

Chapter 1
**KNOWLEDGE GOVERNANCE: AN ANALYTICAL APPROACH AND
ITS POLICY IMPLICATIONS**

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Introduction

“The field of knowledge is the common property of mankind”

Thomas Jefferson

Why did Schumpeter neglect intellectual property rights? For contemporary Schumpeterians, this question, posed by Mark Blaug in 2005, could be seen as an embarrassing one. How could the “father” of competition by means of innovations manage to miss completely the analysis and discussion of what in today’s scholarship is one of the most – if not *the* most – influential incentive for corporations to innovate continuously? Blaug’s own answer to that question is very direct, sharp and does not embarrass at all. It also calls attention to the central issue discussed in this chapter:

It never occurred to anyone before, say the 1980s, that such disparate phenomena as patents for mechanical inventions, industrial products and processes (now extended to biotechnology, algorithms and even business methods), copyrights for the expression of literacy and artistic expressions in fixed form and trademarks and trade names for distinctive services, *could be generalized under the heading of property rights*, all conferred by the legal system in relation to discrete items of information resulting from some sort of appropriate intellectual activity. (Blaug 2005, 71–72, italics added)

This chapter is an outgrowth of recent papers published by the author (Burlamaqui 2009a, 2009b and 2010).

For the purposes of the argument I will develop in this chapter, there are two crucial elements implicit in Blaug's answer. First, that at the time Schumpeter was writing *Capitalism, Socialism and Democracy*, the balance between private interests and the public domain was completely different from what it has become today. Second, that what became codified, and largely accepted, as intellectual property *rights* was then seen as a set of *rules and regulations* issued by the state, granting temporary monopolies to corporations in very specific cases.

To this, I will add a conjecture on Schumpeter and property rights: it seems that the kind of "monopolistic practices" he praised in his 1942 book were the ones that *resulted from innovations and were short-lived* (not those that resulted from legal contracts issued by governments), were built to *assure their longevity* and were largely written on behalf of oligopolistic corporate interests which were already dominant market players.¹ Summing up, the core argument suggested by the reference to Schumpeter and Blaug is my conviction that in the last three decades, the boundaries of the private (or corporate) interests has been hyperexpanded while the public domain has significantly contracted (cf. Brown-Keyder 2007; Boyle 2008; Rodrik 2011 for similar lines of reasoning).

Recent history seems to back both Blaug's response and my conjuncture. Until the 1970s, United States patents were seen as monopolies (a term with distinctly negative connotations at that time), not rights. In fact, in some areas of economic activity, it would have been possible to say that upholding the validity of IP was the exception rather than the rule (Brown-Keyder 2007, 159). This was reflected in IP law as well as in competition or antitrust law. In copyrights, the term under United States law was 28 years.

The early 1970s witnessed several dramatic changes. In 1974, a trade act allowed the Federal Trade Commission to bring sanctions directly against countries whose products were seen to hurt United States interests. In 1975, copyrights were expanded to over 70

¹ He would probably see those as government-sponsored market failures. I will come back to that point later in Section III.

years from the death of the author, and for corporate owners, to 95 and sometimes even 120 years (Brown-Keyder 2007, 158; Boyle 2008, ch. 1). In 1979, Section 301 of the United States trade law was amended to “allow private parties to take significant and public steps to enforce international trade agreements” (Brown-Keyder 2007, 160). In 1988, the Justice Department rescinded guidelines for antitrust prohibitions on certain kinds of licensing clauses. This removed IP licensing from antitrust scrutiny. Finally, with the enactment of the WTO in 1995, the TRIPs agreement quickly became the linchpin of United States trade strategy. By then, private corporations had vastly expanded their enforcement power and global outreach, while the public domain had significantly contracted.

The aim of this chapter is to propose a framework within which, in the field of knowledge, the dividing line between private interests and the public domain can be redrawn. Its goal is to help establish an approach that should, analytically, produce a better way to understand the interaction among knowledge production, appropriation and diffusion and, from a public policy/public interest point of view,² to open up the space for a set of rules, regulatory redesign and institutional coordination which would favor the commitment to distribute (disseminate) over the right to exclude. We will label it a “knowledge governance” approach.³

² Incidentally, it should contribute, as well, to broadening the Schumpeterian research agenda by directing it into a scarcely explored (in the Schumpeterian domain) territory, that of “law and economics.” But see Langlois (2001) for an interesting starting point in that direction. F. Scherer (1994 and 1996) has dealt consistently with these issues but, we argue, in a much more structure-conduct-performance approach than in a genuinely Schumpeterian one. The neo-Schumpeterian legacy has dealt heavily with competition policies (or how to enforce competition) but has said very little on the relationship among innovation, intellectual property regimes, business cooperation and abuses of economic power.

³ Knowledge governance should be understood as a broad concept embracing different forms of governance mechanisms influencing the production, appropriability and dissemination of knowledge. As a provisional definition, the “knowledge governance approach” is characterized as a distinctive, emerging approach that cuts across the fields of knowledge management, innovation and competition policies and governance redesign. Knowledge governance deals with how the deployment of governance mechanisms influences knowledge processes, such as sharing, retaining and creating knowledge. “As an analytical perspective, it encompasses intellectual property rules and regulations but supersedes it by drawing on those

As referenced in the introduction to this volume, contemporary research on open-source innovation and the shifting boundaries between intellectual property and the public domain by Harvard, Stanford and Duke legal scholars Yochai Benkler, Lawrence Lessig and James Boyle, and on consumer-based innovation by MIT economist Eric von Hippel and his research team, is throwing new light on matters like growth dynamics, innovation patterns, the interaction of competition and regulation and on new ways in which firms and consumers interact. Their new findings and insights point to the necessity of rethinking patent law as well as government incentives for research and open sourcing and, therefore, the way innovation policies are designed.

But when it comes to the way in which this “rethinking” should be done, as well as the subtleties of the interaction among law, economics and the governance of technological development, the available perspectives at hand still fail to give us a comprehensive approach to either the big picture (the “vision and theory,” as Schumpeter would have put it) or on how to craft *inclusive* policy making and institutional building for the way knowledge is governed.

On the dominating neoclassical front, the newest developments on “knowledge and innovation management” still depart from the premise that more protection is the best incentive for the achievement of more innovations and suggest a whole wave of claims about extending monopoly positions and market power (the right to patent generic knowledge, genetic sequences, business models, etc.) to corporations, in order to sharpen up their competitive advantages (cf. Merger, Menell and Lemley 2003; Landes and Posner 2003; Spinello and Bottis 2009).⁴

aforementioned fields and disciplines in order to identify the contours of the new knowledge ecology, and to support alternative governance mechanisms for organizational and business models which are emerging as complements – or alternatives – to the instituted intellectual property regime we now have” (Burlamaqui 2009b).

