PART I

Foundations and Problems

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Introduction

This work examines the potential for international economic law to provide a harmonized approach to securing access to essential interoperability standards and standards-essential intellectual property (SEIP). In particular, it considers whether it would be both optimal and feasible to pursue the negotiation of an international instrument addressing issues arising in connection with access to essential interoperability standards and SEIP, and notably whether an essential facilities doctrine should form the primary basis for such an international initiative. While the essential facilities doctrine is ultimately found not to provide the basis for an optimal and feasible approach, this work nevertheless proposes a way forward, drawing on insights from the law and economics distinction between liability rules and exclusive property rules.

1.1 Interoperability Standards, Network Externalities and Market Dominance

Interoperability standards provide crucial information infrastructure that supports the growth of our increasingly digitized economies. In bygone eras, interoperability standards have provided the indispensable underpinnings for the development of railroads and international shipping, not to mention the keyboard layout of typewriters and keyboards. In more recent times interoperability standards have been equally critical to computing, telecommunications and the Internet. Standards will form the backbone of industries of the future such as mobile payments services and the Internet of Things (IoT). Given the fundamental importance of standards and interoperability, it is important to ensure that society is able to reap the full benefits associated with the creation, implementation and use of interoperability standards.

Many of the interoperability standards that have become essential information infrastructure were not drafted by governments. They have been drafted by groups of private actors, who came together in groupings exhibiting varying degrees of formality. Adequate incentives are needed for private actors to draft new, better standards for the future.

Yet, standardization and market dominance often go hand-in-hand. Information markets, including standardized markets, are often subject to strong network externalities, positive feedback loops and 'tipping' towards a single dominant actor; such markets frequently exhibit 'winner-take-all' or 'winner-take-most' characteristics, and can also be characterized by 'path-dependence', which in some cases might give rise to risks of an entire industry being 'locked in' to an inferior technology, owing to the pervasive effects of network externalities over time.

At the same time, the network externalities associated with interoperability standards are maximized when as many people as possible join a network – real or virtual. As such, incentives are also needed to ensure that the promoters of standards keep the standard sufficiently open, so as to obtain the widest possible dissemination and use of the standard. In many cases, optimizing these incentives involves a balancing exercise.

1.2 Balancing the Interests of Creators and Users of Essential Interoperability Standards through Intellectual Property and Competition Law

Traditionally the two most important levers for regulating interoperability standardization have been intellectual property and competition laws. Intellectual property laws provide inventors, creators of works and others a statutory, time-limited monopoly in exchange for the publication of the invention or work. Such a time-limited monopoly is generally manifested in a bundle of exclusive rights; the inventor or author is entitled to exclude others from using the invention or work.

Intellectual property rights are territorial in nature, and vary from jurisdiction to jurisdiction, with some international harmonization. There are many facets to an intellectual property right – the conditions governing its award, the scope of its exclusive rights, exceptions to it, remedies for its infringement and others. These 'facets' are levers which can be tweaked by legislators (and in common law jurisdictions, the courts) to ensure that intellectual property rights secure their underlying purpose, namely to promote innovation and thus maintain the speed of technological advance of society.

Competition laws also seek to promote innovation and growth, but they do so via a different modality – by disciplining the actions of private actors that are harmful to the competitive process. Whilst the paradigmatic competition rules concern coordinated conduct – the prohibition of price-fixing being a prime example – many jurisdictions' competition laws also address unilateral conduct, including refusals to supply goods or services and, in exceptional circumstances, refusals to licence intellectual property rights. Where harmonization of intellectual property law is partial and incomplete, international harmonization of competition law is largely absent.

Unsurprisingly, then, various jurisdictions are taking widely divergent approaches to addressing the concerns associated with access to interoperability standards and SEIP. What precisely are those concerns? First, where a de facto standard is the creation of a single, dominant firm, that firm may in some instances possess the power to control access to the standard. The European Commission's case against Microsoft Corporation (and in some ways the United States case against Microsoft also, as reflected in the remedies ultimately imposed on Microsoft) could be characterized as resulting from such a fact situation.

Microsoft, having effectively created a de facto standard in the form of its Windows operating system software, denied its competitors access to certain communication protocols indispensable to communications between the Windows operating system software and Microsoft's Active Directory server operating system software, as well as to certain 'server–server' communications protocols. For denying its competitors access to interoperability standards which were considered indispensable to competition in the market for supplying workgroup server operating systems software, Microsoft was accused by the European Commission of abusing its dominant market position pursuant to Article 82 of the Treaty of Rome (now Article 102 of the Treaty on the Functioning of the European Union). Such conduct could be characterized as the denial of access to an essential facility (namely to the relevant communications protocols).

