce its competition law against foreign conduct by foreign firms, even if lawful where the conduct has occurred, so long as that conduct has an adverse effect on the country's commerce).<sup>79</sup> However, the central issue is to what extent the national competition law and policy support an enforcement action<sup>80</sup> to prevent or control cartel effects which are adverse to the trade of the requesting State, but beneficial or unharmed to the commercial interests of the host State. The experience shows that the host country is hardly prepared to sacrifice its own interest.<sup>81</sup> This is an outcome which limits the function of co-operation on international trade.

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<sup>77</sup> Article V of the US/EC Agreement.

<sup>78</sup> Cf. James R. Atwood, 1991 Fordham Corporate Law Institute, Chapters 4 and 6, (ed Hawk).

<sup>79</sup> *Re Wood Pulp* [1985] 3 C.M.L.R. 474. As the British Government has contended, economic effects alone are not sufficient to establish the national jurisdiction. Consequently, Britain has resisted extra-territorial application of competition law. Opposite stance, however, is adopted by the US courts and the EC Commission. Richard Whish, *ob. cit.*, p. 375 and 385.

<sup>80</sup> The American policy is that the US Congress "intended the Sherman Act to protect American consumers and American competitors, but not to benefit foreign consumers in their home markets." James Atwood, *ob. cit.*, p. 86

<sup>81</sup> James Atwood, *ob. cit.*, at p. 89.



## CHAPTER SEVEN

### ADJUDICATION ON NON-VOLUNTARY LICENCES OVER UK PATENTS

#### 7.1 Introduction: reasoning, discretion and public policies

From common law to modern cases involving deliberations on trade matters under public policy arguments, reasoning has been developed to give decisions a greater sense of certainty and acceptability or legitimacy. Although subtle, this development has been a result of the legal evolution from broad statements to detailed statutory provisions in particular instances of intellectual property and competition law. In the preceding chapter, it was seen that developments in economic analysis and thoughts have also played a distinct role, very influential on judicial decisions. Reflecting these developments in law and economics, the investigations carried out by the Monopolies and Mergers Commission (MMC) provides for a reasoning method which contrasts with both old common law and modern discretionary jurisdiction.

If they are not guided by sound criteria applied to particular cases, discretionary judgements in general may lead to legal obscurity, of the type encountered in the reasoning performed by common-law judges. Such a recurrence would be incompatible with the level of transparency and certainty required by international standards.<sup>1</sup> In this respect, the analysis of the adjudicatory process on non-voluntary licensing is at the same time a warning towards a potential failure of the discretionary adjudication, and a claim for reasonable procedures free from the temptations of unsound justifications, even in the name of a theoretical public interest.

The legal literature shows that the judicial duty described in terms that judges have simply to ascertain facts and identify the proper rule applicable has never been a convincing idea. Nor are judges mechanical dispensers of precedents<sup>2</sup> As they have done for centuries, judges are

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<sup>1</sup> See *inter alia* Articles 41 to 43 of the Agreement on TRIPS.

<sup>2</sup> For an account of the modern views of the judges' political role, see Richard A. Maidment, *The Judicial Response to the New Deal*, Manchester University Press, 1991; J. A. G. Griffith, *The Politics of the Judiciary*, 4th ed., 1991; Daniel A. Farber & Philip P. Frickey, *Law and Public Choice*, Univ. of Chicago Press, 1991;



led to apply concepts of ends entailing sensitive elements of public interest, which has ultimately been elevated to a category of legitimacy for both statutory choices and judicial reasoning

The implications of courts dealing with public interest are twofold. Firstly, adjudicators do not appreciate setting policies which may appear to be their own. Secondly, if the law fails to provide the right guidance to solve a particular legal problem some judges may feel reluctant to deliberate, mainly if questions are affected by economic ideas and thoughts which at times emerge with significant influence. Other judges having, or sensing they have, sufficient ability to handle these sorts of questions may venture in a debatable reasoning. As a result of these discrepant attitudes, decisions tend to vary. This was very typical in the assessment of restraints of trade on public policy arguments at common law.

Despite the variation of opinions on restraints of trade - a very unwelcome result, judges at common law were never divested from their duty to decide according to their own knowledge and experience. It was part of their mandate, tacit or expressly stated, to pass judgement on public policies. In their role as guardians of public interest, courts could strike down a contract or clause regarded as unlawful restraint *prima facie* void, subject to reasonableness. The judicial intervention was justified to protect a person in a weak position, giving way to an argument oriented to an individualist law, that was the assessment of public interest in consideration of the interests of individual parties. Although present, the perception of a collective interest<sup>3</sup> was obscured by that individualism. The former only gained prominence later with the emergence of new legal mechanisms put in place to watch over the interests of a growing consumer society.<sup>4</sup>

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William F. West, *Administrative Rulemaking, Politics and Process*, Greenwood Press, 1985; John Bell, *Policy Arguments in Judicial Decisions*, Clarendon Press, 1983.

<sup>3</sup> John Bell speaks of a collective welfare, *ob. cit.*, at p. 77, 81/82 and 219

<sup>4</sup> Alongside an ideology of economic welfare which gained momentum at the turn of the century, protection of public interest was improved with the emergence of a legislation designed to regulate the competitive process in the USA, such as the Sherman Act in 1890, the creation of the Federal Trade Commission in 1914, and in England the emergence of compulsory licences over, and revocation of, patents. With relevant statutory regulation, little by little public policies could be drawn with less uncertainties.

The legacy of the restraint of trade doctrine is a disarray of reasoning associated with the application of public policy arguments, and a consequent uncertainty (unpredictability) of the judicial process, an outcome inadequate to the pattern of procedure claimed for the adjudication on non-voluntary licensing. Likewise, the *Leyland* case,<sup>5</sup> significant for the type of judicial commitment it contains, is a modern warning about what an adjudicatory policy should avoid. By contrast, the reasoned MMC reports about the effects of restrictive practices can be identified as a paradigm of reasoning.<sup>6</sup> While pursuing an empirical public interest, the Commission relies much on what can be observed and very little upon the construction of law. The same cannot be said about discretionary decisions.

While doubly affected by the availability of limited information about concerned facts and by concepts of ends, the discretionary rationality much depends on public policy arguments. A discretionary mandate is to fulfil purposes arising from ill-defined rules or guidance, which may lead to a state of uncertainty. Redressing this prospect, there is a case for circumscribing the jurisdictional discretion to statutory and judicial limitations.

In the analysis of the comptroller general's decisions, it will show that discretionary power is primarily limited by specific statutory provisions such as those setting the purposes of the non-voluntary licensing, and enabling the comptroller to act as he "thinks fit."<sup>7</sup> The scope of this circumscribed jurisdiction is understood in the sense that the exercise of discretion is to be proper in regard to the purposes envisaged by the statutory policies, and not hinder the patent right unnecessarily. Described here as "useful" discretion, this notion requires a response to varying contextual factors or determinative reasonable answers. This will be tested in a number of situations, and particularly employed in royalty computation.

Regarded as reasonable in the interests of the parties, royalties are not only submitted to the patentee/licensee's bargaining. They are also assessed in accordance with the nature of the invention. Ultimately, the computation of a royalty economic value is a function of rationally differing features of an invention. The rigor of this criterion, nevertheless, may not be

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<sup>5</sup> [1986] R.P.C. 279.

<sup>6</sup> Also important, the investigations carried out by the Commission are highly significant for their impact on the intellectual property order.

Patents Act 1977. ss. 48(4), 49(1).

observed in the assessment of remuneration for Crown use. In this type of remuneration the judicial role is minimal. In this respect, UK safeguarding policy is open to criticism.<sup>8</sup>

Discretionary judgements involving issues such as sublicensing, importation, and dumping defence are challenging. In entertaining these issues, adjudicators may not be free from the temptations of welfarism imposed by a safeguarding policy and the economy it oversees.

The policies that the comptroller is to implement are a matter of public interest, translated into elements of efficiency and welfare. While these elements may be properly considered under the procedures governed by the framework of competition law, the adjudication system of unauthorised patent use intrinsic to the legal framework of intellectual property has proved to be inadequate to address issues connected with international trading. In this area, the discretionary jurisdiction on balance is inclined to favour the country's interest which may not satisfy an efficiency defence.

Although the discussion of discretionary jurisdiction will bring the comptroller's decisions into focus, the purpose is not to assess whether the adjudicatory outcomes were the right ones in the particular circumstances. The aim is, instead, to approach the reasoning put in place in selected cases and to look at the criteria employed. The question that one should consider is this. How to set up an adjudicatory legal system of control over the exercise of intellectual property rights in a manner which complies with goals or criteria of efficiency and welfare, and avoid the undesired outcome of diversity of opinions typical in the common-law doctrine of restraint of trade? In order to address this question a number of points are considered.

Firstly, It is argued that whatever the format of the judicial opinions, the role of courts and judges is incontestable. More than a defence, this is an assumption which underlies the institutional process of adjudication.<sup>9</sup> Case law is a source of consolidated knowledge and experience. Precedents contain enduring lessons necessary to build up a safeguarding policy.

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<sup>8</sup> In addition to subsection 7.3.2 (iv) below, see Chapter 7, subsections 5.3.2 (i) and 5.3.3 (i).

<sup>9</sup> While leading industrialized countries can benefit from a long experience in safeguarding adjudication, many other countries cannot.

Such precedents may also have a catalyst function of great assistance to improve the statutory regulation and cure past mistakes. As an example, one should bear in mind the benefit of the experience gathered by the comptroller and many times referred to in court. Thus, to be able to bank on a consolidated adjudicatory experience is indispensable to the formation of a sound and confident safeguarding policy.

Secondly, despite of the uncertainties of the old doctrine of restraint of trade, one is bound to argue that in dealing with public policy issues judges have proved to be less than clear, but without them it is worse still. Judges are influenced by economic thoughts and theories. At times they are invited to examine the issues before them in the light of arguments alien to legal discourse. This is usual in issues concerning the control of intellectual property and competition process. Applying their particular perception of the economic background, judges develop a rationality of their own which may not be in accordance with economic analysis and methods. These in general are found difficult to understand and very confusing indeed for judges.<sup>10</sup> Economic analyses, however, have contributed to improving and enforcing competition law. It follows that resorting to economic analyses to back public policy arguments is advisable.

Thirdly, provided that they are given the right guidance, adjudicators are able to make a more rational use of public policy arguments. In this connection, one may look at the proceedings of the Monopolies and Mergers Commission. Taking public interest into account, the Commission is guided by legal circumstances clearly set up. While influential in ordering the use of intellectual property rights, MMC reports illustrate the benefits of having not only sound legal guidance on matters of public interest, but also the contribution of non-legal professionals in the make-up of an adjudicatory body. In this respect, one may observe that in the process of non-voluntary licensing adjudicators are not always legal specialists. The presence of academics and businessmen from other areas other than the legal branch has proved to be important for the interpretation of the economic background and to pass to judges sound impressions and informed advice on economic matters. Incidentally, the

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<sup>10</sup> This is so because judges are poor economists and unskilled politicians. Their decisions on legal matters affected by economics are not always welcome in the business circle, and may spread uncertainties.

comptroller general's decisions on non-voluntary patent licences are not always delivered by legal professionals.

Fourthly, statutes, regulations, or any sort of guidelines are all imperfect. They always contain some gap. They may be too rigid or confer too broad a mandate to the adjudicator. The conceptualisation of a safeguarding policy (the legal machinery designed to limit the exercise of proprietary rights) should rely on clear legal definitions and guidance, but it is not commendable nor practical that all matters are regulated in a strict manner. To allow some discretion is also desirable. In summary, as part of an institutional adjudicatory process, judges or adjudicators are responsive to rules, have discretion, and are committed to principles designed to substantiate efficiency and welfare goals and criteria.

Taking into account these arguments, one cannot establish beforehand the amount of discretion that an adjudicatory process should allow, but one may state that a sound process requires, on balance, rules narrowly drawn, and a degree of discretion. The assumption is that a combination of discretion and clear rules is necessary for a sound reasoning, as well as for an efficiency defence allowed within legal limits. In order to understand the nature of the adjudicatory process on non-voluntary licences, all of these points will be discussed. For the sake of comparison, the chapter starts dealing with public policy arguments at common-law and modern decisions. Then, it discusses the discretionary power of the comptroller general and courts in the adjudication on the use of UK patents.

## **7.2 Review of public policy arguments**

### **7.2.1 Reflections on public interest**

#### **(i) The importance and notion of public interest**

Despite its intangible nature, public interest is a notion central to legal theory and enforcement. Its content, *a priori* undefined, is a constant puzzle to decision-makers in different branches of law, and in particular to the regulation of the exercise of intellectual property rights and the competitive process. These indicate the relevance of the principle to which the safeguarding policy is committed, and justifies the brief reflections on the theoretical thoughts<sup>1</sup> which explain the public interest as an element of legitimacy, the interface between private and public interests, and the process to select and ascertain the criteria of public interest.

Public interest is an element of legitimacy as far as it works as valid grounds for general acceptance of both statutory choices made by Parliament and legal rationality put forward by courts on a case-by-case basis. In this respect the decision-making machinery on Parliamentary or judicial level is a relevant institutional process of identifying public interest, of which statutes and court rulings are in some sense expressive sources. Obviously there are no determinative terms to describe public interest. The ambiguity surrounding its concept does not make it immune from being manipulated to serve purposes other than those regarded as not convenient to the public at large. It follows that in passing a judgement of public interest Legislature and courts or tribunals have the duty to secure the interests of society at large from being exploited by particular groups seeking purely private gain at public expense.

There is a relationship between individual and public interests. Individuals or groups of people may pursue varied interests; some pertain and others do not to the society at large.

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<sup>1</sup> For literature on public interest discussion see Torben Bech Dyrberg, *The Politics of the Individual and Public Interests*, Essex Paper No. 91, University of Essex, 1992, from which much has been drawn. A similar topic equally undefined is the so-called *public choice*, dealt with in the "Symposium on the Theory of Public Choice", [1988] 74 *Virginia Law Review* 167.

This observation leads to the assumption that society is capable of having interests of its own. The question is how it is possible to distinguish the interests of the public at large from those which are confined to the individual sphere.

One may assume that the aggregation of individual interests forms the interests of society, but this would discard antagonistic interests of other groups or would require that groups give up their interests to affirm those of society's. The assertion may be possible in principle, but no one would suggest that it could be so to the full extent. As a result, what is claimed as being of society or public interest can only substantiate interests of a majority against the interest of a minority. From what is said one may figure out the risk posed by the way public interest is construed, that is the possibility of groups imposing their interests upon others.

Granted that there is no other way to establish public interest but through the majority rule, it highlights both the vital role that process plays in the legal theory and the way public interest is officially established. The recognition of public interest as a key element means that the operation of policies through legal implementation ought to be made on behalf of society. Out of such an aim there is no legitimisation. In addition, the way individual and public interests are related is a matter of representation. Now it remains of concern that the encapsulation of a particular interest in the legal mainstream could eventually lead to the domination of groups by means of biased information or even repression.

The representational expression of public interest requires both an articulation of elements which may confer a democratic sense to the legislative process, and the justification of interests which go beyond the individual sphere. Such a mechanism operates the conversion of political choices into legal options designed to repeal incidental benefits for individuals or pressure groups and to pose limitations, one general the other narrower. Both the Legislature, in designing those options, and the courts, in operating them, have a common aim which is to endeavour that the inherent ambiguity of public interest is not directed for the privilege of an elite. How much the legal scheme is able to guarantee such an aim is a matter for the court to say, but in particular circumstances one can establish that what is or seems to be good for society at large fits in with public interest.

## **(ii) Compliance with the Parliamentary options**

It is not for the courts or tribunals to override legal options. However, apart from having to articulate with standards of instrumental rationality courts also have to apply conceptions of ends. In doing so, they keep in touch with contemporary thoughts and theories regarded as considerable intellectual forces, eg, the idea of public benefit, freedom of trade, consumers' interest, respect of properties, and intellectual property bargain. However sensitive these concepts may be, the courts have a duty to apply them in compliance with statutes and regulations. In respect to these developments, it is reasonable to suggest that in the province of safeguards on intellectual property the idea of public policy may or should be apprehended through the interpretation of the relevant statutes and that the test of public interest can only be articulated usefully in terms of purposes and concepts statutorily stated, in an implicit or express manner, and narrowed down.<sup>2</sup> It is assumed that the courts and administrative authorities are committed to these purposes and concepts. In reference to these, courts and tribunals play their role in completing and construing the law on a rational basis and thus establishing the policy behind the statutes. In other words, the policy is laid down by the Parliament or upon the mandate conferred by it. As a result, although the adjudicatory bodies cannot abdicate their function of applying arguments of public policy, such an office is a limited one. This limitation is a requirement of legal certainty pursued by the modern process governing the safeguarding policy.

The following subsections discuss the relation between the adjudicatory function and public policy arguments, and the consequential implications of such a relationship.

### **7.2.2 Revisiting public policy arguments at common law**

It is a settled and much documented fact that at common law opinions on public policy varied "with every change of the wind."<sup>3</sup> Looking briefly at the decisions, it could be suggested that

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<sup>2</sup> The lack of indications would make judges unsuited to decide on matters involving economic affairs, although they have often been required by the Government of the day to do so, even with the risk of arriving at an economic nonsense. See J.A.G. Griffith, *The Politics of the Judiciary*, 4th ed., especially pages 48, 49, 50, 63, 73, 275, Fontan Press, 1991.

<sup>3</sup> Cf. Atriyah, *The Rise and Fall of Freedom of Contract*, p. 383-387.



the most common cause for such a variation of opinions was due to lack of informed and unsatisfactory legal guidance. In discerning what was for the public good, judges followed only their personal experience and the perception drawn from the circumstances of the particular cases. They had only the principle of freedom of trade (in fashion among political economists) as an opaque basis to start with. Those judges who were either less informed or not convinced that public welfare was a matter for them to deal with, preferred to resort to settled principles and precedents instead of venturing an opinion on the basis of an abstract general public policy. It is not proper nor necessary to carry out here an extended discussion of the matter. A brief comment follows only with the purpose of illustrating the facts stated above and supporting the suggestion that lack of reliable guidance was the reason for the disarray of opinions and uncertainty that should be avoided in the modern regulation of the adjudicatory process of control of the exercise of intellectual property rights.

**(i) Reasonableness as to individual and collective interests**

In the *Mogul Steamship* case,<sup>4</sup> an association of traders was found to have interfered with the course of trade unduly, by raising prices or offering rebates. Such a practice was considered a wrong of public mischief. The House of Lords, however, did not embrace the public policy argument. In a remarkable statement, a member of the court considered the public policy argument to be a dangerous venture compared to "an unruly horse" with no sense of direction which could make judges unreliable interpreters.

Similarly debatable ruling was set in the *Nordenfelt* case<sup>5</sup>. In this, the evolution of the public policy doctrine is explained. According to it, the community had a material interest in maintaining fair dealing. Courts, however, had little idea how to protect such collective interests. In the past, the doctrine was stated as a general rule, i.e., that restraints of trade were all void. That was found to be too rigid. It was believed that, to a certain extent, some restraints could be allowed under conditions of *bona fide*, good considerations or reasonableness. Now what would fall within such a standard? Under the courts' ruling, restraints necessary for the protection of trade would be lawful. In an attempt to elaborate a

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<sup>4</sup> [1892] AC 25

<sup>5</sup> *Nordenfelt v Maxim Nordenfelt Guns Ammunition Company* [1894] AC 533.

definition of reasonableness, the court introduced an element of limit: the restraint having no territorial limitation would be contrary to the commercial policy of England and not meet the requirement of validity. Such a test distinguished partial from general restraint; later it proved to be unsatisfactory.