⁴ How to reconcile these claims for legal protection by the state with the ideology of free and self-regulating markets is a mind-blowing enterprise that, curiously, is never addressed by its market-worshiper proponents.

From a knowledge governance perspective, the critical question that should be asked here is: *When does extended protection cease to work for generating Schumpeterian profits and become a base for rent seeking and rent extraction?*⁵ There is no good theoretical answer to this, but recent data on declining R&D expenditures correlating with the maintenance of handsome profits in big pharma seems to emphasize its relevance (cf. “Supply Running Low,” *Financial Times* 10 February 2011).

As an alternative to the mainstream approach, new insights and evidence are beginning to appear. Besides the already cited studies, a few papers and books are laying the ground for a very different way to understand the complex interactions among knowledge production, appropriation and diffusion. Examples include Jerome Reichmann’s recent papers, the comparative and interdisciplinary research led by Richard Nelson, Akira Goto and Hiro Odagiri on intellectual property and catching-up and the collection of essays by Fred Block and Mathew Keller on the role of the US government in technology development.

Reichmann does so by suggesting new forms of institutional collaboration and underlining that we are in “a time for experimentation, and not a time to copy or codify obsolete approaches that are likely to boomerang against the long-term interests of the very developed countries that are most avidly pushing the harmonization buttons at the international level.” Nelson, Goto and Odagiri do so by pointing to the fact that “The channels of knowledge flow and technology transfer used for the purpose of catch-up are diverse. Accordingly, many policies (in addition to the IPR policy ...) affect the process of catch-up.” Block and Keller do so by showing that governments – not corporations – were always at center stage in major technological endeavors in the United States.⁶

However, notwithstanding the valuable contributions by this emerging body of research, the main analytical question remains largely untouched: How should government-issued

⁵ See Arnold Plant’s point below on that matter.

⁶ Nelson, Goto and Odagiri reinforce the same point for virtually all other development countries.

intellectual property rules and regulations interact with competition policies,⁷ publicly funded R&D and other forms of technology policy in order to help craft and govern socially inclusive development strategies? It appears there is no coherent analytical framework to address that interaction.⁸ But those links are central to any meaningful discussion of dynamic competition, knowledge accumulation and sustainable development in a global context today.⁹

This chapter aims to contribute to answering that question and is structured as follows: Section II lays the ground rules by linking knowledge production and dynamic competition with intellectual property issues from the perspective of the dynamic efficiencies and inefficiencies that are bound to appear. It will become clear that the existence of dynamic inefficiencies opens up a considerable space for knowledge governance. Section III broadens the discussion by interrogating the market-failures approach to guide policy and by introducing a “market features approach” within which markets are conceived first and foremost as *legal entities* where specificities such as contracts and regulatory rules – “features” – constitute the basis for their functioning, and where asymmetric information and uncertainty – “failures” in the neoclassical perspective – are the norm, not the exception. I will argue that “market features” is a more adequate analytical lens for structuring knowledge governance policies from an evolutionary perspective. Section IV further develops the previous framework by linking market features, competition and technology policies with intellectual property. Special attention is given to how competition policies should address intellectual property issues under a market features approach, as well as to the institutional design of public agencies

⁷ A much less catchy label, but one that reveals their real nature much better than “rights.”

⁸ This does not imply a shortage of work discussing specific issues in what is called “the economics of intellectual property rights.” See Menell (1999) for an excellent survey on general theories of IP. A very interesting review acknowledging the under-researched nature of the theme can be found in Dixon and Greenlough (2002). The shortcomings of most of that work are, from my perspective, the result of its concentration on “data,” “measures” and “testing,” with little attention paid to the theoretical framework within which they are conducted.

⁹ From an evolutionary perspective, evolution should not be confused with progress (a very common mistake), but as a process, it should definitively be understood as entailing increasing complexity.

dealing with knowledge production, appropriation and diffusion issues. Section V concludes the chapter by suggesting some broader theoretical and policy implications of that “knowledge governance” approach.

Knowledge Production, Dynamic Inefficiencies and the Role of Knowledge Governance

In the context of Schumpeterian competition, intellectual property rules and regulations (IPRs) – patents, trade secrets, confidentiality contracts, copyrights, trademarks and registered brand names – became powerful, strategic weapons for generating sustained competitive advantages and, especially, Ricardian rents (cf. Plant 1934).¹⁰

From an entrepreneurial perspective, patents and other IPRs are extremely effective means to reduce uncertainties and therefore, *can* contribute to igniting the animal spirits and long-term expectations through building temporary monopolies around products, processes, market niches and, eventually, whole markets (Nelson 1996; Burlamaqui and Proença 2003). However, the word *temporary* is crucial here because of creative destruction; as Schumpeter (1942, 102) stated long ago, “a monopoly position is in general no cushion to sleep on.”¹¹

The Chicago Law and Economics framework claims that in the absence of robust legal protection for an invention, the inventor either will have less incentive to innovate or will try to keep his invention secret, thus reducing, in both cases, the stock of knowledge to society as a whole (Landes and Posner 2003, 294).

¹⁰ Having said that, it is striking how little has been written about the crucial and complex connection between Schumpeterian competition and IPRs. And, of course, we include ourselves in that loophole. In that regard, legal theorists such as Landes and Posner and Benkler are clearly ahead, in the sense that they are already doing the reverse – using Schumpeterian concepts and insights to deal with IPR (cf. Landes and Posner 2003, Benkler 2006).

¹¹ However, a strong IP regime is precisely the kind of “institutional innovation” that can help to build that cushion. Addressing this problem is one of the core issues of the knowledge governance approach.

From a more generally legalistic perspective, patent law itself supposedly internalizes the goal of promoting the diffusion of innovation.¹² It requires, as a condition of granting a patent, that the patent application disclose the steps constituting the invention in sufficient detail to enable readers of the application, if knowledgeable about the relevant technology, to manufacture the patented product themselves. Of course, anyone who wishes to replicate a patented product or process legally will have to negotiate a license with the patentee (Jolly and Philpott 2004, pt. 1; Landes and Posner 2003, 294–295).

Significantly, moreover, any reader of the patent application will be free to “invent around” it, to achieve the technological benefits of the patent by other means without infringing on the patent. Translated to evolutionary economics jargon, the requirement of public disclosure creates a situation of “incomplete appropriability” for the patent holder which relates to Schumpeter’s insight on the temporary nature of monopolies: incomplete appropriability allows for the possibility of technological inventiveness and borrowing from publicized information, both of which foster creative-destruction processes which are the main challengers of established monopolistic positions.

