Ashish Bharadwaj
Vishwas H. Devaiah
Indranath Gupta *Editors*

Complications and Quandaries in the ICT Sector

Standard Essential Patents and Competition Issues

Springer Open

Complications and Quandaries in the ICT Sector

Ashish Bharadwaj · Vishwas H. Devaiah
Indranath Gupta
Editors

Complications and Quandaries in the ICT Sector

Standard Essential Patents and Competition Issues

Springer Open

Editors
Ashish Bharadwaj
Centre for Intellectual Property and Technology Law, Jindal Initiative on Research in IP and Competition (JIRICO), Centre for Social Innovation and Entrepreneurship, Jindal Global Law School
O.P. Jindal Global University
Sonipat, Haryana
India

Indranath Gupta
Centre for Intellectual Property and Technology Law, Jindal Initiative on Research in IP and Competition (JIRICO), Centre for Postgraduate Legal Studies, Jindal Global Law School
O.P. Jindal Global University
Sonipat, Haryana
India

Vishwas H. Devaiah
Centre for Intellectual Property and Technology Law, Jindal Initiative on Research in IP and Competition (JIRICO), Jindal Global Law School
O.P. Jindal Global University
Sonipat, Haryana
India

Disclosure: *Opinions expressed in the chapters are independent of any research grants received from governmental, intergovernmental and private organisations. The authors' opinions are personal and are based upon their research findings and do not reflect the opinions of their institutional affiliations.*

ISBN 978-981-10-6010-6 ISBN 978-981-10-6011-3 (eBook)
https://doi.org/10.1007/978-981-10-6011-3

Library of Congress Control Number: 2017950014

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer Nature Singapore Pte Ltd.
The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

We dedicate this book to ***Prof. (Dr.) C. Raj Kumar****, Founding Vice Chancellor of O.P. Jindal Global University for his unconditional support and inspiring words of encouragement. Foundations of JIRICO are rooted in his vision and leadership.*

Acknowledgements

We are extremely grateful to all contributors who took time out of their busy schedule and ensured timely completion of this project. This has been made possible because of the extraordinary efforts of Mr. Dipesh Jain and valuable support of Mr. Dipinn Verma and Mr. Rakshit Sharma who spent several hours of their precious time towards this project. It is towards all of them we owe our gratitude. We would also like to thank our family and our colleagues at O.P. Jindal Global University (JGU) for their constant encouragement.

Contents

Editors and Contributors

About the Editors

Dr. Ashish Bharadwaj is Assistant Professor at Jindal Global Law School (JGLS), O.P. Jindal Global University and Co-director of Jindal Initiative on Research in IP & Competition (JIRICO)—a think-tank focused on frontline research on issues at the interface of high-technology, patents and antitrust. He writes extensively on role of technology and innovation in shaping societies, green technology, SEP/FRAND litigation and technical standards. He is an affiliated faculty at Centre for Intellectual Property Research, Maurer School of Law, Indiana University (Bloomington), and a visiting professor at the Institute for Innovation Research, Hitotsubashi University (Tokyo). He holds a Ph.D. from the Max Planck Institute for Innovation and Competition (Munich), European Master in law & economics from Erasmus University Rotterdam and University of Manchester, Master in Economic Sciences from Anna University and BA Honors in Economics from Delhi University.

Dr. Vishwas H. Devaiah is an Associate Professor at JGLS, Executive Director of Centre for Intellectual Property and Technology Law (CIPTEL) and Managing Editor of the journal *Jindal Global Law Review*, published by Springer. Vishwas' primary areas of interest are patent law, health law and biotechnology law. He has published widely and serves as a reviewer for the *Asian Comparative Law Journal*, the *NUJS Law Review* and the *Indian Journal of Medical Ethics*. Vishwas worked as a research consultant for the World Health Organisation (WHO) and the Clinton Health Action Initiative, and also co-founded the Initiative for Medicines Access and Knowledge (I-MAK), New York. Vishwas was recently selected for the Microsoft IP Teaching Fellowship at the University of Washington, Seattle. He has received several research scholarships like the IMLAB scholarship, the Open Society Scholarship and the Asia Commons Grant. Vishwas obtained a Ph.D. from the University of Liverpool, an LLM degree from Warwick University and a Bachelor of Laws (BAL, LLB) degree from University Law College, Bangalore University. His Ph.D. research was on the regulation of human embryonic stem cell research, titled 'Protecting egg donors and patients in human embryonic stem cell research: A critical analysis of the current and proposed regulation in India.' Prior to joining JGLS, Vishwas taught at the National University of Juridical Sciences, Calcutta.

Dr. Indranath Gupta is an Associate Professor and Assistant Director of the Centre for Postgraduate Legal Studies and Assistant Director at the CIPTEL. Dr. Gupta received his LLB degree from the University of Calcutta, India, and holds an LLM with distinction from the University of Aberdeen, UK, and a postgraduate research LLM in Computer Law from the University of East Anglia, UK. He obtained his Ph.D. from Brunel University, London, UK.

Dr. Gupta has been involved in qualitative and quantitative research. He was appointed as the research collaborator by the Università Bocconi, Milan, Italy, for a project funded by the European Commission under the 7th framework programme. He has also been appointed as a research assistant for a project relating to data protection compliance level at Brunel University, London. Dr. Gupta has also worked as an advocate in a solicitors' firm at the Calcutta High Court. He has published in European and Indian law journals and has spoken at international conferences and seminars. His research areas include database right, copyright, data protection, cyber law and interface of IP and Competition Law.

Contributors

D. Scott Bosworth is a Principal Economist at Nathan Associates and has over a decade of experience in providing expert consulting, analysis, and testimony in a diverse range of areas, including intellectual property, commercial damages, labor disputes, and antitrust. His practice focuses on quantifying damages in the form of lost profits, reasonable royalties, unjust enrichment, or other sources of harm stemming from business interruptions, unfair competition, abuse of market power, industry cartelization, meal and rest break violations, wage and hour underpayment, and wrongful death or termination.

Mr. Bosworth has experience in a number of industries, including semiconductors, mobile devices & applications, medical devices, nutritional supplements, food & beverage, construction, household appliances, and numerous other consumer and industrial products. Mr. Bosworth has offered expert opinions in federal and state matters, and has provided both deposition and trial testimony. He holds degrees in Economics from Utah State University, and is a CFA Charterholder and member of the CFA Institute.

Jorge L. Contreras is a Professor of Law at the University of Utah and a Senior Fellow at the Centre for International Governance Innovation. He has previously served on the law faculties of American University and Washington University in St. Louis. Before entering academia, Professor Contreras was a partner at the international law firm Wilmer Cutler Pickering Hale and Dorr LLP, where he practiced transactional and IP law in Boston, London and Washington DC. His research focuses, among other things, on the development of technical standards and the use, dissemination and ownership of data generated by scientific research. His published work has appeared in scientific, legal and policy journals including Science, Georgetown Law Journal, North Carolina Law Review, American University Law Review, Harvard Journal of Law and Technology, Berkeley Technology Law Journal, Antitrust Law Journal and Telecommunications Policy. He is the editor of four books relating to technology law and technical standards, including the Cambridge Handbook of Technical Standardization Law (2017). He has been quoted in the NY Times, Wall Street Journal, Economist, Washington Post, Korea Times, has been a guest on NPR, BBC and various televised broadcasts, and has been cited by the U.S. Federal Trade Commission, European Commission and courts in the U.S. and Europe. He currently serves as Co-Chair of the Interdisciplinary Division of the ABA's Section of Science & Technology

Law, and as a member of the National Institutes of Health (NIH) Council of Councils and the IPR Policy Committee of the American National Standards Institute (ANSI). He has previously served as Co-Chair of the National Conference of Lawyers and Scientists, and as a member of the National Academy of Sciences (NAS) Committee on IP Management in Standard-Setting Processes. He is a graduate of Harvard Law School (JD) and Rice University (BSEE, BA).

Vishwas H. Devaiah is an Associate Professor at JGLS, Executive Director of Centre for Intellectual Property and Technology Law (CIPTEL) and Managing Editor of the journal Jindal Global Law Review, published by Springer. Vishwas' primary areas of interest are patent law, health law and biotechnology law. He has published widely, and serves as a reviewer for the Asian Comparative Law Journal, the NUJS Law Review and the Indian Journal of Medical Ethics. Vishwas worked as a research consultant for the World Health Organisation (WHO) and the Clinton Health Action Initiative, and also co-founded the Initiative for Medicines Access and Knowledge (I-MAK), New York. Vishwas was recently selected for the Microsoft IP Teaching Fellowship at the University of Washington, Seattle. He has received several research scholarships like the IMLAB scholarship, the Open Society Scholarship and the Asia Commons Grant. Vishwas obtained a PhD from the University of Liverpool, an LLM degree from Warwick University, and a Bachelor of Laws (BAL, LLB) degree from University Law College, Bangalore University. His PhD research was on the regulation of human embryonic stem cell research, titled 'Protecting egg donors and patients in human embryonic stem cell research: A critical analysis of the current and proposed regulation in India.' Prior to joining JGLS, Vishwas taught at the National University of Juridical Sciences, Calcutta.

John E. Dubiansky is an Attorney Advisor, Intellectual Property in the Federal Trade Commission's Office of Policy Planning. His work focuses on competition advocacy and policy research at the intersection of intellectual property and competition. John was a contributor to the Commission's 2016 study of Patent Assertion Entity Activity. Prior to joining the Commission, John practiced as a patent attorney at law firms including Kirkland & Ellis LLP and Howrey LLP. John holds a degree in mechanical engineering from Cornell University and received his J.D. from the Harvard Law School.

Gustavo Ghidini is teaching IP and Competition Law at University of Milano and Luiss Guido Carli University of Rome; Director, Observatory of IP, Competition and Communication Law, Luiss Guido Carli University.

Douglas H. Ginsburg is Senior Circuit Judge Douglas Ginsburg was appointed to the United States Court of Appeals for the District of Columbia in 1986; he served as Chief Judge from 2001 to 2008. After receiving his B.S. from Cornell University in 1970, and his J.D. from the University of Chicago Law School in 1973, he clerked on the D.C. Circuit and then for Justice Thurgood Marshall on the United States Supreme Court.

Thereafter, Judge Ginsburg was a professor at the Harvard Law School, the Deputy Assistant and then Assistant Attorney General for the Antitrust Division of the Department of Justice, as well as the Administrator of the Office of Information and Regulatory Affairs in the Office of Management and Budget. Concurrent with his service on the federal bench, Judge Ginsburg has taught at the University of Chicago Law School and the New York University School of Law. Judge Ginsburg is currently a Professor of Law at the Antonin Scalia Law School, George Mason University, and a visiting professor at University College London, Faculty of Laws.

Judge Ginsburg is the Chairman of the International Advisory Board of the Global Antitrust Institute at the Antonin Scalia Law School, George Mason University. He also serves on the Advisory Boards of: Competition Policy International; the Harvard Journal of Law and Public Policy; the Journal of Competition Law and Economics; the Journal of Law, Economics and Policy; the Supreme Court Economic Review; the University of Chicago Law Review; The New York University Journal of Law and Liberty; and, at University College London, both the Center for Law, Economics and Society and the Jevons Institute for Competition Law and Economics.

Roberto Grasso is a counsel with WilmerHale in Brussels. His practice focuses on European and Italian antitrust and competition law, and extends to all aspects of EU law. He has extensive experience assisting international corporations in a wide range of industries, including high tech, oil and gas, manufacturing, transportation, investment banking and financial services. In the area of antitrust and competition law, Mr. Grasso provides counsel on EU and Italian legal issues, particularly on cases that intersect intellectual property and competition law. He has strong experience representing companies in connection with international cartel investigations and parallel proceedings, abuse of dominance, merger control, and EU data protection cases. He assists clients in antitrust litigation proceedings before the European and Italian Courts.

Indranath Gupta is an Associate Professor and Assistant Director of the Centre for Postgraduate Legal Studies & Assistant Director at the CIPTEL. Dr. Gupta received his LLB degree from the University of Calcutta, India, and holds an LLM with distinction from the University of Aberdeen, UK and a postgraduate research LL.M. in Computer Law from the University of East Anglia, UK. He obtained his Ph.D from Brunel University, London, UK.

Dr. Gupta has been involved in qualitative and quantitative research. He was appointed as the research collaborator by the Università Bocconi, Milan, Italy, for a project funded by the European Commission under the 7th framework programme. He has also been appointed as a research assistant for a project relating to data protection compliance level at Brunel University, London. Dr. Gupta has also worked as an advocate in a solicitors' firm at the Calcutta High Court. He has published in European and Indian law journals and has spoken at international conferences and seminars. His research areas include database right, copyright, data protection, cyber law and interface of IP and Competition Law.

Dipesh A. Jain is a research assistant at Jindal Initiative on Research in IP and Competition, O.P. Jindal Global University. Dipesh obtained his LLM degree from O.P. Jindal Global University, India and a Bachelor of Laws (BLS. LLB.) degree from University of Mumbai. His LLM dissertation looked at orphan works (copyright) situation in India. Dipesh is enrolled as an Advocate with the Bar Council of Maharashtra & Goa, India. Dipesh practiced as a junior advocate for a year in the Bombay High Court. He has been actively involved in a number of research projects related to intellectual property, technology, data protection, digital piracy, social media platforms and privacy.

Donald E. Knebel is retired as partner in Barnes & Thornburg LLP, a large United States law firm, on December 31, 2013, after spending more than 39 years as an intellectual property and antitrust litigator and counselor. During that time, he represented some of the largest pharmaceutical and medical device companies in the United States and was involved in cases in 23 states and tried cases to verdict in 10 states. He is a fellow in the American College of Trial Lawyers and has been listed in The Best Lawyers in America since the first edition in 1983. Mr. Knebel is a frequent lecturer on antitrust and intellectual property matters. Since 2011, he has been Adjunct Professor and Senior Advisor to the Center for Intellectual Property Research at the Indiana University Maurer School of Law, where he teaches courses on antitrust and intellectual property law. One course seeks to teach law students the principles and techniques of intellectual property litigation by engaging them in the preparation and trial of a hypothetical patent case. This course, thought to be the first of its kind in the United States, now includes law students from the National Chiao Tung University in Taiwan, where Don is an adjunct professor.

Bruce H. Kobayashi is Associate Dean for Research & Faculty Development and Professor of Law at the Antonin Scalia Law School at George Mason University. His background in economics makes him a vital part of the law and economics focus at the law school. Since coming to Scalia Law in 1992, he has been a frequent contributor to economics and law and economics journals. He previously served as a senior economist with the Federal Trade Commission, a senior research associate with the U.S. Sentencing Commission, and an economist with the U.S. Department of Justice.

Professor Kobayashi was educated at the University of California, Los Angeles, earning his B.S. in Economics and System Science (1981), and his M.A. (1982) and Ph.D. (1986) in Economics. He teaches Litigation and Dispute Resolution Theory, Quantitative Forensics, and Legal and Economic Theory of Intellectual Property.

Anne Layne-Farrar is a Vice President in the Antitrust & Competition Economics Practice of CRA and an Adjunct Professor at Northwestern University School of Law. She earned her BA in Economics from Indiana University and her MA and PhD in Economics from The University of Chicago. She specializes in antitrust and intellectual property matters, especially where the two issues are combined. She advises clients on competition, intellectual property, regulation, and policy issues across a broad range of industries and has worked with some of the

largest information technology, communications, and pharmaceutical companies in the world. Dr. Layne-Farrar has advised clients in a variety of jurisdictions, including the U.S., Europe, and Asia (China, India, and South Korea).

Dr. Layne-Farrar's expert work for industry leading clients has included analyzing patent licensing, including F/RAND; calculating damages; assessing economic incentives and firm behavior within standard setting organizations; defining markets; assessing the competitive implications of pharmaceutical innovation, licensing, and settlement agreements; and determining costs and benefits for legislative proposals covering healthcare, credit and debit cards, labor unions, television ratings, software security, and e-commerce.

Dr. Layne-Farrar has given oral and written expert testimony in a variety of U.S. courts and has provided other submissions, including ones before the U.S. Supreme Court, Chinese courts, and before regulatory bodies including the U.S. Federal Trade Commission, the U.S. Department of Justice, the U.S. Senate, the European Commission, and MOFCOM. Additionally, she has presented at academic and industry conferences around the world and is widely published. She coauthored a book on law and economics, has published articles in magazines including *Antitrust, Global Competition Review, and Regulation* and in academic journals, including *Antitrust Law Journal, International Journal of Industrial Organization, and Journal of Competition Law and Economics*.

Russell W. Mangum III has over 20 years of experience in economic instruction, research and analysis. For the past 20 years he has taught courses in economics, statistics, econometrics and finance at five colleges and universities, currently at the School of Business and Economics at Concordia University Irvine (southern California). Dr. Mangum has served as an economic expert in over 100 cases. His consulting practice focuses on economic analysis and expert testimony regarding intellectual property, competition, class certification, statistical analysis, and damage quantification.

Examples of his work as an expert include estimation of lost profits and reasonable royalty in patent infringement matters (including FRAND royalty rates); analysis of relevant markets and lost profits in antitrust cases; statistical and econometric analysis in labor and commercial disputes, and valuation of intellectual property. Dr. Mangum previously served in Washington, DC at the United States Federal Trade Commission in the Bureau of Economics, Antitrust Division.

Eric C. Matolo is a Principal Economist in Nathan Associates' business and litigation consulting practice. He specializes in the economic analysis of intellectual property and antitrust economics. Dr. Matolo has analyzed and determined licensing rates and terms for a wide range of technologies, including those essential to technical standards and subject to FRAND requirements.

Dr. Matolo has conducted expert analyses in projects involving patent infringement, trademark infringement, copyright infringement, unfair competition, false advertisement, misappropriation of trade secrets, anticompetitive conspiracy, contract disputes, and unlawful monopolization.Dr. Matolo has served as a

consulting expert and as a testifying expert. Dr. Matolo has also taught economics at the University of Southern California. He obtained his Ph.D. in economics from the University of California, at Santa Barbara.

Michael Salinger is the Jacqueline J. and Arthur S. Bahr Professor of Management and Professor of Economics at the Boston University Questrom School of Business, where he has been on the faculty since 1990. From 2005-2007, he was Director of the Bureau of Economics at the Federal Trade Commission. Prior to joining the Boston University faculty, he was an Associate Professor of Business Economics at the Columbia University Graduate School of Business. Professor Salinger's research has covered a wide range of topics in industrial economics including the structural determinants of market power, the competitive effects of vertical integration, the economics of bundling, pricing under uncertainty, and the statistical properties of firm growth. He received a B.A. in economics from Yale University in 1978 and a Ph.D. in Economics from the MIT in 1982.

Giovanni Trabucco is a research and teaching assistant at the Chair of IP and Competition Law of the University of Milan, Department of Jurisprudence.

Koren W. Wong-Ervin is the Director of the Global Antitrust Institute (GAI) and an Adjunct Professor of Law at Antonin Scalia Law School at George Mason University. She is also a Senior Expert and Researcher at the Competition Law Center of China's University of International Business and Economics. Prior to joining the GAI, Professor Wong-Ervin served as Counsel for Intellectual Property and International Antitrust in the Office of International Affairs at the U.S. Federal Trade Commission, where she focused on issues at the intersection of antitrust and intellectual property. She also served as an Attorney Advisor to Federal Trade Commissioner Joshua D. Wright. Prior to working at the Commission, Professor Wong-Ervin spent almost a decade in private practice, focusing on antitrust litigation and government investigations with a particular focus on issues affecting clients in the technology and financial industries.