The prevailing perception was that a trading restraint, no wider than needed, was reasonable, and as such valid, with reference to the interests of the parts and the public. The latter, nevertheless, was confined to the interests of the former, i.e., "if the agreement was reasonable in the interests of the parties, then it was presumed to be in the interests of the public."<sup>6</sup> The judicial intervention to strike down a contract or clause was justified to protect a party in a weak position and thus a victim of an unconscionable restriction. This traditional meaning of the doctrine of the restraint of trade seemed to support an ideology of individualism, and consequently indicate a failure of the courts to secure protection to collectivist interest.<sup>7</sup> Protection of collectivism is only later improved under the influence of new thoughts<sup>8</sup> and subsequently strength of competition law, in this century.

## **(ii) The influence of economic theories**

At the turn of the century the matter remained debatable and apparently was never entirely settled. In a more recent case,<sup>9</sup> the House of Lords dismissed an appeal to confirm a decision which held a copyright agreement null and void on the grounds of unreasonable restraint of trade. The plaintiff, a young song writer, under contract, agreed to assign to the publisher his full copyright for the whole contractual term. The agreement would be in force for five years

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<sup>6</sup> Atiyah, *The Rise and Fall of Freedom of Contract*, p. 699. As the author adds, it was almost impossible to prove that a trading restriction operated against the public interest.

<sup>7</sup> Protection of collectivist interests is a result of greater perception of a growing consumer society. A reflection on the change from individualism to collectivism is developed by John Cooke and David Oughton, *The Common Law of Obligations*, chapter 4, second edition, Butterworths, 1993. The suggestion of an ideology of individualism is also supported by the traditional notion present in the tort law, that is, the tort as a scheme of interpersonal distribution of losses, rather than an injury against the public. See John G. Fleming, *The Law of Torts*, p. 4-6, 1992.

<sup>8</sup> These thoughts include or are related to the rise of the economic liberalism, the role of the state and consequent rejection of the notion of *laissez-faire*, and the recognition of the failure of the market forces alone to provide for the best benefits to consumers (i.e., the proscription of an idea of free market associated with a defence of consumer welfare). See Cooke and Oughton, *ob. cit.*

<sup>9</sup> *Macaulay v. Schroeder Publishing* [1974] 1 W.L.R. 1308.

and automatically extended for a further five years in the event that during the first term the royalties exceeded a certain figure. The publisher had the discretion to terminate the agreement at any time. The agreement also prevented the song writer from dealing with his rights involving a third party without the publisher's consent. The remuneration was confined to royalties on published works and there was no obligation for the publisher to promote or publish the author's works.

The point in law at issue was to know whether the contract was likely to conflict with public policy defined as “the interest of both the public and of the individual that everyone should be free so far as practicable to earn a livelihood and to give to the public the fruits of his particular abilities.”<sup>10</sup> The Court confirmed the principle that under normal bargaining conditions the parties may choose any restriction to operate the agreement in such a manner they think proper. The contract in particular, however, was found null and void because its clauses were unnecessarily unfair and the parties were in a situation of unbalanced bargaining power. Nevertheless, in his reasoning (which theoretically appears to be in disagreement with Lord Reid's reasoning concerning public interest) Lord Diplock acknowledged that the court was implementing the public policy in the sense of “protection of those whose bargaining power is weak against being forced by those whose bargaining power is stronger to enter into bargains that are unconscionable.”<sup>11</sup> He went on to ascertain that “under the influence of Bentham and of laissez-faire the courts in the 19th century abandoned the practice of applying the public policy against unconscionable bargains to contracts generally, (...) but the policy survived in its application to penalty clauses and to relief against forfeiture and also to the special category of contracts in restraint of trade.”<sup>12</sup> Although the reasoning on this intended to reflect the economic theories current at that time, ultimately what was regarded unconscionable between the parties was a matter of judicial perception, and the outcome of the decisions paid no regard to the general public interest.

Clearly, at common law, judges were influenced by economic theories, but they had their own perception of economic matters. The statement by Lord Diplock is also confirmed by

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<sup>10</sup> Lord Reid's statement [1974] 1 W.L.R. 1308 at 1313.

<sup>11</sup> *Idem*, at 1315.

<sup>12</sup> *Idem. idem.*

another specialist who writes: "what the judges said [at common law] was one thing; what was necessarily implied or involved in their decisions was something else again."<sup>13</sup> Judges today are also influenced by economic theories. If they are not given the right legal guidance their opinions tend to be as diversified as the decisions of the common-law judges.

### 7.2.3 Critique of the British Leyland case<sup>14</sup>

This landmark case is a public policy apology used to exclude intellectual property right against the copying of purely functional objects (spare parts). The underlying public policy was broadly expressed in the words of Lord Scarman in the following terms: "the manufacturer of an article such as a motor vehicle or other consumer durable cannot by the exercise of copyright preclude the user of the article from access to a free market for spares necessary to maintain it in good working order."<sup>15</sup> As the House also suggested, this principle is latent in British law and applies to intellectual property rights in general, i.e., upon copyright, designs and patented inventions. The decision has a positive aspect, to the extent that the court manifested a commitment to a particular policy, and a negative aspect, that is, while recognising the existence of copyright, a majority view denied enforcement. It is suggested that a contradiction rests on the very foundation of this outcome.

The dispute arose over the copyright claimed by car manufacturers (plaintiffs) to prevent others from reproducing without consent a particular exhaust pipe, a component part required for the repair of a motor vehicle. After being entertained by a trial judge, the claim was submitted to the consideration of both the Court of Appeal and the House of Lords. The latter, against dissenting arguments, eventually allowed the appeal to dismiss the claim of copyright infringement. In summary, four decision models were contemplated as follows:

- copyright protects car manufacturers against reproduction in three-dimensional form and manufacturing for sale of exhaust pipes, and there is no principle of law to exclude the enforcement of such a statutory right. (Court of Appeal);

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<sup>13</sup> P.S. Attyah, *The Rise and Fall of Freedom of Contract*, p. 386.

<sup>14</sup> *British Leyland Motor Corp. and Others v. Armstrong Patents Co. Ltd.* [1986] R.P.C. 279.

<sup>15</sup> *Idem*, at p. 349.

- copyright affords no protection to car manufacturers against reproduction of exhaust pipes. If a statutory right do exist otherwise there is no principle in law to bar its enforcement. (Lord Griffiths);
- copying of exhaust pipes did not attract copyright protection, if it did, no relief was to be available on the grounds of free access to spare-part market. (Lord Scarman);
- copying exhaust pipes is an infringement to the copyright on the mechanical drawings, but on the ground of non-derogation from grant such a right cannot be enforced. (Lords Templeman, Bridge of Harwich, and Edmund-Davies);

It upheld the theory that the exhaust pipe, as a purely functional object with no eye appeal (intrinsic beauty), is not registrable under the 1949 Registered Designs Act, and does not meet the conception of invention, but the corresponding drawings under the copyright regime amended by the 1968 Design Copyright Act are entitled to protection. In accordance with precedents long settled, the unauthorised reproduction of a three-dimensional object (the exhaust pipe system) depicted in a drawing is in principle an infringement.<sup>16</sup> The House of Lords, however, did not allow the infringement defence on the grounds that the enforcement would be particularly contrary to the right to repair invested in the car's owner as it was supported by analogous authorities.

The decision was regarded as not contrary to settled practices (precedents), and the matter affected outside the scope of the legislation examined. Therefore, there was a narrow sphere unfilled by the statute nor fully treated by previous authorities. This permitted the Court to construe the law in an unusual manner. In doing so, the House of Lords revived a public policy which should be read *cum grano salis*, i.e., its effects are to be read in a manner not to extend beyond the economic background of spare parts.

### **(i) Commitment to policies**

Through a careful analysis of the case it is possible for one to draw some limitations upon the policy behind the decision. The public policy can be stated in the following terms: that an

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<sup>16</sup> Cf. Report of the Copyright Committee, Part I, p. 82, Cmd. 8662 (1952). See also Chapter 3 (subsections 3.2.1 and 3.2.2 about similar arguments on the doctrine of useful article in America.

unrestricted market allowing the straight copying of exhaust pipes is in the public interest, so that car owners can enjoy, to the most economical extent, the inherent right of freedom to have their cars repaired. Such a right to a fair repair does not amount to making a new article, a car in this case, and it is explained as follows.

Cars are made and sold with components which are bound to fail in the course of the car's lifetime. From the relationship between vendor and purchaser an irrevocable grant is born in favour of the latter concerning the proper use of the car which, if not repaired, becomes unfit for the purpose the grant is made. To require the purchasers to buy replacement parts only from the car manufacturers or their licensees is an improper interference with the right of the former to have their cars repaired. That is stated, briefly, in the principle no one can derogate from his own grant.

One factual limitation of the decision is that it was established with reference to a specific economic background: mass-produced goods (spare parts), and the need to maintain a consumer durable article in a good working order. The mass-production represents a considerable market exceeding \$1 billion dollars a year. The maintenance need was established by the degree of frequency of the car part replacement, calculated as many as ten times during the average car lifetime. These conditions describe a situation *per se* regarded as able to confer a monopoly right, relying on copyright in technical drawings, to an extent, as the House of Lords concluded, not intended by the statutory copyright.

The evolution of the law, section 10 of the 1956 Copyright Act as it was amended by the 1968 Design Copyright Act, led to the protection of useful articles. What the Parliament truly wanted, however, was to make attainable the copyright purpose, that was to secure the due remuneration for the artistic work. Bearing in mind such a purpose, the Court concluded that indirect copying could not truly be taken beyond that purpose, *i.e.*, protection was provided only to restrain unfair copying. If the statute gives room for an interpretation which makes the reproduction of a useful article an infringement in any circumstances, enabling the owner to take from it the commercial interest to all extent possible, the majority of the House of Lords concluded that it was time to correct the law, *i.e.*, construing it in a way which unveils its real

intent. Hence, enforcement is only allowed where, because of the reproduction of the artistic work in three-dimensional form, the owner is prevented from achieving the real return upon his intellectual effort. This is an extremely important point in law clarified by the House of Lords. Some obscurities, however, still remain.

## (ii) Obscure grounds

Protection without enforcement is a negation of protection or no protection at all. Granted, however, that the scope of the statutory protection (set up with no exemption) was only to allow the copyright owner to reap the due return from his artistic work, and no more than that, what gross mischief could, besides that, despise protection? A positive answer gives rise to a puzzling issue, that is, where to draw the line to separate a necessary protection from an undue or excessive return. Additionally, in certain circumstances it is not easy to discern repairing an article from making a new one.<sup>17</sup> However, it would be easier and sufficient to establish a situation of monopoly disproportionate to the "statutory protection" afforded, by investigating an alleged abuse of right, a submission which was denied. An abuse of right could be remedied and the intellectual property continue to exist meaningfully.

The implied licence could be a solution. A submission in this connection was also cast aside: its assistance would be only usefully conjured up against a patent which bears a true and stronger monopoly right, stated the Court. (The rule of implied licence has been applied to copyright only in limited scope, i.e., coupled with patent.<sup>18</sup>) In rejecting the implied licence, the Court avoided expanding the application of this rule to copyright, which traditionally relies on statutory framework. The Court, however, overlooked the fact that the exercise of copyright applicable to industrial elements (industrial copyright) can have the same effect as a patent, i.e., both industrial copyright and patent can create a legal basis for abusive practice. Hence, there is no sound reason why the implied licence should not be applied to copyright as it was argued.

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<sup>17</sup> See the *Solar* case reported in the footnote below [1977] R.P.C. 537 at 554.

<sup>18</sup> In *Solar Thomson Engineering Co. Ltd. and Another v. Barton* the Court of Appeal upheld the doctrine of implied licence to exclude an infringement claim in respect of copyright in or relating to specified drawings of a patented product (polyrim pulleys). In recognizing the right to repair on behalf of the defendant, the Court treated the doctrine as equally applicable to both the patent and the related copyright. [1977] R.P.C. 537.

To return to the question above, if a negative answer is the case (i.e., beyond a due return there is no mischief sufficiently gross to curtail protection), it could be assumed that the "enforcement exception" could take place only when both a conflicting right, of the kind invested in the car owner, and a right of normal exploitation concur. Such a conflict of rights would lie only (broadly speaking) in a monopolistic background. On this point the plaintiffs made, indeed, a substantial contention: as long as they and licensees were willing to offer adequate supply at reasonable charges there was no detriment to the alleged right of car owners. The House of Lords refused such a test and considered that to enforce the claim would bring the prospect of the plaintiffs acting unreasonably.<sup>19</sup> Accepting the potential for unfair behaviour as an able premise, it could be argued that what ultimately justified the enforcement exemption was the existence of an extra-statutory conflicting right opposed to the copyright claim. The Court was satisfied with a formal conflict arising from the mere existence of alleged rights (a right of consumers and a right over drawings of exhaust pipes), rather than from the exercise of an intellectual property right.

In justifying the policy behind its decision the House of Lords paid no credit to other submissions, namely, abandonment, exhaustion of rights, licence to the world and fair dealing. The first three patterns of defence overlap to a certain extent: they depart from the point in which a right ceases to exist by lack of control, deliberate relinquishment, or preclusion of the right under particular circumstances. These models rely on settled judicial practices regarded as standing apart. In addition, fair dealing would not operate beyond the statutory conditions.

The prevailing solution, modelled outside those submissions, avoided extolling any defence which apparently favoured a blanket licence which could easily be extended to other situations. This suggests that the case, unlike previous ones,<sup>20</sup> is a limited precedent. The application of its effects to any other situation outside the province of the spare-part market is a costly venture. The case has its merits, however.

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<sup>19</sup> Resting on the public policy argument, the Court followed a *per se* rule approach as to the market power assessment. How far such an adjudication criterion would be a valid one under the 1988 C.D.P.A. s. 238 is debatable.

<sup>20</sup> Given *per incuriam* or not, as it was referred by Lord Harwich [1986, R.P.C. at 357], *Popeye* and *Swish* cases broadly established that the reproduction of a purely functional object was a breach of copyright in the drawings. See *King Features Syndicate Inc. v. O. & M. Kleeman Ltd.* [1941] A.C. 417 and *L.B. (Plastics) Ltd. v. Swish Products Ltd.* [1979] R.P.C. 551.



The ultimate merit of the decision rests in the sensible result it sought: to safeguard a public policy which was eventually reduced to a general interest, i.e., the collective welfare of car users (consumers). There was a basic concern, which was to bar an attempt to expand the boundaries of intellectual property to a point where rivals are obliged to copy in order to compete. There is another implication. The rationale for the decision could be stated in this way: if copying is worthy from the point of view of public interest, protection is not necessarily available. In this way the ruling contributes to re-thinking or reshaping the theory behind the intellectual property. All of these, however, do not obscure the critical part of the decision.

It could be argued that the decision seems to conjure up a safeguard with no legal provision. There is a risk in this which a safeguarding policy should avoid, and here it seems proper to clarify a point. A claim inherent in the intellectual property bargain is that the intellectual property is protected under the presumption of mutual benefits based on elements of efficiency and or welfare. This is valid as a theory designed to explain the scope of the legal protection, to inform the drawing of the statute and its interpretation, but it is not to be invoked with a force of its own to cease protection by the permanent denial of enforcement,<sup>21</sup> perhaps this may be advisable only to strike an exceptional statutory inconsistency. The theory in itself, however, is an aid to not a principle of law.

As the judicial reasoning has a rationality of its own, without a statutory regulation previously known the treatment of the intellectual property is rather obscure. In addition, to safeguard public interest, however noble, based on a mere doctrine only leads to an unclear policy. No doubt, in the *British Leyland* case, the complex and difficult choice adjudicated among competing factors cannot be seriously overlooked as fruit of a legal reasoning committed to a central matter: the public interest pursued in a way which, at the scrutiny of any learned man, attracts full legitimacy<sup>22</sup>

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<sup>21</sup> This is at least discouraged by the Agreement on TRIPS, Article 31.

<sup>22</sup> The supervenient legislation seemed to have incorporated the *Leyland* case, but the matter is not entirely settled. See *Ford Motor Company Limited and Iveco Fiat's Design Applications* [1993] R.P.C. 399.

Although welcomed, the policy drawn from the case was put forward in an unsatisfactory way.<sup>23</sup> Once a statutory right is recognised and protection ascertained, a public policy is set out consisting of the reward element along with other elements of efficiency and welfare informing the social bargain. In the name of this social bargain, protection to the right may be limited, or even suspended in the presence of a serious mischief, i.e., anti-competitive practice. However, to cease protection against the statute means to overrule the bargain behind the statutory protection. Bearing in mind that intellectual property is a statutory right, not a common-law right, it is extremely difficult to understand the decision. Thus, the *Leyland* case is a source of legal uncertainties and obscurity.

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<sup>23</sup> Given the scale of disagreements among judges and counsels, all of them presenting impressive arguments, the impression is that the final decision was delivered against the precedents and statutory provisions examined.



## 7.2.4 The public interest under the MMC's reports

### (i) Investigation by the MMC

After discussing public policy arguments at common law and in the modern cases, deliberations of the Monopolies and Mergers Commission (MMC) on public interests are now brought forward for comparison. Unlike the cases previously examined, the MMC reports seem to contain safer reasoning. This suggestion is associated with the Commission's proceedings, and the features of the legal framework governing them.

Central to the competition investigations carried out by the Commission is the legal guidance concerning the scrutiny of business practices operating, or expecting to operate, against public interest. The MMC is required to give regard to all relevant matters, but it shall take into particular account the desirability of pursuing efficiency and welfare goals by promoting:

- *and maintaining effective competition in the UK between the suppliers of goods and services;*
- *the interests of consumers, purchasers and users in the UK in respect of prices, quality, and variety of the goods and services supplied;*
- *through competition, the reduction of costs and the development and use of new techniques and new products;*
- *and facilitating the entry of new comers into markets;*
- *and maintaining a balanced distribution of the industry and employment in the UK,*
- *and maintaining the export interests of UK producers of goods, and suppliers of goods and services.*<sup>1</sup>

The assumption inherent in these guidelines is that competitive efficiency, although important, is not an element of pre-eminence over welfare matters. Although efficiency may lead to economic welfare, there is a sense of social welfare which at times may be contrary to the former. For this reason, and because efficiency in the context of the capitalist systems is most desirable, policymakers in general may be led to disguise, but not to abandon or deny, the social welfare side of trade regulations. In association with this, competition legislation is by nature "suffused with political discretion."<sup>2</sup> This, unsurprisingly, to a certain degree is reflected in the process of investigations carried out by the Commission.

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<sup>1</sup> Section 84(1) of the 1973 F.T.A. which also applies to references under the 1980 Competition Act.

<sup>2</sup> Cf. Richard Whish, *Competition Law*, p. 60 61.

Based on pragmatism and performed by panels, the MMC investigative system, the critics say, is lenient and has failed to develop a “coherent decisional practice.”<sup>3</sup> However, nothing suggests that the investigatory procedures adopted by the Commission are incompatible with its role, predominantly advisory. While passing a judgement on public interest, the Commission's reasoned reports are important material deserving to be taken as an element for comparison.

This section does not intend to make a full analysis of the Commission's investigations. This is not necessary for the purposes of the dissertation. Only three “cases” (subject matters) are selected in which the intellectual property issue was under consideration. Whether the MMC's recommendations in these reports have been sound ones is not a matter of concern. The purposes in considering the MMC reports are, primarily, to contrast the outcome of the Commission's reasoning with the outcome reached by the common-law judges employing public policy arguments.

The Commission is guided by specific directions not available to the common-law judges. The eclectic professional background of the Commission's members is nothing compared with the personal experience of the common-law judges. Although the Commission may not be a model of an adjudicatory body to apply safeguarding measures on intellectual property, the certainty of the conclusions of its reports is incomparably superior to the adjudicatory outcomes of the common-law judges. The point is, as far as predictability and quality of decisions are desired, the specification of sound legal directions and personal experience are decisive elements to entertain matters of public interest. On these elements the system of adjudication on non-voluntary licences over intellectual property rights should rely, in order to avoid the inconvenient uncertainties of the common-law decisions over restrictive practices and passed on grounds of public policy arguments.