In sum, if carefully used, intellectual property rules *can be* sources of dynamic efficiencies that can help to *ignite* the Schumpeterian positive-sum game represented by falling costs, falling prices, positive margins (achieved through market power) and increased consumer welfare.¹³

Those are the basics, but the picture gets much more complicated as we examine the details. When we dive into them, considerable space opens up for dynamic *inefficiencies* to emerge and, therefore, for the introduction of governance considerations and for the emergence of a knowledge governance approach. Consider the following six points.

First, as Sir Arnold Plant, an almost forgotten analyst in the field, observed in the early 1930s,

¹² Reference here is to American patent law.

¹³ From here on, I will label this “Schumpeterian positive-sum game” as the “Schumpeterian package.”

In the case of physical property, the institution of private property makes for the *preservation of scarce goods*. ... In contrast, property rights in patents and copyrights make possible *the creation of scarcity* of the products appropriated. ... *the beneficiary is made the owner of the entire supply of a product for which there may be no easily obtainable substitute*. (Plant 1974 [1934], 65–67, emphasis added)

In sum, intellectual property regulations can easily give rise to dynamic inefficiencies such as cumulative monopoly power to extract rents from a given consumer base, notwithstanding the fact that they *can* at the same time create the conditions for the expansion of productivity and wealth and the generation of Schumpeterian profits.¹⁴ That in itself leaves ground for knowledge governance-oriented initiatives to enter the scene,¹⁵ as we will see shortly.

Second, the broader – and stronger – the IPRs, generally, the less the patentee’s competitors will be able to benefit from the patent by “inventing around,” or innovating on the shoulders of, the patent (or copyright) holder. Broad IPRs are thus bound to exacerbate the dynamic inefficiencies that Plant and others have observed. Accordingly, especially given the complexity and diversity of patents and other IPRs, a one-size-fits-all prescription seems ill advised. From an analytical point of view, the articulation between competition policies and IPRs is a much needed development,¹⁶ especially if the former’s goal is *innovation diffusion and delivering the Schumpeterian package, not innovators’ protection per se*.

¹⁴ Or, in a more technical way of saying it, the expected (negative) impact on future incentives for competitors to compete (innovate) and future consumer welfare (see Anthony 2000, sect. IV.)

¹⁵ On policy prescriptions, institutional building, institutional coordination and regulatory redesign.

¹⁶ We will use the term “competition policies” rather than “antitrust” here because of the outdated connotation of the latter. We will not discuss “trust busting,” but a much more subtle and complex set of behaviors, institutions and policy tools.

Third, the practice of *strategic patenting*, that is, the proliferating business strategy of applying for patents that the company has no intention of using, or exploiting, solely to prevent others from profiting from the innovation (cf. Varian, Farrel and Shapiro 2004, pt. 2; Landes and Posner 2003, ch. 11). Obviously, this is a major source of dynamic inefficiency. It has the effect of shifting resources from true innovative activity to litigation (or, from labs to courts). It drastically increases the costs of patent prosecution and litigation and, therefore, of innovation. Such strategic patenting constitutes a paradigmatic example of what Baumol has called “unproductive entrepreneurship.” As Baumol notes:

... [a] variety of roles among which the entrepreneur’s efforts can be reallocated ... and some of those roles do not follow the constructive and innovative script conventionally attributed to that person. Indeed, at times the entrepreneur may even lead a parasitical existence that is actually damaging to the economy. (cf. Baumol 1993, ch. 2, 25; see also ch. 4)

Evidently, this task of “reallocation of entrepreneurship” (from unproductive roles to productive ones) is a *knowledge governance* matter, and one that goes far beyond the common notions associated with industrial policy.

Fourth, IPRs have a central role in the “new economy” (or “digitally renewed economy,” as Paul David would label it).¹⁷ In so-called “new-economy industries,” intellectual property, rather than the products and processes in and of themselves, is a firm’s primary output or asset. Overlapping innovations, rapidly falling average total costs, zero marginal costs, strong network externalities and, therefore, fierce “standards battles” and path dependence are the hallmarks of new-economy industries (Shapiro and Varian 1999; Best 2001; De Long 2000; Brynjolfsson and Kahin 2002). These industry-structure characteristics might be seen as generating speeding waves of creative destruction and, thus, potentially more (not less) fiercely competitive challenges to incumbents. Although there is an element of truth in that picture, creative destruction in a world of increasing

¹⁷ Cf. David in Brynjolfsson and Kahin 2002, 85.

returns of scale, fast learning and “winner-take-all” markets does not mean anything close to some idealized form of “perfect competition” or perfectly contestable markets. Rather, it merely brings the replacement of one, or a few, dominant firms by others, such as the replacement of Fairchild by Intel, of Ciba and Geigy by Pfizer and Novartis, of Wang and Compaq by Dell and HP, IBM by Microsoft and Lenovo, and Microsoft by Google and Apple.

In other words, in the new economy, firms’ abilities to combine first-mover advantages with trade secrets, patents, copyrights, brand loyalties and network externalities may afford them secure long-lasting monopolistic positions despite their low rate of (radical) innovations and not because of it.¹⁸ The outcome is, once more, the danger of replacing Schumpeterian profits with rent extraction and Schumpeterian competition with zero-sum game exclusionary practices. From the perspective of delivering the Schumpeterian package, there is an obvious role for knowledge governance here in restoring the balance between private interests and the public domain (cf. Boyle 2008, chs. 8–10). However, the normative policy framework within which it should take place is far from certain. We will revisit it in Section IV.

Fifth, if we think of knowledge production as a cumulative, and increasingly globalized,¹⁹ process in which cutting-edge knowledge and know-how rest on previous innovations, and think of patents and IPRs, in general, as fences erected to protect those previous innovations, it is not difficult to perceive, depending on the institutional design within

¹⁸ See Landes and Posner’s (2003, 395–396) somewhat reluctant recognition of that point. The case of Microsoft itself can be used to illustrate the point. The lack of breakthroughs – technological innovations, or radical quality/price improvements – is notoriously known in Microsoft. It is well known that the “Windows” model was copied from Apple’s user interface – which itself was a secondhand theft from Xerox PARC – as well as the tremendous lack of perception, by the company, of the Internet potential until the success of Netscape became obvious. It is also known that the differences between the versions of Windows and Office that I am using right now, although “new,” display very pale improvements in relation to their 1998 predecessors.