Professor Wong-Ervin is a frequent author and speaker on issues at the intersection of antitrust and intellectual property. She currently serves on the American Bar Association (ABA) Section of Antitrust Law's International Task Force and Due Process Task Force, and was previously co-chair of the ABA's 2016 Antitrust in Asia Conference. From 2012 to 2015, she served as a vice chair of the Intellectual Property Committee within the Section of Antitrust Law. Prior to that, she served on the editorial boards of Antitrust Law Developments (7th edition), and the 2003 Annual Review of Antitrust Law Developments. Professor Wong-Ervin is also co-editor of Competition Policy International's North America Column. She also serves as co-chair for the Federalist Society's Antitrust and Consumer Protection working group for the Law and Innovation Project.

Professor Wong-Ervin graduated the University of California, Hastings College of Law. She earned her BS degree magna cum laude in Political Science from Santa Clara University.

Joshua D. Wright is the Executive Director of the Global Antitrust Institute and holds a courtesy appointment in the Department of Economics. On January 1, 2013, the U.S. Senate unanimously confirmed Professor Wright as a member of the Federal Trade Commission (FTC), following his nomination by President Obama to that position. He rejoined George Mason's Antonin Scalia Law School as a full-time member of the faculty in Fall 2015.

Professor Wright is a leading scholar in antitrust law, economics, intellectual property, and consumer protection, and has published more than 70 articles and book chapters, co-authored a leading antitrust casebook, and edited several book volumes focusing on these issues. Professor Wright also served as Co-Editor of the Supreme Court Economic Review, a Senior Editor of the Antitrust Law Journal, and an Editor of the International Review of Law and Economics. Professor Wright's teaching and interests include Antitrust, Contracts, Law and Economics, the intersection of Intellectual Property and Antitrust, and Quantitative Methods.

Wright previously served the Commission in the Bureau of Competition as its inaugural Scholar-in-Residence from 2007 to 2008, where he focused on enforcement matters and competition policy. Wright's return to the FTC as a Commissioner marked his fourth stint at the agency, after having served as an intern in both the Bureau of Economics and Bureau of Competition in 1997 and 1998, respectively.

Wright received his J.D. from UCLA in 2002, his Ph.D. in economics from UCLA in 2003, and graduated with honors from the University of California, San Diego in 1998. He is a member of the California Bar.

Introduction

Many countries have formulated policies and re-oriented their economy to foster innovation as it is a major source of economic growth. Intellectual property (IP) rights, patents in particular, are necessary to foster technological innovation in a globalized world. Several transitional and emerging economies have increasingly embraced a stronger IPR regime to facilitate inflow of foreign investment and promotion of trade in goods and services. Open and well-integrated markets not only induce growth in domestic industries, but also enable entrepreneurial ventures to innovate and play a prominent role in nation building. The objective ought to be on promoting innovation in niche technological areas, such as computing, health-care, mobility and mobile connectivity, thereby directly promoting human well-being and economic growth. In this context, legal challenges, economic constraints and technological complexities play a vital role.

Governments in developing economies play vital role in fostering innovation, which is seen as the engine for economic growth. For instance, the current Indian government, under Prime Minister Modi, has rolled out elaborate plans to boost manufacturing in vital sectors. Further, the government is working towards making India's IPR regime friendly towards investors and innovators. Since technological advancement is a proven potent driver of economic growth, the government is trying to incentivize innovation to ensure '*Make in India*', '*Digital India*', '*Startup India*' and '*Invest India*' initiatives are successful in the long run. The emphasis, particularly in R&D-intensive sectors, ought to be on promoting technological innovation and manufacturing, rather than importing finished or semi-finished units, replicating products or creating generics. The National IPR Policy unveiled in May 2016, is one such effort of the government where it proposes the primary use of IP as a financial asset and marketable tool for promotion of innovation to ensure economic growth and socio-cultural development. The policy proposes several strategic actions as well as legislative measures to achieve the given objective.

As a follow-up to the National IPR Policy, it is imperative to understand factors that influence innovation. Further, we ought to discuss the role of IP in driving innovation in order to recognize the diversity of approaches undertaken by

organizations. There is a need to understand why different firms adopt different strategies to protect their investments towards innovation. Answering these questions will bring coherence and effectiveness in policy-making. For instance, with patented technology standards (say for example, WiFi or 3G/4G/5G network in mobile devices) becoming increasingly common, the complexities and contradictions at the interface of IP and Competition Law have emerged strongly in the past few years. One needs to understand that interoperability is key to ensure that technologies owned by multiple players, sometimes competitors, connect with each other in a seamless manner across geographical borders and markets. To ensure interoperability we see a crucial yet complicated role played by Standards Setting Organizations (SSO) and Standards Developing Organizations (SDO). Given the rapid developments in the ICT sector, the role of SSOs and SDOs in setting up standards and the various players involved in implementing those standards in their devices tend to influence practices and internal dynamics of this sector.

Patents often protect technologies that eventually become standards. Those patents that are essential to the functioning of the standard (known as 'Standard Essential Patents' or SEPs) ought to be made available to everyone on **F**air, **R**easonable **A**nd **N**on-**D**iscriminatory (FRAND) licensing terms. Complexities arise when both licensors and licensees of SEP differ on what they mean by "fair", "reasonable" and "non-discriminatory" terms, often resulting in legal battles and/or investigation by competition or antitrust authorities. Regulators, legal practitioners, academicians and the businesses around the world are attempting to resolve such complicated legal issues related to determination and building consensus on FRAND rates as well as what amounts to appropriate royalty base.

This book discusses the role of SSOs/SDOs and various stakeholders involved in implementing the standards. It also addresses topics such as the appropriate royalty base, calculation of FRAND rates and concerns related to FRAND commitments and the role of Federal Trade Commission (FTC) in collaborative standard setting process. This book also unpacks how the regulatory agencies and courts in the United States, European Union and India are dealing with the rising allegations of anti-competitive behaviour by SEP holders.

Jorge Contreras in his chapter on "**National Disparities and Standard Essential Patents: Considerations for India**" discusses the increase in patenting of technologies that are being declared as standards. The chapter elicits the role of SSOs that are enabling patent holding entities to voluntarily declare their technology as a standard so that it is adopted by product manufacturers. The SSOs formulate disclosure and licensing policies. Disclosure policies require patent holders participating in the development process to disclose patents essential in the development of standards and licensing policies require patent holders to grant licenses on FRAND terms. While SSOs formulate these policies, it is observed that issuing licenses on the above terms may not always be smooth and equitable as product manufacturers based in different countries might perceive FRAND in the context of their own economic settings. A FRAND rate that is acceptable in a country may not be equitable in some other country. This has led to several disputes in various countries. It is also observed that SEP holders are largely based in

developed countries while product manufacturers situated in developing countries are barely contributing to the development of the standard process. It is therefore necessary to address this anomaly by encouraging product manufacturers based in developing economies to engage in more research and development. Such activities could also be incentivized by their respective governments, which may lead to technological contribution in standards development process and increased participation in such processes.

While SSO activities are recognized as potential sources of economic efficiency, the nature of the SSO process facilitates and requires communication and agreement among parties that may otherwise compete in the marketplace, thus leading to antitrust agencies and private counsel to require caution in the standard setting process. The industry-wide, international scope of technological agreement in SSO activities is a potential source of market power for IP owners. The risk of such market power has led technology adopters to seek assurances from technology contributing SSO participants that technologies adopted in the standard are made available on FRAND terms. In addition, it has become increasingly common for technology contributors to provide FRAND commitments in conjunction with their SSO participation. **D. Scott Bosworth, Russell W. Mangum III** and **Eric C. Matolo** in their chapter on "**FRAND Commitments and Royalties for Standard Essential Patents**" address some of the conceptual and practical effect of FRAND commitments to SSOs on royalties for SEPs. They discuss some recent decisions by US courts and regulatory agencies clarifying that FRAND commitment can be binding on technology contributors, and that determination of FRAND royalty rates on standard essential technology can be meaningfully different from that applicable to technology unencumbered by FRAND commitments. They contend that determination of FRAND royalty rates likely requires inquiry into the apportionment of inherent technology value from value that resulted from the SSO process and standard itself. Their chapter addresses various methods to evaluate the sources of economic value of SEPs, to apportion inherent technology value from that resulting from a standard, and the implications of such apportionment on the royalties for FRAND encumbered SEPs.

It is widely agreed that FRAND commitments impose certain constraints on the terms and conditions that patent holders may seek from licensees in comparison to licensing patents without a FRAND commitment. But exactly what those constraints might entail has been the subject of heated debate for at least a decade. **Anne Layne-Farrar** and **Michael Salinger** in their chapter on "**The Policy Implications of Licensing Standard Essential FRAND-Committed Patents in Bundles**" discuss the policy implications of licensing of essential and FRAND-committed patents in bundles. The particular constraint discussed in their chapter is whether FRAND prohibits patent portfolio licensing, where both FRAND committed and non-essential, non-FRAND-committed patents are bundled together into a single license. They explain that the answer to that question is "No, FRAND does not create a blanket prohibition against portfolio licensing." Whether such a patent portfolio license honors a FRAND commitment depends on the specific licensing terms and conditions comporting with FRAND.

Assessment of FRAND licensing terms for SEPs has not been an easy task in the ICT sector. There are existing debates encompassing FRAND terms and it is important to have a nuanced understanding of the attributes that cumulatively would add up to FRAND. **Gustavo Ghidini** and **Giovanni Trabucco** in their chapter titled "**Calculating FRAND licensing Fees: A Proposal of Basic Pro-competitive Criteria**" while assessing the FRAND licensing terms for SEPs, discuss the idea of a balanced criteria based on certain guidelines. These guidelines, based on four progressive cumulative steps are "… consistent with the overall evolutionary and pro-competitive juris-political inspiration" as witnessed in the European Union. These possible steps include: identifying licensing fees strictly proportionate to the technology adopted by the willing licensee; fixing royalty rates of the patent based on the value prior to the completion of standard setting; resolving royalty stacking issues at the time of determining the licensing fees and finally adopting dynamic approach to determine FRAND royalty rates.

Antitrust regulators, specifically in Europe, have focused on SEPs in recent years. Be it the investigations in *Samsung* and *Motorola* or the *Huawei v ZTE case*, the European Commission and the Court of Justice in the European Union have laid down the scope of the EU competition law. In the past, SEP holder's right to seek injunctive relief was limited, however, the *Huawei v ZTE case* laid down the specific conditions under which a SEP holder can seek injunctive relief against an unwilling licensee. **Roberto Grasso** in his chapter titled "**Selected Issues in SEP Licensing in Europe: The Antitrust Perspective**", suggests that regardless of the developments in the above instances, it is unclear as to what circumstances would amount to abuse of dominance by an SEP holder, what kind of licensing strategy adopted by the portfolio license holder would be seen as illegal, and whether transfer of a subset of patents to the Patent Assertion Entity (PAE) would amount to a breach of EU competition law. Grasso explores the concept of FRAND as it is defined in the European Commission's Horizontal Guidelines. He analyzes the issues stated above in the context of the EU Competition law.

In the mix of the debates concerning SEPs and antitrust issues, the role of antitrust agencies in creating the right balance for future innovators is of paramount importance. **John Dubiansky** in his chapter on "**Competition, Intellectual Property Rights and Collaboratively Set Standards: Federal Trade Commission Advocacy and Enforcement**", illustrates the important role that FTC has played over the years in relation to competition and consumer protection. There are two overarching themes in this chapter. First, FTC's role in collaborative standard setting and FRAND commitment of SEP holders. Secondly, FTC's advocacy and enforcement to address contentious issues at the intersection of IP and Antitrust Law. Either through reports and guidelines or by presentations or comments, FTC has carried out its objective of competition advocacy. Further, there have been workshops, filing of *amicus curiae* briefs and written comments and presentations submitted to legislatures and agencies. Dubiansky has talked about how FTC has addressed the issue of FRAND commitment of the patent holder and the scope of seeking an injunction by a patent holder citing infringement of patent where the patent holder has already committed to FRAND terms at the

outset. There have been suggestions made by FTC in relation to contentious issues of patent hold-up and policies and procedures followed by SSOs in connection with licensing practices. The chapter also reflects upon the extensive use of Section 5 of the FTC Act in number of antitrust cases, which prevents "unfair methods of competition".

It is usually alleged in the instance of SEP that there is a possibility of hold up once a patent is declared as a standard whereas there is no empirical evidence that points towards the same. **Donald E. Knebel** in his chapter on "**Standard Setting Organizations and Competition Laws: Lessons and Suggestions from the United States**" discusses the possibility of patent holders involved in standard setting processes to engage in what may be alleged as anticompetitive behavior. He discusses this in the context of the US jurisdiction wherein the courts have held conducts of non-disclosure and royalty demands as anticompetitive behavior. The strategy of refusing to license until demands for higher royalties are met is seen as an instance of hold-up. While RAND terms developed by SSOs aim to prevent SEP holder from demanding excessive royalties, it has been ineffective in preventing hold-ups due to the fact that parties to such licensing tend to interpret the terms to their own convenience. Vagueness has resulted in uncertainty and further resulted in increased costs for the users of such standards as they are unsure as to how much it will cost them to adopt the patented technological standards in their products. Knebel explores the possibility of ex ante disclosure of royalty rates and whether it runs afoul of antitrust laws in the US if SSOs mandate such royalty rate disclosures.

The controversies surrounding SEPs and the role of Competition Commission of India (CCI) have taken the centre stage. **Koren Wong-Ervin et al.'s** chapter on "**FRAND in India**" is set in the backdrop of the CCI's investigation orders against Ericsson and the discussion paper issued by the Department of Industrial Policy and Promotion (DIPP) on concerns relating to hold-up, royalty base, royalty rates, injunctive relief for SEPs under FRAND commitment, and application of Non-disclosure agreements (NDAs). As a point of reference, this chapter relies on the jurisprudence and the existing debates in the US and the EU surrounding the treatment of the above concepts. The developments in US and the EU will provide some degree of guidance and clarity to the Indian courts and the CCI about these inherently complex yet important matters. Contrary to the existing practices in US and EU, Wong-Ervin points at the different treatment of NDAs in the CCI investigation orders. The chapter points to a measured approach in the absence of actual evidence showing FRAND licensing practices as anti competitive and against consumer welfare. The perception is otherwise contrary to the views expressed by the authors. Any radical change undertaken by Indian regulators and policy makers may disrupt the balanced FRAND ecosystem.

The Courts in India have suggested that the process followed by the CCI for initiating an investigation of alleged abuse of dominance is merely a departmental inquiry and not adjudicatory in nature. **Indranath Gupta, Vishwas H. Devaiah** and **Dipesh A. Jain** in their chapter on "**CCI's Investigation of Abuse of Dominance: Adjudicatory Traits in Prima Facie Opinion**" which is set in the backdrop of an investigation concerning alleged abuse of dominance in the ICT

sector, observes the process adopted by CCI to initiate an investigation. This chapter illustrates that the practice adopted by CCI is more of adjudicatory in nature as opposed to what has been suggested by the Courts.

The chapters are a true reflection of the existing range of disagreements that persist between the SEP holders and the implementers who rely on those standards. As a result, we have come across a surge in litigation in various jurisdictions. Further, interventions on the part of antitrust authorities are quite common. Given that most of the cases concerning antitrust issues and SEPs are pending in India, the diverse range of ideas expressed in the above chapters would go a long way in providing guidance about many complex issues.

Ashish Bharadwaj
Jindal Global Law School
O.P. Jindal Global University

Vishwas H. Devaiah
Jindal Global Law School
O.P. Jindal Global University

Indranath Gupta
Jindal Global Law School
O.P. Jindal Global University

Chapter 1
National Disparities and Standards Essential Patents: Considerations for India

Jorge L. Contreras

1 Introduction

Today's technology product markets, particularly in the information and communications technology (henceforth "ICT") sector, are inherently international. Products designed in California may be assembled in Taiwan from parts sourced from Korea, Germany and Malaysia for sale to end consumers in India. The global character of technology markets underscores the importance of technical interoperability standards such as those enabling wireless networking (Wi-Fi, Bluetooth), wireless telecommunications (4G LTE), digital media storage (DVD, SDRAM) and digital content encoding (MP3/MP4). These standards enable products and components manufactured by different vendors to work together without customization or firm-to-firm interaction. Stakeholders affected by technology interoperability standards span the globe, from product designers to manufacturers to consumers. This chapter considers the impact of patents on international technical standardization activities. In particular, it assesses the impact that patents have on individual firm behavior and intra-firm dynamics in the context of international standard-setting, and evaluates available options to reduce disparities between large patent holders and firms from less-developed economies.

This chapter has benefitted from presentation and discussion at the Workshop on Mega-Regionalism: New Challenges for Trade and Innovation (MCTI), Honolulu, Hawaii, USA—January 20–21, 2016, and from helpful comments and discussion with Ashish Bharadwaj, Dieter Ernst and Brian Kahin.

J.L. Contreras (✉)
S.J. Quinney College of Law, University of Utah, Salt Lake City, USA
e-mail: jorge.contreras@law.utah.edu

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_1

2 Standards and the International Standard-Setting Landscape

While many health, safety and environmental standards are developed by governmental agencies, the vast majority of interoperability standards originate in the private sector.[1] In the U.S., there is an express governmental preference for privately-developed standards over government-developed standards,[2] and elsewhere this preference has generally been supported by the market. Some widely adopted interoperability standards (e.g., Microsoft's .doc and Adobe's PDF electronic document formats) are single-firm proprietary formats (*de facto* standards). Over the past two decades, however, most successful interoperability standards have been developed by groups of firms that collaborate within voluntary associations known as standards-development organizations or standards-setting organizations (henceforth "SSOs"). The resulting standards are often referred to as "voluntary consensus standards", which will be the principal focus of this chapter.

SSOs vary greatly in size and composition. The European Commission identifies three broad categories of SSO:[3]

(1) those that are formally recognized by governmental bodies. These include:

International groups [e.g., the International Organization for Standardization (ISO) and the International Telecommunications Union (ITU)],
regional groups [e.g., the European Telecommunications Standards Institute (ETSI)], and
national groups [e.g., Germany's Deutsches Institut für Normung (DIN), the Japanese Standards Association (JSA), China's National Institute for Standardization (CNIS) and the Bureau of Indian Standards (BIS)].[4]

(2) "quasi-formal" groups that are typically large international organizations that share many of the characteristics of formally recognized groups [e.g., the IEEE Standards Association, ASTM International and the Internet Engineering Task Force (IETF)], and

[1]Dieter Ernst, *America's Voluntary Standards System – A Best Practice Model for Innovation Policy*?, East-West Center Working Paper No. 128, (2012); Brad Biddle, et al., *The Expanding Role and Importance of Standards in the Information and Communications Technology Industry*, 52 Jurimetrics 177 (2012).

[2]Office of Management and Budget (OMB) Circular A-119 (1998).

[3]European Comm'n – Directorate-General for Enterprise and Indus. (EC). 2014. Patents and Standards: A Modern Framework for IPR-Based Standardization.

[4]The American National Standards Institute (ANSI) presents a somewhat unusual case, in as much as it is a private organization which is recognized in certain capacities by the U.S. government. ANSI oversees, accredits and establishes policy for national SSOs that wish to develop American National Standards. Among other things, ANSI-accredited SSOs must adopt due process and intellectual property policies that comply with ANSI's "Essential Requirements".