Microsoft had succeeded in creating a de facto interoperability standard – its near-ubiquitous Windows personal computer operating system software – despite keeping certain of its interfaces secret. Moreover, Microsoft's competitors were unable to obtain details of those interfaces through reverse engineering, because of the cost and time of undertaking such a reverse-engineering exercise; in the meantime, Microsoft could easily defeat reverse-engineering attempts by updating the interfaces.[1]

[1] *Microsoft (Case COMP/C-3/37/792 – Microsoft)* (European Commission) [683–7]; *Microsoft* v. *Commission of the European Communities (Case T-201/04)* [2007] 2007 ECR II-03601 (European Court of First Instance) II–3708.

Thus, the core of the EU Microsoft case was the question of access to interoperability information. The question of intellectual property was, in a sense, incidental: Microsoft raised intellectual property as an objective justification for its refusal to provide the interoperability information to its competitors, rather than asserting its intellectual property rights in claims before the courts.

The nature of standards-essential intellectual property, in this instance standards-essential copyrights, played a larger role in the US case of *BellSouth* v. *Donnelley*, in which BellSouth Advertising and Publishing Corporation (BAPCO), a wholly-owned subsidiary of Florida's incumbent telecommunications network operator, refused to supply copyrighted telephone listings to Donnelley, who wished to create a competing directory.

Unlike in the EU Microsoft case, however, the information in question was already in the public domain, so Donnelley was able to copy it and create a rival telephone directory. BellSouth sued for copyright infringement; Donnelley counterclaimed for refusal to supply the listings, citing the essential facilities doctrine. The United States District Court for the Southern District of Florida upheld BellSouth's copyright claim and did not summarily dismiss the essential facilities counterclaim;[2] the United States Court of Appeals, Eleventh Circuit, hearing the matter on appeal, resolved the matter not through application of the essential facilities doctrine, but rather by careful application of the limiting doctrines in copyright law, notably the distinction between unprotectable ideas and protectable expressions, the need for copyrighted works to be original (little was original about BellSouth's directory, whose layout was rather commonplace), and merger doctrine.[3]

Quite similarly, in the Magill case in the EU, three broadcasters refused to supply copyrighted television guide listings to Magill, who wished to publish a weekly television guide. Magill (which does not involve any interoperability standard) was more like Donnelley than Microsoft, because the listings were already published and Mr Magill was readily able to copy them; the only impediment was the broadcasters' assertion of copyright. The European courts, including the Court of Justice,

[2] *BellSouth Adv & Pub* v. *Donnelley Inf Pub* [1988] 719 FSupp 1551 (United States District Court for the Southern District of Florida).

[3] *BellSouth Advertising & Pub Corp* v. *Donnelley Information Pub Inc* [1993] 999 F2d 1436 (United States Court of Appeals for the Eleventh Circuit).

intervened to prevent the assertion of copyright, applying the doctrine of abuse of a dominant market position.[4]

Similar facts obtained in the IMS Health case, where IMS Health sought injunction to preclude its competitors from copying the format of its pharmaceutical sales data reports. Like in the Donnelley case, these facts gave rise to tension between, on the one hand, the protection of intellectual property, in this case copyright inhering in the structure of a database, and on the other hand, the need for competitors to access a reporting format which had clearly become standard in the marketplace and which was demanded by consumers (IMS Health's competitors tried to develop their own sales data formats, but customers asked for IMS Health's '1860 brick structure' instead). After complicated litigation involving both copyright claims before the German courts and rulings by the European Commission,[5] the Court of First Instance[6] and the Court of Justice[7] on a claim of abuse of a dominant market position, the case eventually settled after the German Higher Regional Court clarified that IMS Health's competitors could use the brick structure without infringing copyright, provided that sufficient modifications were made.[8]

Underlying all these cases is the notion that interoperability standards can become essential to competition in a market. In many cases this essentiality or dominance will be solidified by intellectual property protection, including copyright protection over certain expressions (such as database structures and software code), patent protection of inventions and trade secret protection for certain processes not within the public domain.

An intellectual property right is, in essence, a time-limited legal monopoly to exploit an intellectual property right or alternatively licence the

[4] *Magill TV Guide/ITP, BBC and RTE (89/205/EEC)* [1988] OJ 78 43 (European Commission); *Radio Telefis Eirann* v. *Commission of the European Communities* [1991] European Court of First Instance T-69/89, II–00485 ECR; *Radio Telefis Eirann (RTE) and Independent Television Publications (ITP)* v. *Commission of the European Communities (C-241/91 and C-242/91 P)* [1995] ECR -00743 (European Court of Justice).

[5] *NDC Health/IMS Health: Interim Measures (Case COMP D3/38044)* [2001] OJ 59 (European Commission).