¹⁹ In the sense of its increasingly geographical dispersion, but not denoting any sign of broader inclusion or democratic orientation.

which IPRs are handled, the tension and potential trade-off between private interests and the conception of knowledge as a global public good. This is the so-called argument of the “second-enclosure movement” or “information feudalism,” which is now the subject of intense debate (cf. Drahos and Braithwaite 2002, Boyle 2003 and 2008, Evans 2005, Technology Review 2005). According to Evans (discussing Boyle’s ideas),

There are really two halves to the second-enclosure movement. The defensive side focuses on intensifying the enforcement of protected monopoly rights to exclude others from using information that has been defined as private property. The offensive side of the agenda involves taking information that has been considered part of “nature,” or the common, cultural and informational heritage of humankind, and transforming it into “private property.” If both halves are successful, the “second-enclosure movement” would constitute a *global redistribution of property* comparable to the eradication of the commons that ushered in agrarian capitalism in Western Europe 300 years ago. (Evans 2005, 2; emphasis added)

Once more, we encounter strong forces of *global* dynamic inefficiencies, presenting an opportunity for knowledge governance-oriented policies to step in.

Sixth, to the question “where do knowledge and innovations come from in the developed nations?” a very large part of the answer would include: publicly funded R&D, government contracting to buy things from the private sector that do not exist, and using the WTO to help open up markets for those innovations abroad (Block 2008, Weiss 2008, 2009). In the case of the United States, armed with an annual procurement budget of US\$450 billion – more than 1 trillion if states are included – the United States state plays a crucial role in governing the way knowledge and innovations are produced and commercialized (Ruttan 2006; Weiss 2009).

Furthermore, according to some recent studies, the United States government played a decisive part in the development of virtually all general-purpose technology, from

interchangeable parts and mass production to DARPA and biotech (cf. Ruttan 2006, Weiss 2007, Block 2008, Block and Keller 2011 in this volume).²⁰ Let me rephrase this point: If we conceive R&D as “turning money into knowledge” and innovation as “turning knowledge into money,” why should governments (i.e., public money) heavily subsidize the former and almost completely retreat from participating in the latter? A knowledge governance approach to that broad source of dynamic inefficiency would quickly lead to the following question: Having financed the bulk of the basic R&D that enabled the emergence of champions such as Boeing, General Electric, IBM and a whole host of high-tech giants in hardware, software and biotech, would it not be reasonable for the United States government – or any other government, by the way – to have a stronger role in granting that technological achievements do not remain overly protected and scarcely diffused? The answer would be an obvious and resounding yes.

Last, the institutional structure – or institutional design – within which the knowledge-production appropriation and diffusion apparatus is enforced is central for understanding its performance. We refer here not to the rules, as such, but to their legal enforcement apparatuses, the state structures by which they are supported and the sort of public bureaucracies available to administer the R&D and IP systems. It is well known in the literature on institutions and economic sociology that these are crucial elements in determining the degree of success any regulatory system (such as IPRs) can achieve (Evans 1995; Dobbin 2004, Smelster and Swedberg 2005; Nee and Swedberg 2005 offer excellent discussions on this theme). Jaffe and Lerner’s (2002) thoughtful and provocative work on the recent changes in the United States patent system provides the background for our discussion, which will draw on the relationship between the institutional design of the United States patent system and the problems it creates for the promotion of innovation and “productive entrepreneurship” (see Section IV).

²⁰ DARPA is the Defense Advanced Research Projects Agency, the central research organization of the United States Department of Defense. Its most radical innovation was the Internet (known first as **ARPANET**).

All six issues discussed above illustrate how the interaction between Schumpeterian competition and hyperextended intellectual property rules and regulations can give rise to dynamic inefficiencies that risk the delivery of the “Schumpeterian package” and call for knowledge governance interventions to restore the balance between private interests and the public good (or public interest). Before I turn to suggesting *how* those interventions should take place (in Section IV), let me introduce another pillar into the argument: the relationship between Schumpeterian competition and “market failures.” This will allow me to proffer another concept that will help me in suggesting how knowledge governance should address dynamic inefficiencies: market features.

Competition, Market Failures, and a Market Features Approach

Competition from an evolutionary perspective means mainly *rivalry*. But it also allows room for *cooperation*. In that realm, competition policies are the regulatory devices used to build a competition-enhancing environment and steer firms’ behaviors toward pro-competitive strategies, strategies that include both rivalry and cooperation. As any policy tool, competition policies must be framed against some sort of theoretical background. The most commonly used is the “market failure approach.”²¹ But applying that approach to public policy adds more confusion than clarity to the matter.²² The reason for that is that market failures are defined against the perfect-competition model. Therefore, if

²¹ For a clear exposition of that approach, as well as for a public-choice-oriented critique of it, see Mitchell and Simmons 1994, pt. 1. Both the **Chicago School** and its heir, the public-choice perspective, have pioneered the criticisms to that approach by trying to show that most of what was presented by market failures turned out to be children of government failures. But their root is neoliberal in the sense that they stick to the notion of a self-regulated market and with the perfect-competition model as its “proof.” Ours will be, instead, an evolutionary-institutionalist-based rejection that will leave spacious room for the “role of the state” in forging competition policies. (See Burlamaqui 2000 for a more general discussion of that matter.)

²² The paper by Nelson, Dosi, Cimoli and Stiglitz given at the IPD meeting in Rio (17–18 March 2005) makes the same point but does not pursue, in that work, an alternative theory (Nelson et al. 2005, 2–3).

perfect competition is our metric, all markets are laden with market failures requiring correction.²³

That, in fact, and not surprisingly, happens to be the case: markets do require supervision, regulation and enforcement mechanisms in order to function. That, in fact, is precisely the **Polanyian** approach that, as well as empirical reality,²⁴ points us to the fact that markets are first and foremost legal entities where contracts and regulatory rules constitute the basis for their functioning (cf. Polanyi 2001 and Harcourt 2011) and a locus where asymmetric information and uncertainty are the norm instead of the exception (cf. Shackle 1991). The policy prescription maze that follows from the “market failure approach” begins when the following question is asked: Assuming the failures, according to which blueprint are we to correct them? Again, the standard answer is ... the perfect-competition model. But where can we find empirical evidence to support that model’s relevance for public-policy usage (although there is plenty to reject it)? Or, how can we test this model in order to be assured of its efficiency? (Has anyone ever heard of an actual measurement of a Pareto optimum?)²⁵ It does not get us very far (for a similar rejection of the market-failure approach to inform public policy, see Nelson 2007).²⁶

²³ Obviously, the problem here is that if the model aims to claim even a minimal amount of relevance either as an analytical device or a tool for policy prescription, it cannot sustain *at the same time* that markets are self-correcting *and* that almost all markets are filled with “failures” that demand “intervention” (– read government action or regulation) to become able to self-correct.