It is also intended to assess the impact on the intellectual property order<sup>4</sup> of the Commission's function as an apparatus working under the framework of competition law. It

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<sup>3</sup> R. Whish, *ob. cit.*, at pages 23 and 61.

<sup>4</sup> Intellectual property order is defined as the way the

has been affirmed in this dissertation that the mechanisms of competition law have a value apart, distinct from the remedial measures intrinsic to the intellectual property law. The estimation is that these remedial measures alone are insignificant to curb the misuse of intellectual property rights. In consequence of such insignificance, and from the point of view of the objectives of the social bargain, protection of these rights has little or no sense without an effective control of the competitive process. In this connection, the examination of the Commission's reports has an additional purpose, which is, to find out how the legal process under the framework of the competition law is significant to the intellectual property order, i.e., to what extent the control of competition ensures an alignment of the market conditions concerning the licensing and exercise of the intellectual property rights. Obviously, one is aware that the MMC investigations are only a part of the mechanism of competition control,<sup>5</sup> and a few reported cases do not cover the complete role of the Commission. Nevertheless, it is believed that, as far as the method of the Commission's reasoning is concerned, the selection shows a true picture of its unique procedures. The selected cases deal with the background business practices related to electrostatic reprographic machines, car spare parts, and database services in which the intellectual property factor is of considerable value.

## **(ii) Background cases**

### **Indirect Electrostatic Reprographic Equipment<sup>6</sup>**

The investigation was concerned with the conditions of supply in the United Kingdom of indirect electrostatic reprographic equipment. Complying with the terms of a reference made by the Secretary of State, the Commission found that Rank Xerox retained substantial market power. Relying on this monopoly situation, the company applied a discriminatory rental system. By the operation of a "Group Pricing Plan", Rank Xerox was able to reduce the copy charge, but the discriminatory policy was kept, and the Plan worked as a bar against

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intellectual property rights are exercised in relation to the market forces. It is assumed that the exercise of these rights is responsive not only to the rules of supply and demand (the market self ordering), but also to the state regulatory intervention upon competition.

<sup>5</sup> The control of the competitive process in Great Britain involves several bodies, including the Secretary of State for Trade and Industry, the Director General of Fair Trading (DGFT), the MMC, the High Court, and Restrictive Practices Court.

<sup>6</sup> MMC report 47, A Report on the Supply of Indirect Electrostatic Reprographic Equipment (1976).

competitors. The MMC recommended, *inter alia*, the termination of the pricing plan and the surveillance of the sale prices of the company.

Apart from the reported conditions of supply and the pricing arrangements, the Commission found out that Rank Xerox possessed a stock of more than 2.250 patents, of which a large number were not used. A considerable proportion of these inventions were related to processes of indirect electrostatic reprography. A particular process, called the fusion of toner to plain paper, was protected by several Xerox patents, and was vital for the development of faster machines. It was brought to the Commission's attention that competitors could not easily find alternatives to that particular process. Moreover, it was suggested that the Rank Xerox patenting policy worked to discourage potential competitors, mainly by taking out patents to expand the scope of existing ones.

In the Commission's view, a portfolio of hundreds or thousands of patents in the field of important technology impedes and delays the emergence of competition, not only by the charge of excessive royalties, but also by the intimidating cost of tracking down the technical validity of the inventions.<sup>7</sup> In the case of Rank Xerox, the company itself was not able to identify the number of patents in use. The significant barrier posed by the Xerox patents was such that "compelled competitors to expend substantial time, effort and money both on ascertaining the scope of the group's patents and on developing alternative, and sometimes inferior, process in order to avoid infringement."<sup>8</sup>

The Commission recognised that it was not in a position to examine whether the Xerox patenting policy conflicted with public interest. Therefore, the background information suggested that the restrictive patent licensing allowed Rank Xerox to deter competitors and maintain its dominant position.<sup>9</sup> The inference was made on the basis of the inquiry about the position of the Xerox group carried out by the US Federal Trade Commission (FTC). As a result of the investigation, the American agency found Xerox to be in breach of section 5 of the Federal Trade Commission Act. The FTC eventually issued a Consent Order of world-

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<sup>7</sup> *Idem*, para. 387.

<sup>8</sup> *Idem*, para. 388.

<sup>9</sup> *Idem*, para. 391.

wide scope setting out, *inter alia*, that Xerox was required to licence all patents relating to office copiers, a licensee could designate up to three patents to be licensed free of royalty, the royalty rate could not exceed both 0.5% on net revenues and an accumulated royalty of 1.5%, Xerox was obliged to provide licensees with know-how except know-how for manufacture abroad, for five years Xerox could not operate any price plan, and for ten years the company was prevented from acquiring any interest in any supplier of copiers.<sup>10</sup>

Taking into account the effects of the FTC's consent order, the Commission made no recommendation concerning the patenting affairs. Furthermore, in the 1991 report on Indirect Electrostatic Photocopiers (IEPs)<sup>11</sup> the Commission observed that after the 1976 report competition developed quickly among manufacturers and importers in the supply of IEPs, and it was satisfied that no barrier existed either to entry or exit from the IEP market.<sup>12</sup> Nothing thus operated or expected to operate against the public interest.

### **Car Parts<sup>13</sup>**

The investigation considered the wholesale supply of motor car parts either for resale as such or for replacement in motor cars. The Commission detected the existence of a complex monopoly situation in favour of certain car manufacturers and importers. The suppliers required purchasers to buy from them exclusively or from sources approved by them. This trading restriction, an exclusive buying requirement, was found anti-competitive.

The MMC concluded, in summary, that the exclusive buying:

- *limited the extent to which component manufacturers can compete with one another and with car manufacturers and importers;*
- *restricted price competition;*
- *limited, on the level of service, the benefits franchisees could take from a more competitive market;*
- *restricted competition among factors (retailers).<sup>14</sup>*

<sup>10</sup> *Idem*, paras. 157 to 160.

<sup>11</sup> MMC report, Indirect electrostatic photocopiers, A report on the supply by manufacturers and importers of indirect electrostatic photocopiers in the United Kingdom, Cm. 1693, (1991).

<sup>12</sup> *Idem*, para. 9.156.

<sup>13</sup> MMC, A Report on the matter of the existence or the possible existence of a complex monopoly situation in relation to the wholesale supply of motor car parts in the United Kingdom, HC 318 (1982).

<sup>14</sup> *Idem*, para. 6.34.



The Commission found that practices other than exclusive buying also impeded the development of the components industry. These practices included minimum stock requirements and stock control systems, sales or purchase targets, discounts and bonuses, and restrictions on advertisements. Altogether these were forms of restrictions on the freedom of franchisees to sell spare parts.<sup>15</sup> The MMC, however, had no specific mandate to investigate any practice but exclusive buying in connection with the replacement equipment market, thus excluding supply for production of cars and to importers. In this respect, the Commission observed:

*We recognise that the future of the components industry has important implications for the public interest, affecting, as it does, the employment directly and indirectly of a very large number of workers and the export of a substantial volume of goods. But our terms of reference are narrowly drawn and it is therefore necessary to consider whether by adopting any of the practices mentioned in the previous paragraph car manufacturers and importers 'require persons to whom they supply car parts to acquire them exclusively from them or from sources approved by them'*<sup>16</sup>

The position of the British component industry was this. Although impeded from supplying directly franchised outlets, a large number of component manufacturers reached this part of the market through car manufacturers. Relying on their own business, a small number of car parts manufacturers supplied the replacement market both at home and abroad. In some way they benefited from the situation. A third class of component manufacturers, unable to supply car manufacturers in the required volume, and prevented from supplying franchised outlets, even indirectly, could only supply non-franchised outlets. In this way, the bulk of parts for cars made in the United Kingdom was supplied by UK industry, but a proportion of these parts was imported by car manufacturers, with whom the UK component industry could not compete.<sup>17</sup> This state of affairs made the equation of interests a very complicated matter. The situation was maintained thanks to the intellectual property right over designs of car parts. While copyright was strengthened by legal precedents,<sup>18</sup> specialists in the Government were in controversy whether protection should be removed or reduced.<sup>19</sup> Relying on this

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<sup>15</sup> *Idem*, para. 6.11.

<sup>16</sup> *Idem*, para. 6.12.

<sup>17</sup> *Idem*, paras. 6.20 to 6.24.

<sup>18</sup> See *British Northrop Ltd v Texteam Blackburn Ltd* [1974] R.P.C. 57, *Dorling v Honnor* [1964] R.P.C. 160, and *Amp v Utilux* [1972] R.P.C. 103. These cases had the effect to assure protection for lifetime plus 50 years against copying of the useful articles, i.e., in their three dimensional shapes.

<sup>19</sup> Whitford Committee, Report on Copyright and Designs Law, Cmnd 6732 (1977); the Government Green Paper, Cmnd 8302 (1977).

protection, car manufacturers held a high bargaining power capable of threatening competition.<sup>20</sup>

Considering the copyright issue, the MMC argued that "the use of copyright to protect functional articles in the absence of any element of invention [appeared] to be particularly capable of being directed towards unreasonable restriction of competition, and there may well be a case for some change in the law."<sup>21</sup> In this respect, the MMC could not be of any assistance. Additionally, its mandate was rather limited under the reference.

The Commission recommended the abandonment of the practice of exclusive buying, but commented that the removal of such a restriction was a small step of limited impact, and suggested that further investigation would be needed to look at the full implications of the restrictions mentioned above.<sup>22</sup> The intellectual property issue was later re-assessed in the Ford case reported below.

#### **Ford Motor Company Ltd.<sup>23</sup>**

The investigation concerned the restrictive policy conducted by the Ford company regarding the licence for manufacture or sale of certain spare parts. Licence was available only for firms supplying spare parts to the company which was claiming copyright over the designs of the replacement body parts. Upon specific reference, the Commission carried out an inquiry and concluded that Ford's practice was anti-competitive, and adverse to public interest, thus confirming the preliminary report of the Director General of Fair Trading. The MMC recommended changes in the law of copyright and registered designs (to accord protection only for five years) as the only means to remedy the anti-competitive consequences, and hoped that in the meantime Ford would agree to license the manufacture of the parts on reasonable royalties.

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<sup>20</sup> *Idem*, cf. paras. 4.38 and 4.39.

<sup>21</sup> *Idem*, para. 6.18.

<sup>22</sup> *Idem*, para. 6.54.

<sup>23</sup> MMC, A report on the policy and practice of the Ford Motor Company Limited of not granting licences to manufacture or sell in the United Kingdom certain replacement body parts for Ford Vehicles, Cmnd. 9437 (1985)

In accordance with the reference, the MMC was required to investigate the pursuit of the policy and practice described above, but not to give any opinion on possible anti-competitive effects arising from the protection of the drawings or designs of spare parts, nor the validity of the intellectual property right being claimed by Ford.<sup>24</sup> The success of the claim would allow Ford Company and other car manufacturers and importers "to eliminate the competition provided by independent suppliers of panels which infringed Ford's copyright or registered designs,"<sup>25</sup> with significant impact on the market.

The effects of Ford's practice (refusal to license) on employment and balance of payments was brought to the Commission's attention. If the car manufacturers were to win the battle of proprietary right, the job losses would exceed 2,000 in areas where unemployment was already high. It would directly affect people employed by independent suppliers, others indirectly employed on sub-contracted work, and also those indirectly employed in support services.<sup>26</sup> Furthermore, owing to trade cessation, the cost of vehicle repairs would increase, and export by independent suppliers would be jeopardised by the increase in the export prices (computation of royalties in the price structure), thus reflecting in the balance of payments.<sup>27</sup> Apart from these would-be consequences, the characterisation of the exercise of intellectual property rights as anti-competitive, and the suitable remedies to cure its adverse effects were discussed.

A course of conduct capable of being qualified as anti-competitive practice was a manner by which a person carries on a business, Ford argued; quite differently, it added, is a mere exercise of a property right which is not part of that conduct. Ford also contended that a practice is only anti-competitive if, once it has stopped, an opportunity for competition opens.<sup>28</sup> The contention was rejected by the Commission on the grounds that refusal to grant licences over copyright is as anti-competitive as it is under patent, and that if the referred practices "were to be abandoned, lawful competition would become possible. Whether it

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<sup>24</sup> The intellectual property right issue was sub judice, see *British Leyland v Armstrong* [1984] 3 C.M.L.R. 102

<sup>25</sup> Cmnd. 9437, para. 5.33.

<sup>26</sup> *Idem*, para. 5.22.

<sup>27</sup> *Idem*, paras. 5.23 and 5.28. The impact on overseas trade in the Commission's view was comparatively insignificant." Para. 6.47.

<sup>28</sup> *Idem*, para. 6.7.

would be economically possible as well as legally possible nobody can tell until the legal obstacle is removed."<sup>29</sup> From the point of view of public interest, the problem was to assess the sort of change necessary to let competition emerge.

The Commission in principle understood that the grant of licences at a reasonable price would solve the problem, and Ford was prepared to accept such an undertaking.<sup>30</sup> Nevertheless, there were practical and legal difficulties to enforce the remedial licensing due to the lack of ability of the Secretary of State to make a licensing order, and to arbitrate royalties. Recognising a conflict between a 15-year protection and the public interest, the MMC asserted that five years would give Ford an opportunity to obtain an adequate return, and equally would "provide continuing stimulus to innovation and development."<sup>31</sup>

### **Historical on-line database services<sup>32</sup>**

The subject of investigation was the supply in the UK of text retrieval services, providing users with on-line access to historical databases containing business and financial data. The reference limited the inquiry to database material reproduced or summarised from daily and Sunday newspapers, and excluded from real-time services (continuously updated information).

The Commission established the existence of two monopoly situations: one in favour of the Financial Times group (retaining about 40 per cent of the reference services under the name FT profile), and the other in favour of Knight-Ridder Inc and its subsidiaries (about one third of the reference services under the names Data-Star/Dialog). Because of the significant competition among the suppliers of database services, and despite some concerns among them relating to existing restrictions on information access, the MMC found no evidence that they operated or expected to operate against the public interest. The Commission also observed that in the course of the investigation the FT group not only declared themselves to

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<sup>29</sup> *Idem*, paras. 6.18 and 6.25.

<sup>30</sup> *Idem*, paras. 6.53 to 6.55.

<sup>31</sup> *Idem*, paras. 6.63 to 6.65.

<sup>32</sup> MMC, A report on the supply in the UK of services which provide access to databases containing archival business and financial information, Cm. 2554 (1994).

be prepared to license all their publications, but also opened new licensing opportunities<sup>33</sup> The MMC collected authorised views of interested parties, concerning licensing policies applied by the major UK players in the electronic information market, who predominantly rely on copyright protection over the databases they host and/or create. Safeguarding licensing has been contemplated in regard to the reality of the market for electronic information, the profile of the firms and their trading practices.

The market for electronic information is of an international nature. While data are stored in one country, electronic access to users is provided in many other countries. A service available in the UK may be provided by a host computer located in the USA or Switzerland, and information may be accessed from anywhere in the world, even before the produced data can be available for the first time in hard copy. In the future, it may be possible through intelligent software to "allow users to bring together information resources in a single search inquiry, although those resources would actually be held in many different places on many different computers on the network."<sup>34</sup> Due to this background, information providers tend to be big, and operate in different countries.

The information industry is dominated by large companies, competing on an international basis. They invest in sophisticated retrieval software to answer user inquiries, select and compose databases which require a great deal of editorial techniques. The companies rely heavily on copyright to protect their products. It is believed that for the development of a new database no incentive other than copyright exists. Without it the industry is not sustainable. While relying on copyright, the industry is keen on some world-wide practices, such as exclusive and restrictive licensing, leading to some impediments to information access. However, low barriers to entry, threats of new forms of competition and the existence of several players are the characteristics of the market. Alternative sources of informative material is also available. These are believed to secure users' choices, and new comers' ability to compete, and thus guarantee a workable degree of competition.

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<sup>33</sup> *Idem*, paras. 5.28, 5.29. It was explained that the change was due to the availability of new technology.

<sup>34</sup> *Idem*, para. 8.27.

As far as the restrictive practices of dominant firms are concerned, a key point is the practical difficulty of putting in place an adequate compulsory licensing policy without damaging data suppliers (hosts, copyright owners) unfairly. In the view of the major group, compulsory licensing would require a change world-wide because "a change in one country merely meant that people in other countries gained the benefits without having to make changes themselves."<sup>35</sup> However, the view of the overwhelming majority<sup>36</sup> did not regard copyright over databases sacrosanct. They believed that the copyright owner may be compelled to licence, when opportunities exist to exploit without unfair damages, such as, already-published information by other publishers or database producers being withheld or limited.<sup>37</sup>

If copyright is to be regarded as sacrosanct, and in order to make it a unique means for the host company to stay ahead of the competition, it could discourage the information industry to seek improvements,<sup>38</sup> such as, better editorial techniques, more friendly software retrieval, and reduction of operational costs and consequent better prices. Such discouragement is a possibility, though hypothetical, which requires in-depth analysis

### **(iii) Assessment of the investigations**

A relevant conclusion emerging from the analysis is that, while the common-law judge assessed public interest on the basis of precedents and principles, the Commission is concerned with an empirical public interest. Another conclusion is that although in the cases above no recommendation was made to make available a licence of right upon, or to order the owner to licence, the intellectual property right concerned,<sup>39</sup> in practical terms the consequential effects of the recommended remedies were to make possible a general access to that right, thus satisfying the social bargain.

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<sup>35</sup> *Idem*, para. 6 44.

<sup>36</sup> Only the European Information Industry Association (EIIA) stated that in no circumstances compulsory licensing should be imposed upon copyright holder. Para. 8.32.

<sup>37</sup> *Idem*, para. 8 10.

<sup>38</sup> See in this respect *The Daily Telegraph's* initiatives, at para. 6.49.

<sup>39</sup> The unavailability of specific measures addressing the intellectual property issue, and the limitations on the MMC investigatory capacity imposed by the terms of the references denote the benignity and political discretion of the system.

### **Empirical public interest**

Concentrating on specific practices, such as discriminatory rental scheme, exclusive buying, and restrictive licensing policy, the task of the Commission was to establish the existence of a monopoly situation, and the characterisation and effects of the referred mischief without sophistication. While working on facts, the reasoning is developed in a language very understandable by the main players (businessmen). The feeling is that the proceedings satisfy all, the Government as guardian of public interest and the traders involved. Not all interested firms in the end feel happy with the conclusions, but these firms are able to follow the reasoning and understand the sense of public interest, and the likely effects of the recommendations and the actions, if it is the case, implementing them. All of these give the proceedings and the applied reasoning a touch of legitimacy. This would not be possible if the Commission were not required to carry out the investigation under settled guidelines. The gain for the public arising from State intervention is the alignment of the market.