[6] *IMS Health Inc* v. *Commission of the European Communities (Case T-184/01 R)* [2001] ECR II-03193 (European Court of First Instance).

[7] *IMS Health GMBH & Co and NDC Health GMBH & Co (Case C-418–01)* [2004] ECR -05039 (European Court of Justice).

[8] Alison Jones and Brenda Sufrin, *EU Competition Law* (5th ed., Oxford University Press 2014) 532.

right to someone else capable of exploiting it. Intellectual property rights generally confer exclusivity on their owner: the owner is entitled to exclude any other person from engaging in acts such as copying, using, making or importing the invention or work. Yet such exclusivity in a sense runs against the grain of standardization, whose underlying purpose is to enable the widest possible use of protocols, interfaces and information, since expanding implementation of an interoperability standard as broadly as possible maximizes the positive network externalities associated with the standard.

Where a standard has become essential to competition in a market, any undertaking or undertakings able to control access to the standard (including through the assertion of any standards-essential intellectual property rights) may have the means (if not the incentive; this is quite controversial)[9] to exclude competitors from using the standard, thus reserving for itself a monopoly in the market for the standardized commodity. Unsurprisingly, numerous lawyers and economists have contemplated whether concerns surrounding access to interoperability standards warrant regulatory intervention, for example in the form of the imposition of an essential facilities doctrine.[10]

1.3 Interfacing Intellectual Property and Competition in International Economic Law

Leading jurisdictions are developing bodies of jurisprudence to address such concerns. In the United States, the limiting doctrines in intellectual

[9] For the foundational works propounding the single monopoly profit theorem in the economics of industrial organization, see, e.g., Ward S. Bowman, 'Tying Arrangements and the Leverage Problem' (1957) 67 Yale Law Journal 19; Robert H. Bork, *The Antitrust Paradox: A Policy at War with Itself* (The Free Press 1993).

[10] Teague I. Donahey, 'Terminal Railroad Revisited: Using the Essential Facilities Doctrine to Ensure Accessibility to Internet Software Standards' (1997) 25 AIPLA Quarterly Journal 277; Marina Lao, 'Networks, Access and "Essential Facilities": From Terminal Railroad to Microsoft' (2009) 62 Southern Methodist University Law Review 557; Richard N. Langlois, 'Technological Standards, Innovation and Essential Facilities: Toward a Schumpeterian Post-Chicago Approach' in Jerry Ellig (ed.), *Dynamic Competition and Public Policy: Technology, Innovation and Antitrust Issues* (Cambridge University Press 2001); Nicholas Economides, 'The Microsoft Antitrust Case' (2001) 1 Journal of Industry, Competition and Trade 7; Francois Leveque, 'Innovation, Leveraging and Essential Facilities: Interoperability Licensing in the EU Microsoft Case' (2005) 28 World Competition 71; Christian Ahlborn, David S. Evans and A. Jorge Padilla, 'The Logic & Limits of the Exceptional Circumstances Test in Magill and IMS Health' (2004) 28 Fordham International Law Journal 1109.

property law have been the main avenue to address such concerns. The decision of the United States Supreme Court in *eBay* v. *MercExchange* was a notable watershed, opening the way for the lower courts to adopt a more flexible and case-by-case approach to the injunctive remedy as a means of addressing patent hold-up and royalty stacking claims. Nevertheless, these moves remain a work-in-progress. Injunctions still remain the norm in actions brought before the United States International Trade Commission (USITC). The question of how, precisely, a fair, reasonable and non-discriminatory (FRAND) royalty should be calculated remains far from settled, although some early attempts from the lower courts, notably the decision of Judge Robart in *Microsoft* v. *Motorola*, show particular promise. Finally, the decision in *Oracle* v. *Google* raises the spectre of parallel concerns concerning access to standards-essential copyrights.

The European Union provides a more variegated landscape. While European competition laws are enshrined in the EU's constituent treaty and present a high level of harmonization across the bloc, intellectual property laws are harmonized to a much lesser extent; the grant and enforcement of intellectual property rights is left primarily to the Member States. German courts, which tend to grant injunctions for patent infringement as a matter of course, have become the venue of choice for SEP holders. In the *Apple* v. *Motorola* litigation, this dynamic reached its logical conclusion: the courts issued injunction banning the sale of Apple's laptops and cell phones in Germany for infringing Samsung SEPs. At this point, the EU competition regulatory authorities intervened. Since then the EU has developed a more comprehensive regime for regulating access to SEPs, with the unilateral disciplines in competition law as the centrepiece. Chinese courts have also tended to rely on competition laws in the form of the essential facilities doctrine to ensure access to SEPs, but in cases such as the Qualcomm litigation, this has come to represent a doctrine of excessive pricing.