²⁴ Let me remind the reader that all market operations are backed by legal contracts enforced by regulatory agencies and subject to legal penalties if violated. Economists rarely pay attention to those “details,” but they are the devices that allow markets to be created and to function.

²⁵ On that, see Georgescu-Roegen’s nearly forgotten, and brilliant, 1935 paper “Note on a Proposition of Pareto” (Georgescu-Roegen 1935).

²⁶ After all, the perfect-competition model should be an ideal in the Weberian sense of the concept: a construct that accentuates certain properties found in reality and exaggerates them for purposes of organizing and making sense of the empirical data. That means that the construct should be abstract but empirically relevant. The problem is that none of the core assumptions supporting the hypothesis of the model – perfect information, product homogeneity, free entry and exit (absence of sunk costs), price-taking behavior (absence of market power), absence of increasing returns and tendency toward equilibrium – is found in reality, thus making the model useless either for positive or normative functions – something that

In place of the market failure approach, and in tune with the knowledge governance oriented perspective, I proffer a *market features approach*. By market features approach I mean an analytical perspective that takes into account markets' institutional diversity and sector specificities – in both their technological and industrial dimensions – as well as their regulatory and legal aspects and degrees of concentration (market power). Market features is a concept whose main advantage is that it does not *fight* the empirical evidence but, rather, accommodates it. It does not utilize a one-size-fits-all approach but relies instead on analytical flexibility. And, for our specific subject, it opens up space for sector-specific innovation and competition policies, as well as for differentiated ways to organize R&D and its relation to intellectual property rules.

The idea of a market features approach is not new. It comes from that undeservedly neglected tradition that unites scholars such as George Shackle and Ludwig Lachmann, a tradition that could very well be labeled “Austrian Keynesianism” (see Lachmann 1986 and Vaughn 1994 on that matter). The specific idea of a market's taxonomy comes from Lachmann's last book in his discussion of markets as economic processes embedded in institutions. As Vaughn explains it, Lachmann argues that

Instead of examining the world through the lens of the “market” we need to develop ideal types *of particular kinds of markets*: assets markets versus production markets, fix-price versus flex-price markets, markets dominated by merchants versus markets dominated by salesmen. Such distinctions will make a difference as to how markets adjust to change (Lachmann 1986, 128, in Vaughn 1994, 159; emphasis added).

This was a brilliant insight, but it was left more or less as it was first submitted. For our concerns, it offers a very promising alternative point of departure both for positive and normative purposes. To be more concrete, let us very briefly contrast the market features in the soft drink industry with the “apps” industry for electronic devices (like tablets,

Frank Hahn (1984), for instance, spelled out several times in his works.

smart phones and computers). The first is dominated by two firms (Coca-Cola and Pepsi), and competition is over market share, using advertising, product differentiation and price discounts. The second is extremely fragmented, changes occur by the day, entry is very easy and technological capabilities play a major role in shaping competition. Both are examples of competition by means of innovation, but the role of technology, regulatory rules and the nature of contracts are completely different. Why should those two industries be subjected to the same intellectual property regime?

Recently, Cimoli and Primi (2007) advanced this insight by developing a taxonomy for mapping markets for knowledge, which presents a taxonomy of contemporary markets for knowledge according to four main categories: (1) rationale of the market, (2) prevailing patenting behavior, (3) main patent use and (4) barriers to entry. Those markets encompass what in the literature has been identified as market for technologies, plus two additional categories of markets: the market for science and secondary markets for science and technology (see Primi in this volume).

This new approach allows for a much more realistic, although possibly less elegant, assessment of differentiated market dynamics and how they are likely to adjust (or give rise) to change. That perspective still has to be properly developed, but it will help economic theory to become more relevant and useful from the point of view of understanding empirical reality and crafting policy. It is also in line, for instance, with the “sociology of markets” perspective (Fligstein 2001, Dobbin 2004, Nee and Swedberg 2005) as well as recent findings by Carlton and Gertner (2002, 30), in which they state that “Only detailed study of the industry of concern has the possibility of uncovering reliable relationships between innovation and industry behavior.” There is clearly a very promising theoretical road to be traveled here. From a knowledge governance perspective, the market features approach should constitute a building block to crafting public policy. As the reader will find out immediately, I will be using that concept as a building block for suggesting how to structure knowledge governance interventions.

Knowledge Governance: Bringing the Public Domain Back In

The market features approach has as its policy counterpart a *market-shaping policy perspective that is the linchpin for the governance of knowledge*. Its core principle is that it is possible, through institution building, legal change and policy guidance to redesign markets as well as regulatory mechanisms and proceedings in order to pursue the major public policy goal of delivering the Schumpeterian package. Within that approach, the general rule should be the promotion of innovation plus the assurance of its widest diffusion, and this implies, simultaneously, promoting and regulating entrepreneurial success. Promoting *and* regulating is a crucial link here. Together, they address both the private (profit seeking) and the public (innovation diffusion and technological upgrading) sides of competition policies and their respective institutional designs.

This policy and institutional design package was, in fact, the core of the Asian state-centered developmental strategy. Nowadays, it remains alive and well in East Asia and especially in Singapore and China. In Singapore, it is evident in the country's twin, government sponsored, initiatives, on "biomedical sciences" and on "work restructuring," where market shaping and institutional coordination are core elements (Pereira 2008). In China, it is clearly present in the 12th five-year plan for 2011 to 2015, finalized last April. The plan highlights the importance of the "magic seven" industries: (1) energy saving and environmental protection, (2) next-generation information technology, (3) biotechnology, (4) high-end manufacturing, (5) new energy, (6) new materials and (7) clean-energy vehicles. The plan's objective is to "shape" them in order to raise their share from 3 percent to 15 percent of the economy by 2020.

None of those countries phrase their government-sponsored initiatives as knowledge governance, but it is quite clear that this is what they really are: going much beyond "industrial policy" or "intellectual property," they reach the key interactions between knowledge and markets ... and shape them from a public policy/public interest perspective.

From a normative perspective, knowledge governance policies should take the market features approach as their point of departure and use market-shaping devices in order to design policies to manage creative destruction processes. These policies would seek to shape markets in order to reduce dynamic inefficiencies and increase dynamic efficiencies coming from Schumpeterian competition, a form of competition that, now, overuses intellectual property rules as one of its core weapons. From the perspective of firms, knowledge governance policies should not be about preventing “market power” but about curbing its excesses: “unproductive entrepreneurship” and “rent extraction.”