### **The impact of the MMC reports on the intellectual property order**

As part of the social gain,<sup>40</sup> the impact on the intellectual property order is visible. In the case of reprographic equipment, the dimension of the threat posed by the patenting policy was clearly established, but in this respect the Commission saw no reason to recommend any specific remedy. The disclosure of the competitive situation itself brought up with the investigation worked as a deterrent, as was confirmed in later reports

Concerning the spare parts case, one could not tell that the first investigation contributed to more improved competition, but this may be inferred from the terms of the reference of the second report which did not include the investigation of the practices previously scrutinised. Assuming that such an improvement occurred, presumably the exercise of copyright became less abusive. It should also be noticed that in the course of the second investigation Ford advanced that it was prepared to licence at fair royalties. Again, the investigations *per se* reflected positively on the bargaining power provided by the intellectual property, irrespective

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<sup>40</sup> The social gains include improvement towards better prices, employment, expansion of tax basis, exports, and consumer choices.

of the absence of any licensing order. (Incidentally, at the time of the investigations the legislation provided no grounds for a licensing order.) The effects could also be assumed from the muscle of the state machinery (the MMC mechanism for instance), bearing pressure on the industry.<sup>41</sup>

As far as the exercise of copyright is concerned, the database case suggests that an adequate safeguarding policy should give due regard to a particular field of technology. Sensitive to this aspect, the Commission did not feel encouraged to advance any opinion or recommendation. Surprisingly enough, while the investigation was being carried out the major investigated group announced a change in their licensing policy. Officially, such a change was credited to technical reasons. The force of the event, nevertheless, is not to be underestimated as it suggests a possible effect of the investigation on the pattern of business conduct regarding the exercise of copyright.

All of these confirm the suggestion that control of the competitive process most likely reflects considerably in the exercise of the intellectual property rights. Consequently, that control itself works as an effective limit to these rights.

As an option largely applied not only in Britain, but also in the legal system of the leading industrialised nations generally, the implementation of remedial measures intrinsic to intellectual property may not follow the proceedings of the MMC investigations. Factors such as time and enforcement cost are likely to discourage an emulation. As far as reasoning and public policy arguments are concerned, the MMC system is, however, a contrasting paradigm to assist the structuring of the legal mandate of an incumbent body in charge of the adjudicatory process of non-voluntary licensing, in a manner so as to avoid the uncertainties of the common-law decisions.

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<sup>41</sup> Incidentally, see the message inserted in the latest MMC's report on Motor Car Parts, pp 158/159, Cm 1818 (1994).





## **7.3 Decisions on non-voluntary licences over UK patents**

### **7.3.1 The discretion of the comptroller-general**

#### **(i) Discretion within the statutory framework**

Under the British patent statute the unauthorised use of a patent is governed by detailed statutory conditions. Nevertheless, the statute entrusts to the comptroller a great deal of discretion<sup>1</sup> in the entertainment of applications for, or in relation to, non-voluntary licences. The comptroller may apply his discretion in several situations. In an application for a compulsory licence on grounds of non-working to the extent reasonably practicable, he may allow sufficient time to enable the patent to be worked, and so adjourn the granting of an order. In determining the grounds for his decision, the comptroller is not required to look at evidence arising after an application has been lodged, but he may do so in the face of a good reason. Where an application has been opposed, a degree of discretion may also be exercised concerning the length of the scrutiny of any question of fact raised in the proceedings.

It is said that "the grant of a compulsory licence admittedly is a matter of discretion."<sup>2</sup> However, the comptroller cannot reject an application unless he has strong reason to do so. The discretion is not a blanket charter, either. Nor is any party adversely affected by the comptroller's discretion without being given an opportunity to be heard.<sup>3</sup> Without prejudice of more objective indicators,<sup>4</sup> a general guidance is given to the comptroller as to the matters he approaches on an application for compulsory licensing. The purposes of the statutory guidance is to secure:

- *reasonable and most efficient work in the United Kingdom of a patent for the public advantage;*
- *reasonable reward to inventors and proper regard to the nature of the invention; and*
- *fair protection to the commercial interests of those carrying on an invention in the country.*<sup>5</sup>

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<sup>1</sup> 1977 Patents Act, ss 47-52. Traditionally, legislature has implicitly relied upon the unrivalled experience and expertise of the comptroller. See *Smith Kline* case [1990] R.P.C. 203 at 249 (Nicholls LJ's statement) and *Allen* case [1987] R.P.C. 327 at 373 (Dillon LJ's statement).

<sup>2</sup> *Zanetti-Streccia's Patent*, [1973] R.P.C. 227, at 229. (Statement of Whitford, J.)

<sup>3</sup> 1977 Patents Act, s. 101.

<sup>4</sup> See section 50(2) of 1977 Patents Act.

<sup>5</sup> 1977 Patents Act, s. 50.

The resort to discretion is also allowed particularly in situations described in statutory provisions enabling the comptroller to settle terms of licences as he "thinks fit."<sup>6</sup> The fitness to be ascertained must satisfy a balance of interests, i.e., the interests of the patentees, would-be licensees and opponents, as well as the interest of the public at large. In this respect, discretion is considered particularly when the comptroller is invited to ascertain specific matters of facts, such as

- the working of a patent to the extent reasonably practicable in the country,
- the fulfilment on reasonable terms of the country's demand for a patent-related product,
- the denial by the patentee of a licence on reasonable terms, or
- the unfair prejudice (derived either from a refusal of a licence or imposition of conditions by a patentee) operated against the establishment or development in the United Kingdom of commercial or industrial activities.<sup>7</sup>

The case law indicates that courts also share the comptroller's discretion.

#### **(ii) The amount of discretion as assessed by courts**

The courts in many cases recognised a wide discretion in favour of the comptroller. The general view is that such a discretion should not be disturbed, unless to remedy errors which make the discretionary decision inconsistent with a statutory direction. Nevertheless, what is in the comptroller's discretion is also within the discretion of the courts on appeal.<sup>8</sup> Consequently, the discretion of the latter can overrule the former's

In the *Allen* case,<sup>9</sup> the comptroller's discretion was assessed in respect of two points: the extension to which the comptroller was allowed to impose limitations and conditions concerning the terms of a licence of right, and the jurisdiction of the comptroller to start proceedings to settle terms before the earliest date from which a statutory licence of right

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<sup>6</sup> 1977 Patents Act, s. 48(4)(a)(c). The "thinks-fit" clause is also inserted in s. 49(1).

<sup>7</sup> 1977 Patents Act, s. 48(3)(a)(b)(d)(e).

<sup>8</sup> See 1977 Patents Act, s. 99.

<sup>9</sup> *Allen & Hanburys Ltd. v. Generics (UK) Ltd. et alii* [1986] R.P.C. 203.

takes effect. The House of Lords accepted that in settling terms of licence, the comptroller had the discretion to insert conditions concerning importation of a patent-related product and quality control. The use of such discretionary power is justified on grounds of public interest or public advantage, and it is not for the courts "to tell the Comptroller how he should exercise his discretion."<sup>10</sup> The idea of wide discretion, nevertheless, is taken *cum grano salis*.

As a matter of clarification, it was argued that the comptroller could not impose restrictions inconsistent with the statutory direction, and he could not interfere unnecessarily with the control the owner has over his patent.<sup>11</sup> The legal control over the use of the invention conferred to the patentee was to a certain degree meant to work against the comptroller's discretion. For instance, if a compulsory licence is granted and there is no disagreement as to the conditions of the licence in principle the comptroller cannot alter such conditions. However, the patentee's control over his right cannot amount to bar an application for settlement of terms presented before the end of the sixteenth year over a patent treated as endorsed licence of right, as specified in transitional provisions.<sup>12</sup> In this connection, it was argued that the application would be premature and the comptroller had no jurisdiction to entertain it, an argument accepted by the comptroller. Overcoming the jurisdictional obstacle, the Court concluded that for practical reasons the comptroller could entertain the application.<sup>13</sup> This suggests that in exercising his discretion the comptroller is empowered to do anything necessary to comply with his statutory duty and not contrary to, or inconsistent with, the patent regulation.

The principle of wide discretion<sup>14</sup> is recollected from an old practice of the Patent Appellate Court, which consists of not interfering with the comptroller's decision as to the method of evaluation of a royalty rate. If the comptroller arrives at a conclusion plainly supported by the facts of the case that the royalty should be assessed per kilo or on a

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<sup>10</sup> *Idem*, at 250 (Lord Diplock's statement).

<sup>11</sup> Lord Templeman argued that if in licences of right the proprietor and applicant agree on certain lawful terms or conditions, the comptroller could not limit these terms. *Allen case* [1986] R.P.C. at 255-257.

<sup>12</sup> The 1977 Patents Act extended from 16 to 20 years the term of protection for those inventions patented under the 1949 Act, but established that at the end of the sixteenth year the patents were treated as endorsed licences of right. Schedule 1, para. 4(2)(c).

<sup>13</sup> *Allen case*, [1986] R.P.C. at 255-257.

<sup>14</sup> The wide discretion is understood in the sense that as long as it is properly exercised there are no grounds for the court to interfere on appeal, unless the comptroller's decision is affected by plain inaccuracy.

percentage of the selling price, and as no principle exists concerning the mode of assessment, then the tribunal should not alter the result, unless the common-sense applied by the comptroller appears to be a gross error.<sup>15</sup>

Further discussion on the perception of a wide, but not exclusive, discretion has raised a question about the role of the appellate courts, whether they have or have not more than a mere supervisory function. However wide the discretion could be, it cannot be read in a manner to deny the discretion also exercised by the court. Clearly, if the law opens an opportunity for appeal, the judge cannot assess the accuracy or error of the comptroller's adjudication unless the court is entitled to undertake a full re-hearing and exercise a "fresh discretion".<sup>16</sup>

The revisional assessment is made on the basis that judges have a duty to search for the right answer.<sup>17</sup> Obviously, such a duty is entrusted to the appellate courts. Consequently the power of review attracts the same amount of discretion conferred to the comptroller, within the limits of the appeal.

The right answer may rely on the interpretation of a particular statutory provision which provides a straightforward outcome, or if the provision is too broad its application is left therefore to the arbitration of the judge. In the first example discretion does not apply or hardly does. The second example occurs where discretion is significant, and a great deal of work is done to establish the facts and complete the statute. In this respect, when asked to examine the question of royalty rates the Patents Court has exercised a discretion to the same extent the comptroller has used for the same purpose of resolving the question, and, concerning the same matter, the Court of Appeal has appeared to be rather liberal.<sup>18</sup>

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<sup>15</sup> *Idem, idem.*

<sup>16</sup> See [1987] R.P.C. 327 at 374 (Dillon LJ); [1988] R.P.C. 51 at 59 (Falconer J); and [1990] R.P.C. 203 at 223 (Falconer J), 239 (Lloyd LJ), and 249/250 (Nicholls LJ). As to the Court of Appeal the discretion is limited because the appeal to it is not "a complete hearing." *Smith Kline* case [1990] R.P.C. 203 at 236 and 250.

<sup>17</sup> The duty to search for the right answer is not the same as the duty to give the right answer, the former may be interrupted for reasons of cost/effectiveness and, unlike the latter, is part of the positivist conception of law which gives no direct definition of what is right and what is wrong.

<sup>18</sup> Not all courts hear appeals on questions of facts. From the comptroller's decisions on compulsory licences, appeals shall lie with the Patents Court, but the Court of Appeal may hear appeals from decisions of the former only on points in law and if leave is given. 1977 Patents Act, s. 97(1)(3).

In the *Smith Kline* case,<sup>19</sup> the Court of Appeal stressed its limited discretionary role in dealing with calculation of royalties, a question essentially of fact and discretion. Nevertheless, the appeal was entertained in the consideration that guidance would be needed in order to clarify "important issues of principle involved".<sup>20</sup> The reporting judge added: "I do not propose to isolate at this stage the questions of law on which alone an appeal lies."<sup>21</sup> This attitude reveals great consideration of the matter of royalties.

Within a system of non-voluntary licences, the intellectual property right to a great extent is reduced to a matter of reasonable remuneration conferred to the patentee. For this reason, the assessment of royalties should attract careful attention of the adjudicatory bodies. And a distinction between matters of fact and matters of law in order to establish a limitation in the conditions on which appeals lie to the courts can amount to irremediable damages to the right of the owner to a just remuneration. Frequently, judges have to scrutinise facts in order to pass a judgement on wrongs in law. When this occurs, there may not be a clear division between matters of facts and error in law. In the *Smith Kline* case, the Court of Appeal had a good reason to refuse to hear the appeal. It could argue that if the Court has to examine complex facts in order to approach an alleged wrong in law, the appeal is not to be heard.<sup>22</sup> If had been the case, the distinction between matters of fact and matters of law could amount to an inconvenient bar.

### **(iii) Conditional applications**

In *Enviro-Spray systems Inc's Patent*<sup>23</sup> it was alleged that the applicants for a compulsory licence (over patents concerned with the flow control of a product from a container by means of propellant gas) had proved no ability to work the patents. They provided no information on how they intended to exploit the inventions, and gave no details about financial resources and technical assistance. In the course of the proceedings the comptroller was asked to make a conditional grant, i.e., to grant a compulsory licence with effect from a future date after the

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<sup>19</sup> [1990] R.P.C. 203.

<sup>20</sup> *Idem*, at p. 236 (Lloyd LJ).

<sup>21</sup> *Idem*, *idem*.

<sup>22</sup> Section 97 of the Patents Act 1977 does not deal with the matter in such detail.

<sup>23</sup> [1986] R.P.C. 147 at 156.

comptroller was served with further evidence of the applicants' ability. The request was dismissed on the ground that the statute made available no power for such a two-stage process. Although the decision sounds correct, clarification is needed concerning the comptroller's argument.

It could be argued that because the statute has no provision on the contrary the comptroller could allow the conditional grant under the concept of useful discretion. The validity of this argument cannot be ruled out. And in this respect it seems to be within the comptroller's capacity to take any measure, without explicit statutory provision, and in the precise and necessary extent to comply with a safeguarding policy, provided that it does not lead to unnecessary restriction upon the intellectual property right. In the *Enviro-Spray* application, while alleviating the applicants' evidentiary burden, the conditional grant would require the patentee to keep tracking down or following up the process, and thus impose an inconvenient cost upon the owner with no reasonable justification. It follows that whoever has the interest in exploiting an invention, by means of a non-voluntary licence and within specific statutory conditions, has to be prepared to demonstrate in the first place his ability to do this. The conditional grant, in the *Enviro-Spray* case, would amount to an unnecessary disturbance of the patent right. The same cannot be said in respect of an early application for settlement of terms concerning a class of patents treated by the patent statute as endorsed with licence or rights.

#### **(iv) Early settlement of terms of statutory licence of right**

Having extended the patent term from 16 to 20 years, the 1977 Patents Act also made such a new term applicable to existing patents which, nevertheless, were to be treated as endorsed licences of right from the first day of the 17th year.<sup>24</sup> In *Allen v Generics*<sup>25</sup> an early application was at issue relating to a patent of that class.

After unsuccessful negotiations with the patentee, the interested firm started the proceedings to settle terms before the date on which a licence of right would automatically be

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<sup>24</sup> 1977 Patents Act, sch. 1(4)(2)(c).

<sup>25</sup> [1986] R.P.C. 203 at 249 to 252.

available. The comptroller regarded the application a premature one and adjourned entertainment. The decision was challenged and reversed.<sup>26</sup>

Later in the House of Lords it was established that there was nothing against the comptroller exercising his jurisdiction. In regard to the short period of the subsistence of the automatic licence of right, it was recognised to be in the public interest that a licence could start operating as early as possible within the remaining four years. To this end, the Court saw no obstacle in starting the initial procedure in the course of the sixteenth year. The decision was an exception, justified under the particular circumstance of a licence of right operating automatically, depending solely on a mere lapse of time. The practical approach was entirely proper. Given the described situation, the early application was a matter of time-saving and caused no hindrance to the patent right. The next point shows the comptroller acting to favour this right.

#### **(v) Cancellation of endorsement of licences of right**

In proceedings to cancel an endorsement 'licence of right',<sup>27</sup> the patentee (applicant) showed a *bona fide* interest to manufacture the patented article in this country, but to facilitate his intent he wanted to withdraw the endorsement. The sole opponent, a British company, was allegedly about to commence manufacturing the patented article and intended to challenge the validity of the patent. If it failed in such a challenge, the company, then, would like to apply for a licence.

The facts showed that a considerable demand for the patented article was being met only by importation. It was also substantiated that the patentee had previously tried to get the patent worked with no success, but he decided to apply for the cancellation because a group of British businessmen was seriously negotiating the working of the patent, but the group saw no prospect of a deal unless the endorsement was cancelled. The cancellation would make possible for the interested group to have an exclusive licence which had been required for financial reasons.

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<sup>26</sup> *Idem, idem.*

<sup>27</sup> *Serenyi's Patent* [1938] R.P.C. 228.



The opponent knew of the patent at least four years before the application and took no step either to challenge the validity or to apply for a licence under the provision of licence of right. For this reason, and on the balance of the whole circumstances, the comptroller, under his discretion, allowed the cancellation as a best way to meet the public interest. The cancellation, moreover, would not prevent the opponent from challenging the patent validity through proper proceedings. The comptroller would have inflicted inconvenient harm upon the patentee right if the cancellation were not allowed.

If an endorsement 'licence of right' has been made upon a voluntary application of the patentee, a later request of his own for cancellation can only be denied on the basis of an impediment of public interest objectively assessed. In the *Serenyi* case referred to above such an impediment was not present, since the opponent was not qualified as an existing licensee. This argument in itself was sufficient to allow the cancellation. In withdrawing the endorsement, the comptroller paid due regard to the patentee's right of private control over the patent. Having the duty to respect this right, the comptroller can, again, only exercise his discretion against it to satisfy a competing statutory policy. This argument is now tested as regards sub-licensing

#### **(vi) Sub-licensing**

Sub-licensing is an issue frequently raised in applications over patents on pharmaceutical. Applicants are normally holding companies which have a number of subsidiaries. In *Hilti AG's Patent*<sup>28</sup> the applicant sought the liberty to grant sub-licences to companies under their control. The application was made under the assertion that the patentee would have no prejudice. The first question at issue was whether the comptroller had jurisdiction to dispense such an order.

The matter does not seem to be one of lack of jurisdiction. In principle, a sub-licence may be regarded as a right of a licensee to extend the licence to others (subsidiary companies for instance). The nature of the request may be compared to a multiple application which the

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<sup>28</sup> [1988] R.P.C. 51.

statute does not prohibit.<sup>29</sup> But some difficulties may arise concerning the adjudication on proper conditions of sub-licensing.

A sub-licensee, even a subsidiary company, is an independent entity whose business the comptroller hardly knows about, unless the sub-licensee is qualified in the application. This is the first difficulty. In order to perform his duty, the comptroller is required to watch over specific interests and pursue a balance of these. His ability is impaired if he has to entertain an application on behalf of an unknown would-be sub-licensee.

A common argument in favour of a sub-licence is that its terms follow those of the licence. This approach does not seem to be a proper one to safeguard fairly the commercial interests involved, of which the comptroller is an institutional care-taker. In this regard, if the patentee opposes a sub-licence, not even providing reason for the refusal, the comptroller has no secure basis to decide otherwise, nor has he an entire account of what the factual situation will be at the time the sub-licence is to become effective. Thus, the comptroller is not able to assess whether the sub-licence is beneficial or not to the public interest.

In a very few cases sub-licences have been allowed,<sup>30</sup> but the judicial policy is to preclude it under the *fresh-application* rule, which requires the assessment of evidentiary elements *in substantiam* and *in continenti tempore*.<sup>31</sup> In the *Salbutamol* case a patent upon a pharmaceutical substance (salbutamol) was treated as endorsed of licences of right. The application was to settle terms. It was at issue, *inter alia*, whether the applicant could be allowed to sub-contract the manufacture of the final dosage drug. The sub-contract was permitted by the comptroller who argued: "sub-contracting of the manufacture of final dosage forms by generic companies is common practice and is regulated by the product licensing authority, the sub-contractor being simply an agent of the licence holder who retains full responsibility. Thus, to my mind, sub-contracting is to be distinguished from sub-licensing and I can see no objection to this being permitted under the licence."<sup>32</sup> The Patents Court

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<sup>29</sup> Section 41 of the 1949 Patents Act prohibiting sublicensing even of subsidiary companies was not retained by the 1977 Patents Act, sch. 6.

<sup>30</sup> See Whiford J's statement in the *Salbutamol* case referred in the footnote below [1987] R.P.C. at p. 366.