Table 1 Selected ICT standards and where they were developed

Standard	Description	SSO	EC class
802.11	Wireless networking	IEEE	2
Bluetooth	Short-range wireless networking	Bluetooth SIG	3
CD	Compact disc (digital media)	n/a[a]	n/a
CDMAone/IS-95	2G wireless telecommunications	Qualcomm/ TIA[b]	n/a 2
DVB	Digital video broadcast (Europe)	DVB Forum	1
DVD	Digital media	n/a[c]	n/a
Ethernet	Device networking	IEEE	2
GPS	Global positioning system	n/a[d]	n/a
GSM	2G wireless telecommunications	ETSI	1
H.264	Audio-video encoding	ITU	1
HDMI	High-definition multimedia interface	HDMI Forum	3
HDTV	High-definition broadcast TV (US)	ATSC	3
HTTP	Hypertext transfer protocol	W3C	2
IP	Internet protocol	IETF	2
LTE	4G wireless telecommunications	ETSI	1
MP3/MP4	Audio and video compression	MPEG (ISO/IEC)	1/2
PDF	Portable document format	n/a[e]	n/a
SDRAM	Semiconductor memory	JEDEC	2
UMTS	3G wireless telecommunications	ETSI/3GPP	1
USB	Device networking	USB Forum	3
V.90	56k modem	ITU	1
VHS	Video cassette media	n/a[f]	n/a
WWW	Worldwide web	W3C	2
XML	Extensible markup language	W3C	2

[a]The CD specification was developed by Philips and Sony
[b]CDMA technology was initially developed by Qualcomm, which then submitted it for adoption to the Telecommunications Industry Association (TIA)
[c]The DVD specification was developed by Philips, Sony, Toshiba and Panasonic
[d]The GPS standard was originally developed by the U.S. Department of Defense
[e]PDF is a proprietary format developed by Adobe
[f]The VHS format was developed by Matsushita/JVC

(3) smaller, privately-organized consortia (also known as special interest groups or fora), including groups such as the Bluetooth SIG, HDMI Forum, USB Forum and hundreds of others.[5]

Table 1 lists a number of widely-adopted ICT standards and the organizations in which they were developed.

[5]Updegrove catalogs more than 1,000 such groups. Andrew Updegrove, "Standard Setting Organizations and Standards List" CONSORTIUM INFO. (2015), http://www.consortiuminfo.org/links/#.VarhPnjDRD0.

3 Firm-Level Participation in Standard-Setting

Firm-level participation in SSOs varies according to the type and nature of the SSO. ISO, probably the most prominent Category 1 SSO, allows participation solely on a national basis, so that each member state has a delegation that represents its interests at the SSO. Criteria for participation in a national delegation are determined at the national level. The U.S. representative to ISO, for example, is ANSI. Other Category 1 SSOs may limit participation to firms and institutions engaged in business in a particular geographic area. For example, the members of the European Committee for Electrotechnical Standardization (CENELEC) comprise the national electrical standardization committees of each European state. Other Category 1 SSOs, such as ETSI, open membership to all interested parties, but offer different membership categories and benefits to those within the region of focus (Europe, in the case of ETSI).

In contrast, Category 2 SSOs are generally open to all interested parties on an equal basis. Participation depends on firms' interest in the relevant area of standardization, as well as its ability to bear personnel, travel and technology costs associated with SSO participation. It is no surprise that large global technology firms participate in upwards of fifty or more different SSOs, with the largest involved in more than one hundred SSOs each.[6] Participation in large, international SSOs in the ICT sector has traditionally been international in character, with representation from firms and institutions based in North America, Europe, Oceania, Japan, Korea and India. Over the last decade, Chinese firms have dramatically increased their participation in international SSOs, in some sectors surpassing participation from all countries other than the U.S.[7] Despite recent gains by China, SSO participation by firms in less-developed countries, particularly in Latin America and Africa, has remained at low levels.

Category 3 SSOs or consortia are usually formed by small groups of firms interested in developing a specific technology or standard. Often these "founder" or "sponsor" firms hold patents relevant to the technology in question.[8] Such founders are often large multinationals with substantial patent portfolios, but may also include smaller, specialized firms focusing on the target technology area.

---

[6]Justus Baron & Daniel F. Spulber. *Technology Standards and Standard Setting Organizations: Introduction to the Searle Center Database* (2015), http://www.law.northwestern.edu/research-faculty/searlecenter/innovationeconomics/documents/Baron_Spulber_Searle%20Center_Database.pdf.

[7]Dieter Ernst, Indigenous Innovation And Globalization: The Challenge For China's Standardization Strategy (2011); Jorge L. Contreras, *Divergent Patterns of Engagement in Internet Standardization: Japan, Korea and China*, 38 Telecomunications Pol'y. 914-932 (2014).

[8]Brad Biddle, et al., *The Expanding Role and Importance of Standards in the Information and Communications Technology Industry*, 52 Jurimetrics 177 (2012).

4 Patents and Standards

4.1 Patenting Standards

Standards are sets of protocols and technical descriptions of product features enabling interoperability. While standards themselves are not patentable, products that are compliant with the technical requirements of standards (often referred to as standards-compliant products) generally satisfy the statutory requirements for patent protection. The owners of patents covering these standardized technologies (referred to as standard-essential patents or "SEPs") are often the firms and institutions that employ individuals who make particular inventive contributions to standards. Some of these contributions may be made jointly and owned by multiple firms, but in most cases firms individually submit technical contributions to the standard-setting process and own the resulting SEPs.

Because standards documents are often quite lengthy and complex, sometimes running to hundreds or thousands of pages, multiple inventive concepts are frequently embodied in the same standard, leading to the possibility of multiple patents covering any given standard. For example, Blind et al. report large numbers of patent families[9] declared to be essential to various standards including WCDMA (1000 patent families), 4G LTE (1000 patent families), MPEG-2 and MPEG-4 (160 patent families), optical disc drive standards (2200 patent families), and DVB-H (30 patent families).

Ordinarily, if the vendor of a product that infringes a patent is unable, or does not wish, to obtain a license on the terms offered by the patent holder, that vendor has three choices: to stop selling the infringing product, to design around the patent, or do neither and risk liability as an infringer. With standards-compliant products, however, designing around the patent may be impossible or economically infeasible. Moreover, once a standard is approved and released by an SSO, market participants may make significant investments in plant, equipment and labor, based on anticipated implementation of the standard in products (a situation often referred to as lock-in).[10] In such cases, the cost of switching from the standardized technology to an alternative technology may be prohibitive, thereby increasing the

[9]A patent "family" consists of all individual patents deriving from a single, initial patent application. These may include individual patents in multiple countries, as well as multiple patents in the same country derived from the same initial application (e.g., continuations, continuations-in-part and divisionals in the U.S.). *See* Knut Blind et al., *Study on the Interplay between Standards and Intellectual Property Rights* (*IPRs*), *Final Report* (2011), http://ec.europa.eu/enterprise/policies/european-standards/files/standards_policy/ipr-workshop/ipr_study_final_report_en.pdf.

[10]Carl Shapiro & Hal R. Varian, Information Rules: A Strategic Guide To The Network Economy (1999).

patent holder's leverage in any ensuing negotiation over licensing rates. This phenomenon has been termed patent "hold-up" and is discussed extensively in the literature.[11]

As noted above, complex technological products may implement dozens, if not hundreds, of standards each of which may be covered by hundreds or thousands of patents. As such, the aggregation of royalty demands by multiple patent holders could lead to cost-prohibitive burdens on implementing standards-compliant products. This situation is sometimes referred to as "royalty stacking".[12]

4.2 SSO Patent Policies

Over the past two decades, SSOs have responded to the increasing number of patents covering standardized technologies and the perceived threats of patent hold-up and stacking by adopting a series of policy measures intended to address these concerns. SSO patent policies today fall into two general categories: disclosure policies and licensing policies, and often include elements of both. Disclosure policies typically require participants in the standards development process to disclose SEPs that they hold. Licensing policies typically require that participants grant manufacturers of standardized products licenses under their SEPs on terms that are "fair, reasonable and nondiscriminatory" (henceforth "FRAND") or royalty-free (henceforth "RF").

These commitments purport to assure manufacturers that they will be able to obtain licenses (which may sometimes involve a payment) to sell standards-compliant products covered by SEPs. Perhaps, in part, because FRAND commitments require relatively little administrative overhead to enact, their use has become widespread among SSOs.[13] Nevertheless, a consistent, practical, and readily enforceable definition of FRAND has proven difficult to achieve. No SSO defines precisely what FRAND means, and many affirmatively disclaim any role in establishing, reviewing, or assessing the reasonableness of FRAND licensing terms. This lack of certainty has contributed to recent litigation over FRAND

[11]Jorge L. Contreras, *Technical Standards, Standards-Setting Organizations and Intellectual Property: A Survey of the Literature (With an Emphasis on Empirical Approaches), in* RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW, VOL. II - ANALYTICAL METHODS (Peter S. Menell & David Schwartz, eds., Edward Elgar: 2017, forthcoming).

[12]Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991-2049 (2007); Jorge L. Contreras, *Patents*, *Technical Standards and Standard-Setting Organizations: A Survey of the Empirical*, *Legal and Economics Literature*, *in* RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW, VOL. II – ANALYTICAL METHODS (Peter S. Menell & David Schwartz, eds., 2017, forthcoming).

[13]FRAND commitments (or similar commitments to license patents on a royalty-free basis) are required of all SDOs accredited by ANSI.

commitments,[14] and leaves most of the details of licensing arrangements to bilateral negotiations among patent holders and potential licensees.

5 Impact of Patents on International Participation in Standard-Setting

5.1 Patenting by SSO Participants

Over the past two decades there has been a sharp increase in patenting within certain technology standardization sectors, particularly wireless telecommunications.[15] In addition, a core group of firms in the telecommunications sector accounts for the large majority of patent filings covering ICT standards. These firms include Qualcomm, InterDigital, LG Electronics, Nokia, Samsung, Ericsson and Motorola.[16] In addition, researchers have observed a rapid increase in patenting activity by Huawei in the area of Internet standardization.[17] These statistics suggest that patenting behavior is not concentrated among firms of any one country, but is distributed at least among firms based in the major developed economies [U.S. (Qualcomm, InterDigital and Motorola), Korea (LG and Samsung), Europe (Nokia and Ericsson), and China (Huawei)].[18]

When considering levels of patent acquisition, it is important to note that a firm's home jurisdiction is relatively immaterial to the jurisdictions in which it seeks and obtains patents. That is, a large firm with a global market is likely to seek patents in all major markets, no matter where it is based. Thus, in 2014, the ten firms to which the greatest number of U.S. patents were awarded were: IBM (US), Samsung (Korea), Canon (Japan), Sony (Japan), Microsoft (US), Toshiba (Japan), Qualcomm (US), Google (US), LG (Korea) and Panasonic (Japan).[19] It is likely that a comparable distribution exists in most other jurisdictions, with at most a modest "head

---

[14]Jorge L. Contreras, *Fixing FRAND: A Pseudo-Pool Approach to Standards-Based Patent Licensing*, 79 Antitrust L.J. 47-97 (2013).

[15]Rudi Bekkers & Joel West, *The limits to IPR Standardization Policies as evidenced by Strategic Patenting in UMTS*, *33* Telecom. Pol. 80-97 (2009).

[16]Blind et al., *supra* note 9; Justus Baron & Tim Pohlmann, *Mapping Standards to Patents using Databases of Declared Standard-Essential Patents and Systems of Technological Classification* (2015), http://www.law.northwestern.edu/research-faculty/searlecenter/innovationeconomics/documents/Baron_Pohlmann_Mapping_Standards.pdf.

[17]Contreras, *supra* note 7.

[18]Though Japanese firms such as Sony, Toshiba, Sharp and Panasonic have played major roles in many areas of ICT standardization, particularly consumer electronics and digital media, they are comparatively underrepresented in telecommunications and networking SSOs, due largely to early policies adopted by the Japanese government. *See* Contreras, *supra* note 9.

[19]U.S. Patent & Trademark Office. 2015. All Technologies (Utility Patents) Report, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/all_tech.htm#PartB.

start" advantage for local firms. Thus, in India, research conducted by the author and the Centre for Internet and Society has found that nearly 100% of Indian patents covering mobile device technologies are owned by foreign companies.[20] These are, by and large, the same major international technology firms that are active throughout the world.

These findings suggest that in terms of standard-essential patents (and, most likely, all patents), firms can be classified as either "Haves" or "Have-nots". The Haves are generally large multinational technology-focused firms based in North America, Europe and the Asia Pacific economies. The "Have-Nots" are all others. It is important to note that not all firms based in these key jurisdictions are Haves. Smaller firms and new market entrants in developed economies may also be Have-Nots. Likewise, not all firms based in developing nations are, or must remain, Have-Nots. A key example is China-based Huawei which, in the span of just a few years, rose from insignificance to prominence in the area of Internet standardization and related patent holdings.[21] Other large firms in China, India, Brazil and other emerging economies may also be situated to invest the resources necessary to increase their patent portfolios in this manner. However, it appears that most firms in these jurisdictions are likely to be classified as Have-Nots.

5.2 Patent Licensing Dynamics

As noted above, most SSOs require that their participants license SEPs to product manufacturers on terms that are either FRAND or RF. Thus, at least as to standardized technologies, patent acquisition and enforcement is unlikely to result in outright exclusion of competitors from a market. However, in markets characterized by FRAND (as opposed to RF) licensing, transactions are not always smooth or equitable, particularly in relation to transactions between Have and Have-Not firms.

The situation often plays out as follows: a standard is developed at an international SSO. Firms that participate in the SSO obtain patents covering the standard throughout the world. The standard then becomes implemented in products that are sold globally. By the time firms in less-developed countries become aware of the potential for sales of such products in their own countries (possibly with locally-attractive features, lower costs or domestically-sourced components), the basic product technologies have already been patented by foreign Have firms. Local Have-Nots must thus seek licenses from foreign Haves in order to manufacture standardized products for their domestic markets. The royalties sought by foreign patent-holding firms, while arguably reasonable on an international basis, may be

[20]Jorge L. Contreras & Rohini Lakshané, *Patents and Mobile Devices in India: An Empirical Survey*, 50 Vanderbilt Transnat'l. L.J. 1-44 (2016).

[21]Contreras, *supra* note 7.

viewed as excessive in local markets. The royalty burden owed to foreign firms can thus be viewed as inequitable by local firms and governments, particularly if foreign Have firms enter the market and compete with the local Have-Nots.[22] Such sentiments surfaced in China during the development of 2G wireless telecommunications standards, leading to China's adoption of a domestic 2G standard known as TD-SCDMA, which enjoyed limited success.[23]

The perception of unfairness can be exacerbated when foreign firms actively enforce their patents against local market participants in their domestic markets. This situation has recently occurred in India where, over the past three years, multinational telecommunications vendor Ericsson has brought patent infringement suits against several Indian and Chinese handset vendors serving the domestic Indian market.[24]

6 Potential Responses

There are several potential responses, both public and private, to the perceived inequity implicit in foreign Have firms' practices relating to the patenting and licensing of technical interoperability standards to domestic firms in less-developed countries. In many cases, these responses are not mutually exclusive and may co-exist within a country or region. The principal categories of such responses are considered below:

6.1 Embrace the Status Quo

Action is required to address a situation only if a problem exists. There are many who would argue that the current patent imbalance between Have and Have-Not firms is a natural result of market-based global trading. The situation is no different than it is in many other industries including pharmaceuticals, automotive and

[22]In addition, the royalty burden on local Have-Not firms is often greater than the burden on other foreign Have firms that hold patents that may be used as bargaining chips in cross-licenses with other Have firms. The result is that Have firms that have entered into cross-licensing networks generally have a low monetary royalty burden as compared to Have-Not firms that lack patents essential to relevant standards.

[23]Dieter Ernst, Indigenous Innovation And Globalization: The Challenge For China's Standardization Strategy (2011).

[24]Dept. Industrial Policy & Promotion (DIPP), Indian Ministry of Commerce & Industry, *Discussion Paper on Standard Essential Patents and their Availability on FRAND Terms*, Mar. 1, 2016; Contreras & Lakshané, *supra* note 20; Dieter Ernst, *Global Strategic Patenting and Innovation – Policy and Research Implications*, East-West Center Working Papers: Innovation and Economic Growth Series, No. 2 (2015), http://www.eastwestcenter.org/system/tdf/private/iegwp002.pdf?file=1&type=node&id=34977.

aviation, in which a handful of firms from developed countries dominate the market. In such a market, all firms have the potential to succeed based on superior innovation and technical skill.

This potential is particularly salient in the area of technical standardization, in which SSO participation is, in many cases, open to all interested organizations irrespective of national origin. The success of firms from small countries [e.g., Philips (Netherlands), Nokia (Finland) and Ericsson (Sweden)], and from developing economies [e.g., Huawei and ZTE (China)] demonstrates that the "club" of successful market entrants is not limited to firms from the largest developed economies. Thus, special measures designed to create a greater balance between the interests of Haves and Have-Nots could be misguided and counterproductive.

6.2 *Adopt Protectionist Measures*

When a government perceives that its domestic producers are being disadvantaged by foreign interests, a natural reaction is to implement regulations, and undertake enforcement actions, intended to protect the local industry. Of course, expressly protectionist regulation generally flies in the face of widely-adopted international treaty obligations such as the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement),[25] as well as more recent bilateral and multilateral trade agreements such as the Trans-Pacific Partnership (TPP).[26] Nevertheless, protectionist measures that target the actions of foreign patent holders may be disguised as prohibitions of unfair business practices and anticompetitive behavior, and may remain on the books for years before they are successfully challenged.

For example, in the early 2000s, after realizing that foreign firms had dominated the market for 2G wireless telephony devices, the governments of both Korea and China sought to assist their domestic industries in the area of 3G standardization. Korea supported Qualcomm's CDMA One wireless telecommunications technology in exchange for presumably favorable terms for Korean vendors. China, in contrast, embarked on a go-it-alone approach to 3G standardization, producing a competing TD-SCDMA technology that was not heavily patented by Western interests.[27] Neither of these approaches proved to be successful, and the telecommunications markets in both Korea and China have now gravitated toward

[25]World Trade Organization, Agreement on Trade-Related Aspects of Intellectual Property Rights, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 15 April 1994, in World Trade Organization, The Legal Texts: The Results of The Uruguay Round of Multilateral Trade Negotiations 321 (1999), *available at* http://www.wto.org/english/docs_e/legal_e/27-trips.pdf.

[26]Trans-Pacific Partnership (TPP), Chapter 8 (Technical Barriers to Trade).

[27]ERNST, *supra* note 7.

international interoperability standards, with Korean and Chinese firms playing significant roles in international SSOs.[28]

Another protectionist approach is the targeted enforcement of existing regulations against foreign entities. There has been a spate of recent competition law investigations and enforcement actions against large Western holders of standards-essential patents in China, Korea and India.[29] For example, in February 2015, China's National Development and Reform Commission (henceforth "NDRC") fined Qualcomm approximately US$975 million for a host of alleged violations of China's Antimonopoly Law in connection with its licensing of standards-essential patents. The Korean Fair Trade Commission is also reported to be investigating Qualcomm. In India, the Competition Commission of India (henceforth "CCI") has investigated Ericsson in connection with Ericsson's patent infringement suits against Indian and Chinese manufacturers of mobile phones for the domestic Indian market.[30]

A final way that governments can seek to reduce the dominance of foreign patent holders in domestic markets is through the imposition of compulsory licensing for particular patents or products. This power, which is permitted under TRIPS in special circumstances, has to-date been exercised primarily in pharmaceutical markets in developing economies. Nevertheless, the possibility of compulsory licensing exists in other industries that have a significant impact on health, safety and welfare of local populations.[31] In response to the dominance of the local Indian mobile devices market by foreign patent holders, some have proposed the imposition of a compulsory licensing regime in this market.[32]

6.3 *Increase Patenting by Local Firms*

As the competitive advantage possessed by Have firms derives to a large degree from patents on standardized technology, some have suggested that it would benefit local firms to increase their own patenting activity.[33] Increased patenting by local firms would, it is argued, give such firms greater bargaining power in licensing

[28]Contreras, *supra* note 7.