Within a knowledge governance framework, the main policy concerns should be to mitigate structural inefficiencies and to increase access. Plant argued that patents can make the beneficiary “the owner of the entire supply of a product for which there may be no easily obtainable substitute,” a troubling claim. A clever, but not radical, innovation (for instance, market-niche dominance by Post It® notes from 3M) should not raise major concerns among policy makers dealing with competition issues. But what if a proprietary general-purpose technology corners the market (for instance, a new genetic engineering research tool or a particular DNA sequence)? Then Plant’s point would hold completely, and the granting of a patent would create a substantial monopoly for the owner – and potentially prevent others from exploiting it – thus slowing the diffusion of a new innovation.

More concretely, knowledge governance policies should shape markets and drive firms toward establishing research coordination and patent pools, pushing common standards, preserving multiple sources of experimentation, establishing differentiated patent and copyrights terms and severely punishing both “unproductive patenting” behavior and attempts by firms to seize markets through creating their own proprietary closed systems (see Carlton and Gertner 2002 for a similar line of reasoning).

Those examples highlight the importance of the market-shaping approach. In cases like those involving general-purpose technologies, IP rules and regulations should be much more rigorously examined and carefully constructed. A possible “tool” for dealing with

that would be for the government to claim a *golden share* in the IPR system (especially patents and copyrights), by which it would be able to convert a property right previously granted into a general public license,²⁷ should the owner refuse, after establishing his first-mover advantage,²⁸ to behave cooperatively and to license broadly and fairly.

In sum, radical innovations – and, especially, general-purpose technologies – should be subjected to a special IPR regime in which the government’s golden share should be able, if needed, to “shape” the market toward a more competitive institutional design (away from too secure – or broad – monopolies).²⁹ A legitimate, and fair, reason to do so is that, as already mentioned above, according to some recent studies, the US government played a decisive part in the development of virtually all general-purpose technology, from interchangeable parts and mass production to DARPA and biotech (cf. Ruttan 2006; Weiss 2007; Block 2008). Having financed the bulk of the basic R&D that enabled the emergence of champions such as Boeing, General Electric, IBM and a whole host of high-tech giants in hardware, software and biotech, it would not be unreasonable for the US government – or any other government, by the way – to have a stronger role in granting that technological achievements do not remain overly protected and scarcely diffused (cf. Fong 2001).

²⁷ That is, a *legally enforced* temporary monopoly.

²⁸ Meaning the ability to recover his costs, establish a robust competitive advantage and enjoy a sizable profit stream, but not the ability to exclude others from using and inventing around his innovation or protecting its diffusion. Taking as an example the Microsoft case, the battle should not be about “breaking” the company. The golden share would allow the government to force Microsoft to publish its source code. An open code would quickly get cleaned up and improved, consumers would benefit and new entrants would probably arise helping ignite the innovation race and dislodging Microsoft from its monopoly position while preserving the company’s market power and ability to innovate.

²⁹ As a clever reader, you should, at this point, be asking “How can an innovation – or innovation cluster – be defined as radical before it ‘matures’ though a process that evidently takes time?” The answer is simple: it cannot. The proposal here is for public sources of funding and regulatory bodies, through the golden share or via special provisions similar to those behind the rationale for issuing compulsory licenses, to retain the *option* to classify an innovation cluster as a strategic general-purpose technology for potentially delivering “massive wealth creation.” As such, those technologies would be treated similarly to weapons of mass destruction, but for inverse reasons. And that placement would happen ex-post, not ex-ante.

In fact, this is already on the EU Competition Commission’s radar. Its former chief, Neelie Kroes, has recently argued in a speech that

[I]ndustry standards for technology could be based on either proprietary or non-proprietary technologies, but when a market developed so that a proprietary technology became a *de facto* standard and the owner of that technology exploited that market power, *competition authorities might have to intervene*. One remedy would be to require disclosing of information at ‘fair rates’ so that other companies could design compatible products and systems.” (Financial Times 11 June 2008; emphasis added)

Given both the complexity and diversity of knowledge-production regimes, and R&D funding, a one-size-fits-all prescription for knowledge appropriation (IPR rules) is certainly not the best way to handle the matter. The 20-year length of a patent (or the terms of copyrights and registrations) is not a “scientifically established outcome” (Landes and Posner 2003). It is, rather, a convention – that is, a (lobbying-based) institutional–legal construct that, as such, can very well be questioned and changed.³⁰ Conversely, as Jaffe and Lerner (2003) adduce (very much in line with the market features approach), “In the world of theoretical patent analysis, it is easy to show that the attributes of patent protection should vary depending on the characteristics of the technology.”

But Jaffe and Lerner (2003–2005) then expose several reasons why this differential-treatment approach would not work in practical terms. The difficulties of dealing with

³⁰ As a matter of fact, a century ago, copyrights lasted for 14 years – and could be extended another 14 if the copyright holder petitioned for an extension. Today, corporate copyrights last for 95 years, and individuals retain copyrights for 70 years after their deaths. There was nothing “scientific” to back these changes but rather the powerful lobby of the entertainment industry. As for patents, mind the reader that both in Switzerland (between 1850 and 1907) and in the Netherlands (between 1868 and 1912), industrialization occurred without enforcement of patent laws (cf. Schiff 1971).

technologies – classifying and quantifying their impact empirically – plus the political lobbying by firms to get special treatment are the main arguments submitted by the authors. We are in partial agreement with them as to having pure technological considerations serving as the basis for policy, as well as to the rent-seeking dangers surrounding any sort of differential treatment. But note, again, that if we look to the development histories of Japan, South Korea, Singapore, China, Ireland or the United States, differential treatment lay at the core of both their technological and industrial policies. That is, it *can* work, *has* worked and *still works* (cf. Chang 2002, Reinert 2007, and Austin 2009).

To be less abstract on the matter, let us propose this broad guideline for knowledge governance policies: the length and breadth of patent protection, as well as innovations protected by copyrights, such as software, should be directly linked to the expenditures in R&D, made by applicants in the development of a technology and inversely correlated with their market power.³¹ Thus, big research budgets (in terms relative to the firm's size) would, in principle, qualify better than “historical accidents” to earn legitimate protection. Conversely, “global players” would enjoy less legal protection than “garage outfits,” given that the same legal contract would grant cumulative and increasing returns in the former case – reinforcing dominance – and, often, the ability to serve debt in the latter. Instead of one size fitting all, we would have something like – paraphrasing Rodrik – “many recipes under the same rule.”³²

³¹ R&D expenses as a percentage of the applicant's sales or assets could become a metric. That would require a close monitoring of R&D evolution within firms. Assuming that those R&D-intensive industries are also the ones bearing more fixed and sunk costs, plus near-future planned expenses tied to the “birth” of an innovation or technology, should be in the contract granting the rights and their actual production of the enabling mechanism to conclude the exam. Otherwise, patent pending would be a sort of “reasonable doubt” proviso.