<sup>31</sup> *Salbutamol* case [1987] R.P.C. 327 at 380.

<sup>32</sup> *Idem*, at p. 349.

disallowed the sub-contracting. Confirming the latter's decision, Dillon LJ in the Court of Appeal stated:

*If the applicants want to sub-contract the making of the final dosage forms, they and their proposed subcontractors should put detailed proposals, with the intended form of sub-contract, before the comptroller on a fresh application.*<sup>33</sup>

What is fresh is the data and reasons attached to the complete proposals referred to, and from which the authority may derive his reasoned justifications, brought with the application under consideration.

As far as the control of the patentee over the patent is concerned, the *fresh-application* rule is a criterion of some assistance for the proper exercise of the discretionary jurisdiction. The private control exercised by the patentee through voluntary licensing is statutorily encouraged and should be saved as far as possible. This policy is based on the belief that the patentee is materially better prepared to exploit the market within the monopoly right statutorily affordable. In exercising his discretion, the comptroller has the ability to interfere lawfully with the private control to satisfy a specific competing policy, but in doing so he needs to give proper regard to the facts and merits of individual claims. As long as the fresh-application guidance is observed, sub-contracting or sub-licensing may be granted.

The importance of sub-licensing may lie in the encouragement of competition, and in this respect regarded is given to sub-contracting or sub-licensing as a common practice in the chemical and pharmaceutical industries, as it was referred to in the comptroller's statement quoted above. However, the matter requires further guidance. Sub-contracting may concern a small component or a relevant part of manufacturing, and it may be ordered abroad thus involving importation with implications which need to be assessed in the light of the purposes pursued by the non-voluntary licensing policy. Under this consideration, the distinction between sub-contracting and sub-licensing is irrelevant. In short, sub-licensing may be granted; but if it is not contemplated in a fresh application, the comptroller will have difficulty

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<sup>33</sup> [1987] R.P.C. at 380, line 35.

in performing his duty properly, as regards, *inter alia*, the working of the invention in the country to the fullest possible extent, a point examined below.

**(vii) The patentee's duty to manufacture in the country**

In the *McKechmie* case<sup>34</sup> a compulsory licence was claimed upon a patented process (an invention originating in a German company) for improvement in the manufacture of light-resisting lithofone. The Applicant alleged abuse of monopoly right, specifically, non-working of the patent in the UK on a commercial scale, the working being hindered or prevented in the view of the demand being met by importation, and refusal of the patentee to grant a licence, thus in prejudice of a new trade or industry in the UK and against public interest. The licence denied to the applicant was later granted to a third firm.

The patentee suggested that he had had difficulties in finding suitable licensees and that the working required considerable investment. These circumstances were put forward to justify the denial of licence and the late working of the patent.

The application was allowed by a decision eventually confirmed by the High Court. The comptroller-general did not find enough evidence to accept the patentee's excuse, and established:

- *that the patent was not being worked, although shortly after the application the working in the UK had started;*
- *that in the five or six-year interval between the date the patent was sealed and the date the application was lodged supply was made by importation, inferring from that the existence of a domestic demand;*
- *that the importation apparently was hindering, in the sense of making more difficult, if not preventing, manufacture under the patent;*
- *that it was of the interest of the community at large that the patent worked in the UK without undue delay.*<sup>35</sup>

The analysis below has not the purpose of assessing whether the comptroller's decision was in fact the right one in the circumstances of the particular cases from the point of view of competition or efficiency. One has no ability to do so here, nor the information available

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<sup>34</sup> *McKechmie Bros. Ltd.'s Patent* [1934] R.P.C. 441.

<sup>35</sup> *Idem.*

would allow such an examination. Instead, the purpose is to infer from the published reasoning what in fact have been the procedures and criteria the comptroller has used in the entertainment of the application.

In fact, at the time the application was made the patent was not worked in the United Kingdom, and the circumstances in which the patentee did not early promote the working of the patent remained unclear. On this point, however, the comptroller-general stuck to the simple fact that the patentee had time enough to take the necessary steps to work the patent. In so doing, the controller did not explore in full the reason presented by the patentee, and, for instance, the reason for the patentee discriminating between willing licensees was not investigated, a practice which, although debatable, has some relevance from the competition's point of view.

Apparently, there was a demand for articles related to the patented process. No figure, however, was brought to make some quantitative sense. Was that demand from the point of view of distribution and price unsatisfactorily met? How could the entry of another licensee be in the public interest? These issues are relevant. Depending on the market conditions surrounding the patented articles it could be assessed how the supply by importation was hindering the working in the country and the sort of benefit which it could render to the public. If the manufacture in the country is not, or cannot be, carried out in an efficient way, importation could make available to the public better quality and price. This would be an issue of public interest, and an inquiry in this regard would require a test of gain for the community at large to be performed.

The fact that the comptroller had failed to perform a test of the community's benefit was not a mistake in itself. It rather reflected the underlying policy, which was, as it is today, to foster manufacture in the country, and consequently to create conditions to expand both employment opportunities and a tax basis, and so to heat the economy as a whole. In order to satisfy this welfare policy, the patentee is required to take as much effort as he does abroad to work the invention or carry on the process, and in doing so not to take advantage of the UK

market at the expense of traders in the country.<sup>36</sup> The implementation of such a policy in particular with no regard to efficient allocation of resources is justified on grounds of welfare, in the sense that it favours fundamentally, as was said, the expansion of employment and a tax basis. It favours consumer choice, but not necessarily guarantees better price and quality.

The argument of lack of economic viability of the working in the country as a patentee's defence was also disregarded in two more cases. In the *Fabricmeter* case<sup>37</sup> a compulsory licence was requested upon a patented invention (originated in a US company) for improvements in and relating to fabric measuring machines. The applicant alleged abuse of monopoly right under the charges, namely, lack of working unreasonably, hindering or prevention of manufacture in the UK due to importation from abroad, demand of the patented article not being met adequately or on reasonable terms, and detriment of an industry or trade in the United Kingdom by reason of refusal to grant a licence. It was reported that the patentee had set up a manufacture at the date of the hearing only to the effect of disallowing the application.

The patentee suggested that the manufacture in England would be commercially impracticable and economically impossible, so that the company would face diminution of profit. This contention was rejected both because there was no full evidence in that respect and the allegation was not an adequate excuse for not working the patent in the country. The comptroller felt satisfied with the factual background, and established that there was no working of the patented article in the country on a commercial scale, and that the demand was not satisfactorily met, in prejudice of domestic industry or trade.

The failure to manufacture in the country was also an issue in the *Kalle* case.<sup>38</sup> A compulsory licence was granted upon a patented process (an invention originating in a Germany company) for producing photo-mechanical printing plates, on the grounds that the patent was not being worked in the UK and demand was being met by importation. The respondent contended that the UK market size would make the commercial working

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<sup>36</sup> See *Hatschek's Patent* [1909] R.P.C. at 241.

<sup>37</sup> *Fabricmeter Co. Ltd.'s Application* [1936] 53 R.P.C. 307

<sup>38</sup> *Kalle & Co. A.G.'s Patent* [1966] F.S.R. 112.

uneconomic, mainly because of the high manufacturing cost. In view of this, importation would be the only practical means to meet the demand.

Rejecting the submission, the court held that the UK market seemed to be larger than the patentee suggested. This assertion, based on unsafe evidence, derived from the considerable volume of the respondent's annual sales, and on royalty figure proposed by the respondent.

All the cases cited above were discussed in the light of different legislation. The efficiency argument is also rejected under the proceedings governed by the current patent regime.<sup>39</sup> One may argue that competition (efficiency) would be ill-placed since the proceedings conducted by the comptroller do not allow a full economic analysis. This is true. Therefore, the unsuitability of the proceedings to carry out an economic analysis confirms the argument that the adjudication system of non-voluntary licence has been designed to pursue welfare and efficiency goals. While not allowing a proper entertainment of the efficiency argument, thus neglecting the efficiency goals, the proceedings turn rather into a pro-welfare system.

It is understood that the safeguarding system is governed by the principle that intellectual property rights are protected to the extent that they work for the benefit of the country. Lying in this statutory principle, a duty is imposed upon the right holder, that is, to exploit the invention fully in the country. The process is precisely in accordance with the policies behind it.

The policy in itself is a choice of the country in the defence of national interests. Nothing wrong with this. The criticism goes to the proceedings which fail to distinguish non-voluntary licences on grounds of efficiency from those on grounds of welfare. As far as the legal basis for unauthorised use of UK patents includes efficiency grounds, and the efficiency defence is not fully allowed, the system of safeguarding policy fails to deliver the goods.

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<sup>39</sup> In *Extrude Hone Corporation's Patent* [1982] R.P.C. 361, an application being made under the 1977 Patents Act, a compulsory licence was granted upon an invention (originating in an American company) on the grounds of, *inter alia*, the patentee's failure to fully exploit the invention relating to a method, apparatus and material for abrading or honing surfaces. The patentees contested alleged market fragmentation and lack of commercial viability. Casting aside the submission, the decision relied purely on the absence of the patentee's real effort to introduce the invention in the UK

### **(viii) Restrictions upon importation from non-EC countries**

As was said, the granting of non-voluntary licences to import was an issue dealt with by the courts on several occasions. The House of Lords came to recognise the comptroller's discretion to decide in the circumstances of a particular case whether to allow or not importation, including from EC-countries. Later, the European Court of Justice established that the limitation concerning importation from EC-countries was contrary to the Treaty of Rome,<sup>40</sup> which prohibits quantitative restrictions on imports between Member States.<sup>41</sup> Now the issue has only importance concerning limitation on imports from non-EC countries. And in this respect the discretion of the comptroller is no longer contested. The issue, however, has some remaining implications concerning trade protectionism, dumping and disclosure of sensitive information.

### **A trace of protectionism**

While the law allows discrimination between EC-countries and non-EC countries, the system of non-voluntary licensing is used to protect trade in favour of a block of countries. Protectionism in such a scale should be a matter for concern, not only from the point of view of the trade liberalism as a message entailing the new GATT framework, but also from the point of view of consumer interest. As has been pointed out during this dissertation, this is not the only way the intellectual property and competition policies in place in the industrialised World are used in a protectionist fashion. Before deciding whether to emulate or not these policies, other countries should be aware of the consequences.

A general purpose governing the granting of a licence is to secure the adequate working of the patent in the country and that "the interests of any person for the time being working or developing an invention in the United Kingdom shall not be unfairly prejudiced."<sup>42</sup> These are key policies to be considered when the prohibition on imports from non-EC countries is at

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<sup>40</sup> Articles 30 and 36.

<sup>41</sup> *Re Compulsory Patent Licences: EC Commission v. United Kingdom (Spain intervening)*, Cases C-30/90 and C-235/89 [1993] R.P.C. 283 and [1992] I E.C.R. 777, 829. See also *Allen and Hanburys Limited v. Generics (UK) Limited*, E.C.J. Case 434/85 [1988] 14(6) F.S.R. 312.

<sup>42</sup> 1977 Patents Act, s. 48(3)(a) and 50(1)(a)(c).



issue. Pursuing those policies, the practice adopted by the comptroller is to prohibit imports if adequate manufacture of a patented product is being carried out in the country.<sup>43</sup>

The issue is usually raised in cases related to patents upon chemical or pharmaceutical compounds. *Allen v. Generics* is the landmark case where the House of Lords established that in settlement of terms of licences of right the comptroller can include limitation on imports.<sup>44</sup> The patented article was a medicine drug, an anti-asthmatic antibiotic known under the generic name of Salbutamol. The licensees wanted to manufacture salbutamol tablets in the UK and with this purpose intended to import raw material from Italy. A degree of discretionary prohibition was allowed.

In dealing with this question the authority may be encouraged to exercise his discretion in the light of a liberalising ideal, and holding that imports, once admitted, should not distinguish between countries, be they EC members or non-EC members. However, neither the comptroller nor the courts can put forward their own liberalism. They can only search and implement the policies statutorily laid down which are the choices made by the Legislature.

### **The Dumping issue**

A second implication, dumping, has not been a serious allegation, and the matter to some extent is overlooked. On the one hand, the proceedings before the comptroller do not seem to allow proper consideration to the problem, which, on the other hand, is not a frequent one.

In *Ciba-Geigy A.G.'s Patent*, the invention related to the production of a chemical substance called triaryl phosphate which acts as a flame retardant.<sup>45</sup> The patent was being worked in the United Kingdom. The applicant, an American firm already working the patent in the United States under a licence from the patentee, wanted to export the product to the UK. That would amount to a reciprocal arrangement: Ciba-Geigy manufactured in the UK and export to several countries including to the United States; the applicant manufactured in

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<sup>43</sup> See the *Cimetidine* case [1990] R.P.C. 204 at 247 and 262; and 663 at 694.

<sup>44</sup> [1986] R.P.C. 203.

<sup>45</sup> [1986] R.P.C. 403.

the latter and wanted to export to the former country. As was suggested by the comptroller, in principle only on the basis of exceptional reasons, the scope of that quid pro quo could be restricted. The patentee argued that importation would be detrimental to its business.

Additionally, it was alleged that the price of the imported product would be lower than those applied in the UK, hence the patentee's apprehension that competition could not be afforded, unless an anti-dumping element was included in the royalty rate. After careful consideration of the facts the comptroller decided to allow importation on the ground that to face competition would be a normal consequence brought up by compulsory licence, and he saw no reason to believe that importation would unfairly harm the patentee's business or put it at severe risk. As to the dumping defence, no consideration was given. Holding a dissenting view, the Patents Court reversed the decision under fresh consideration.

Having due regard to the figures contained in the affidavits put forward by the patentee's representative, Falconer J. concluded: the patentee had made huge investments to develop the market in the UK and would continue to do so in order to keep its industrial reputation; no suggestion was made that the demand was not being met on reasonable terms, nor that the invention was not being worked to the fullest extent possible; if a licence for importation was granted, part of the demand would not be met by manufacturing in the country; the applicant had the advantage of making use of its spare capacity and could sell the product at a price substantially lower than the patentee's price, as a consequence of which the applicant would capture a very significant share of the European market at that time being exploited by the patentee, a UK-based company.<sup>46</sup> The tenor of the argument was to protect the interest of a company working the patent in the country. While taking this into account, the decision of the Patents Court (disallowing importation) not only favoured the country's trade expansion, but equally avoided the dumping argument, at least directly or explicitly. Looking at the reasoning no one can tell that the dumping issue, in the judge's mind, was neglected.

It seems at least improper for the courts to embark on the analysis of dumping questions without legal guidance, but to ignore it simply does not seem a sensible choice. There is in

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<sup>46</sup> *Idem*, p. 410-416.

dumping an element of public interest. For this reason, if a substantial dumping allegation is made before the comptroller, and importation is eventually allowed, it would be proper for one to suggest, *de lege referenda*, that the comptroller could contemplate the possibility of bringing the matter to the attention of the competition body, without prejudice to the course of the proceedings.

### **The disclosure of information issue**

The third element surrounding the discretion concerning the licence to import is the disclosure of commercial information, a matter that is given increasingly legal importance today. As far as the protection of this type of information is concerned, the disclosure of information is a point to treat with care. In approaching this particular question, the comptroller has found some difficulty in exercising his discretion with respect to authorisation of importation. Without relevant information, adjudication on public interest (i.e., balance of patentee', would-be licensee', a country' or region' in particular, and the society's interest) appears to be a hard task, and, for this reason, more guidance is needed.

The point to consider is whether the applicant for a licence including importation should disclose information about the source of supply, or the country or countries from where the licensee may import the patented article to the United Kingdom. The lack of disclosure leads to the question whether there should be a general licence to import, i.e., with no need for the applicant to disclose the information pertinent to the importation. This was a major question contended in *SKF's Patents*<sup>47</sup>

There are different types of information such as the countries from which the applicants intend to import, the particular ingredient to import if more than one, the applicant's list of potential customers, the intention to export, the direct costs and selling prices. There are some questions: Is the licensee required to provide detailed information? Has the patentee the right to require it? Is it within the comptroller's discretion to limit the amount of information required? Are the answers to these questions affected by the fact that (a) the application falls

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<sup>47</sup> *Smith Kline & French Laboratories Limited's Cimetidine Patents* [1988] R.P.C. 148.

under a licence of right, (b) the intended importation is to be made from countries which afford no protection to the type of invention in question, (c) the patented article is a pharmaceutical one so having a particular price elasticity? The *SKF's Patents* case failed to address all of these.

The choice from where to import in principle should be left to the licensee' and patentee's decision. In default of an agreement the authority can only judge the restriction imposed by the patentee at the convenience of specific interests statutorily protected. Objectively the patentee cannot impose limit on importation from any EC-countries neither can the adjudicating authorities. In this regard, there should be a general licence to import from the Community. Nevertheless, the patentee may be interested in being provided with details of the imports. Concerning imports from non-EC countries, if satisfactory evidence shows that importation affects or puts at severe risk the interest of any person working the patent in the United Kingdom or brings no advantage to the domestic demand, then the authority is in a position, to sustain the patentee's restriction.

The patentee may argue that importation is likely to affect his interests in a particular way, but he needs specific information which is in the applicant's possession in order to make a full assessment. As long as the authority is satisfied that the information required by the patentee is substantial to assess the alleged unfair detriment, then the patentee has the right to require the disclosure of the data, which supposedly is equally necessary for the authority to exercise his discretion. What would happen if the would-be licensee did not provide the required data? The non-compliance of the requirement may lead to a situation of relevant risk to those interests referred to above, consequently the restriction raised by the patentee should be satisfied.

As was pointed out by the comptroller, "it must remain a matter for the applicant's own judgement whether or not they can substantiate their case without disclosing [certain] information."<sup>48</sup> Obviously, if the applicant does not disclose a relevant piece of information or

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<sup>48</sup> Statement of the superintending Mr Vivian, MF. [1988] R.P.C. at page 152.

is not required to do so, they should bear the consequences of not disclosing material evidence.

It is inherent in the comptroller's discretion to assess and declare whether, in the circumstances of a particular case, a piece of information is or is not necessary for the adjudication. This is a matter to be decided in the light of the circumstances of a particular case. But it is reasonable that at least the applicant should name the countries from where he plans to import. The applicant does not necessarily have to import from the list of countries presented, but it is assumed that such information (a list of countries) is a minimal and reasonable requirement. And the patentee may have a commercial interest in knowing this; furthermore, he is entitled to know the probable countries where the import should be from. Such a right was recognised in the *SKF's Patent* case. This right emerges from the control the patentee has over the patent, a right which subsists regardless whether the patent is or is not endorsed as a licence of right.

In the name of good administration of the patent, the patentee has a reasonable interest in other types of information. It is of legitimate interest to him to gather relevant information in order to track down potential situations of infringement, or to enable him to establish sound royalty policy. It is in his interest to know whether his patent is protected in the exporting country, and what level of demand is in that country for the patented article. This information may be of some assistance to establish, among other things, a competitive price policy for either the licence or the patent-related product.

The importance of the information may depend on the knowledge, or lack of it, the patentee has about the market, and how the price or royalty charge responds to a variation in demand. Again, the assessment of all these, in the light of the background of each case, stands beyond the issue of import restriction. As the *SKF's patent* case shows, lack of necessary information may be an impediment for the proper exercise of discretionary power, making it more difficult to strike the proper balance of interests and rights.

**(ix) Securing the manufacture in the country**

When the interest of a manufacturer is at issue, assessing the unfair prejudice the importation might cause is not always an easy task. In *Research Corporation's (Carboplatin) Patent*,<sup>49</sup> an application was lodged to enable the importation of an anti-cancer drug called Carboplatin. Because of its high cost, the same drug was normally replaced by another, Cisplatin, already out of patent and obviously cheaper. However, the side effects of the later required patients to be treated in hospital. Conversely, the Carboplatin could be used for the treatment of out-patients.