[29]To some degree, these investigations echo similar investigations by U.S. and European competition law authorities.

[30]DIPP, *supra* note 24; Contreras & Lakshané, *supra* note 20.

[31]Jorge L. Contreras & Charles R. McManis, *Compulsory Licensing of Intellectual Property: A Viable Policy Lever for Promoting Access to Critical Technologies?*, *in* TRIPS AND DEVELOPING COUNTRIES – TOWARDS A NEW IP WORLD ORDER? (Gustavo Ghidini, et al., eds., 2014).

[32]Rohini Lakshané, *Letter to Prime Minister Shri Narendra Modi*, Mar. 24, 2015, http://cis-india.org/a2k/blogs/open-letter-to-prime-minister-modi.

[33]Florian Ramel & Knut Blind, *The Influence of Standard Essential Patents on Trade*, (paper presented at IEEE-SIIT Conference, Sunnyvale, California, Oct. 6, 2015).

negotiations with existing Have firms. While this conclusion is correct on a theoretical level, it may oversimplify the issue. The acquisition of patents is not itself a productive activity, but a by-product of technological innovation. Thus, unless one seeks to encourage speculative patenting divorced from technical development (a goal that most would agree is undesirable), obtaining patents must be coupled with technological development. To the extent that patents cover technical standards, that technical development usually occurs in connection with participation in an SSO.[34] Thus, to enhance their bargaining position Have-Not firms should seek not to increase their patenting activity, but their participation in international standardization activities.[35] If they do, their ability to obtain patents covering their technical contributions should follow.

It is, of course, a separate matter whether local governments should facilitate patenting by domestic providers. Doing so in a manner that discriminates against foreign firms would generally run afoul of TRIPS and other treaty obligations.[36] However, governments can help their domestic industry by funding additional R&D and SSO participation.

6.4 Benefits of Increased SSO Participation by Local Firms

The potential benefits that Have-Not firms can derive from increased participation in international SSOs are numerous. First, SSO participants can influence the direction of standardized technologies in a manner that favors, or at least takes into consideration, local markets or local technology/patent positions. Involvement in charting the future direction of technology standards can also give firms insight into and advance notice of product development and evolution opportunities. Participation may also offer local firms opportunities to export interoperable products beyond the domestic market. It may also afford increased opportunities for patenting in domestic markets and abroad, and will inform foreign firms of the technology and patent assets that local firms have available for licensing.

From a policy standpoint, increased involvement in SSOs would give Have-Not firms opportunities to influence SSO policies and practices, particularly in ways that might facilitate licensing and technology dissemination in developing markets. For example, SSO policies could provide that offering lower royalty rates for deployment of standards-compliant products in developing markets would *not* violate the

[34]While individual firms often develop technologies internally which they then bring to SSOs for standardization, a significant amount of revision, compromise and development also occurs within the collaborative SSO setting.

[35]*See*, *infra* section 6.4.

[36]These obligations require local patent offices to afford "national treatment" to foreign applicants, treating them on the same basis as local applicants.

SSO's requirement of non-discriminatory treatment.[37] Likewise, SSOs could mandate reduced-royalty or royalty-free licensing in certain markets or under certain conditions.

6.5 *Incentivizing Increased SSO Participation*

Despite these potential advantages, with a few exceptions, Have-Not firms have not yet made meaningful and sustained contributions to major international SSOs. This absence is rendered more notable by express policies intended to ensure broad participation in such SSOs. For example, participation in international Category I SSOs such as ISO and ITU is often determined on a national basis.[38] The national delegations to bodies such as these present good opportunities for involvement by firms from less-developed countries. Some Category I SSOs such as ETSI, and most Category II SSOs, such as IEEE, ASTM and IETF are, by their own policies, open to participation by all interested organizations. Accordingly, the only barriers to participation in these SSOs, which represent a significant portion of global standardization activity,[39] arise from a lack of technical skill, financial resources and interest among Have-Not firms. These deficiencies are, of course, very real and very serious. However, they can be overcome, at least in part, through national and philanthropic programs that provide resources for technical training and participation in international SSOs.[40] The example of Chinese firms such as Huawei and ZTE,[41] illustrate that it is possible for local firms, with sufficient determination, governmental support and expenditure of resources, to become significant forces in international standardization activities.[42]

---

[37]Major research universities around the world have adopted a similar stance in a 2007 document entitled "In the Public Interest: Nine Points to Consider in Licensing University Technology". The "Nine Points" document expressly acknowledges that "responsible licensing includes consideration of the needs of people in developing countries and members of other underserved populations".

[38]*See*, *supra* section 2.

[39]Because Category 3 SSOs (consortia) are typically formed by small groups of firms with an existing technology and patent position, it is not realistic to hope that they will be fruitful avenues for greater Have-Not firm participation.

[40]For example, the Internet Society, a US/Switzerland-based NGO, regularly sponsors a number of Fellows from developing countries to participate in meetings and other activities of the IETF. http://www.internetsociety.org/what-we-do/education-and-leadership-programmes/ietf-and-ois-programmes/internet-society-fellowship.

[41]Contreras, *supra* note 7.

[42]Of course, China underwent a phase during which it concentrated significant resources on the development of local standards without heavy foreign patent coverage (*see supra section 6.2*) discussing initiatives such as China's TD-SCDMA 3G mobile telephony effort, as well as Ernst (2011), which details several such efforts). While many would argue that these efforts were

Trade agreements, despite their potential to facilitate the involvement of local firms in international SSOs, have, to date, done little in this regard. Though the recent Trans-Pacific Partnership agreement (TPP) includes an entire chapter devoted to standards, its goal is ensuring that locally-developed standards, generally those relating to health and safety, are open and transparent and do not discriminate against foreign producers.[43] The standards focus of the TPP is thus inward looking with respect to less-developed countries, ensuring that they allow international firms to enter without standards-based barriers, rather than outbound, or helping them to participate in the broader global standardization community.

In addition, future trade agreements could encourage greater openness to Have-Not participation in nationally-based SSOs, require that nationally-adopted standards originate from open SSOs, and establish international bodies designed to support Have-Not participation in international SSOs.

More important than trade agreements, however, may be international and local capacity building efforts to support greater international SSO participation by representatives from Have-Not firms. Such support could come in the form of grants from local governments, non-governmental organizations (henceforth "NGOs"),[44] and multi-governmental organizations [e.g., the World Intellectual Property Organization (WIPO)]. SSOs themselves could also offer financial support to Have-Not firms wishing to participate, underwritten by the membership dues paid by their existing multinational firm members. With such support programs in place, the steep costs of international SSO participation could be defrayed for Have-Not firms, thus broadening overall participation and promoting broader representation in these critical global organizations.

A final component of this governmental and institutional support for standardization is educational. Countries such as India already possess world-class educational institutions in the science and engineering disciplines. However, it is not clear that these institutions uniformly emphasize standards education and training. The need for greater education in the area of standards has been noted even within the United States by the National Institute for Standards and Technology (NIST), which has funded efforts at several U.S. universities to promote curriculum and program development relating to standards, and itself offers various training programs relating to standards for U.S. government agencies and the private sector.[45]

(Footnote 42 continued)

ultimately of limited success, it is possible that they did serve the unexpected purpose of preparing Chinese firms to participate in international standardization efforts.

[43] *See* Trans-Pacific Partnership, Chapter 8 (Technical Barriers to Trade).

[44] For example, the IETF fellows program sponsored by the Internet Society (*see supra* note 40).

[45] *See* www.nist.gov.

6.6 Applications in India

The types of support mechanisms described in Part 6.5 above may seem superfluous in jurisdictions such as India, which are already major markets for ICT products and possess a sophisticated governmental and private sector organizational infrastructure devoted to standardization. For example, the Indian government's Bureau of Indian Standards (BIS) conducts standardization activity in fourteen industry sectors including computer communications, networks and interfaces.[46] The Telecommunications Engineering Center (TEC) operated by the Ministry of Communications and Information Technology, coordinates with international SSOs including ETSI, ITU, IEEE and IETF in developing telecommunications standards.[47] Private trade associations such as the Telecom Standards Development Society of India (TSDSI), the Global ICT Standardization Forum for India (GISFI), and the Development Organization of Standards for Telecommunications in India (DOSTI) facilitate the development of standards for the Indian ICT sector, often in cooperation with international SSOs.[48]

But it may be the very existence of this domestic standardization infrastructure that inhibits greater direct Indian participation in international SSOs. The seemingly sophisticated network of Indian standardization activities may have made the Indian government and industry somewhat complacent about participation in leading international standardization efforts. But these activities are by no means equivalent in importance or impact. While domestic standardization efforts may facilitate the adoption and adaptation of international standards for local Indian needs (admittedly, a necessary function), they appear largely to follow the lead of the dominant international SSOs, rather than participate in their leadership. Participation in domestic standardization activities is thus no substitute for active engagement at the international SSO level. Thus, it seems that the Indian government and private standards groups could increase their prominence internationally by supporting (institutionally and financially) greater engagement by Indian firms in international SSOs.

[46]DIPP, *supra* note 24.
[47]*Id.*
[48]*Id.*

7 Conclusion

Patents on standardized technologies are being issued with increasing frequency, and the majority of these patents are held by large multinational firms based in developed economies. As a result, firms from less-developed economies with sparse patent holdings are disadvantaged in both domestic and foreign markets. While protectionist governmental policies can address these disparities, such measures are potentially contrary to international treaty obligations and generally unsuccessful in the long term. An alternative approach involves greater participation in international SSOs by firms from less-developed economies. This increased participation is likely to benefit such firms both in terms of technology development, strengthening of patent positions, and influence over SSO policies. To facilitate increased participation, both financial and institutional support will be required from local governments, NGOs, multinational organizations and SSOs themselves. However, if participation in international SSOs by firms in countries such as India can be increased, it could have a meaningful impact on domestic innovation, job creation, technical capability and manufacturing output.

Chapter 2
FRAND Commitments and Royalties for Standard Essential Patents

D. Scott Bosworth, Russell W. Mangum III and Eric C. Matolo

1 Introduction

This chapter addresses the conceptual and practical effect of Fair, Reasonable, and Non-Discriminatory (henceforth "FRAND") commitments to standard setting organizations (henceforth "SSOs") on royalties for standard essential patents (henceforth "SEPs"). While SSO activities are recognized as potential sources of economic efficiency, the nature of the SSO process facilitates and requires communication and agreement among parties that may otherwise compete in the marketplace, thus leading to antitrust agencies and private counsel to require caution in the standard setting process. The industry-wide, international scope of technological agreement in SSO activities is a potential source of market power for intellectual property owners. The risk of such market power has led technology adopters to seek assurances from technology contributing SSO participants that technologies adopted in the standard are made available on FRAND terms. In addition, it has become increasingly common for technology contributors to provide FRAND commitments in conjunction with their SSO participation. Recent decisions by U.S. courts and regulatory agencies have clarified that FRAND commitments can be binding on technology contributors, and that determination of FRAND royalty rates on standard essential technology can be meaningfully different from that applicable

D. Scott Bosworth (✉) · R.W. Mangum III · E.C. Matolo
Nathan Associates Inc., Irvine, CA, USA
e-mail: sbosworth@nathaninc.com

R.W. Mangum III
e-mail: rmangum@nathaninc.com

E.C. Matolo
e-mail: ematolo@nathaninc.com

R.W. Mangum III
School of Business and Economics, Concordia University Irvine, Irvine, CA, USA

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_2

to technology unencumbered by FRAND commitments. More specifically, determination of FRAND royalty rates likely requires inquiry into the apportionment of inherent technology value from value that resulted from the SSO process and standard itself. This chapter addresses various methods to evaluate the sources of economic value of SEPs, to apportion inherent technology value from that resulting from a standard, and the implications of such apportionment on the royalties for FRAND encumbered SEPs.

2 Industry Standards

Technical or industry standards (henceforth "standards") have become an integral part of technological development as well as everyday use of common devices. Cellular phone calls, wireless internet connection, broadcast television and radio, video and audio content streaming, connection of computer and media equipment peripherals (e.g. keyboard, mouse, speakers, set-top box), transfer of data between devices, storage and viewership of media on optical discs (e.g. DVDs) collectively make up just a sample of common uses of standards. More specifically, 3G, 4G, and LTE mobile telecommunication technology, 802.11 Wi-Fi wireless internet protocols, ATSC and DVB-T digital television transmission, H.264 video compression, USB and HDMI connectivity, Bluetooth wireless data exchange, and Blue-ray technologies are all examples of standards. Formally, standards are defined as product technology and/or manufacturing processes including consistent use of product, process, or production rules, conditions, characteristics, and guidelines, together with defined design and specification, performance, testing methods, and quality control.[1] As evidenced by the plethora of standards incorporated into today's products, standards are a major contributor to product development in the modern economy.

The establishment of standards and the incorporation of them into products and manufacturing processes provide benefits for consumers and manufacturers of goods. Standards can make products more valuable for consumers and product manufacturers, as well as the production of products more efficient for the manufacturers. For example, a manufacturer of a wireless phone earpiece will benefit if its device operates with a wide range of phone models, as that would expand its potential customer base and demand for its products. In addition, broad functionality would prevent the need to manufacture a variety of models to fulfill the demands of various phone purchasers. Similarly, a consumer benefits from an earpiece working with a wide range of phone models that would prevent the need to purchase a new earpiece after obtaining a new phone. In other words, both the value

[1] *Circular No. A-119*, (January, 2016), https://www.whitehouse.gov/sites/default/files/omb/inforeg/revised_circular_a-119_as_of_1_22.pdf; *Circular No. A-119*, (February, 1998), https://www.whitehouse.gov/omb/circulars_a119/.

of the earpiece to the consumer and the value to the product manufacturer increase due to the interoperability of products as the number of phone manufacturers implementing the same technological method of communication between the phone and an earpiece expands. Economists refer to this phenomenon as a networking effect. In economics, a network effect, or network externality, occurs when the value of a good to a user increases as others use the same type of product.[2] Standardizing the method of wireless communication between mobile phones and earpieces ensures that consumers and product manufacturers can experience the benefits associated with the network effect. For example, the existence and industry adoption of the Bluetooth wireless standard prevents a scenario where, only a Samsung earpiece works with a Samsung phone, only a Motorola earpiece works with a Motorola phone, and so on. Thus, network effects from standards typically increase the value of standard practicing products. In addition, this increase in value from the network effects typically corresponds to market expansion of the unit volume in terms of the products practicing the standards.[3]

At the heart of the network effect associated with standards is the interoperability of various products due to the incorporation of standard technology. Interoperability through standardization can be crucial for satisfying various consumer needs, particularly in the information technology industry.[4] Through the standardized interoperability, consumers are less likely to be "locked in" to a single product model or manufacturer. In addition, more manufacturers can develop new and/or enhanced products to replace or work in conjunction with other manufacturers' products.

The networking effect benefits experienced by both consumers and product manufacturers are a substantial driving force behind the motivation for standard setting. Not only can standards make products more valuable for consumers, they also increase production efficiency and incentivize increased innovation.[5] In addition, the interoperability network effects can facilitate and sustain international trade. It is for such reasons that the U.S. Department of Justice (henceforth "DOJ")

---

[2]D W Carlton & J M Perloff, Modern Industrial Organization (4th Ed. 2015); Chad Syverson Austan Goolsbee, Steven Levitt, Microeconomics (2013); Daniel L. Rubinfeld Robert S. Pindyck, Microeconomics (2009). Network effects also arise when the expansion of users leads to increased variety or lower pricing of complementary goods. Economists may refer to such network effects as indirect network effects.

[3]In the extreme case of a government mandated standard, such as the ATSC digital television transmission standard mandated by the U.S. government for all televisions, universal adoption of the standard results in the adoption of SEP technology on a scale vastly greater than that which would have occurred without the standard.

[4]Fed. Trade Comm'n, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, (March, 2011), https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf.

[5]Increased product value and expanded market product unit volume increase the potential for manufacturers, investors, and innovators to recoup innovation expenses, thus stimulating and increasing industry innovation activity.

and U.S. Federal Trade Commission (henceforth "FTC") (henceforth collectively, "U.S. agencies") recognize standards as a driving force for the modern economy.[6]

3 Standard Setting Organizations and Standard Essential Patent Licensing

The development of a standard typically involves a SSO.[7] SSOs serve an important role by providing a platform for businesses, universities, and individuals from across the world working in corresponding industries to collaborate and participate in the development and establishment of standards.[8] Typically SSOs engage in evaluating various alternative technologies and determining which technologies to incorporate into a standard. Given the benefits of standards, SSOs play an important role in product and technology development. Ultimately, SSOs choose which technology solutions will most likely be embedded in products with widespread development.

Just as economists like to say there is no such thing as a free lunch, the saying holds for the SSOs and standards. The rationale is that the benefits of the SSOs establishing standards come with a potential competitive cost. This is because the SSO standard establishment process outlined above involves coordination among entities that would typically otherwise compete but-for their involvement in the SSO process. As a result, SSO activities can be the cause of potential anticompetitive effects. One cost of SSO member collaboration is the exclusion of rivals' alternative technology. However, typically SSO membership and participation is open to all industry participants thereby limiting the exclusion of any technology option as a candidate for the standard evaluation and selection process. In addition, the ultimate selection of a standard enables the beneficial network effects through product interoperability.

Another anticompetitive concern with the SSO process relates to enforcement of patent rights covering technology required to practice a standard—often referred to as standard essential patents. Upon an SSO's adoption of a standard, SEP owners gain the position of control of access to rights to the standard, positioning them to

[6]U.S. Dep't of Justice & Fed. Trade Comm'n. (2007), *available at* https://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101-promotinginnovationandcompetitionrpt0704.pdf.

[7]For convenience, this chapter considers standard setting organization (SSO) as synonymous with standard developing organization (SDO).

[8]An alternative standard is a standard developed and owned by a single product manufacturer that dominates a particular market. Such a standard is referred to as a *de facto* standard. Examples of *de facto* standards include Facebook, and Microsoft Office. The focus of this chapter is standards established through SSOs.

capture licensing fees reflecting the resulting value of the *standard*.[9] That is, after adoption of a standard as the industry is locked into the technology selection, implementers may have no choice but to license the rights to the SEPs in exchange for royalties reflecting a lack of technology alternatives and/or the expanded market value created by the standard adoption, thereby increasing SEP holders' licensing fees.

This effectively non-competitive licensing position for implementers can be of particular concern given the common widespread reach of a chosen standard, nationally or globally. It is the widespread adoption that enables SEP patent holders to extract whatever the market will bear (potentially including value of the standard) given the standard-enhanced market value and the lack of substitutability from otherwise alternative technologies. After all, it is not only past, un-adopted technology that is locked out once a standard is set; it is also new technology that arises after standard adoption that may not reasonably be turned due to the lock-in effect. In addition, in anticipation, and as a result, of widespread adoption of a standard, manufacturers of products implementing the standard technology may expend significant resources on production processes based on the selection of the standard, resulting in significant sunk costs which together with widespread standard adoption inhibit the pursuit of any alternative product designs due to increased switching costs.[10] High switching costs may further enable SEP holders to obtain licensing fees, for example, based on royalty rates higher than they would have absent the establishment of the standard. Thus, patent holders can benefit from the inclusion of their SEP-protected technology into a standard from both increased royalty rates after an industry is locked into a standard, plus an expansion of licensed sales due to widespread standard adoption.