The well-known distinction in law and economics between exclusive property rules and liability rules can be useful in structuring these discussions, as well as identifying points of convergence between leading jurisdictions. Adopting this framework, both the United States approach (where injunctions are unavailable for certain infringements) and the EU/China approach (where competition law disciplines such as the essential facilities doctrine apply) both involve the substitution of an exclusive property rule (either patent injunction or per se legality for refusals to licence) with a liability rule (in the form of either no injunction plus reasonable royalties, or imposition of a compulsory licence for breach of the competition laws).

Although jurisdictions continue to develop domestic approaches, the divergent approaches and interests across jurisdictions raise concerns of a collective action problem. International economic law has to date provided little guidance on these matters. Moreover, in the current climate of rising economic nationalism, developing new disciplines in international economic law would seem unduly ambitious, at least for the moment.

As such, it is important, timely and feasible for an expert-led colloquium to convene to provide guidance in the form of a soft law manual for courts, regulators, standard setting organizations (SSOs) and other relevant parties regarding the proper 'rules of the road' for ensuring access to essential interoperability standards and SEIP. This can be accomplished in a manner which is faithful to the purposes and procedures of intellectual property and competition law, and which moreover is wholly consistent with the present obligations imposed by international economic law, notably international intellectual property law. A draft of such an instrument is provided in Chapter 9.

Harmonization of this hitherto controversial area of law would seem to offer considerable benefits, and merits careful consideration. This is unlikely to be the last word on this already much-debated subject. Standardized technologies continue to move forward at a remarkable pace; future readers of this work may well be familiar with technologies mentioned here as future prospects. Any expert manual will therefore require frequent upgrades.

Preserving the balance which has always been inherent in intellectual property law between the competing rights of creators and users of technological knowledge, between initial and follow-on innovation, between present, upgraded and future standardization initiatives, which at the margins is more of an art than a science, would seem to be the key to addressing these difficult issues on an ongoing basis.

1.4 Methodology

In terms of its methodological approach, this work borrows from the 'topical approach to law' pioneered by German jurist Theodor Viehweg. The topical approach to law, which may be characterized as a 'pre-modern systematization of reasoning (and argumentation)', and one opposed to the deductive reasoning attributed to Réné Descartes,[11] is fundamentally 'the art of problem-thinking';[12] the problem itself is 'previously given and continually guiding'.[13] 'Problem thinking' is to be contrasted with 'system thinking'.[14] Rather than constructing a 'system' in order to solve a given legal problem, we are urged instead to use the problem itself as our starting point, and to collect various topics (or *topoi*) which can then be applied in a more or less unstructured way so as to generate a solution which is apt to resolve the problem in question. Such *topoi* may be described as '*general propositions or concepts* that provide *premises of arguments* used in a certain discourse and are *collectively accepted* by the participants in the discourse as being plausible'.[15] The topical approach to problem-solving is thus described by Esser:

> Topical reasoning can and should afford to justify results not following logically and inevitably from established principles, but to present them intelligibly out of the matter (aus der Sache einsichtig darstellen). While, in dogmatic deduction, the reduction of complexity to logically relevant aspects becomes a technique, things are different here: The situation needs to be assessed in all of its complexity, in order to discuss all problems with a view to achieving an ideal solution (das Lösungsideal 'problematisieren'). Encompassing all the complexities of competing legal interests has to replace the depreciation of problems in deductive logical systems and all formal considerations in order to discover convincing reasons.[16]

Such an approach is not wholly opposed to deductive reasoning; rather, as Stoeckli states: 'problem and system cannot be separated completely from each other, because between them exist "essential entanglements"'.[17] Instead, the topical approach should be viewed as a type of rationality, albeit one better suited to practical problems such as those occurring in

[11] Guenther Kreuzbauer, 'Topics in Contemporary Legal Argumentation: Some Remarks on the Topical Nature of Legal Argumentation in the Continental Law Tradition' (2008) 28 Informal Logic 71, 73.
[12] Theodor Viehweg, *Topics and Law* (Peter Lang 1993) 19.
[13] Ibid. 20.
[14] Ibid.
[15] Kreuzbauer (n. 11) 79. Emphasis in original.
[16] Josef Esser, *Vorverständnis Und Methodenwahl* (Athenäum-Fischer- Taschenbuch-Verlag 1972) 157–8; see Thomas Cottier, *Equitable Principles of Maritime Boundary Delimitation: The Quest for Distributive Justice in International Law* (Cambridge University Press 2015) 606 for translation.
[17] Walter Stoeckli, 'Topic and Argumentation: The Contribution of Viehweg and Perelman in the Field of Methodology as Applied to Law' (1968) 54 Archives for Philosophy of Law and Social Philosophy 581, 586.