The Carboplatin drug was being manufactured in the United Kingdom (i.e., formulated in Spain for the UK market) under a licence, and the licensee was engaged in research and development and supported clinical trials at a very high cost in order to make the drug fully approved. The applicants, who were not undertaking research, were subsidiaries of an Australian company which formulated the drug in Australia and from where they intended to import carboplatin at a reduced price. Evidence showed, however, that the reduction would not bring a substantial increase in the demand, and would disturb the R&D activity then carried out in the UK.

The applicants alleged that there was an unsatisfied demand in the UK and that the manufacture of the product was contracted out. The Court rejected the argument that the demand was not being met for the time being on reasonable terms, and on balance concluded that the advantage which could be brought by the applicants in terms of reduced price would not render much benefit compared with the prospective business run in the country. On this ground importation from outside the Community, which had been allowed by the comptroller, was prohibited. This was a difficult decision, because in the short term importation from Australia at a reduced price would alleviate the financial burden on the National Health Service in two senses. The high price being charged by the UK supplier of carboplatin limited the use of this drug by the N.H.S. Importation could encourage more use of it in the treatment of out-patients. The Court opted for a medium or long term solution,

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<sup>49</sup> [1990] R.P.C 663.

and at the same time satisfied the policy of manufacturing in the country. It made sense. Apparently, it was a sensible decision based on grounds other than efficiency. But it was not a decision in favour of consumer welfare.

The point in favour of consumer welfare is that importation may provide for a continuing inflow of improved products at lower prices thus directing consumer choice. Nevertheless, importation substitution is always desirable from the point of view of the balance of payments, favoured by the policy of manufacturing in the country. As the *Carboplatin* case shows, the assessment whether the importation unfairly prejudices the domestic manufacturing seems to be, in fact, a much more complex matter, and may involve elements of industrial policy. From the *Carboplatin* case, however, it cannot be expected that the comptroller and the Patents Court on appeal are able to indulge in a sort of workable competition. Discretion is not to be so limited as to frustrate the objects of the safeguarding policy, but is not to be exercised so extensively to the extent that it becomes unnecessary to implement the policy behind the patent statute.

### 7.3.2 Discretion in royalty rate assessment

#### (i) Judicial perception of royalty computation

Within a non-voluntary licensing system, to a certain extent intellectual property rights are reduced to a matter of reasonable remuneration conferred to the owner. This is one central reason why the computation of royalties should attract careful attention from the adjudicators. The other reason lies in the fact that royalty assessment is one of the most difficult issues to set. Aware of these, adjudicators do, or are invited to do the best they can in order to arrive at an acceptable figure.

The nature of the difficulty to establish a sensible remuneration is that the process is always surrounded by uncertainties and the outcome can never be one of mathematical exactitude.<sup>1</sup> Usually, statutory criteria are too general, and judicial orientation cannot always be followed directly because of the unusual features of the cases. Moreover, alleging confidentiality, interested parties are generally unwilling to provide helpful information. The submissions of both patentees and would-be licensees are by definition an exercise of contrast: the former in general tend to maximise the amount of remuneration and the latter to ask for the minimum. Such behaviour tends to reflect competitive attitudes, established in opposite directions: unwilling to share their market, patentees may ask for an excessive rate, while licensees offer low royalties so as to enable them to compete successfully.<sup>2</sup> In the end, what is reasonable may be a matter of impression or common-sense, because no determinative rules exist.

As Luxmoore pointed out, “*no one can hope to lay down any exhaustive rules to enable the question whether the terms of a proposed licence are reasonable or not to be answered with certainty in every case.*”<sup>3</sup> Having limited information and relying on ill-defined

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<sup>1</sup> See observations of Nicholls LJ in the *Cimetidine* case [1990] R.P.C. 203 at 250.

<sup>2</sup> In some sectors the tension of competitiveness is more apparent than in others. Examples of the former are the pharmaceutical and integrated circuit industries, and the electric lamp industry in the past. In this respect, two cases are instructive: *Research Corporation's (Carboplatin) Patent* [1990] R.P.C. 663 at 697; and *Brownie Wireless Co. Ltd* [1929] XLVI R.P.C. 457 at 475. The tension is an impact of, *inter alia*, the massive investment in R&D those industrial sectors require and this is unsurprisingly reflected in the process of royalty assessment.

<sup>3</sup> *Brownie Wireless Co. Ltd* [1929] XLVI R.P.C. 457 at 473.



guideline, adjudicators search for reasonableness with regard to the circumstances and probabilities of the case. In doing so, judges are required to use their discretion.

Reasonableness is too broad a legal requirement. Its meaning can only possibly be established in the light of particular circumstances. In construing it, courts take into account current conditions and existing relevant practice, and exercise their discretionary power on a case-by-case basis, choosing between given rules and accepting or rejecting particular methods brought before them for the calculation of the due amount of royalty. As far as the British system is concerned, the role of judicial discretion is perceived in the development of general and specific rules which are applicable to situations, such as the assessment of royalties relating to patents over drugs and medicines, and the assessment of notional remuneration and compensation for loss of profit concerning the Crown use.

## (ii) General rules

The reasonableness of royalties raises the question “reasonable” for whom and regarding what.<sup>4</sup> In addressing the matter, the legislation evolved from detailed provisions to more general considerations.<sup>5</sup> The 1919 regime put forward provisions which referred to a set of elements, such as:

- *the reasonable advantage assured to the patentee from his patent rights;*<sup>6</sup>
- *the maximum advantage to the patentee, provided that the licensee working the invention in the United Kingdom could enjoy a reasonable profit;*
- *equality of advantages among several licensees, and by virtue of this purpose the royalties could be reduced in the light of costs incurred under licences previously granted to test the commercial value, or to secure the working on a commercial scale, of the invention.*<sup>8</sup>

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<sup>4</sup> According to the Patents Act 1977, the remuneration due to the inventor or “other person beneficially entitled to a patent” shall be reasonable in regard to the nature of the invention and the interests - which shall not be unfairly prejudiced - of any person working or developing the invention in the country. Section 50(1)(b)(c). The provision is substantially the same of the Patents Act 1949, Section 39(1)(b)(c).

<sup>5</sup> Contrast Section 24(1)(b) of the 1907 to 1919 Patents and Designs Act with Section 50(1)(b)(c) and Section 39(1)(b)(c) of the Patents Act 1977 and 1949, respectively.

<sup>6</sup> See Patents and Designs Act 1907 to 1919, s. 27(4)(b), similar provision regarding royalty in exclusive licences.

<sup>7</sup> See 1907 to 1919 Act, s. 27(4)(a), as indicated in the previous footnote.

<sup>8</sup> Idem

According to the current statutory policy, the parties have, or should have, the first say about what is in their best interests. Departing from tabled submissions, the comptroller arrives at a figure which for him appears to be a reasonable remuneration. The process entails a fettered discretion.

In the statement of Lloyd LJ, in the Court of Appeal, an appropriate royalty should reflect the prospect of profitability for both patentee and licensee. In his words, reasonable remuneration means:

*the royalty that would be agreed between a willing patentee and a willing licensee, having regard to the other terms of the proposed licence.*<sup>9</sup>

The consideration to the balance of interests of both parties is twofold: it directs the setting of royalties to a fair trading approach, and restricts the action of the comptroller to the proposed terms subject to disagreement.

The amount of remuneration assessed in a particular case which did not allow the licensee to compete would lead to the unfeasibility of the system of patent safeguards. A remuneration set at an unreasonably high rate can turn the licence to no practical effect.<sup>10</sup> To avoid such an outcome, the patentee, on the one hand, is assured the right to an adequate reward. On the other hand, the licensee is given an opportunity to run his business in a way commercially possible. Thus, as an arbiter the comptroller has "to be fair to both sides, and set terms which are reasonable in the sense that the licensee should be able to enter the market, but which are not so generous that they allow the licensee to disorder the market by unfair competition."<sup>11</sup> Such a concern is clearly present in those cases giving rise to the anti-dumping contention which in general is circumvented.

### **The dumping defence**

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<sup>9</sup> Smith Kline & French Laboratories Ltd's (Cimetidine) Patents [1990] R.P.C. 203 at 236.

<sup>10</sup> This argument was put forward in *Allen & Hanburys Limited's (Salbutamol) Patent* [1987] R.P.C. 327 at 378. However, adjudicators are wise enough to avoid such an exaggeration.

<sup>11</sup> Mr E. F. Brake, *Syntex Corporation's Patent* [1986] R.P.C. 585 at 593.

The anti-dumping element was at issue in the *Shiley Inc.'s Patent* case<sup>12</sup> relating to an artificial tilting-disc heart valve, a high-tech based invention involving heavy R&D costs. The patentee claimed the inclusion of an anti-dumping clause preventing the licensee from selling below the patentee's price, consequently providing for an additional rate in the instance the licensee's price was reduced. It was held that the point was not significant, since the royalty at a fixed rate would be enough to deter the alleged effect.<sup>13</sup>

The allegation of the dumping effect is difficult to prove. In another case, it was suggested that the applicant intended to sell in the country below a fair price.<sup>14</sup> The patent related to dehydrated potatoes was manufactured and sold in the country at a reasonable price. There was a fear that the applicant, a company financially backed by the government in the country of origin, could embark into a dumping pricing policy. No further inquiry into such a matter was made, and the defence was dismissed for lack of evidence. The allegation was also found to be irrelevant. As the comptroller concluded, the licence, if granted, would amount to no benefit to the public. Thus, the order was refused.

On another occasion of allegation of dumping, the comptroller once again was not impressed by the evidence, and preferred to view the effect of the importation on the patentee's business as a normal consequence derived from the competition process.<sup>15</sup> The patent concerned a manufacturing process of triaryl phosphates for use as flame retardant plasticisers in vinyl chloride polymers which the applicant wanted to import benefiting from the low costs incurred in the country of origin. On appeal, the Patents Court, reversing the comptroller's decision, did not deal with the dumping question directly, but regarded the applicant's competitive capability as a trade injury against the patentee's manufacturing interests. Consequently, the importation was found to be contrary to the statutory policy,<sup>16</sup> but as to the dumping allegation no judgement was passed on.

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<sup>12</sup> [1988] R.P.C. 97.

<sup>13</sup> [1988] R.P.C. 97 at 104 and 105. Conversely, the fixed rate per-unity basis may enable the patentee to embark into price-cutting competition and by undercutting his price may imperil the licensee's business. See this discussion below.

<sup>14</sup> *Farmers' Marketing & Supply Co. Ltd.'s Patents* [1966] R.P.C. 546.

<sup>15</sup> *Ciba-Geigy A.C.'s Patent* [1986] R.P.C. 403 at 406.

<sup>16</sup> Even if dumping practice does not exist, importation from outside the Community may be prohibited in order to avoid prejudice to the manufacturing interests of the person developing the invention in the country. See *Research Corporation's (Carboplatin) Patent* [1990] 663 at 696.

Considering the lack of interest or inability of adjudicators (comptroller, tribunal and courts) to entertain a dumping defence and scrutinise the matter properly, an improvement of the adjudicatory system could open an opportunity for the question to be referred to a competition authority. Such a reference would be on the grounds of public interest (efficiency or welfare), so that it would not prejudice the normal course of a settlement of terms of a non-voluntary licence.

### **Reasonableness as to the nature of the invention**

As far as the reasonableness of the remuneration relates to the nature of the invention, the comptroller is required to give proper regard to the intrinsic value attached to the novel feature of the invention, i.e., its importance to the advancement of the art, and related to its contribution to meet a particular need of society, the time and investment spent in its development, and the commercial reality of the invention.<sup>17</sup> It could be said at once with regard to this matter that the importance of the invention defines what the licensee has to pay for, i.e., he should be charged for what he asks for. In affirming this guidance, the comptroller may exclude payment on account of accessories not covered by the patent claims,<sup>18</sup> but he cannot overlook the patentee's obligation concerning the disclosure of the invention.<sup>19</sup>

### **Computation method and bargaining power**

It is settled practice not to interfere with the comptroller's decision dealing with methods of royalty assessment. It has been affirmed,<sup>20</sup> as a policy held by the Appeal Tribunal (now the Patents Court), that once a decision upon a particular method has been made by the comptroller it is not to be altered, unless to cure an unacceptably plain inaccuracy.<sup>21</sup> Obviously this rule is not absolute, and can be balanced in respect of the parties' bargaining power.

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<sup>7</sup> See the *Carboplatin* case [1990] 663 at 683. For a more exploratory notion of the nature of the invention, see the concept of exceptional invention in [1969] R.P.C. 307, [1970] R.P.C. 523, and [1972] R.P.C. 829.

<sup>8</sup> For instance, royalties may not cover know-how. See *Cassou's Patent* [1971] R.P.C. 91 at 93 and 94.

<sup>9</sup> Cf. Agreement on TRIPS, Article 29(1).

<sup>20</sup> *F. Hoffmann-La Roche & Company A.G.'s Patents* [1973] R.P.C. 587 at 620 and 621.

<sup>21</sup> *Hoffmann-La Roche & Co. A.G.'s Patents* [1973] 601 at 620.

Royalties may be fixed on a lump sum per-kilo basis, or expressed in terms of a percentage on either the patentee's or the licensee's selling price. The general practice is to establish the royalty basis upon the patentee's selling price instead of the licensee's selling price; the former - it is suggested - would reflect circumstances favouring the patentee. However, the settlement at a fixed rate per unity tends to be prevalent over these two previous bases. The argument is that a royalty on the basis of a lump sum and set irrespective of the selling price is exceptionally welcomed, since it is supposed to work as a deterrent against distortion of competition. This view, based on the assumption that a lump-sum royalty would be neutral from the point of view of competition, is debatable. The royalty at a fixed sum may operate to favour the patentee who may undercut his prices while the licensee, enjoying no subsequent reduction in royalty and not affording to compete, may be driven out of the market. This argument is supported by a hearing officer, who sees no evidence to suggest that a royalty rated per unity quantity prevents the licensee from being put out of competition.<sup>22</sup>

It is essential to consider, in the end, the potential bargaining power of each party, whether the licensor or licensee, to carry out a distortive cut-pricing practice. In this respect, "it would be wrong to assume that it is always the patentee who is in the more powerful bargaining position: the patentee may be an individual inventor and his prospective licensee a powerful company, in which case the former's position will be relatively weak."<sup>23</sup> As regard practice of non-interference, the observation is that the choice of methods leads ultimately to a question of appellate jurisdiction.

### **Assessment methods - a question of fact or principle?**

It has been argued that the issue relating to methods of assessment concerns a question of fact and discretion rather than an issue of principle. Therefore, it would not ordinarily be subjected to an appeal on grounds of law.<sup>24</sup> The rigor of such a rule, however, has been relaxed by the Court of Appeal.<sup>25</sup> It took the view that adequacy of remuneration is a

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<sup>22</sup> See observation of Mr K.E. Panchen in the *Carboplatin* case, [1990] R.P.C. 663 at 682.

<sup>23</sup> Richard Whish, *Competition Law*, p. 625/626, (1993)

<sup>24</sup> Section 97(3) of the Patents Act 1977 limits appeals to the Court of Appeal only on grounds of law.

<sup>25</sup> See statement of Dillon LJ. in [1987] R.P.C 327 at 373-376. The same view taken by Lloyd LJ. in [1990] R.P.C. 203 at 235/6.

relevant matter involving "important issues of principle" so as it does allow a fresh discretion and enable the Court to issue proper rule. The exceptional intervention of the Court was clearly welcome. A final decision by a high court on controversial matters, such as royalty computation, has the benefit of bringing more certainty to the business circle

### **Per-cent rate and field of technology**

A practical sense of reasonableness is concerned with per-cent rate. On average, a 5 to 7% royalty rate is quoted for patents relating to mechanical engineering. Some variation, however, may be justified in the consideration, for instance, of the medium or other elements covered by the licence and relating to any technical back-up which possibly involves transfer of know-how.<sup>26</sup>

In the *Extrude* case, the compulsory licence was over a patent relating to abrasive flow machinery (a technique for aero engines). The remuneration was set at 7% upon the selling price charged to customers, payable on all fixtures and accessories forming part of the machine.<sup>27</sup> A different approach is not to be ruled out. In the *Shiley Inc.'s Patent*,<sup>28</sup> the court accounted on the particular function of, and the burden in R&D costs involving, a mechanical device. The patented product was a tilting-type heart valve. The comptroller's decision assessing a 7% royalty was reversed on the ground that the invention was related to a surgical device to which, along with drugs, the prevailing practice was to allow a rate ranging between 25 and 30 per cent. In making its own assessment, the Patents Court arrived at a figure of 15% upon the patentee's price,<sup>29</sup> following a settled practice in the field of drugs and medicines. This was an unusual case in which the Tribunal disallowed the method applied by the comptroller.

While demonstrating the complexity of royalty computation and the court's role in dealing with this, the *Shiley* case confirms the idea that in complex matters, governed by

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<sup>26</sup> See *Extrude Hone Corporation's Patent* [1982] R.P.C. 361. [The *Extrude* case].

<sup>27</sup> See previous footnote.

<sup>28</sup> [1988] R.P.C. 97.

<sup>29</sup> [1988] R.P.C. 97 at 109-112. See *Fairfax (Dental Equipment) Limited's Patent* (application by Filpin Filpost Limited), Patent Office, 1993, [1993] 16(6) IPD 13.

unsatisfactory and incomplete rules, it is of undeniable assistance to have the commitment of the adjudicators to superior policies involving considerations of welfare and efficiency. Taking the differentiation of methods of royalty computation as an example, it is inherent in the welfare/efficiency model of limitation that a safeguarding policy should assure a due return on an investment. Aware of this policy, an adjudicator may be inclined to use his sensitivity and vary or chose a royalty method in consideration to the particular nature of the invention under the assumption that, as far as a due return is concerned, a proper method of computation is, or should be related to the field of technology. The test that the adjudicator is invited to apply in a particular circumstance is this. Is the computation method appropriate to the field of technology? Obviously the assessment of such appropriateness relies a great deal on the adjudicator's experience, and the test requires him to search for a sound justification of the method chosen. This leads to the next point.

### **(iii) Royalties in the field of food and medicines**

The 1949 regime provided specific statutory guidance as to the considerations the comptroller should take into account to settle terms of royalties in respect of a licence over a substance or process used as, or for the production of, food or medicine.<sup>30</sup> Although no similar provision as to that category is found in the 1977 Patents Act, the courts still keep the guidance as a valid criterion.

### **Rational discrimination**

The reason for a provision addressing a particular field was to give distinct consideration to the nature of the class of inventions. The essential nature of the health of the Nation, or the crucial conditions of the market reality for the food and medicine industry was a particular concern. In passing the Patents Act 1977, the Legislature omitted the specific provision, leaving it entirely up to the comptroller to search for and apply the proper method according to his discretion and under the circumstances of the case

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<sup>30</sup> Section 38A(2) of the 1907 to 1919 Patents and Designs Act addressed specific guidance as to considerations for the assessment of royalties regarding patents relating to chemical products and substances intended for food or medicine. The same provision was *mutatis mutandis* reproduced by Section 41(b) of the Patents Act 1949, but omitted by the Patents Act 1977.

The omission of the 1977 Act is explainable. In setting a particular method to apply to a specific field (food and medicine related inventions), the previous legislation seemed to be a discriminatory treatment. A variation in criteria applied to different fields can, however, be rationally justified by offsetting the variation of features. In essence, the consideration to the nature of the invention entails a rational (or positive) variation in method. The legal policy, however, is not to set statutorily any specific method, but rather leave it with the adjudicator. Thus, the omission would not amount to the abandonment of the old criteria, governing the special category of inventions relating to food and medicines (surgical or curative devices being included). Consequently, section 41 of the 1949 Patents Act is still a valid guidance that the comptroller may apply as he thinks fit.