SEPs owners' ability to capture relatively higher licensing fees as a result of industry participants being locked into an industry standard and/or facing high switching costs is commonly referred to as patent "hold-up." Typically, the more widespread the standard and/or higher the switching costs the higher a patent holder can charge in licensing fees.[11] An SEP holder obtaining such increased licensing fees essentially reflects the patentee's ability to extract the network effects value from the standard for itself. In doing so, SEPs owners may prevent product manufacturers and consumers from experiencing the full realization of the benefit of network effects. If patent holders successfully demand and obtain elevated licensing fees, this raises product manufacturers' costs, which at least partially offsets some of

[9]To the extent the network effects are due to interoperability, as opposed to the specific technology choice, expand the value of products practicing the standard, the standard also may enable SEP owners to capture royalties beyond those reflecting the patented technology value itself. An exception may be when the SEP technology has no meaningful competitive alternative technology.

[10]High sunk costs may be indicative of the large switching costs required to pursue and commercialize alternative technologies.

[11]U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 6.

the potential gains for manufacturers from the adoption of a standard.[12] In addition, the high licensing fees may delay or hinder further investment by manufacturers in products implementing the standard. Furthermore, higher production costs can ultimately result in decreased profits to product manufacturers, increased prices for consumers, and delayed further investment by manufacturers in products using the standard.[13]

4 SSO Licensing Policies and FRAND[14] Commitments

As part of efforts to influence the licensing of SEPs, SSOs have developed certain licensing policies for patent holders in an attempt to mitigate the risk of excessive licensing fees from SEP owners, particularly where technology contributors participate in the SSO process. These policies typically address the risk of patent hold-up through disclosure requirements and licensing rules.[15] Disclosure rules generally require SSO participants to make known any patents or applications for patents owned by participants that read on the (proposed) standard. The objective with the disclosure rule is to identify the various intellectual property rights associated with the technologies considered for the standard *ex ante*, thus allowing SSO participants to make informed decisions during the standard selection process and minimizing the number of surprise licensing obligations once the standard is selected (*ex post*).[16]

It has become increasingly common for SSOs to require their participants to commit to identifying any potential SEPs, and to licensing them on FRAND terms. Generally speaking, FRAND terms categorically have two components: first, the requirement to license to any potential licensee without discrimination; and second, to offer reasonable royalty terms for SEP licensure. However, SSOs typically do not explicitly define what exact licensing royalty terms qualify as FRAND, and not all SSOs' licensing rules are identical. In fact, an SSO policy may explicitly prohibit

[12]Such an offset from increased licensing fees occurs to the extent that a manufacturer is unable to raise downstream product prices. However, any product price increase as a means to counter cost increases (due to licensing fees), particularly with minimal reduction to units sold, may be a proper adjustment to reflect valuable inputs to the product.

[13]The reduction in investment is relative to the investment that would exist if SEP holders simply received royalties reflecting the inherent technology value and not the value of the standard. Although high licensing fees can on the one hand stimulate investment in new and improved technology (i.e. invention and innovation), the high price of access to the technology for adopters can on the other hand limit the demand for and adoption/commercialization of further new technology.

[14]In the literature and case law, FRAND and RAND are generally used interchangeably.

[15]U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 6.

[16]*Id.*

any discussion, among members and participants, of license rates.[17] The inclusion of often vague language in SSO licensing policies leaves room for interpretations over the licensing fee terms that would be consistent with an SSO's FRAND requirements, which thus can ultimately be up for debate.[18] Yet, the general goal of FRAND term licensing rules is to make sure holders of SEPs do not (i) use the threat of patent hold-up or refusal to license to extract excessive and unreasonable licensing fees (i.e., the licensing rate must be Reasonable); (ii) lock out a competitor from the industry by refusing to licensing (i.e., licensing must be Non-Discriminatory)[19]; or (iii) use the essential nature of the SEPs to extort fees for other non-SEPs or require cross-licenses (i.e., the licensing terms must be Fair). In other words, as a practical matter, given the market power SEP owners may obtain with the adoption of a standard, the extra requirements for FRAND licensing include, but are not necessarily limited to, determining a reasonable royalty with the following extra conditions: (i) no exclusive licensing terms that would restrict technology adopters' access to standard essential technology; (ii) no cross-license requirement with regards to non-SEPs; and (iii) no bundling of the SEPs with non-SEP technologies to extend the SEP owners' market share reach into other non-essential technology areas.[20]

It has not been historically clear whether or how FRAND commitments are binding, or how the "reasonable" condition of FRAND terms can be determined. Taking the definitional components of FRAND—Fair, Reasonable, and

[17]IEEE-SA, *IEEE-SA Patent Policy: Introduction and guide to the IEEE-SA patent policy effective 15 March 2015*, (2016), https://development.standards.ieee.org/myproject/Public/mytools/mob/patut.pdf.

[18]The vague nature of FRAND terms incorporated into SSO licensing policies are often the result of antitrust concerns over explicit agreement on technology prices, *see* U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 6.

[19]A separate but related component of the "non-discriminatory" part of the FRAND condition is the comparison of rates across products and licensees. U.S. courts and U.S. agencies have determined that asymmetric rates are not inconsistent with FRAND. S*ee, e.g.*, case cited *infra* note 24; U.S. Department of Justice, *Response to Trustees of Columbia University, Fujitsu Limited, General Instrument Corp., Lucent Technologies Inc., Matsushita Electric Industrial Co., Ltd., Mitsubishi Electric Corp., Philips Electronics N.V., Scientific-Atlanta, Inc., and Sony Corp., Cable Television Laboratories, Inc., MPEG LA, L.L.C. Request for Business Review Letter*, (1997), https://www.justice.gov/archive/atr/public/busreview/215742.htm. As will be discussed more fully below, according to recent rulings, FRAND terms do not necessarily require symmetric rates for all products and licensees. In other words, FRAND terms may include a royalty fee structure that varies based on timing, product volume, and/or product-type.

[20]It can, and has been, claimed by patent holders that requiring implementers to take licenses to non-SEPs as part of a license to SEPs is benign, in the sense the non-SEPs are simply licensed for free. However, it is incorrect to presume that non-SEPs simply have no value. If it was believed by a patent holder that some of its patents had no value, it could just make them available with a zero-cost license. The determination of what IP is needed or desired, including that of "valueless" patents, can be handled by the licensee, and need not be mandated by the patent holder. That is, if a patent has no value, a licensee will not worry about not having a license to it. If there is some risk a baseless lawsuit may nonetheless ensue on a "valueless" patent, it would be the implementer that is asking for the license, not the patent holder that is demanding it be licensed.

Non-Discriminatory—at face value, it may intuitively appear that determining a SEP royalty rate that is "reasonable" is no different than a "reasonable" royalty rate resulting from royalty analyses for non-essential patents. As will be shown in the next part, this is not necessarily the case, as there are distinct and meaningful differences between royalty rate analyses for SEPs compared to analyses for patents that are unencumbered by FRAND commitments. These differences are motivated by the goals of FRAND term licensing outlined above, namely preventing patent holdup while also promoting widespread adoption.[21] It will also be shown in the next part that SEP owners should account for such differences when making licensing offers given the apparent current view from U.S. courts regarding the binding nature of commitments to SSO licensing policies.

Committing to an SSO's FRAND licensing term policy is often times mandatory for technology contributors participating in the SSO standard process. On the other hand, typically there is no SSO policy requirement for SEP owners that do not participate in the standard development and selection process. However, there are incentives for holders of SEPs to participate in the SSO activities, thereby ultimately committing to the FRAND terms for any licensing activity. For example, SSO's typically aggregate assurances regarding which patents are claimed essential to the standard, which may be perceived as an endorsement of the relevance of SEPs for technology contributors. In addition, SSO participation provides patent holders the opportunity to influence the standard that is adopted. Ultimately, participation in an SSO process is voluntary and holders of SEPs that do not participate in the SSO process are not necessarily bound by all the SSO disclosure and FRAND licensing rules.[22]

5 FRAND Terms Determination and Recent U.S. Court Decisions

The U.S. agencies have recognized licensing SEPs based on FRAND terms as a method for mitigating the potential for patent hold-up. At the same time, the agencies further recognize that certain aspects of SSO licensing policies may hinder the impact of any FRAND commitment to an SSO by holders of SEPs. For example, as previously noted, SSO licensing policies generally do not incorporate any well-defined criteria for what licensing fees actually qualify as FRAND. In addition, patent holders may simply fail to comply with an SSO's licensing policy. Failing to comply with an SSO's FRAND policy may be the result of a patent holder taking advantage of a negotiation position and engaging in patent hold-up. On the other hand, negotiating parties may legitimately disagree as to what terms qualify as FRAND.

[21] *See, e.g.*, case cited *infra* note 24.

[22] U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 6.

There is no universal authority or method for identifying FRAND licensing terms. Again, thus far, SSO's licensing policies generally fall short of explicitly defining FRAND terms. Nevertheless, recent decisions from U.S. courts, together with guidance from U.S. agencies provide clarity for identifying licensing terms for SEPs. A few takeaways from these recent decisions which will be discussed below relate to when FRAND terms apply, and certain conditions for obtaining FRAND terms.

5.1 FRAND Commitments Are Binding

The existence of a commitment by an owner of SEPs to comply with an SSO's FRAND licensing policy at first glance may not be sufficient to simply determine that the patentee is bound to always licensing under FRAND terms as part of an agreement with a potential licensee. According to *Metaswitch Networks Ltd. v. Genband US LLC*, et al. (henceforth "*Metaswitch*")[23] the valuation and damages expert cannot presume that patent holders with SSO commitments are legally bound by such commitments. *Metaswitch* does go on to say that assuming a binding obligation is reasonable, but that is the extent to which the valuation expert (e.g. economist) shall claim any binding nature of a FRAND commitment. However, a more comprehensive review of recent case law indicates that making such an assumption is in fact reasonable. According to recent U.S. court decisions, commitments to SSO licensing terms by patent holders are binding, thereby granting any potential licensee the right to have access to the patent holder's SEP rights under FRAND terms.

In *Microsoft Corp. v. Motorola, Inc*. et al. (henceforth "*Microsoft*"),[24] the ninth circuit appellate court clarified that SSO FRAND licensing commitments are "contracts [that] are subject to common-law obligations of good faith and fair dealing." In *Microsoft*, the district court decision was appealed to the ninth circuit court since the claim at issue was breach of contract where Microsoft, as a "third-party beneficiary to Motorola, Inc.'s [FRAND] commitments to [SSOs]", alleged Motorola breached its obligation to license its SEPS under FRAND terms based on its commitments to SSOs.

In another example, the district court in *In re Innovatio IP Ventures, LLC Patent Litigation* (henceforth "*Innovatio*")[25] affirmed that, given the patent claims at issue were essential to the standard they were all subject to FRAND. *Innovatio* further clarifies that the patent holder is bound by the FRAND obligation even where the SEPs were subject to an SSO licensing agreement from previous patent owners. In

[23] *Metaswitch Networks Ltd. v. Genband US LLC,* No. C-14-744, ECF No. 299 (E.D. Tex., 2016).

[24] *Microsoft Corporation v. Motorola, Inc.*, 795 F.3d 1024 (9th Cir., 2015).

[25] *In re Innovatio IP Ventures, LLC Patent Litigation*, No. C-11-9308, ECF No. 975 (N.D. Ill., 2013).

other words, according the *Innovatio*, when an entity acquires SEPs from another entity that committed to an SSO agreement requiring the licensure of patents under FRAND terms, the acquiring party inherits the FRAND obligation.

In *Realtek Semiconductor, Corp. v. LSI Corp.* et al. (henceforth "*Realtek*"),[26] the district court examined FRAND commitments as part of an analysis involving injunction claims and royalty rate determination. In *Realtek*, the patent holder submitted letters of assurance to the SSO committing to the SSO's FRAND licensing policy. The court in *Realtek* interpreted the FRAND commitment as a "contract" establishing an obligation by which the patentee is bound. Based on this logic, the court in *Realtek* determined (1) the obligation was breached due to an SEP owner's injunction request prior to an offering of a license on FRAND terms, and (2) to comply with the contract the patent holder must offer licenses to the SEPs under FRAND terms.

The Federal Circuit also acknowledged the binding nature of a patentee's FRAND obligation through a commitment to an SSO (*Ericsson, Inc.*, et al. *v. D-Link Systems, Inc.*, et al. (henceforth "*Ericsson*")).[27] The Federal Circuit in *Ericsson* adds the clarification that the binding FRAND licensing commitment is not generic and may "vary from case to case", and that the patent holder is bound to the specific FRAND terms outlined it the agreement between patentee and SSO at issue. In other words, *Ericsson* emphasizes that in addition to the binding nature of a FRAND commitment to an SSO, FRAND obligations are not identical and may vary to some degree across SSOs.

The court in *Commonwealth Scientific and Industrial Research Organisation v. Cisco Systems, Inc.* (henceforth "*CSIRO*")[28] addressed the unique scenario involving a SEP owner committing to an SSO's FRAND policy for one standard but not for another (related) standard. The court in this district level decision clarified that the patentee is bound by its commitment to the SSO's licensing policy through its submission of a letter of assurance. In particular, *CSIRO* affirmed that the patentee's letter of assurance to the SSO regarding FRAND licensing "constitute[s] binding contractual commitments" and based on this contract the patent holder is obligated to license the SEP under FRAND terms to any party. However, the court also determined the patentee is not bound by any licensing commitment with respects to any revisions or changes to the standard. In other words, the court determined that due to a lack of any assurance to the SSO for the same patent but relating to revisions to the standard, the patent owner is not bound by any FRAND commitment for revisions to the standard. More specifically, *CSIRO* affirmed "while [the patentee] was free to offer licenses on [F]RAND terms as to products practicing these revisions, it was not contractually obligated to do so." Thus, *CSIRO*

[26] *Realtek Semiconductor, Corporation v. LSI Corporation*, No. C-12-3451, ECF No. 363 (N.D. Cal., 2014).

[27] *Ericsson, Inc.,* et al. *v. D-Link Systems, Inc*., 773 F.3d 1201 (Fed. Cir., 2014).

[28] *Commonwealth Scientific and Industrial Research Organisation v. Cicso Systems, Inc.*, No. C-11-343, ECF No. 324 (E.D. Tex., 2014).

clarifies that while patentee licensing agreements with SSOs are binding contractual agreements, each SSO may have its own licensing policies outlining FRAND commitments, and these commitments can be specific, or limited to, a specific standard.

However, as will be discussed below, a recent ruling by the Federal Circuit subsequent to *CSIRO* may have rendered moot the focus on whether a FRAND commitment was made.

In *Apple, Inc.* et al. *v. Motorola, Inc.* et al. (henceforth "*Apple*")[29] the court evaluated a patentee's FRAND commitments via an agreement with an SSO, and the implications of such an agreement on the ability to obtain injunctive relief. In doing so, the court interpreted the FRAND commitment as an obligation for the SEP owner. In addition, the court further clarified that the FRAND commitment is not a conditioned agreement. In particular, according to *Apple* the patentee's agreement with the SSO regarding FRAND licensing is an unconditional commitment by the patentee to license the SEP at issue to "anyone willing to pay a FRAND royalty."

In sum, district courts, regional appellate court, and the Federal Circuit hold consistent views regarding the binding nature of SEP owners' commitments to SSO's FRAND licensing policies. Upon making such a commitment to an SSO, the patent owners are bound by the terms of the specific commitment in a contractual sense and obligated to license the SEPs under FRAND terms. In other words, the current case law clarifies that through a patent holder's (or preceding patent owner's) agreement with an SSO to license SEPs under FRAND terms, any third-party entity is entitled to access to the patent rights under FRAND terms.

5.2 Additional Requirements for FRAND Analysis

In addition to establishing the binding nature of an SEP owner's SSO licensing commitment to license under FRAND terms, recent U.S. case law also provides useful insight into the determination of royalty terms that actually fall within the confines of a FRAND requirement. Decisions in recent U.S. cases, including those referenced above, emphasize that analysis of FRAND licensing rates for SEPs can be meaningfully different from the determination of rates for patents outside of a standard. As will be discussed below, U.S. case law emphasizes the need to identify sources of economic value for the patented technology and apportion the value of technology itself from value of the standardization. This extra necessary analytical step is consistent with the guidelines and recommendations previously set forth by the U.S. agencies which are aimed at limiting patent hold-up by owners of SEPs.

As discussed above, since technology adopters can be locked in once a standard is established, SEP holders can engage in patent hold-up and demand high licensing

[29] *Apple, Inc.* et al. *v. Motorola, Inc.*, 869 F.Supp.2d 901 (N.D. Ill., 2012).

fees. The high switching costs required to utilize an alternative to the standard technology, or lack of alternatives, may prevent technology adopters from pursuing alternative technologies. However, payment of high licensing fees based on high switching costs and licensees locked into a standard can correspond to SEP owners obtaining royalties based on the value of the standardization process and beyond the value of patented technology alone. For this reason, U.S. courts and U.S. agencies have emphasized the extra necessary apportionment steps when analyzing SEPs and FRAND royalty terms. For example, according to the Federal Circuit, the necessary apportionment includes the following

> When dealing with SEPs, there are two special apportionment issues that arise. First, the patented feature must be apportioned from all of the unpatented features reflected in the standard. Second, the patentee's royalty must be premised on the value of the patented feature, not any value added by the standard's adoption of the patented technology. These steps are necessary to ensure that the royalty award is based on the incremental value that the patented *invention* adds to the product, not any value added by the standardization of that technology.[30]

The first condition is necessary because "[j]ust as we apportion damages for a patent that covers a small part of a device, we must also apportion damages for SEPs that cover only a small part of the standard" since the royalty must be "apportioned to the value of the patented invention [] not the value of the standard as a whole".[31] In other words, the first condition, although relating to a standard, is part an apportionment of aggregate product technology value which is a an apportionment step generally in line with a royalty analysis for any type of patent.

However, the second condition is an additional level of apportionment required by the Federal Circuit for technology in a standard where the apportioning extends beyond relative technology value. The second condition is not apportioning from other technology in the standard or the product overall, but rather the isolating of the value of the *adoption* of the standard with the inclusion of the invention in the standard. The regional Ninth Circuit appellate court also recognizes the importance of the step by acknowledging the "very purpose of the [F]RAND agreement is to promote adoption of a standard by decreasing the risk of hold-up".[32] Similarly, in *Innovatio*, the district court emphasizes that "one of the primary purposes of the [F]RAND commitment is to avoid patent hold-up" and a "[F]RAND rate [should] reflect only value of the underlying technology and not the hold-up value of standardization". The recent U.S. case decisions highlighting the need for the extra step of apportioning the value of the standard adoption from the value of the patented technology as part of the FRAND royalty determination built on the guidelines of the U.S. agencies. In a joint report from the FTC and DOJ, the U.S. agencies stressed that for analyzing royalty terms and hold-up, the analysis should

---

[30] *Ericsson, Inc.,* et al. *v. D-Link Systems, Inc*., 773 F.3d 1201 (Fed. Cir., 2014).

[31] *Id.*

[32] *Microsoft Corporation v. Motorola, Inc.*, 795 F.3d 1024 (9th Cir., 2015).