³² A very difficult emerging theme here is the protection to be given to traditional knowledge: DOC (Denominazione de Origine Controllata certifications that grant monopolies based on regional know-how and capabilities, like champagne versus sparkling wines) issues and related others. We acknowledge its importance but do not deal with that in this paper.

As for the source of dynamic inefficiencies referred to above as *strategic patenting*, it should be dealt with in the same way **Ricardo** suggested landlords should be addressed:³³ earned but unused patents should be classified like fertile but uncultivated pieces of land in an environment structurally constrained by scarcity. They should be taxed, and progressively so. After an initial “launching period,” each year of idleness in the commercialization of the patent should give rise to a severe fine, the exact amount of which should be figured out by specialists in the field but could very well be an increasing percentage of the patentee’s sales or assets. Sounds rigorous? Yes, it is, but patents and IPRs, in general, are legally conceded monopolies and matters of public interest.³⁴ They are too important to be left to markets and lawyers to craft.³⁵ Additionally, the kind of approach to the governance of knowledge we are suggesting should have as its core principle the discouragement of the sort of unproductive entrepreneurship that **Baumol** has been talking about for more than a decade, a type of legal entrepreneurship that turns law firms into very big and profitable corporations but with zero impact on the economy’s real productivity. It would, in sum, help to trigger the “relocation of entrepreneurship” – from courts back to labs – as claimed by **Baumol**.

³³ The parallel here would be between the example given by David Ricardo of the unique fertility of a piece of privately owned land, which would generate increasing revenues to its owner, regardless of efforts to improve the land’s productivity, and the stream of revenue generated from a patent regardless of whether its owner keeps innovating.

³⁴ In that sense, they are very similar to the financial industry, and especially to the banking sector.

³⁵ Google offers a striking example on that matter: it has just bid US\$900 million for the patent portfolio of [Nortel Networks](#), the Canadian telecom equipment maker, as part of a strategy to defend itself against patent litigation. The amount of money involved signals how fierce the patent wars have become, particularly in Silicon Valley, where even the largest and most powerful companies, like Google, are besieged by dozens of patent infringement suits. It also underscores Google’s frustration with the state of the patent-reform legislation in Congress.

Though Google could potentially use some of the technology in the Nortel patents in future research, the company said it wanted to buy them to defend itself against patent litigation. By building a large portfolio of patents, Google keeps them out of competitors’ hands. It also hopes to dissuade other companies from suing it, either because Google holds similar patents to the ones they might sue over or as deterrence – if you sue me, I will sue you (*NYT* 5 April 2011).

Another key point outlined in Section II above relates to the relationship between the “digitally renewed economy” and intellectual property issues, and particularly to the risk of winner-take-all market outcomes or, from the point of view of firms, to locking out competitors via the combination of increasing returns, network externalities, path dependency and stronger IPRs protection (cf. Varian et al. 2004; Carlton and Gertner 2002). Knowledge governance policies here should pursue, very aggressively if needed, public enforcement of standards development, cooperative standards setting, stimulus of (instead of restriction on) joint research ventures and other forms of research coordination and venture capital financing to multiple sources of experimentation (Bartzokas and Mani 2004; Block and Keller 2011 in this volume). The aim should be a “less kind, less gentle patent system,” as Jaffe and Lerner (2002) put it, in which patents are much harder to acquire and easier to share.

Also of concern is the recent wave of IPR expansion and its connection to a potential “information feudalism” or “second enclosure movement.” This movement is seen by the so-called “progressive IP lawyers,” software programmers and a sizable number of social and natural scientists of various extractions as a recipe for global monopoly, one that is likely to stifle innovation at the same time as it concentrates wealth (see Moglen 2003, Benkler 2003 and Evans 2005). A number of commentators have called for an alternative to this second enclosure, an alternative they term “the new commons.”³⁶ As Evans (2005, 3) has aptly put it, this alternative is “attractive both because of its distributional implications and because of its potential for raising the rate of innovation and value creation”. From a knowledge governance perspective, the basis of the new commons comes from a redefinition of “ownership”: from the focus on the right to exclude to the focus on the commitment to distribute (disseminate).

³⁶ A “commons” is a piece of land over which people can exercise certain traditional rights in common, such as allowing their livestock to graze upon it. Older texts use the word “common” to denote any such right, but more modern usage is to refer to particular rights of common and to reserve the name “common” for the land over which the rights are exercised. By extension, the term “commons” has come to be applied to other resources that a community has rights or access to.

The key idea here is that once property rights are redefined along the lines pioneered by the open-source software movement, a much more egalitarian redistribution of intangible assets and a more powerful rationale to foster innovations will be able to emerge. This rationale is one that unfolds from the characteristics of the networked information economy – an economy of information, knowledge and culture that flows over a ubiquitous, decentralized network.

In that environment, as Benkler remarks, productivity and growth can be sustained in a pattern that differs fundamentally from the industrial information economy of the twentieth century in two crucial characteristics. First, nonmarket production can play a much more important role than it could in the physical economy. Individuals working alongside firms can make a real difference in the creation of innovative solutions and productivity gains (Benkler 2003, 1 and 2006).³⁷ Second, radically decentralized production and distribution, whether market based or not, can similarly play a much more important role by increasing the diversity of ways of organizing production and consumption and, therefore, by increasing the sources and possibilities for multiple forms of experimentation.

This is clearly a global issue and – because of its global scope, and also because of the under theorized relationship between innovation, competition policies and intellectual property rights – a very difficult one to handle. It will certainly require the active involvement of governments in encouraging and assisting the development of open-source systems to move society toward more general-public-licenses-oriented IPR regimes. It will also require international cooperation – both very turbulent matters from a power politics perspective. Nevertheless, the recent decisions by IBM and Nokia, for example, to put part of their patents into the public domain suggests that there is perhaps more room to maneuver than the skeptical analyst might expect.

³⁷ And, he adds, one can clearly observe this behavior by noticing that most of what we do on the Internet runs on software produced by tens of thousands of volunteers, working together in a way that is fundamentally more closely related to a community than to a hierarchical big corporation standing alone.

Finally, the crucial role of the institutional structure – or institutional design – within which the IPRs are enforced must be examined. This brings us to Jaffe and Lerner’s (2002) discussion of the recent institutional design changes in the US patent system and its deleterious effects on innovation.³⁸ Their story unfolds around two fundamental changes in the legal–institutional foundations of the system. The first, in 1982, was a change in the process by which patent cases were handled. From then on, instead of the 12 regional courts of appeal, one single, specialized appeals court began to process all appeals in patent cases: the Court of Appeals for the Federal Circuit (CAFC). Consolidating patent appeals in one court had the salutary effect of injecting homogeneity into a fragmented system.