The section-41 approach was to be read in conjunction with another provision, which was that the reasonableness of royalties was related to the lowest prices to the public and the reasonable advantage to the patentee.<sup>31</sup> Obviously the availability of pharmaceutical products to society at large was, as it is today, an element of public policy. One cannot tell whether the immediate result of the section-41 approach led to a reduction in the patentee's remuneration which, reflecting a reasonable advantage, was based on two allowances altogether classed as compensation elements, and a reward element, namely:

- *an allowance covering the patentee's R&D costs, and servicing of the capital;*
- *an allowance for promotional or marketing costs; and*
- *a reward, i.e., a reasonable return upon the investment (an appropriate profit uplift).<sup>32</sup>*

Two other criteria have also been applied. The comparison (comparable royalties) approach essentially relies on what licensors and licensees, bargaining with their strengths and weaknesses in a given market, have been able to agree in similar and past cases. A great deal of effort is required to interpret concurrent data, exclude differences or dismiss unusual

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<sup>31</sup> Patents Act 1949, s. 41(2): "In settling the terms of licences under this section the comptroller shall endeavour to secure that food, medicines, and surgical and curative devices shall be available to the public at the lowest prices consistent with the patentees' deriving a reasonable advantage from their patent rights."

<sup>32</sup> Details of the complex calculation of the section 41 approach are discussed in *Geigy SA's Patent* [1964] R.P.C. 391. The criterion was approved in *Hoffmann-La Roche & Co. A.G.'s Patents* [1973] R.P.C. 601, *Allen & Hamburys Limited's (Salbutamol) Patent* [1987] R.P.C. 327, and *Smith Kline & French Laboratories Ltd.* [1990] 203.



features,<sup>33</sup> and identify similarities. The establishment of an authoritative “comparable” requires an exercise of comparing one thing with another and finding a sense of proportion and approximation which relies on expert evidence as much as on experience.

A third method, called the profit-sharing approach (or profits available), is little known and consists of dividing the profit on sales between patentee and licensee.<sup>34</sup> This formula directs the royalty computation to a share in risks and profits, in a proportion in which one may find no apparent logic, and the comptroller is asked to measure what is reasonable to both licensee and patentee. These three approaches (section 41, comparable royalties, and profits available) are normally employed subsidiarily, i.e., to check how sound the elements at issue are, allowing exclusion of possible excesses. The prevailing figure is a result of judicial choice, i.e., an eventual outcome which, justified on the account of the overall circumstances of the case, does not disturb the common-sense apprehended from established practices.

### **An aid, not a right**

A point in law which is beyond doubt is that these calculations do not represent vested rights, i.e., no party is entitled to require that the royalty be assessed under a particular criterion of computation. Formulated by discretion, a method of calculation is an aid to arriving at a sound figure.

The confirmation of specific criteria by several precedents does not elevate the method into a principle of law. If the method of computation were made a principle of law, the rigidity of such a rule would make it impractical to follow precisely in every case. Once converted into law, a discretionary formulation would prevent judges in subsequent cases from exercising a fresh discretion. The reason for this assertion is that a method is subject to alterations in order to satisfy the circumstances of the particular case.

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<sup>33</sup> The judge's attention goes to those comparable figures agreed upon in conditions other than those of normal bargain.

<sup>34</sup> In *Smith Kline & French Laboratories Ltd's (Cimetidine) Patents* [1990] R.P.C. 203 some idea of comparable and profit-sharing approaches is found. As to the latter method, more information is found in unreported cases of the Patent Office, namely, *Frosst's (Timalol) Patent (1988)*, *Tanabe Seyaku Co. Ltd's Patent (application by Harris Pharmaceutical Ltd.)* and *Eli Lilly's Patent (application by Generics (UK) Ld.*

It is most unlikely that two cases could be found which followed precisely the same criterion. The material variations affect, for instance, the way royalties relate to costing. The rates and basis of its appropriation vary, and it may be expressed on historic or current<sup>35</sup> figures, local or on a world-wide scope, estimated or actual. Such variation affects the proportion of the licensee's contribution to the expenditures incurred by the patentee. The elements of compensation, thus, change inevitably with the case's background. All of these make a particular method indeterminate, varying according to the comptroller's discretionary approach and the circumstance of the particular case.

**(iv) Crown use: notional remuneration and compensation<sup>36</sup>**

While having "a shared or concurrent right to use [an] invention" irrespective of a licence, whether "from the patentee or the comptroller, or from the court,"<sup>37</sup> the Crown has to compensate the patentee for such use. The compensation is not for infringement. The patentee has a right to a reasonable payment or a notional remuneration, and a compensation for limited loss of profit for use in a non-emergency period.<sup>38</sup>

The idea of notional remuneration is of a sum estimated with no necessary regard to its constituent elements, nor immediate link with market conditions. The negotiation over the reasonable sum due to the patentee or his substitute is run with total disregard to any sense of bargain of the kind a licensor and a licensee would strike. There is no specific provision as to the proper assessment of the notional remuneration and the loss of profit for exclusion of the actual manufacturing interests.

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<sup>35</sup> Confidentiality is always a problem in accessing commercial data and setting update figures. In this respect, the Patents Court rejected a variable royalty per unit quantity fixed in line with the falling prices (cascade rate) charged by the patentee, the problem being the lack of reliability as to the updated figures. See *The Cimetidine case* and *Research Corporation's (Carboplatin) Patent*, both, [1990] R.P.C. 203 at 245, 259, and 663 at 682/3.

<sup>36</sup> See discussion at 5.3.2 (i) and 5.3.3 (i).

<sup>37</sup> Statement of Dillon, LJ in *Salbutamol case* [1987] R.P.C. 327 at 369, 370, and statement of Diplock LJ in *Patchett's Patent* [1967] R.P.C. 237 at 251. The use is specifically for the services of the Crown.

<sup>38</sup> Patents Act 1977, sections 55, 57, and 57A as amended by the 1988 Copyright, Designs and Patents Act, s. 295 and sch. 5(16). The same regime does apply to designs rights.

The lack of specific guidance whatsoever may work as an element of pressure on the patentee by the Government, who in a particular situation may use their strength to get the payment reduced. In this respect the industry may have a case for concern. In practical terms, however, the dimension of such a concern, whether serious or unfounded, can only be measured up in the light of the traditional attitude of the Government in dealing with the interests of the industry in the context of the freedom of trade. Apart from that, one can tell only a little about the discretionary side.

In the bulk of cases the Government enters into an agreement with the patentee. The question of reasonable payment is a matter dealt with by the Administration. For this reason, the role of judicial discretion on the assessment of compensation for the use of the service of the Crown is rare. Nevertheless, if necessary in the circumstances of a case, it is entirely proper for the court, aware of its function, to conduct its discretion taking into account the muscle of the State over the individual firm (patentee or any substitute). Also influential is the traditional attitude of the government towards private competition. The more liberal the State is, the more the patentee's interest is taken into account, without prejudice to elements of public or national interest. Additionally, it is fundamental to look at previous practices settled by the Administration.

*Patchett's Patent* was a very rare case brought to court under sections 46 to 48 of the 1949 Patents Act.<sup>39</sup> The invention was related to a patented machine gun of which thousands were manufactured for Crown use. The court took the view that *a priori* the sum would be of fair royalty payment nature, rather than compensation for damages. The remuneration would be that sought by a willing and minded licensor and a willing and minded licensee bargaining on an equal footing. This is understood in terms of a notional or token concept, because there are no actual licensor and licensee.

In the past, the reasonable payment was calculated on production costs, and could not be affected by the prospect of profit the patentee might bear as a manufacturer. In between 800 and 900 cases negotiated by Government departments,<sup>40</sup> an initial rate of between 5 to 7.5%

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<sup>39</sup> [1967] R.P.C. 77 and 237.

<sup>40</sup> Evidence brought by a very experienced expert, [1967] at 254.

was agreed by the Government, or a company authorised by it, to manufacture a quantity of the invention-related products. The rates varied in accordance with the number of articles manufactured, and the supply of technical assistance or know how if it was the case. For subsequent use of the same invention (i.e., manufacturing of a new series of the product), lower rates applied in accordance with a sliding scale. While in the *Patchett's* case interest was granted at the court's discretion, the above figures show that the role of the court in royalty computation is rather minimal.

#### **(v) The nature of the adjudication of royalty prices**

A last consideration about the assessment of royalties is that the discretion should not be exercised in such a way as to make the comptroller a price regulating authority. The use of the adjudicatory process of non-voluntary licences with the purpose of controlling the licence prices would be an acceptable restriction. The analysis of the comptroller's decisions has suggested nothing of the kind, and the approach now made is to agree with the manner the comptroller has adjudicated royalty rates.

In a competitive society prices are supposed to be mutually determined, and are based on the amount sellers are prepared to offer for sale and the amount which buyers wish to buy. Since there is no perfect market, abuses and excesses do exist. They are discouraged by regulatory policies which may take different forms. Price monitoring, usually designed to curb inflationary trends, aims to:

- *limit the extent to which prices may be increased on account of increased costs;*
- *secure reductions as a result of reduced costs;*
- *reinforce the control of prices by a control on profit margins, while safeguarding investments and promotion of innovations and technical improvements; and*
- *reinforce the effects of competition and to secure its full benefits in the general level of prices.*<sup>41</sup>

None of these are pursued by the comptroller. In principle patentees and licensees are free to negotiate royalties. In the assessment of royalty rates the comptroller and the tribunal intervene to settle terms of royalties only to the extent patentees and licensees have not been

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<sup>41</sup> Section 2(2) to the Price Commission Act 1977 repealed by the 1980 Competition Act.

able to agree. The adjudication may affect the structure of costs and the pricing policy held by the patentee or licensee, consequently altering the final figure at which articles produced or processed are sold.<sup>42</sup> However, this outcome is irrelevant. The legislature places no duty upon the comptroller to consider economic investigation.<sup>43</sup>

It could be argued that in assessing royalties the comptroller as well as the Patents Court by means of justifying proposed royalties eventually exercise a degree of price control. The justification the comptroller or the court is required to give is a matter of *ratio decidendum* derived from the duty imposed on judicial activity in general, that is, to follow logical reasoning, and has nothing to do with pricing policy.

#### 7.4 Principles of judicial discretion: a summary

This concludes the discussion of the public policy arguments, reasoning, and discretion and their consequent implications for understanding the nature of the adjudicating process on non-voluntary licensing. In the review of the public policy arguments at common-law, and the comparison with contrasting modern cases, the inconvenient legal uncertainty arising from the decisional inconsistency on matters of restraints of trade has been indicated. This was due to lack of legal guidance. The courts were reluctant to adjudicate solely on the basis of broad principles, such as public interest, or under considerations of freedom of trade. Unlike broad clauses, clear rules laying down a specific mandate provides a sense of certainty for the petitionary public in general, and make judges more confident in the application and enforcement of the law.

The way legal provisions are drafted has a direct effect upon the court's function, that is, to enforce the statutory provisions in line with the policies they bear. The reasoning process that courts are required to develop in order to justify their decisions is supposed to satisfy these

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<sup>42</sup> The price situation resulting from a licence is not considered illegal by the Resale Prices Act 1976, section 10(3).

<sup>43</sup> *Intertype Ltd. [1926] R.P.C. 305 at 309.* The statute, nevertheless, does not prevent the authority from considering practical issues *prima facie* found to distort competition, such as a dumping-led remuneration or methods for calculating royalty rates which potentially lead to a dumping price (in case the non-voluntary licence includes importation).

policies. While the connection between legal guidance and consistency of decisions makes a strong case for statutory conditions (on which non-voluntary licences should rely) to be drawn narrowly, a degree of ambiguity and unpredictability is still inevitable. Legal policies are not always fully enacted, or the authority is given power to vary the legal consequences in accordance with particular circumstances.

The tests of discretion performed by the comptroller and the courts on appeal have largely shown that the regulation of every matter of safeguarding policy does not always or should not always follow strict rules.<sup>44</sup> This is especially true in the case of the legal conditions for royalty assessment. It follows that the legislation inevitably contains gaps and ill-defined clauses.

Where the statute provides for a discretionary jurisdiction the boundary of the discretion is always a matter in dispute, but a number of limitations stand out from this analysis. In particular, this means that the discretionary jurisdiction amounts to no unfettered discretion.

Having the satisfactory operation of a safeguard regime as a primary concern, the study has identified two classes of limitations: statutory and judicial. Either ascribed by statute or courts, these limitations convey a sense of duty to give reasons (justification), a sense of appropriateness of reasoning, and a sense of duty or power to act if necessary.

In exercising discretionary power, the comptroller can do anything not statutorily prohibited in order to implement a particular policy or legal purpose. Stated in this way, the comptroller fulfils a dual function, as guardian of public policies and a caretaker of patent right. As an authority in interpreting in the first place the policy behind the law and implementing it, the comptroller is an instance of law in the sense that the task of completing the legal choice that, directly or indirectly, the statute purports to set down is conferred on him; it is not his choice as an arbitrary authority,<sup>45</sup> but the statutory desideratum. In contrast, relying on his discretion

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<sup>44</sup> The perception of the inappropriateness of rigid rules to regulate some legal matters has led to the increasing number of flexible "guidelines" issued by competition bodies in the USA, Canada, Japan and EEC.

<sup>45</sup> One may assume that the judge actually has power to make his own choice which may necessarily not be the choice desired by the Parliament, but it is not for the judge to profess having exercised that power.

the comptroller cannot impose restrictions inconsistent with the statutory directions, nor can his discretion amount to unnecessary hindrance to patent right.

Another idea of limitation comes from the principle that says a body entrusted with a discretion must not develop rules or a policy so rigid as to prevent the discretion being exercised with reference to the individual case. This is a demand for flexibility and practical sense.

A statutory duty to give regard to certain legal purposes is a requirement of producing reasoned justifications. It is only by the giving of reasons that the comptroller and the court can demonstrate that a rational approach has been taken rather than deciding on whim or by prejudice. The discretion has to be based on the demand of reason, thus making the law in line with a reasoning which is based on observations and experience, i.e., a contextual rather than a priori justification

The discretion properly exercised means that an authority is required to give proper regard to the merits and facts of the individual case, i.e., to deal with the substantial points in a rational manner, developing informed arguments. Rationally reasonable means that there are good arguments for a decision to be held as one rationally conclusive and determinative of reasonable answers, as such recognised as a right one. This leads to the last remark.

The recognition of the duty to operate the discretion whenever it is found necessary is based on the perception that the authority has a power and the duty to search for right answers to save the interests concerned and upon request. The primary source of this discretion is the legal framework on patent within which the comptroller operates legally permissible justifications.

## **CHAPTER EIGHT**

### **CONCLUSIONS: USE OF PROPRIETARY RIGHTS AND REGULATORY THEORY**

#### **8.1 The problem restated: conceptual framework**

The regulation of the protection of chip designs has raised important questions bearing upon the limitation of the exercise of intellectual property rights projected in recent times by the IPIC Treaty and the Agreement on TRIPS. Defined at the outset of the dissertation, these questions have inspired the present legal research. The study of the theoretical and legal aspects of limitations on intellectual property in the context of the process of innovation has attempted to answer how the legal treatment of these limitations is shaped and to what degree the legal machinery (rules and institutions) is appropriate to pursue its objectives. Such legal machinery has a limited ability to yield efficiency and welfare gains related to the exercise of proprietary rights. From the analysis of the preceding chapters, the conclusion is drawn that criteria of efficiency and welfare permeate the legal treatment, supported by an emerging institutional and safeguarding policy understood within an historical perspective and in the light of an economic rationale. The analysis leads to a regulatory theory based on a conceptual background. One result of the study is to clarify this conceptual basis.

#### **(a) From social bargain to welfare/efficiency perspective**

Based on a theoretical background, the study has established that underlying the protection of intellectual property there is a sense of social bargain. Particularly pertaining to the US legal theory, the expression “social bargain” means that society through the State is committed to protect intellectual property. In exchange, the right holder has a duty to exercise his right in such a way as to pursue the social objectives summarised in section 2 3.1. Essentially, such a quid pro quo has a role in the welfare/ efficiency approach. A conclusion was reached in Chapter Two that as the innovation process is carried out in circumstances of increasingly imperfect competition, right holders are likely to break that social arrangement by exercising their rights in a manner likely to stifle competition. In this respect, the study of the economic



rationale was highly instructive and confirmed an old principle deeply rooted in the UK law that intellectual property is protected as far as it works for the public benefit. In the face of this finding, one has a case to limit the exercise of intellectual property rights in a welfare/efficiency perspective.

By legally monitoring the competitive process, a country can develop a legal policy of inducing owners to use their intellectual property rights efficiently. At this point, it is fundamental to clarify to what extent welfare and efficiency are taken for granted and what the dichotomy involves.

The dichotomy is self-evident. Welfare and efficiency are in many respects basic postulates which lie at the foundation of intellectual property and thus govern the exercise of proprietary rights. Borrowed from economic and political realms, they are turned into legal principles of considerable value. Nevertheless, welfare and efficiency gains cannot rely on legal machinery unconditionally. Alongside a feasible legal control, having regard to the conditions of a country's economic structure, a sound industrial and technological policy has to be put in place and maintained. As a result, no-one can ensure that an intellectual property system in force, for instance, in an Asian country is drafted to achieve more social welfare than efficiency compared to any legal system in North America.

The legal sense of economic efficiency is best expressed in terms of reduction of costs and prices, widening consumer choice by increasing the variety and quality of goods and services, facilitating the entry of newcomers and the development of new technologies and products.

An assumption established throughout the dissertation is that welfare can be increased through efficiency. In addressing welfare and efficiency, the law tends to treat them in a free-value perspective. This is borne out partly by the availability of a larger quantity of goods and services for society as a beneficial result of competition, and partly by improving employment resulting from the easing of restrictions on trade. However, it is worth pointing out that a legal background supporting a safeguarding policy on the exercise of proprietary rights does not merely pursue efficiency for its own sake. Neither parliaments through statutes, nor courts

through case-law search for a rigid sense of efficiency. The study has demonstrated that by limiting the exercise of intellectual property rights, the law, as it stands in the industrialised world, does not overlook the social dimension of welfare. Thus, beyond or outside efficiency, social welfare is also a legitimate intent. This also comes from the presumption that the exercise of intellectual property rights without harming competition goals will increase economic growth and meet society's needs, which include a range of goods and services. The improvement of these is highly dependent upon a technology-based economy. This conclusion is founded on the analysis of unauthorised use of UK copyright and patent laws, and the discussion in sections 2.3.1, 6.3.1 and 7.2.4.

The welfare/efficiency perspective is also designed to support an adjudicatory procedure favouring a sound defence. The dichotomy includes proper and incontrovertible respect for proprietary rights and the owner's interests. It is a matter of great consideration that the essential function of proprietary rights should not be harmed unnecessarily. Additionally, the right holder must be informed of the law, as far as is possible, before it is applied to implement a limiting measure. The owner's interests are defined as matters in which the right holder has a legitimate stake justified by requirements peculiar to his activities. A proper respect claims a sensible, even inevitable, approach to delineate justifications for limiting the exercise of proprietary rights. Justifying limitations raises a debate about questions of a theoretical and practical nature. These require full and open regard to factual and normative elements which can be explored in turn, although they tend to melt into efficiency and welfare considerations. Promotion of welfare should in principle satisfy the conditions of efficiency economics. Once more, this assertion should not be taken, however, to deny the possibility of conflict.

Although a proceeding with respect to unauthorised use of proprietary rights is expected to allow an efficiency defence, the study has identified (particularly in Chapter Seven) that in a number of cases an efficiency defence was not allowed or it was ill-assessed. Therefore, where legal proceedings fail to allow an efficiency defence, limitations on proprietary rights presumably tend to favour a welfare end departed from an efficiency objective. This quite inevitably leads to a grey area that modern law, the Agreement on TRIPS in particular,

purports to overcome. In this respect, judicial reasoning broadly based on the public interest clause is not always clear.