"distinguish between the licensing terms a patent holder could obtain solely based on the merits of its technology and the terms that it could obtain because its technology was included in the standard".[33] The distinction is relevant for a FRAND analysis because the two are different sources of market power and per the recent U.S. case law royalties consistent with FRAND should only reward the patent holder based on the merits of the technology. Ultimately, "the royalty for SEPs should reflect the approximate value of that technological contribution, not the value of its widespread adoption due to standardization".[34]

Recent decisions by U.S. courts and guidelines from U.S. agencies provide some frameworks for apportioning to the value of the technology covered by a SEP, separate from the value of the standardization process and address the potential hold-up problem. First and foremost, an FTC recommendation to courts has been to apply the hypothetical negotiation framework for analyzing royalty rates for patents subject to FRAND.[35] In general, the U.S. courts have followed this recommendation. For example, *Microsoft*, *Innovatio*, *CSIRO*, *Realtek*, and *Ericsson* all support the use of a hypothetical negotiation for valuing FRAND royalty rates.

These decisions, along with guidelines from the U.S. agencies outline and endorse practical steps for determining FRAND rates through making certain adjustments to a typical *Georgia-Pacific* hypothetical negotiation patent royalty analysis to better isolate the true value of the SEP technology, separate from the value of the standardization. One method is an adjustment to the hypothetical negotiation timing. Usually, a hypothetical negotiation analysis is based on evaluating a would-be negotiation just prior to first infringement. However, since the ability of SEP owners to obtain royalty rates based on the standardization value is typically tied to high switching costs and/or an industry locked into a particular technology, the FTC recommends setting the hypothetical negotiation date at the early stage of development during the licensee's design choice phase.[36] Note that this may not be the same date as the time of first infringement. Similarly, *Ericsson* and *Innovatio* identify a negotiation date of just prior to the adoption of the standard as a method to follow for removing patent value based on hold-up tied to the standardization value. The rationale for the negotiation date adjustment is that the valuation analysis is done for a time when design choice is still ongoing and the licensee is not yet locked into the standard, nor has it expended significant resources (in the form of sunk costs) based on the industry adoption of a standard. With the new negotiation date, the impact of switching costs on the royalty rate can be minimized and the technology at issue can be evaluated against market alternatives.

The second adjustment to the hypothetical negotiation analysis can be considered an extension of the first adjustment of moving the timing of the negotiation. The FTC's guideline extends beyond moving the date of the hypothetical

[33]U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 6.

[34]*Ericsson, Inc.,* et al. *v. D-Link Systems, Inc*., 773 F.3d 1201 (Fed. Cir., 2014).

[35]Fed. Trade Comm'n, *supra* note 4.

[36]*Id.*

negotiation date. A part of a FRAND analysis, capping the royalty based on incremental value over alternatives available at the time the standard was defined would support a royalty based on the value of the technology covered by the SEP.[37] However, due to complexities with reasonably identifying the benefits of alternatives, approaches based on incremental value above alternatives were rejected by *Innovatio* and the district level opinion affirmed by *Microsoft*. The recent U.S. court decisions did not completely reject an analysis based on incremental value of alternatives as an option for any case; but rather the methods were determined to be inappropriate for the specific analyses at issue. In *Ericsson*, the Federal Circuit acknowledged, although did not fully analyze, alternatives that could have been written into the standard as an input to the royalty analysis to account for potential patent hold-up.

Other methods for identifying FRAND royalties which are supported by recent U.S. court decisions and the U.S. agencies include, for example, those based on established market transactions, which at times may be an input for a hypothetical negotiation analysis. The FRAND royalties for the SEPs can be based on a variety of market transactions. For example, relevant market transactions may take the form of bilateral agreements, patent pool agreements, and even negotiated royalty offers.[38] In general, the important requirement for relying upon market comparable transactions is that the royalty analysis must account for any differences in market conditions between the negotiation at issue and the one that is associated with the comparable market transaction.[39] Conditions that may warrant the need for adjustments can include timing of agreement, inclusion of cross-licensing in the established agreement, and the number, country, and strength of patents covered by agreements, pending litigation as a factor, and the products at issue. In a FRAND analysis, additional needs for adjustments may become relevant and necessary, including accounting for whether the patents at issue in the established transaction are SEPs and also subject to FRAND, a difference in SSO licensing policy, and/or whether the agreement is a patent pool arrangement. For example, a license agreement for an SEP entered into at the time just prior to the standardization may provide useful insight into the value of the technology separate from the standard value.

As a less straightforward example, established royalty rates for SEPs licensed together with other intellectual property, such as certain non-SEPs, do not necessarily provide FRAND royalty terms for rights to just the SEPs at issue. The

[37] *Id.*

[38] *Commonwealth Scientific and Industrial Research Organisation v. Cicso Systems, Inc.*, No. C-11-343, ECF No. 324 (E.D. Tex., 2014); *Microsoft Corporation v. Motorola, Inc.*, 795 F.3d 1024 (9th Cir., 2015).

[39] *Ericsson, Inc.,* et al. *v. D-Link Systems, Inc.*, 773 F.3d 1201 (Fed. Cir., 2014); *Microsoft Corporation v. Motorola, Inc.*, 795 F.3d 1024 (9th Cir., 2015); U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 6.

established rates may be informative as they represent agreements between parties regarding the SEPs. However, the established royalty rates may also reflect value attributed to the other intellectual property; thus, simply basing a FRAND royalty on the established rate without accounting for this extra value can result in an overstated royalty. In other words, the established rate may properly be a function of true FRAND rates for the SEPs, but at the same time may not be limited to a FRAND rate appropriate for the SEPs alone. In addition, the portion of the rate based on the value of the non-SEPs may be included as a result of (i) demand for the additional non-SEP intellectual property, or (ii) hold-up. This is not to say that an established rate for certain SEPs and non-SEPs cannot represent FRAND royalty rates for just the SEPs. It may, in fact, be the case that the non-SEPs contribute trivial value, thereby warranting the appropriateness of the established royalty as a FRAND royalty for just the SEPs. However, this determination should not be presumed without proper consideration and support for the minimal value captured by the non-SEPs. Failure to do so may result in the use of established royalty rates allowing SEP holders to capture monetary value extending beyond that attributed to the technology covered by the SEPs, a clear extension beyond FRAND guidelines established by recent case law and regulatory agencies.

Proper consideration and incorporation of the above methods into the royalty analysis (i.e. hypothetical negotiation timing, royalty capping based on alternative technologies at the standard adoption time, and use of established rates with applicable proper adjustments) can assist with identifying and isolating the value of the standard essential technology separate from the value of adopting the standard and incorporating the patented technology. This apportionment will ultimately work towards ensuring the royalty rate determination satisfies the "fair and reasonable" requirement of FRAND. Coupling this analysis with royalty terms that are made available to any technology adopter and that do not require cross-licensing or the adopter's licensure of separate non-SEP rights creates a framework for the determination of FRAND royalties.

It is worth noting that following the guidance for a proper FRAND analysis established by recent case law and regulatory agencies does not require a "one size fits all" royalty for an SEP. The extra apportionment required for a FRAND analysis and methods for achieving such apportionment may yield, or at least not be inconsistent with, rates for the same SEP varying by product volume or product type.[40] The justification for this is simple; the same technology may provide varying value and improvements over technological alternatives depending on the product type.

[40]*See, e.g.*, *Microsoft Corporation v. Motorola, Inc.*, 795 F.3d 1024 (9th Cir., 2015).

6 Impact of FRAND on Patent Royalties

The FRAND royalty analysis requirement of apportioning to the value of the actual technology in isolation from any value of the adoption of the standard including the patented technology can certainly have an impact on the royalty determination. The goal is to limit the value captured by the royalty to the technology itself without capturing hold-up value due to, for example, switching costs and/or the industry locked into a standard. Since switching costs can be very large, licensees may be willing to pay royalties based on a value amount well above that for the patented technology alone for access to technology covered by SEPs, to avoid these costs. This potential premium, which can be attributed to patent hold-up, can be eliminated under a proper FRAND analysis, thereby potentially lowering the royalties patentees may expect to earn from licensing fees.

The main competitive/market concern surrounding SSO collaboration is that patent holders may gain market power through standardization and lead to exclusion of alternative competitive technology. Whether or not this occurs, there is no claim that implementers (i.e. potential licensees) have somehow inappropriately attained market power or any other inappropriate economic rent in their commercial efforts. Ultimately, if not allowing SEP holders to capture the value of the standard means implementers capture the value, this does not suggest there is any loss in economic efficiency. There is no theoretical claim that FRAND commitments are a means by which implementers gain market power or otherwise achieve an unfair advantage. As such, any value captured by implementers is only that dictated by a competitive and efficient market system. That is, implementers should be able to keep whatever gains or rents the competitive market allows them to keep.

On the other hand, if the value of the standardization cannot be captured by SEP holders, this does not necessarily translate into the value transferred to implementers. If the standardization itself has value, the objective of FRAND is to prevent SEP holders from capturing that value, and the idea that implementers capture it, suggests the downstream implementer market is somehow concentrated or monopolized. This is contrary to implementer markets generally, where substantial and ever increasing competition usually exists. In other words, it should not be expected that implementers will not compete-away (pass through) any standard-based value. Such a claim would require evidence of the lack of competition, entry barriers, etc. Furthermore, a concentrated downstream standard implementer market is contrary to an intended goal of standardization and FRAND terms, namely widespread adoption.[41] The combination of FRAND terms and increasing competition between implementers of standard technology can effectively yield a transfer of the value of standardization to the public domain (e.g. consumers).

Given that proper FRAND analysis accounts for alternative technologies, for example at the time of the adoption of the standard technology, the nature of the

[41] *Id.*

alternative technologies would likely have an impact on the patent value. The lesser the improvement of the technology covered by the SEP over the alternatively available technology, the smaller the royalty rate that is warranted. Therefore, if an SEP really had no viable alternative technology, then a FRAND rate may not be materially different than a rate reflecting all the value the SEP owner could extract (absent any FRAND requirement). It is when there were alternatives to an SEP, but the standard adoption rendered them irrelevant, or their use not reasonably feasible due to switching costs, that it would be expected that the FRAND rate will differ from that which the market will bear. In other words, application of the above FRAND requirements does not necessarily guarantee a "low" rate, nor should it. What should happen is that certain items are factored in, and others factored out of the royalty rate. Proper FRAND determination can still yield royalty fees that result in material impact on implementers' costs, and potentially consumer prices. For example, if there is a lack of alternatives and the improvement of the technology covered by the SEP is highly valued by consumers, market-based economics may justify increased implementer costs, supported by higher product prices.

7 Federal Circuit Ruling on *CSIRO* and the Relevance of FRAND Commitments

In the December 2015 ruling by the Federal Circuit regarding *CSIRO*, the appellate court apparently provided further clarification regarding the additional apportionment required for valuing all SEPs, as opposed to only those encumbered by FRAND obligations. The Federal Circuit seemingly eliminated previous ambiguity by stating "royalties for SEPs generally—and not only those subject to a [F]RAND commitment—must not include any value flowing to the patent from the standard's adoption".[42]

8 Conclusion

The answer to the question of what impact, if any, a FRAND requirement has on patent royalties may depend on who you ask. What is clear, however, is that recent decisions from U.S. courts and guidelines established by U.S. agencies emphasize that a proper FRAND analysis for SEPs must be based on the value of the patented technology and not the value of the standard adoption. Proper reliance upon established market transactions and adjustments to a hypothetical negotiation analysis can provide realistic effective means for determining appropriate FRAND

[42] *Commonwealth Scientific and Industrial Research Organisation v. Cicso Systems, Inc.*, 809 F.3d 1295 (Fed. Cir., 2015).

royalty terms. The guidance from the U.S. agencies can be helpful in providing some consistency in FRAND analyses given the oftentimes vague language of SSO licensing policies. Despite the vague language, practitioners should consider SSO licensing policies to be binding. Between the binding nature of the SSO commitments and the focus of eliminating standard adoption value from FRAND royalty terms, the cost for access to standard essential intellectual property rights should be kept within reasonable reach. Additional clarity from U.S. courts and/or U.S. agencies may or may not increase the consistency of FRAND determinations. However, keeping these requirements and guidelines in place should remain beneficial given the collusive nature of SSOs. This is not to say that the coordination amongst competitors through SSO activities is necessarily a bad thing. Networks effects made possible through product interoperability based on standards published by SSOs can increase consumer product value, promote manufacturing efficiencies, and stimulate international trade.

The common justification for intellectual property law is that inventions must be properly protected to allow inventors to be rewarded for inventions, thereby stimulating innovation. However, promoting inventions and innovation does not justify, nor does it require, rewarding patent owners beyond the value of the technology the intellectual property is meant to protect. Allowing patent holders to extract the value of the network effect created from a standard rewards the patentees based on value beyond the patented technology. Without FRAND terms the network effects value will flow to SEP holders. Proper FRAND terms that keep SEP holders from extracting the value of network effects can still leave the efficient level of return for innovators—that based on the technology itself. In other words, extracting the value of network effects by SEP holders is not necessary to appropriately motivate innovation. Any value of the standardization resulting from collaborative efforts during the SSO process may ultimately be available in the public domain.

Chapter 3
The Policy Implications of Licensing Standard Essential FRAND-Committed Patents in Bundles

Anne Layne-Farrar and Michael Salinger

1 Introduction

The majority of standard development organizations (henceforth "SDOs")[1] around the globe have policy statements guiding member conduct to help ensure the smooth functioning of the standard setting process and the commercialization of standards after the technologies have been defined. The majority of SDOs with such policy statements include rules on the disclosure, use and licensing of patented technologies within the standards they develop, to help ensure that firms wanting to implement the SDO's standards will have access to the technologies required for standard compliance. By far, the most prevalent patent licensing rule calls for any patented technologies necessary for compliance with the standard—referred to as "essential" technologies—to be licensed on fair, reasonable, and non-discriminatory (henceforth "FRAND") terms and conditions.[2] A great deal of ink has been spilled

We thank Koren Wong-Ervin for helpful comments.

[1]For example, among the 251 standards estimated to be included in a laptop, 75% are covered by FRAND licensing rules, while only 22% are covered by royalty-free licensing rules. *See* Brad Biddle et al., *How Many Standards in a Laptop? (And Other Empirical Questions)*, ITU-T Kaleidoscope: Beyond the Internet?-Innovations for Future Networks and Services, at 1-7, IEEE (2010).

[2]Sometimes referred to as standard setting organizations, or SSOs.

A. Layne-Farrar (✉)
Charles River Associates, Chicago, USA
e-mail: alayne-farrar@crai.com

A. Layne-Farrar
Northwestern University School of Law, Chicago, USA

M. Salinger
Boston University, Boston, USA

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_3

on what a FRAND commitment does and does not imply, but until quite recently there was no analysis (to the best of our knowledge) of the implications of FRAND commitments for licensing patents in bundles or portfolios.[3]

The issue is an important one, since the norm in high technology industries—including mobile telecommunications, computer hardware, software, consumer electronics, and others—is for patent holders to license their patents at the technology portfolio level. That is, patent holders in high tech industries tend to license all of their patents on a given technology in a single bundled license agreement; it is rare to see an arm's length license agreement within such industries covering standard essential patents (henceforth "SEPs") only, without the inclusion of at least some non-FRAND-committed patents.

In this chapter, we address the relationship between the two common practices described above: FRAND commitments and patent portfolio licensing. More specifically, we discuss whether making a commitment to license patents on FRAND terms and conditions prevents a patent holder from licensing those patents only in a bundle with other non-FRAND-committed patents. Alternatively, we can ask whether a FRAND commitment necessarily obligates a patent holder to license its FRAND-committed patents on a stand-alone basis, without including any patents that lack such commitments in the license, should the licensee request such a limited license. If FRAND commitments do allow for portfolio licensing, the next question that arises is what that commitment might imply for the royalties charged for the whole portfolio.

To preview the findings upfront, economic analysis establishes that FRAND commitments do not prevent portfolio licensing. However, bundling FRAND-committed patents with non-FRAND-committed patents does create a fundamental policy dilemma. On the one hand, a technology portfolio license can enable SEP holders to renege on a FRAND commitment. On the other hand, bundling patents is a widespread practice because it provides an efficient means of contracting that minimizes transaction and litigation costs for both licensors (the patent holders) and licensees (the manufacturers). Because of these efficiencies, it would be counter-productive to prohibit SEP holders from bundling patents into portfolio licenses, including both FRAND-encumbered and non-FRAND-encumbered patents. That being said, FRAND commitments do limit the license fees that a SEP holder can charge for a portfolio license. In fact, the FRAND royalty on a bundle of FRAND-committed and non-FRAND-committed patents can be less than what the FRAND commitment would be if the patent owner had made FRAND-commitments on all the patents in the bundle. More generally, economics establishes that even if a patent holder licenses its SEPs only in combination with other patents not bound by a FRAND commitment, such bundling is not a competitive problem per se, as long as the terms and conditions for the portfolio license are

[3]This chapter offers a non-technical summary and policy oriented extension of our theoretical paper on the antitrust implications of patent bundling, Anne Layne-Farrar & Michael Salinger, *Bundling of RAND-committed Patents*, 45 Res. Pol'y (2016), *available at* http://www.sciencedirect.com/science/article/pii/S0048733316300269.

consistent with the FRAND commitment for the SEP-only subset of the licensed portfolio.[4] In other words, SEP holders may include non-FRAND-committed patents in a portfolio license agreement "for free." The economics of portfolio licensing then has further implications for licensees. Firms seeking a license cannot argue that a SEP-only license must be offered at a discounted price relative to the relevant portfolio license price; instead, licensees must establish that the portfolio license is priced higher than a SEP-only license would be before demanding a discount.

In the remainder of this chapter, we explain the above conclusions. Section 2 provides some important economic background, describing the key theories developed in the economics literature that underlie the analysis of patent bundling. Section 3 provides the discussion of the question of primary interest here: what does a FRAND commitment imply for bundled patent licensing. Section 4 concludes with the policy implications of our analysis.

2 Important Economic Principles

A key concept in the general economic literature on product bundling is the "single monopoly profit" theorem.[5] Because this theorem applies more broadly than to just monopolists, we use the term "single rent"[6] theorem here. This theorem, explained and summarized in Sect. 2.1, helps to distinguish when bundling has the potential to pose antitrust concerns.

In assessing the antitrust risks, it is important to understand how common bundling is throughout the economy and why that is the case. Section 2.2 therefore turns to the substantial and growing economics literature that investigates the causes of product bundling in general. One strand of that literature focuses on bundling intellectual property (such as computer software, music, and video entertainment).

---

[4]SDOs with FRAND commitments typically apply those commitments to the full terms and conditions of the license, and not solely to royalty rates or explicit financial payments. *See for e.g.*, the European Telecommunications Standards Institute *IP Policy*, http://www.etsi.org/images/files/ipr/etsi-ipr-policy.pdf. In the discussion here, for simplicity we focus on running royalty rate terms and assume that all other terms and conditions are held constant and in compliance with the FRAND commitment.

[5]While the term is widely recognized, we have not been able to document the source of the term. Whinston attributes the arguments to a Chicago oral tradition. Michael Whinston, *Tying, Foreclosure, and Exclusion*, 80 Am. Econ. Rev. 837-59 (1990). Bowman recognizes the strong assumptions underlying the principle and a set of exceptions to it when those assumptions do not apply, *see* Ward S. Bowman, *Tying Arrangements and the Leverage Problem*, 67 Yale L. J., 19-36 (1957).

[6]Economists (as well as lawyers and courts) typically use the phrase "single monopoly profit," but we prefer the term "single rent" because the argument applies to rents of any kind, including patent royalties.

The narrower topic of bundling patents in licenses, however, is quite sparse.[7] One notable exception is a theoretical study by Gilbert and Katz,[8] who develop a model of patent bundling outside of standard setting contexts. Section 2.2 provides a review of this strand of the literature as well.