However, because the CAFC’s formative years coincided with the “Japanese challenge,” “America’s lost competitiveness” and the Reagan administration’s extreme pro-business policies, the new homogeneity took the form of interpreting patent law “to make it easier to get, easier to enforce patents against others, easier to get large financial awards from such enforcement, and harder for those accused of infringing patents to challenge the patents’ validity” (Jaffe and Lerner 2002, Weiss 2008).

The second change dates from the early 1990s, when Congress modified the Patent and Trademark Office’s (PTO) financial basis, turning it into a profit center, a service agency whose costs of operation should be covered by the fees paid by patent applicants – or by its clients (ibid.). According to Jaffe and Lerner, these two changes transformed a regime that had been committed to fostering and protecting innovation, into a lawyers’ paradise. The patent system then became a very powerful generator of unproductive entrepreneurship and, hence, a severely dysfunctional institution. In order to be “efficient,” the PTO started to examine – and grant – as many patents as it could, regardless of the quality and reliability of the examination process. Between 1983 and

³⁸ Why do we want to illustrate that point with the US system? Simply because it is the most powerful patent system in the world, and also the most likely to be mimicked by “emergent economies.”

2006, the patents granted increased from about 62,000 to 196,000 per year. The number of patent applications also ballooned to 452,633 in 2006 (from 112,040 in 1983).³⁹

In analytical terms, what happened was the replacement of a qualified bureaucracy committed to public service with a business-oriented “new public management” cadre that was given the task of regulating a crucially important part of the knowledge creation system of the new economy.⁴⁰ The results were dismal in that they incentivized strategic patenting and patent litigation (which consumes literally billions of dollars) without any clear impact in terms of innovation inducement or on the rate of innovation (see Noll 2004 on this issue). In sum, the economic benefits of stronger patent protection and increased room for strategic patenting have failed to materialize – except in the big patent portfolio holders’ licensing revenues and on the dedicated law firms’ balance sheets. On the sort of detailed institutional redesign that ought to be done in order to improve patent quality in the United States, I direct the reader to the excellent discussion by Jaffe and Lerner (2002).

Patents and intellectual property in general are too important to be left to lawyers, juries and a single PTO. They should be institutionally restructured, in the form of a cross-cutting knowledge governance agency in charge of coordinating publicly funded R&D with innovation policies, competition policies and IPRs.⁴¹ A rekindled competition authority should become the “pilot agency” for that type of institutional coordination, and

³⁹ Cf. http://www.uspto.gov/go/taf/us_stat.htm.

⁴⁰ As Drechsler (cf. 2005, 1) aptly sums it up, NPM is the transfer of business and market principles and management techniques from the private into the public sector, symbiotic with and based on a neoliberal understanding of state and economy. The goal, therefore, is a slim, reduced, minimal state in which any public activity is decreased and, if at all, exercised according to business principles of efficiency. NPM is based on the understanding that all human behavior is motivated by self-interest and, specifically, profit maximization.

⁴¹ Note that in the field of technology procurement, the network of US agencies already includes, today, the Department of Defense, the CIA, NASA, the Department of Energy, the National Institutes of Health and the Department of Agriculture (Weiss 2009). The fact that they are not properly coordinated does not mean that the potential for a crosscutting agency is not there. On the contrary, *the US is already halfway there*.

dedicated judges and courts (but not juries) should be the “last resort” in those matters, not the first.

Additionally, this agency should be structured along “Weberian lines” – a set of offices in which appointed civil servants operate under the principles of merit selection, expertise, hierarchy, the division of labor, exclusive employment, career advancement and legality. This type of rationality – Weber’s key term – would increase speed, scope, predictability and cost-effectiveness (Weber 1922, 124–130; Drechsler 2005).

Conclusion

The knowledge-governance-oriented policy-institutions framework I have proposed should be flexible and pragmatic and should have creative-destruction management and maximum expansion of access to knowledge as its main goals. In its innovation and competition policies dimension, it should *not* be anticonsolidation but antiunproductive entrepreneurship (Baumol 1993 and 2002); proefficiency but not libertarian (in the “Chicago School” sense of letting the market, almost always, take care of its own problems); and, especially, pro-cooperation, leaving room for business networks to thrive and for state-sponsored administrative-guidance initiatives. It should also engineer policies toward the development of multiple sources of experimentation and allow room for industrial and technology policies without jeopardizing its own core theoretical foundations.

In its intellectual property dimension, it should *not* point to a one-size-fits-all institutional design,⁴² and should *not* pursue the maximum protection of monopolistic rents as both the

⁴² It should *not*, therefore, be framed, as Coriat, Cimoli and Primi indicate in a just-released paper, as an American “export”: it is essential to note that recent (dramatic) changes in IP law have been strongly embedded in the specificities of an American patent law that is predicated on a common-law regime wherein the essential criterion for patentability is the “utility” the invention is deemed to have. Utility, a property that refers to products of “useful arts,” basically involves industrial and commercial advances enabled by this invention. Under these conditions, in my opinion, the aforementioned change was, in fact, that suddenly it was enough to relax or change the meaning of the word “utility” for nonpatentable areas to

US PTO and the WTO seem to be doing. It should, rather, search for the minimal common denominator, allowing for institutional and technological diversity and for distinctive developmental strategies (Boyle 2004, 2008; Rodrik 2011). It should take into account the asymmetries in the distance to the “development frontier” among countries and regions, echoing Joseph Stiglitz’s recent, and wise, remark that “Intellectual property is certainly important, but the appropriate IPR system for an emerging country is different than the IPR system best fitting already developed nations” (Stiglitz 2005).⁴³

From an evolutionary policy perspective, the key issue to deal with is how to separate innovation-rooted profits, which should be rewarded but understood as windfalls (dependent on continuous innovation), from legal monopoly-granted rents, which should be eliminated or, at least, closely monitored and curtailed.

None of these policy prescriptions will be achieved without a huge dose of “strategic state action,” and most of them will require a high degree of international institutional redesign. This is an uneasy task; nonetheless, the expected result, to which this paper intends to **be a small contribution**, would be a theory/policy framework linking, conceptually, market features to innovation and Schumpeterian competition and competition policies to intellectual property rights management, which will allow room for catching-up initiatives and for the (re)construction of development strategies.

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become patentable (Coriat et al. 2005, 4).

⁴³ One of the main reasons for that, although certainly not the only one, is that the big pharmaceutical companies perform obscene price discrimination among nations (cf. Varian et al. 2004, 52) and almost always refuse to engage in poor and emerging countries’ public policies oriented toward health care.

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