It is an incontestable assertion that the law is apt to limit the exercise of proprietary rights on grounds of public interest or public policy. There is a great deal of vagueness in these expressions which in this study are replaced by the welfare/efficiency perspective. Applying this dichotomy, the thesis places the legal treatment of the exercise of proprietary rights into the focus of competition rules. This adds fresh thought to the assessment of the function of intellectual property, thus providing a better comprehension of how it works, and allowing the maximum room for the construction and performance of legal techniques designed to limit the exercise of proprietary rights.

#### **(b) Appropriateness of protection**

Being a concern prevailing throughout the entire discussion, the legal treatment of the limitations on intellectual property does not ignore the idea of "adequate" protection. Such a concept, however, cannot be conceived other than within the statutory framework. In this respect, it has been suggested that perfect standards of protection, which do not exist,<sup>1</sup> would require an adequacy of protection in respect of both stage of development of a country or region, and a particular field of technology.<sup>2</sup> On the contrary, available regimes of protection are uniform to rather than consonant with such particulars. In this context, and assuming that right holders originating from technology-generating regions and operating in markets of technology-borrowing regions are to enjoy an incremental advantage from strong protection of intellectual property (e.g., broad patent claims, effective protection of trade secret, and streamlined enforcement mechanism), an implicit suggestion of this study is that the limitation on the exercise of intellectual property rights through a safeguarding policy seems to be a sound response to mitigate the effects of increasingly imperfect competition.

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<sup>1</sup> In this study, the idea of "adequacy" of protection is entertained only for the sake of argument

<sup>2</sup> This matter is discussed in Rushing F.W. & Brown, C.G. (editors), *Intellectual Property Rights in Science, Technology, and Economic Performance*, Westview, 1990.

An "adequate protection" is not a concern. The study suggests, nevertheless, that if such adequacy existed it would be considered in regard to:

- the nature of the proprietary right (i.e., patent, copyright or design);
- the subject matter of protection (field of technology);
- the condition of the industrial structure existing in a country or region; and
- the state of enforcement.

Moreover, an adequate protection would be one reasonably satisfactory for the purposes (social bargain) it serves or is intended to pursue. Whatever legal format it has, the system would not become inadequate by the introduction of a class or type of constraint to curb inappropriate exercise of proprietary rights for which exercise the system was neither built nor intended to serve. As explained below, the "adequacy" of protection would be related to other concepts underlying the limitations on the exercise of proprietary rights.

### **(c) Intellectual property order and state intervention**

Whilst the legal apparatus supporting the limitations is put in place to order the exercise of rights, the ordering requires a degree of state intervention. The study describes the intellectual property order as the exercise of intellectual property rights in relation to market forces. It is assumed that such exercise is responsive not only to the rules of supply and demand (market self ordering), but also to state regulatory intervention on competition. The degree of intervention is one reasonably necessary for the alignment of market conditions (for licensing and use of the proprietary rights) with the social bargain. It is essential that in the pursuit of the bargain behind the intellectual property the economic logic is not exaggerated, but follows criteria of significant flexibility. This is governed by a "workable competition", a soft concept which denotes a variety of perceptions.

As a warning, workable competition implies that efficiency should not be pursued for its own sake. As a situation not defined a priori, it reflects a competition configuration practicably assessed in relation to structural and behavioural competition aspects and

performance. As a utilitarian notion, it defines a balance of significant detrimental and beneficial effects. As far as the exercise of proprietary rights is concerned, it suggests that a mischief is to be evaluated in the light of "contingent rules" rather than asserted on the basis of a general statement of illegality. It is clear now how strong the competition strand is in driving the exercise of the proprietary rights, and the chip design in particular.

#### **(d) Audit trail and investment input**

The regulation of the protection of chip design, chosen as a paradigm of new technologies, is significant for the influence of the competition element impregnating its structure. The analysis of this showed that protection is afforded on account of investment rather than intellectual input. This was made clear by the discussion, for instance, of the concept of "audit trail" described as the output arising from the documented trial-and-error job performed along with chip designing, including logic circuit arrangements, test data, time records, and accidental errors or traps. Printed on paper or electronically stored, the audit trail is a debatable proof of originality. Its significance, nevertheless, rests on evidential elements projecting systematic tasks and investment. This background is directly associated with the subject-matter of protection. That is, in order to stand as a legally protected design, the topography has to be a product of substantial analysis and study, recorded in a substantial audit trail showing how the mask work was designed, thus reflecting considerable time and money invested in the creative activity.

The stress on the investment input reflects the competition strand bearing upon the statutory protection of new subject-matters, information technology in particular. The competition element emerges more vigorously in connection with the exercise of rights governed by institutional safeguards. The role of a safeguarding legal policy based on competitive elements leads to the inevitable conclusion that without an effective control of the competitive process, protection of intellectual property rights makes little or no sense.<sup>3</sup> At least three evidential elements have been brought to the support of this defence. Firstly,

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<sup>3</sup> See recent article by David J Gerber, *Constitutionalizing the Economy: German Neo-Liberalism, Competition Law and the "New" Europe, stressing the value of competition law under the influence of the "Freiburg School" of legal and economic thoughts.* [1994] 42(1) *The American Journal of Comparative Law* 25

because of the dynamics of innovative activities being carried out in a context of increasingly imperfect competition, authors and inventors tend to use their rights in a manner likely to impair the social bargain. Secondly, at the level of legal policy there is an increasing resort to competition legislation to direct the intellectual property order. Thirdly, in the enforcement of safeguards by adjudicatory bodies, the application of the public policy argument considers efficiency and welfare aims within a framework of competition law. These are part of an institutional policy which has gradually been shaped and adapted to meet competition criteria and goals increasingly demanded by an interdependent world economy.<sup>4</sup>

#### **(e) The role of a safeguarding policy**

Dominating the study, an institutional safeguarding policy has been portrayed as the manner in which the law:

- defines the mandate of incumbent authorities;
- defines the rights and obligations conferred or inflicted on individuals and the State; and
- relates all of these to a set of defined remedies and their enforcement intrinsic to intellectual property and competition laws put forward to limit the exercise of copyright, designs and patents.

Theoretically, a safeguarding policy relies on the assumption that intellectual property is protected to the extent that it works for the benefit of the society at large. This theory relies on two propositions. Firstly, an "adequate" system of intellectual property protection should not be drafted, enforced or exercised in a manner which unnecessarily hinders the goals of competition law and policy. Secondly, a workable system of competition law and policy should be compatible with the availability of a system of intellectual property rights which enables innovative firms to pursue the best strategy to capture an appropriate return from

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<sup>4</sup> As has recently been highlighted, the features of this apparent interdependency include orientation to intensive R&D activities, production based on economy of scope, and the increasing importance of intellectual property and competition. The stringency of this interdependency has led to growing unstable economic relationships and has threatened the capacity of the leading G-7 countries to coordinate a sustainable world development. See discussion by Hugh Miall, in *Shaping the New Europe*, especially chapter 3, Pinter Publishers, 1993.

their investments. The implications provided by the contrast of these propositions are threefold:

- there is a necessary interaction between intellectual property and competition laws;
- an adequate regime of intellectual property is a function of a workable system of competition law and policy; and
- that interaction brings a convergence of two goals, the pursuit of social benefit and the promotion of innovation both of which a safeguarding policy is committed to.

While providing for a conceptualisation of a safeguarding policy in place in developed countries, the study allows some reflections and suggestions. The legal infrastructure, as analysed, belongs to developed economy countries open to international trade, and therefore exposed to competition. While claiming greater protection for intellectual property, these countries seek to improve the legal monitoring of the competition process, and thus the ordering of the exercise of intellectual property rights. The effects of such an intervention include boosting private bargaining power, and the creation of guidance for a strategic and pro-efficiency trading behaviour. The perception is that an open economy, strong protection for intellectual property, effective control of the competitive process, and workable safeguards pursuing welfare/efficiency ends fit together. Once the intellectual property issue is taken up and studied, keeping its connection with the overall system, the conclusion that strong protection creates a demand for a sound safeguarding policy follows. This brings the intellectual property issue back within the context of a societal covenant, that is, the exercise of proprietary rights committed to the creation of mutual benefits for owners and society at large. The participation of the State in this covenant to organise the system legally and watch over it also amounts to a matter of enforcement.

A last concept related to the enforcement of safeguards is named "useful discretion." This is defined as the use of discretionary power in a manner:

- to satisfy the public policy drawn from the statute (statutory bargain);

- committed to fulfil the legal pre-conditions (social bargain) governing the setting of the proprietary rights; and
- not to constraint unnecessarily the legitimate interests of authors and inventors or owners.

Drawn from the British legal regime of discretion concerning unauthorised use over patents, these elements are projected in both the IPIC Treaty and the Agreement on TRIPS, and are the basis for a regulatory theory on the limitation of the exercise of proprietary rights.

The need to satisfy a public policy drawn from the statute raises a crucial question of regulatory policy, that is, as far as unauthorised use of proprietary rights is concerned, to define the scope and limits of this public policy in a manner that one may reasonably predict its result. The issue is posed by the contrast between the degree of guidance provided by the IPIC Treaty<sup>5</sup> and the Agreement on TRIPS concerning non-voluntary licensing over chip designs.<sup>6</sup> While the less guided regulation of the former Treaty may lead to legal obscurity, the detailed conditions of the latter could not be detached from legal underpinnings, but meaningfully conceived in the context of related ground rules.<sup>7</sup> Whatever regulatory model is considered, an element of balance that a regulatory theory on safeguards has to countenance is not to constrain the legitimate interests of the owners unless it is reasonably<sup>8</sup> necessary to safeguard the ends the exercise of the intellectual property is intended to serve. The dimension of this regulatory theory raised by the study is further explained below.

## **8.2 Regulatory choices and the pursuit of efficiency and welfare**

The study has focused on efficiency and welfare as legitimate criteria to limit the exercise of proprietary rights. More than a research proposal, an efficiency/welfare sense is found underlying the aims of the statutory safeguards intrinsic either to the intellectual property or competition law. The study suggests there should be efficiency/welfare gains as a result of the application of the safeguarding measures studied. However, it recognises that although

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<sup>5</sup> Article 6(3)(a).

<sup>6</sup> Article 37 (2) c.w. Article 31 (a) to (k).

<sup>7</sup> Mainly Articles 7 and 8 of the Agreement on TRIPS.

<sup>8</sup> Reasonable in accordance with certain standards identified in the circumstances of individual merit, and based on proof beyond a pattern of probability.



difficult to pursue practically, efficiency and welfare ends are inherent in the regulation of a safeguarding institutional policy. As a significant point in the thesis, the study explains the reduction of the pursuit of efficiency and welfare ends to:

- commitment to principles and incomplete rules;
- subscribed discretion; and
- streamlined process.

Such a theoretical scheme is conceived to approach the policy behind the rules of the IPIC Treaty and Agreement on TRIPS governing limitations on the exercise of proprietary rights.

#### **(a) Commitment to incomplete principles and rules**

Whilst showing the need for clear descriptions of legal circumstances in which adjudicators are entitled to act, the study showed an underlying incompleteness in the principles and rules on which a safeguarding policy relies. This characteristic reflects an incomplete knowledge of the economic phenomenon and the process of innovation within the dynamics of competition. More specifically, economic analysts do not know everything about the behaviour of competitive forces, and the changing nature of the economic process. Although a likely inadequacy of instruments of analysis is also part of the problem, the insufficient knowledge is not a failure of the economic analysis in itself, but is derived from the lack of precise information about economic elements.

A concurrent fact is that firms in general are reluctant to release information relevant for the full analysis of economic structure. Because of the lack of full knowledge, it is difficult to predict the behaviour of private firms and the movement of the economic process. Consequently, there is an inherent imperfection in selecting and writing policies concerning incentives for innovation and competition control.<sup>9</sup> This consequential imperfection affects not only the legal structuring of intellectual property (often uncritically regarded as a means to improve innovation), but also the regulation of safeguarding measures designed to limit the

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<sup>9</sup> See in addition Robert Bork, *The Antitrust Paradox: A Policy at War With Itself*, 1978.

exercise of proprietary rights. Facing this imperfect knowledge, the regulatory policy relies considerably on "contingent" rules and principles which produce contingent responses (i.e., dependent upon the merit or assessment of individual situations) not always being sufficiently reliable and consistent. Taking this background into account, the ability of safeguarding rules to commit adjudicators should be viewed with caution.

Clear legal descriptions are expected to express binding commitments. The functions of formal rules of commitments are twofold. Firstly, for adjudicators, commitment rules are points of departure on which they may rely to take efficient deliberations. Adjudicators are committed to taking action when a situation arises. The existence of such commitments is supposed to improve the outcomes of adjudicatory actions. The adjudicator is committed in advance to a rule for determining the effects of the exercise of proprietary rights. The more informed criteria the rules provide, the less adjudicators tend to resort to discretion. Secondly, from the point of view of accountability, public opinion and surveillance or reviewing bodies are better equipped to test the consistency of the adjudicator's decision which is expected to be in accordance with the announced policy.

Part Two of dissertation, particularly Chapter Seven, provides substantial basis for these remarks. Nevertheless, there are subjects in respect of which drawing prescribed conditions is almost impossible. Computation of royalties is an illustrative example. Given the inherent impossibility of drawing strict rules to regulate every matter, the exercise of discretion could be either an inevitable and casual resource, or an expressed legal policy.

#### **(b) Commitment to discretion**

As a legal policy, discretion denotes an absence of rules to bind the adjudicator in advance in respect of a course of action. The legislature provides the authority with a general goal and power to implement the underlying policy. The statute thus creates legal conditions within which the adjudicator is allowed to choose among permissible alternatives. This may be related to substantive matters, such as "adequate remuneration" and "reasonable terms and conditions", or involve procedural issues, such as "due" or "fair" proceedings.

Essentially, the lack of satisfactory adjudicatory criteria is the most serious point arguing against a wide discretion. A system of safeguarding policy which instead of relying on formal rules assigns a significant role to the adjudicator's reputation, i.e., relies on the ability and experience of the person in office to implement the legal policy, hardly fits in with the policy behind the Agreement on TRIPS. Even that person being given the predication of independence, there is a difficulty in principle to justify a wide discretion in a legal system organised on a check-and-balance basis. A contrasting point is that discretion allows a degree of flexibility<sup>10</sup> in the implementation of policy.

To what extent flexibility is needed in order to outweigh the unwanted uncertainty is however a debatable question to which the study gives no answer. Nevertheless, the study recognises it to be proper for a safeguarding policy to make use of a subscribed discretion, in circumstances where discretionary interventions attract statutory support and are based on reasoned explanations, and where the adjudicator's decision is assessable by a higher judicial or administrative body.

In fact, a fettered discretion is necessary to cope with problematic legal concepts (sensitive to varying contextual factors), to adapt them to the economic reality, and direct them to the society's needs. Such a limited discretion necessary for the operation of safeguarding rules relies to a certain degree on the skills and intentions of the adjudicator, who is expected to take into account incomplete information about economic elements.

Although free to make a particular choice, the adjudicator is in some way committed to the policy expressed by concurrent principles and incomplete rules governing substantial and procedural matters

### **(c) Commitment to process**

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<sup>10</sup> In the field of monetary policy, the warning comes from Milton Friedman: "the granting of wide and important responsibilities that are neither limited by clearly defined rule for guiding policy nor subject to test by external criteria of performance is a serious defect" which potentially causes uncertainty and instability; [...] "eliminating the danger of instability and uncertainty of policy is far more urgent than preserving 'flexibility.'" *A Program for Monetary Stability*, pp 85/86, 1960.

Relying on tightly drawn rules and guided discretion, a safeguarding policy claims a "commitment to process", through which facts are asserted, rules are meaningfully stated, and the bureaucratic exercise of discretion takes place. Obviously the operation of law necessarily requires a set of procedures. More than that, the expression "commitment to process" as it is here applied implies the observance of a formal process qualified by "fair" and "equitable" procedures. The fairness is in respect of a variety of elements, such as:

- the treatment of the parties;
- the production of proofs;
- suitability of remedies;
- legal requirements free from unnecessary burdens;
- protection of sensitive commercial information;
- independence of judges;
- opportunities to be heard given to the parties;
- motivated decisions;
- appropriate or limited efficiency defence; and
- self-execution of relevant rules contained in international agreements or treaties to which the country is committed.

These elements are directed towards the rational treatment of public policy, private and public interests.

The rationality the study contemplates consists of the commitment inflicted upon the adjudicator to seek the best answer in particular legal circumstances, reflecting comprehensible substantive choices. This requires the existence of guidance, objectively defined or having a degree of incompleteness, known at the outset for the resolution of the concerned issue. Even bearing a degree of obscurity, the process is projected as a means of challenging factual, logical and legal premises. From the point of view of rationality, the normalisation of the process as a demand for the pursuit of efficiency and welfare gains implies, therefore, the existence of rules susceptible to control, and applied with individualised

attention to concrete interests (considerations to individual merits), and in response to pressures reasonably representative of the interests of society at large

The process, nevertheless, has its underlying constraints. Open to the arguments of contesting parties, the process does not always allow full access to or analysis of economic information. In order to remove these restrictions, the study suggests a legal process which would take into account the view of informed members of society by harnessing private expertise.

A sense of commitment is above all understood as directing the adjudicator's attention to a legal consideration whether a business conduct in connection with the exercise of proprietary rights offends or has offended efficiency economics or any relevant point of public welfare asserted with a degree of objectivity. While attempting to convey the idea of a streamlined adjudicatory process, a theoretical approach must not exclude consideration of common sense. In this respect, case studies are particularly illustrative.

By portraying an emerging institutional policy designed to correct defaults in the exercise of intellectual property rights and direct them towards the improvement of social welfare, a promising avenue for future research remains. The alignment of legal standards governing the procedural conditions for the operation of safeguards intrinsic to the intellectual property and competition laws could form the basis of a further study.

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**LIST OF ABBREVIATIONS**

<b>AC</b>	Appeal Cases
<b>APLA, AIPLA</b>	American Patent Law Association, or American Intellectual Property Law Association
<b>APLAQJ, AIPLAQJ</b>	American Patent Law Association/American Intellectual Property Law Association Quarterly Journal
<b>All ER</b>	All England Law Reports
<b>BNA's PTCJ</b>	BNA's Patent, Trademark & Copyright Journal
<b>CLP</b>	Computer Law & Practice
<b>CLSR</b>	The Computer Law and Security Reports
<b>CMLR</b>	Common Market Law Reports
<b>ChD</b>	Chancery Division of the High Court
<b>Cm, Cmd, Cmnd</b>	Command Papers
<b>ECLR</b>	European Competition Law Review
<b>ECR</b>	European Court Report
<b>EIPR</b>	European Intellectual Property Review
<b>ER</b>	English Report
<b>FSR</b>	Fleet Street Reports
<b>F Supp</b>	Federal Supplement
<b>IP</b>	Industrial Property (WIPO)
<b>IPD</b>	Intellectual Property Decisions
<b>IIC</b>	International Review of Industrial Property and Copyright Law
<b>J Pat Off Soc'y</b>	Journal of the Patent and Trademark Office Society



<b>Okla L Rev</b>	Oklahoma Law Review
<b>RIDA</b>	Revue Internationale du Droit D'Auteur
<b>RPC</b>	Reports of Patent, Design & Trade Mark Cases
<b>SI</b>	Statutory Instrument
<b>UCLA L Rev</b>	UCLA Law Review
<b>U Pitt L Rev</b>	University of Pittsburgh Law Review
<b>USPQ</b>	United States Patents Quarterly
<b>WIPR</b>	World Intellectual Property Reports
<b>WLR</b>	Weakly Law Reports

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