Layne-Farrar and Salinger[9] extend the Gilbert and Katz[10] model to incorporate standard setting contexts, FRAND commitments, and the combination of FRAND-committed and uncommitted patents in a single license.[11] The discussion presented in Sect. 3 is based on the analysis developed in the Layne-Farrar and Salinger[12] paper.

2.1 The Single Rent Theorem

When a seller practices "tying" or "pure bundling" it conditions the purchase of good A on the purchase of good B. In other words, in order to purchase A, the customer must also purchase B, whether or not the customer wants B. To those unfamiliar with economic reasoning, both the rationale for tying and the potential harm from it might seem obvious: the consumer is harmed because he pays for an item he does not want and the seller benefits because it gets the profits from selling the additional item. But that argument is incomplete for two reasons. First, it

[7]Patent bundling is related to but different from patent pooling, which Shapiro & Lerner and Tirole have analyzed theoretically. Patent pooling entails licensing patents held by different patent owners in a single package. Patent bundling refers to licensing multiple patents held by a single patent-owner as a package. *See* Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting* in 1 Innovation Pol'y And The Econ., 119-150 (Adam Jaffe, Josh Lerner & Scott Stern eds., 2001), http://www.nber.org/chapters/c10778.pdf; Josh Lerner & Tirole Jean, *Efficient Patent Pools*, 94 Am. Econ. Rev., 691-711 (2004).

[8]Richard J. Gilbert, & Michael L. Katz, *Should good patents come in small packages? A welfare analysis of intellectual property bundling*, 24 Int'l J. Indus. Org. 5, at 931-952, (2006).

[9]Layne-Farrar & Salinger, *supra* note 3, at 1155-1164.

[10]Gilbert & Katz, *supra* note 8.

[11]Note that, while most commonly made in the context of standard setting within SDOs, FRAND pledges are not limited to such cooperative efforts, in large part because SDOs are not the only way that technology standards emerge. The Program for Information Justice and Intellectual Property, at Washington College of Law, maintains a database of more than 150 such public non-SDO patent pledges: http://www.pijip.org/non-sdo-patent-commitments/. *See* Jorge Contreras, *A Market Reliance Theory for FRAND Commitments and Other Patent Pledges*, Utah L. Rev., 479 (2015) and E. Elhauge, *Treating RAND Commitments Neutrally*, 11 J. Competition L. And Econ. 1, at 1-22 (2015), (For discussions of the legal basis for enforcing FRAND commitments made outside an SDO setting). For other discussions of non-SDO patent pledges, *see* Anne Layne-Farrar, *Moving Past the SEP RAND Obsession: Some Thoughts on the Economic Implications of Unilateral Commitments and the Complexities of Patent Licensing*, 21 George Mason L. Rev., 4, (2014) and J. Harkrider, *REPs Not SEPs: A Reasonable and Non-Discriminatory Approach to Licensing Commitments,* Antitrust Chronicle, 10 (2013).

[12]Layne-Farrar & Salinger, *supra* note 3.

presumes that the price the seller charges for the A-B bundle exceeds what it would have charged for A sold separately by more than the incremental cost of adding B to the product bundle. Second, it also presumes that tying A and B together does not reduce demand for good A (which would drive the seller's profits down). If both assumptions were true, then tying B to A would increase the seller's profits, but these assumptions do not necessarily hold due to a principle known as the "single monopoly profit" theorem, or more accurately the "single rent" theorem.

One of the founding fathers of the theory, Judge Robert Bork, along with a co-author, explain in a fairly recent publication[13]:

> The single-monopoly-profit theorem shows that, in a vertical chain of production, the vertically integrated monopolist can earn monopoly profit only in one of the markets—either the upstream or downstream market, but not both. Different stages in the vertical process are complements to one another. If retailers increase the markup on a particular product, the manufacturer's profits will fall. Likewise, when a manufacturer increases the wholesale price of a product, the retailers' profits will fall. … In horizontal applications, the single-monopoly-profit theorem implies that firms typically cannot extend monopoly power over one product to other products without sacrificing total profit.

Judge Bork led the Chicago School of thought in developing the theory starting in the 1970s.[14] The production of nuts and bolts offers the seminal horizontal market example. Suppose that the cost of making either a nut or a bolt is 10 cents each. Assume that the market for bolts is competitive, meaning the price of a bolt is set at its marginal cost of 10 cents, while a monopolist controls the production of nuts. Could the nut maker extend its nut monopoly to bolts through product tying, as a means of increasing its monopoly profits and foreclosing competitors in the bolt market? Suppose that the monopolistic price for a nut-bolt combination is 40 cents. Since the bolt market is competitive, all manufacturers will charge the marginal cost of 10 cents for a bolt while the monopolist will charge 30 cents for a nut, enabling the nut monopolist to reach the 40 cent price target and earn 20 cents in profits. If the nut maker ties nuts and bolts together, it would set the price of the bundle at 40 cents, again earning 20 cents in profits. In summary, the monopolist cannot increase its profits through tying the two products together; there is but a single rent to be earned regardless of whether the products are tied or sold separately.

The single rent principle is a key underpinning for the so-called Chicago critique of a wide range of antitrust policies, including tying. Beginning in the 1940s,

---

[13]Robert H. Bork & J. Gregory Sidak, *What Does the Chicago School Teach About Internet Search and the Antitrust Treatment of Google?*, 8 J. Competition L. & Econ., 4 at 663-700 (2012). For Bork's original work on the subject, *see* Robert A. Bork, The Antitrust Paradox: A Policy At War With Itself, at 372–75, 380–81 (2d ed. 1993).

[14]*See*, *for example*, Richard A. Posner, *The Chicago School of antitrust analysis*, 127.4, U. Of PA. L. Rev., at 925-948 (1979); Richard a . Posner & Frank H. Easterbrook, Antitrust: Cases: Economic Notes And Other Materials. (1981); Benjamin Klein, "Tying", The New Palgrave Dictionary Of Economics And The Law, at 630-631 (Peter Newman ed., 1998); and Richard A. Posner, Antitrust Law *at* 197–99 (2d ed., 2001).

antitrust policy makers have expressed concerns that a firm with market power in one market could "leverage" that power into adjacent markets by tying the sale of the good with market power to the purchase of some other good.[15] The Chicago School—a group of legal and economic scholars associated with The University of Chicago—challenged this view, largely on the basis of the single rent theorem. They argued that this principle cast serious doubts on claims that firms' incentives to tie goods together were rooted in "leveraging" or anticompetitive "foreclosure." If firms with market power could only earn a single profit from a combination of goods, then another explanation must be found for the prevalent practice of product tying and bundling.

The single rent theory, like all economic theories, rests on some key assumptions, however.

Most importantly, the products must be strong complements to one another and they must be used in fixed proportions. If nuts and bolts were used in varying proportions, say because some applications called for a bolt but did not require a nut, the single rent theorem would not hold, and tying the purchase of nuts and bolts together could potentially increase the seller's profits. The first question to ask when assessing the potential of anticompetitive tying is therefore whether or not the single rent theorem assumptions hold in the circumstances at hand.

To see more clearly how the single rent principle works, and when it might fail, consider another simple example. Suppose that a restaurant chain plans to sell one kind of drink at each of its locations, the "Half-and-Half", which requires a mixture of lemonade and brewed tea.[16] The traditional proportions of the two mandatory (i.e., perfectly complementary) ingredients is 50/50. Further suppose that the restaurant drink supplier incurs costs of $0.25 per serving for lemonade and $0.10 per serving for brewed tea. The going retail price for a glass of Half-and-Half is $5.00 and the restaurant chain is targeting a $4.00 profit margin per serving. Thus, the profit maximizing price that the drink supplier can charge for the two Half-and-Half ingredients combined is $1.00 per serving,[17] yielding a profit to the supplier of $0.65 per serving ($1.00 − $0.10 − $0.25). In this case, the supplier could charge $1.00 for the bundle of ingredients, $0.50 per ingredient for a sum of $1.00 per serving, or some other split between the two inputs that sums to $1.00 per serving. Alternatively, the supplier could sell the tea to the restaurant for $1.00 per serving and "throw in" the lemonade "for free." For the restaurant chain selling only Half-and-Half drinks mixed at 50/50, any of these options would be equally acceptable (i.e., equally profitable) and the supplier would earn the same $0.65 profit per serving under any of the pricing alternatives. It is this logic that led the

[15]For a review of the history of the monopoly leverage theory, *see* Jennifer M. Clarke-Smith, *The Development of the Monopolistic Leveraging Theory and Its Appropriate Role in Antitrust Law*, 52 Cath. U. L. Rev. (2002).

[16]This is a drink comprised of half lemonade and half tea, made popular in the United States by the golfer Arnold Palmer.

[17]The implicit assumption here is that the restaurant chain has an outside option (say, soft drinks), so that it has bargaining power over its desired margin.

Chicago School to conclude that when the single rent principle holds, efficiency reasons are the most likely motivation for product tying and bundling (a point discussed further below).

But what happens when we drop the key assumption of fixed proportions? Suppose the drink supplier has a monopoly over lemonade and therefore charges the monopoly price for lemonade at $1.00 per serving, while a competitive market supplies tea at $0.10 per serving. The restaurant will substitute toward tea by mixing its Half-and-Half drinks with a higher proportion of tea than lemonade. A drink supplier with market power in both lemonade and tea, however could tie the sale of the two products to eliminate such substitution. For a restaurant chain with no other drink supply options, the tied sale would push more lemonade on the restaurant than it demands—and would increase the supplier's profits at the restaurant's expense as compared to selling the two drink ingredients separately. This example makes clear that market power is still a prerequisite for anticompetitive harm: if the restaurant has an alternative lemonade supplier, a single supplier attempting to tie tea and lemonade will be unsuccessful. When that prerequisite is met, breaking the assumption of fixed proportions for complementary inputs breaks the single rent principle and creates anticompetitive incentives for tying.

In extending the single rent analysis to patents, it is important to keep the market power condition in mind. A patent is a property right that does not by itself confer a monopoly any more than other forms of asset ownership do. By way of analogy, an apartment building is also a property right that might appear to give the owner a "monopoly" over the rental of apartments in that particular building. But the fact that there is a single seller of a specific asset does not constitute a monopoly unless that asset constitutes a well-defined market. If other apartment buildings (or other forms of housing) are competitive alternatives to the apartments in a particular building, the owner of the building has a property right but not a monopoly. Patented technologies are similar. While some patents might well constitute well-defined markets, not all patents do, and in practice most patents do not.

This is true of SEPs as well. First, such patents are self-declared to SDOs. The patent holder is asked to exercise good faith in identifying the patents it believes may be (or may become) essential for technical compliance with a given standard, but no SDO evaluates the declared patents to determine whether they are in fact essential. Furthermore, as the standard continues through development, which patents are and are not essential for its practice tend to change. Until an independent review (legal and technical) establishes that a particular declared patent is in fact essential for the practice of a standard, there can be no presumption of market power.[18] Second, and equally important, even restricting the analysis to truly essential patents for a particular standard, we cannot automatically conclude that an individual SEP or portfolio of SEPs held by a single patent holder constitutes a

[18]Typically, an essentiality determination is conducted only when necessary, such as if the patent is submitted for inclusion in a patent licensing pool or when the patent is litigated.

well-defined market and that ownership confers market power. SEPs are perfect complements to one another. This creates a connection among the patents that in turn imposes a connection among the patent holders. As a result, SEPs cannot be licensed in isolation. Specifically, royalty rates consistent with FRAND are tied to the value the patented technologies contribute to the standard, which inherently accounts for all valuable contributions to the standard (i.e., the value contributed by all other SEPs). In contrast to monopolists, who can set prices without consideration of other firms, SEP holders must take into account the value of other SEPs when setting their own royalty rates. Reinforcing this dynamic, firms taking a license to SEPs know they must license all SEPs to be compliant with the standard. As a result, licensees push back in negotiations if they feel an SEP holder is attempting to ask for more than its share. All of these factors lessen any market power that might be conferred by essentiality. The degree to which market power is mitigated by complementarities is an empirical matter and thus market power for SEPs, just as for non-SEPs, should be evaluated on a case-by-case basis.

2.2 *The Economic Literature on Bundling*

With the bounds of the single rent theorem in mind, we turn next to the extensive literature on tying and bundling. This entire literature is about exceptions to the single rent principle. The first strand focuses on how tying can be used to practice price discrimination.[19] The second strand focuses on the circumstances under which tying can be used to foreclose rivals (leverage market power). The first two subparts below review these strands of the literature.

The emphasis in the literature on the exceptions should not obscure the general rule, however.

The intuition that the objective of tying is to leverage market power from one good to another often fails to withstand rigorous economic scrutiny. Thus, other, non-anticompetitive rationales are needed to explain the very common practice of tying and bundling. The third subpart below discusses the literature that establishes this point. Finally, the fourth subpart discusses the two papers that address the tying and bundling of patents; specifically, Gilbert and Katz[20] and Layne-Farrar and Salinger.[21]

[19]Price discrimination is not necessarily harmful to consumers. Economists only condemn price discrimination that leads to output reductions. *See* Lars A. Stole, *Price Discrimination and Competition*, in 3 Handbook of Industrial Organization at 2223 (2007).

[20]*Supra*, note 8.

[21]*Supra*, note 3.

1. *Price discrimination*

The "price discrimination" strand of the literature on bundling started with George Stigler's analysis of block booking practices for cinemas.[22] The argument rested on a simple example. A firm sells two products, A and B, to two customers, I and II. In Stigler's article, the seller is a movie distributor, the products are films, and the customers are movie theaters. Customer I is willing to pay $10 for movie A and $2 for movie B. Customer II is willing to pay $2 for movie A and $11 for movie B. If the seller does not bundle, it will charge $10 for movie A and $11 for movie B. Only customer I will buy movie A. To get customer II to buy movie A also, the seller would have to lower its price to $2, but selling two units at a price of $2 generates less profit than selling one unit at price of $10 (even assuming that marginal cost is 0). Similarly, at a price of $11, only customer II will buy movie B. Stigler's insight was that the movie distributor could offer the two products solely in a bundle and charge each customer $12. Both customers would then buy both products. In this example, bundling is "Pareto superior"—meaning that no party is harmed and some receive a positive benefit—as compared to selling the goods separately.

That is, under this example bundling enables the seller to earn a profit of $24 instead of $21 and consumer surplus goes up as well (from 0 to $1).[23]

While much of the subsequent literature has focused on extending the Stigler model to more general circumstances, arguably the most important extension for tying policy to emerge from this follow-on literature is due to an early contribution by Adams and Yellen.[24] Like Stigler's model, their analysis was based on assumptions about the willingness to pay among a discrete number of customers. Adams and Yellen pointed out that mixed bundling yields higher profits for price discrimination than pure bundling does. Pure bundling means that the firm sells only the bundle; the individual products cannot be purchased separately. Mixed bundling means that the firm offers customers a choice of the bundle or the separate, individual goods, with the price of the bundle being different (typically less than) the sum of the individual prices. In the context of the Stigler model, pure bundling would occur if the movie distributor only offered the A and B movies together for a price of $12, while mixed bundling would occur if the movie distributor offered

[22]*See* G. J. Stigler, *United States v. Loew's Inc.: A note on block-booking*, Sup. Ct. Rev., at 152-157 (1963).

[23]The single rent principle does not apply in the Stigler setting because the monopolist has two monopolies rather than one. Moreover, the model rules out price discrimination in selling the goods separately. As a result, simple pricing of the two goods leaves a "deadweight loss." Customer A values good II at more than marginal cost but less than the simple monopoly price. The same point applies to customer B and good I. Thus, the bundling in this example does not force on each customer a good that he values at less than marginal cost. The standard interpretation of the Stigler model is that bundling is a substitute for price discrimination.

[24]W. J. Adams & J. L. Yellen, *Commodity bundling and the burden of monopoly,* The Q. J. of Econ., at 475-498 (1976).

three distinct packages: the two- movie bundle at $12, or movie A alone for $10 and movie B alone for $11.

Adams' and Yellen's insight on mixed bundling is important for competition policy because mixed bundling is not the same as pure bundling or tying. Under mixed bundling, customers have even more choices and are free to obtain the individual goods should they so desire.[25] It is only pure bundling that restricts customer choice and has the potential to create harm. While important for understanding certain seller motivations in combining goods into bundles, the price discrimination strand of the literature is insufficient to explain why firms would ever choose not to offer the individual goods separately as well.[26]

2. *Foreclosure*

The foreclosure strand of the literature developed formal economic models to clarify when tying should raise antitrust concerns, particularly as to when it might work as a form of monopoly leveraging.

Whinston (1990)[27] is the seminal paper in this area. He analyzed the possible strategies for a firm that initially has a monopoly over two products. Its position in one (good A) is protected but it faces potential entry with respect to the other (good B). In Whinston's model, tying B to A offers the seller a means to commit to price aggressively in response to a rival's entry into B. By refusing to sell A without B, the incumbent lowers the profits it can earn if entry into the B market does occur: losing sales of B after a rival enters not only reduces the incumbent's profits from sales of B but also reduces its profits from sales of A. With tying, a lost B sale also means a lost A sale, so tying gives the incumbent an extra incentive to price more aggressively in the face of potential entry than it otherwise would have done.

An essential element of the Whinston model is the assumption of economies of scale in the production of good B. Thus, even if the incumbent continues to price good A above its marginal cost (to avoid prohibitions against predatory pricing), the lower price for the A-B bundle as compared to pricing for the two goods separately

[25]The distinction between pure bundling and mixed bundling can be blurry when the price of the bundle is so close to the price of the individual goods that the seller engages in what is called a "virtual tie".

[26]Much of the subsequent price discrimination strand of the literature extends the Stigler and Adams-Yellin analysis to more general distributions with notable contributions by Schmalensee and McAfee, McMillan, and Whinston. McAfee, McMillan and Whinston show that for completely general continuous distributions of reservation values, mixed bundling almost always yields higher profits for the seller than pure bundling. It is possible that the optimal mixed bundle might entail charging a premium for the bundle, which would only be a practical policy if the seller can prevent those who want both goods from buying them separately. *See* Richard Schmalensee, *Gaussian demand and commodity bundling*, THE J. OF BUS., at S211-S230 (1984) and R. P. McAfee et al., *Multiproduct monopoly, commodity bundling, and correlation of values* 104 THE Q. J. OF ECON. 2, at 371-383 (1989).

However, we are not aware of anyone who has seriously suggested that tying can occur because it is not feasible to charge a premium for the bundle.

[27]Whinston, *supra* note 5, at 837-59.

can still render entry by a new rival into the B market unprofitable because the rival cannot achieve sufficient scale to compete effectively against the incumbent.

In game-theoretic analysis, commitment to a strategy means sticking with it even when it would be profitable to change course. In the Whinston model, the incumbent would like to sell A separately (at the monopoly price) after rival entry occurs in B if it could. However, as is often the case in game theoretic results, committing not to act in one's own short term interest can have a long term strategic value. When the incumbent commits not to act in its own interest by selling A separately, the new B entrant cannot exploit the incumbent's incentive to accommodate entry by unbundling the sale of the two goods, which in turn helps to prevent entry into the B market.

When the United States Department of Justice sued Microsoft for tying its browser to its Windows operating system, Carlton and Waldman[28] adapted the basic Whinston model to assumptions that more nearly matched the facts of that case. Others have pursued different extensions. Of them, Choi and Stefanadis[29] is of particular note. In their model, an incumbent monopolist sells two products (A and B) that consumers combine in fixed proportions. Entry into both product markets is possible, but both require investing in research and development (R&D) and the outcome of that R&D is uncertain. Because the two goods are only useful in combination (such as a computer and an operating system software program), a firm that successfully innovates in A can only sell its product if consumers can purchase B also, so innovation in B must be successful. Alternatively, consumers might buy A from a successful entrant if they can combine it with B from the incumbent. If the incumbent sells A and B only in bundled form, it denies this one-good-at-a-time path to market entry. With higher costs of market entry and a reduced prospect for success, potential innovators might choose not to attempt entry at all. If entry into B also entails scale economies, then reduced access to potential customers (those who get B from the incumbent in order to get A) can tilt the balance in the entry decision and convince the potential entrant to stay out of the market altogether.

However plausible the foreclosure effect might seem as a matter of theory, it is important to critically assess claims that the theory applies in any particular instance. One must always pose the question, "Why does the seller of A refuse to sell it on a stand-alone basis to people who want to buy it but not buy B?" In the foreclosure literature, the answer to the question is that the seller generally does have an incentive to sell its monopolized good separately but foregoes that option for strategic reasons.[30] The monopolists in the leveraging literature are imposing on

[28]Dennis W. Carlton, & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 Rand J. Econ, 194, at 195 (2002).

[29]Jay Pil Choi & Stefanadis Christodoulos, *Tying, Investment, and the Dynamic Leverage Theory*, 32 Rand J. of Econ., at 52-71 (2001).

[30]The model in Nalebuff is similar to Choi and Stefanadis in that the incumbent initially has a monopoly over two goods and faces random entry in both. Nalebuff argues that in addition to its entry-deterring effects, bundling increases profits relative to selling the goods separately and therefore is not costly. The argument draws on the price discrimination strand of the literature. But

themselves the cost of not selling the good separately; they do so to influence the actions of potential entrants. In any real case, there needs to be a presumption that the commitment not to sell goods separately imposes a cost on the firm accused of tying to exclude competitors. To apply the argument in a specific case, one would have to present compelling evidence that the commitment to maintain tying is credible and that the benefit the seller receives from the tying commitment exceeds the cost that commitment imposes.

3. *Product complexity*

As explained above, any allegation about anticompetitive effects from tying must include a compelling answer to the following question: "If a firm is selling A only in combination with B, why does the firm refuse to sell A on a stand-alone basis to people who want just A?"

It is impossible to overstate how common a phenomenon it is to bundle goods into packages. Many times every day people buy bundles of goods that include components they do not want. Shoes come with shoe laces. Newspapers come with an array of sections attached to the front page, from sports to the arts. Whenever the purchase of something includes something else "at no extra charge," the term "no extra charge" is code for "tied." The thirteenth item in a "baker's dozen" is not free. The baker who purports to be setting the price of a "dozen" knows very well that he is setting the price for 13 with the thirteenth item tied to the first 12. Ironically, the advent of separate baggage charges on airlines has engendered complaints, and Southwest Airlines has engaged in an extensive advertising campaign to tout its business practice of tying the right to check two pieces of luggage to its passenger flight service (although it of course does not explain its policy in these terms.)

Given that tying and bundling occur regularly in both highly competitive markets (bakeries) and less competitive ones (cable television programming), it is clear that the explanation for the practice has to be simpler than the leveraging and price discrimination models that dominated the economics literature through the early 2000s. Evans and Salinger[31] provide such an explanation. They point to the cost of product offering complexity as the most natural explanation for tying and bundling. Firms face a long list of decisions even after deciding on their general line of business, including the exact features and components they will include in each product. Dell offers a good example. Rather than presetting a handful of computer models each with a specific screen size, hard drive capacity, memory, and operating system (among other features), Dell allows its customers to customize their

(Footnote 30 continued)

that argument ignores the possibility of mixed bundling, which would be even more profitable than pure bundling. *See* Barry Nalebuff, *Bundling as a Barrier to Entry*, 119 Q. J. OF ECON., at 159-187 (2004) and Choi & Stefanadis, *supra* note 29.

[31]*See* David S. Evans & Michael A. Salinger, *Why do firms bundle and tie-evidence from competitive markets and implications for tying law*, 22 YALE J. ON REG, at 37 (2005), and David S. Evans & Michael A. Salinger, *The Role of Cost in Determining when Firms Offer Bundles and Ties*, 56 J. OF IND. ECON., at 143-168 (2008).

computers by selecting from menus for each of these features. But even Dell does not include every conceivable configuration, and it is important to remember that Dell and the personal computer industry define the exception, not the rule, in product offering flexibility. In general, companies do not customize their offerings to the precise desires of every customer—it is typically not cost-effective or even feasible to do so.

Product offering complexity and cost provides an intuitively appealing explanation for the widespread practice of bundling. This explanation is well supported by the available evidence, such as the accounting literature on "activity-based costing."[32] Evans and Salinger provide evidence in their study comparing how United States and Japanese automobile companies offered optional features, like air conditioning, and how the relative practices of features changed over time.[33] The most compelling evidence, however, is not published: it is the common experience of consumers who daily purchase bundles of items that are not available separately for sale.

4. *Patent bundling*

Patents, as intangible assets, are unlike traditional goods in a number of important ways, so while some lessons can be drawn from the existing bundling literature summarized above, that literature cannot be applied directly to patent licensing. In particular, unlike physical goods, there is typically no marginal cost to including an additional patent in a license bundle. The creation of claim charts linking the patented innovations to licensed products and services imposes additional costs during negotiations, but such charts are typically prepared only for the handful of representative patents driving the valuation exercise and are not required for each and every patent included in a portfolio license.[34] From the licensee's perspective, there is also no inventory or disposal costs associated with an additional patent's

[32]*See, e.g.*, Robin Cooper & Robert S. Kaplan, *Measure costs right: make the right decisions*, 66 Harv. Bus. Rev., 5, at 96-103 (1988).

[33]When Japanese automobile companies first started their substantial penetration into the United States markets, each model came with only a small number – possibly only two – bundles of options. The Honda Accord might, for example, have a base model that did not have air conditioning or any sound system other than an FM radio, a middle model that included air conditioning, power windows, and a few more extra features, and a top model that also included leather seats, an upgraded sound system, a moon roof, and better tires. The original rationale was that the Japanese companies had longer supply lines and did not have the ability to supply cars with exactly the features customers wanted (to the relevant location). In contrast, US automobile companies were selling options on an a la carte basis. In some cases, even the AM/FM radio was effectively optional. (Ford listed it as standard, but a buyer could get a credit for not having it.) Over time, one might have expected competition to compel Japanese companies to adopt policies more like the US policy. To the contrary, the US car companies came to recognize that there were hidden costs to their more complex set of offerings and started emulating the Japanese companies by offering options only on a bundled basis. Thus, the tying strategy won out over the unbundling strategy in market competition.

[34]It is important to understand that fair and reasonable license fees for a portfolio of patents are not determined by adding up the value of each patent included. Instead, portfolio licensing exhibits

inclusion in a license, as compared to unwanted physical goods tied to a wanted good; the addition of an "unwanted" patent in a portfolio license can simply be ignored.

The unique attributes of intangible goods alter bundling analysis in meaningful ways. The underlying economics in addressing the concerns with patent tying are largely the same as for physical good ties—analyzing whether the single rent theorem applies, and if not, whether bundling can create harm to competition—but patent tying adds a layer of complexity to the analysis because there are two levels of rents to consider: the *ex ante* rents that can be earned before a licensee makes any sunk investment (such as investments to commercialize a standard in a new product) and the *ex post* rents that can be earned after such investments are made (which could include expropriation of the licensee's sunk investments, known as "patent holdup").[35]

Gilbert and Katz[36] extend the bundling literature to patent licensing in light of differences between patents and physical goods. They developed a simple model to aid their analysis. The patent holder owns two patents on complementary technologies, so that value is earned from the technologies only when they are used in combination. The patent holder has no manufacturing capacity, so in order to earn a return on its patents, it must license them. A single licensee (the "manufacturer") comprises the downstream market. Assume for now that the manufacturer has no innovative capabilities. Thus, in order to produce a product to sell in the marketplace, the manufacturer must license the patents from the patent holder. In addition to taking a license, the manufacturer also must make a complementary investment to commercialize the patented technology. If the manufacturer does not obtain a license to the technology prior to investing in complementary commercialization assets then the patent owner may be able to practice holdup.

To put these issues in more concrete terms, we replicate here a numeric example based on the Gilbert and Katz model from our technical paper.[37] Suppose that without any investment by the manufacturer, the patented technology yields a value of $20 (unrealizable by the patent holder without licensing, by assumption). With efficient investment in complementary assets by the manufacturer, the technology embodied in an end product yields gross benefits (i.e., before taking account of the commercialization cost incurred by the manufacturer) of $100 (unrealizable by the manufacturer absent the initial contribution by the patent holder). Call these gross benefits B. The commercialization investment (refer to this amount as S) has a cost

(Footnote 34 continued)

strong nonlinearities. For example, a license to 100 patents may set the fee at "L," while a license to those 100 plus another 20 more may still be licensed at "L".

[35]This analysis starts from the point in time that the patent holder has already made its R&D investment and has a patent in hand. Thus, in our discussion here "ex ante" refers to the licensee's investment, not the patent holder's.

[36]*Supra*, note 8.

[37]Layne-Farrar & Salinger, *supra* note 3.

of $30, so the potential net value of the patented technology embodied in the end product (patent plus manufacture) is $70 (or B − S = $100 − $30).

Knowing the above costs and benefits, the manufacturer would not invest S in complementary assets without first obtaining a license for the patented technology (ex ante, or long term contracting in Gilbert and Katz's terminology). At this time, the IP owner can charge no more than B − S for the two patents (here $100 − $30 = $70), which allows the manufacturer to make and recover its investment (and also to choose the most efficient level of complementary investment). If the manufacturer failed to obtain a license before making its commercialization investment, however, the IP owner could insist on a license fee L = $100 (or just below it). With such ex post licensing (or short term contracting in Gilbert and Katz's terminology) the manufacturer would rationally accept this offer as it would be the manufacturer's best option at that point. In short, the presence of a sunk investment in commercialization is the key factor enabling holdup.

How does patent bundling enter into the picture? Up to this point, whether the technology is based on one patent or two is irrelevant—the manufacturer needs both. Thus, whether the IP owner offers the two patents separately or in a bundle is also irrelevant. It can offer to license the patents as a bundle at a license fee of $70 or à la carte with individual prices that add to a cumulative fee of $70.

Profits and consumer welfare (and, therefore, total surplus) are all the same under the various options for charging a total of $70. The irrelevance of bundling under these conditions is an application of the single rent principle. One patent that is essential for a product gives the patent holder the ability to extract the same total license fee as it can with two such patents.

To this foundational model, Gilbert and Katz then adds the possibility that the manufacturer could invest in R&D to invent around the patented technology. If successful, the manufacturer would no longer need a license from the patent holder and the patent holder would earn zero profits. This setup addresses the antitrust concern that tying in patent licensing could reduce incentives of others in the industry (the manufacturer in the model) to innovate, particularly in terms of investments in non-infringing alternatives to the patented technology.

Ex ante contracting is a preferable licensing approach from a social perspective because it eliminates the potential for patent holdup.[38] But in the Gilbert and Katz model, patent holders will only offer an ex ante license if allowed to offer bundled licenses. Thus, to obtain a license to a single patent, the licensee would have to wait for an ex post, short term contract. This setup introduces a competition policy tradeoff: ex ante licensing is efficient (inducing appropriate commercialization investments by manufacturers) but because the license is for the full technology portfolio, it will also reduce the manufacturer's incentive to invest in workaround technologies. On the other hand, ex post licensing may maintain the manufacturer's incentives to invest in R&D on alternative technologies, but also exposes the

[38]In the real world, a number of obstacles often prevent such licensing, particularly in standard setting contexts.

licensee to the risk of patent holdup. Whenever the potential licensee is unsuccessful in developing workarounds for all of the needed patented technologies, the patent holder would be able to holdup the licensee using the remaining patents. Gilbert and Katz therefore conclude that (ex ante) bundled licensing is the welfare maximizing option.[39]

Combining the insights from Gilbert and Katz with the product complexity teachings of the Evans and Salinger papers discussed above provides strong justification for portfolio licensing, at least outside of standard setting contexts.

Some large technology companies hold tens of thousands of patents. Requiring them to license each one of those patents on an à la cart basis would impose a heavy cost burden on innovative firms: for a company with 1,000 patents (a relatively modest patent portfolio size), the number of possible combinations of patents for licensing is roughly 10^{301}.[40] Put differently, obligating a licensor with 1,000 patents in a given portfolio to unbundle any arbitrary combination of those patents would mean that the licensor would have to determine as many as one googol cubed different licensing prices and then monitor and enforce compliance for all those different licensing configurations.[41] Clearly, just as with traditional product complexity, there is a cost of having more complex patent license offerings as well. Not surprisingly, in practice patent licensors offer a small subset of the patent bundles that they could conceivably offer. But even if many licensees only use a subset of the patents they license, the realities of product complexity and the efficiencies of portfolio licensing allay public policy concerns.

In our experience, most licensees (outside of litigation contexts, where incentives can be distorted for a number of reasons) prefer to license bundles of patents. Patent licenses help to disseminate technology and to reduce patent infringement litigation. If a company licenses only a subset of a licensor's patents that it needs to implement a technology in a given product, that licensee risks a patent-infringement lawsuit every time it modifies that product or introduces a new and improved version of that product—even if it pays the royalties due on the patents it does license. To protect against this scenario and to provide freedom in product design, licensees often request licenses to broad, inclusive patent bundles.[42]

Interpreting the Gilbert and Katz ex ante license as analogous to a FRAND commitment (namely, ex ante licensing to preclude patent holdup) clarifies why it is not anticompetitive to tie the license of one SEP to another SEP for the same standard. Within the same standard, all genuinely essential patents are perfect complements to one another and are used in fixed proportions (one license to each SEP is required). As a result, the assumptions for the single rent theorem hold and

[39]Observe that they also assume that all investments in workaround technologies are redundant, not contributing any new innovations. Dropping that assumption would complicate the analysis considerably.

[40]The math problem here is determining the combinatorial for 1,000 patents, where the patents can be taken by ones, or in combinations of twos, threes, or any other subset.

[41]A googol is equal to 10 raised to the 10^{th} power.

[42]This practice is common and is referred to as "freedom to operate" or "convenience" licensing.

we can conclude that it is not anticompetitive for a SEP holder to license all of its SEPs in a single bundle for each standard.

But what about tying FRAND-committed patents to non-FRAND-committed patents? That requires a more complex framework and an extended model. Layne-Farrar and Salinger[43] provide that extension, starting from the model developed in Gilbert and Katz[44] but assuming that only one of the patents to be licensed is encumbered by a FRAND commitment. Taking all of the above discussions into account, we can interpret the inclusion of all the patents that a licensee might conceivably use—both FRAND-committed and not—as a form of commitment on the part of a patent owner not to behave opportunistically by suing for patent infringement on a non-FRAND-committed patent that the licensee of its FRAND-committed patents ends up infringing. The remaining question is then how such portfolio licenses affect FRAND licensing terms and conditions. The remainder of this chapter discusses the findings of the Layne-Farrar and Salinger (2016) study.

3 Tying and Bundling with FRAND-Committed Patents

What happens when we introduce a FRAND commitment on one, but not both, of the two patents in the simple two-patent model discussed above? To build up to the answer to that question, consider first an even simpler version of the model with only one patent that helps us to be more precise about what a FRAND commitment means. Assume that the manufacturer has a chance of inventing around the patent, investing R in a workaround that has a probability p ($0 \leq p \leq 1$) of success. Under this framework, we can introduce the concept of a FRAND commitment by assuming that the patent holder has to set a license fee L before the manufacture makes any of its investments (either in R to invent around the patent or in S to commercialize the patented technology).[45] In a standard setting context, the cost of a successful workaround (R) can be interpreted as the cost of creating an alternative technology to define the standard, while the commercialization cost of S can be interpreted as the opportunity cost of not adopting an alternative.

The patent holder can consider three levels of royalties: the holdup amount, the net contributed value of the patented technology, or a rate that eliminates the licensee's incentive to invent around the patents.[46] The first option sets L = B, the total value of the end product compliant with the standard.

---

[43]Layne-Farrar & Salinger, *supra* note 3.

[44]Gilbert & Katz, *supra* note 8.

[45]Note that we do not have to force to patent holder to actually set its license fee before the manufacturer makes its investment in S. It is enough to limit the patent holder to a license fee of B-S, which is the maximum amount it could have earned before the manufacturer's investment.

[46]We show why this is the case in our formal model in Layne-Farrar & Salinger, *supra* note 3. In essence, these three rates mark inflection points, such that charging something other than one of

This is the holdup amount defined above, where the patent holder expropriates the full value of the manufacturer's sunk investment S. The second licensing fee option is L = B − S, the maximum net value that the patented technology contributes to the end product, as explained above. The final licensing fee option is to set L = R/p, the manufacturer's investment cost in working around the patented technology divided by its odds of success. This royalty rate is the maximum royalty that the patent holder can charge if it wants to prevent the manufacturer from attempting to work around its patents because this royalty rate reflects the payment at which the manufacturer is indifferent between trying to invent around the patent holder's patent and simply licensing that patent.

These three options define the patent holder's potential licensing fees, but we have not yet said which of those options is consistent with a FRAND commitment. That turns out to be a more complicated determination than one might suppose. Most obviously, setting L = B is inconsistent with FRAND because that royalty fee takes advantage of holdup (it includes the licensee's investment S) and it exceeds the contribution the patented technology makes to products compliant with the standard (which is capped at B − S).[47] This leaves the familiar net value royalty of B − S and the unfamiliar cost-based royalty R/p. The former rate, L = B − S, is free of holdup and hence is consistent with FRAND. The latter rate, L = R/p, requires a closer look. As noted above, this is the rate that eliminates the manufacturer's incentive to attempt to replace the patent holder in defining the standard. If the patent holder sets its license fee L above R/p, the manufacturer will always have an incentive to attempt the workaround.[48] The manufacturer may not always succeed (unless p = 1), but if the patent holder sets L at this level, it takes the chance that it will not define the standard and may not be able to license its patent at all. Thus, if the licensee wants to be certain that its patented technology will define the standard, it must prevent the manufacturer from investing in the workaround strategy. Setting L = R/p achieves that goal and guarantees that the patent holder will earn some positive licensing fees. This explanation clarifies that L = R/p is also consistent with FRAND: it is a rate set with regard to competition to define the standard, it is not opportunistic and is free of holdup.

These findings provide an interesting policy dilemma for interpreting FRAND commitments. On the one hand, a FRAND-consistent license fee can be defined as any royalty that does not expropriate sunk, complementary investments. Such rates are non-opportunistic and free of holdup. L = B − S satisfies this criteria. On the other hand, we could also interpret FRAND as a commitment to set licensing terms

(Footnote 46 continued)

these rates would not result in the patent holder maximizing its licensing revenues within the constraints of particular parameter values.

[47]An alternative approach would be to assume that the manufacturer chooses *S* only after it observes the outcome of its R&D. Under that assumption, the IP owner would never be able to charge a license fee of B because that would incentivize the manufacturer to always try to work around the patent.

[48]*See* Layne-Farrar & Salinger, *supra* note 3, at 1158-1159 (For the mathematical proof).

and conditions that could be acceptable for SDO members during the standard development phase. This view of FRAND is consistent with the strand of the literature that interprets FRAND as requiring rates bounded by what the patent holder could charge at the time the standard is developed, reflecting any competition among technological solutions.[49] For some parameter values, this conceptual standard limits the license fee to L = R/p. As we showed in our technical paper, R/p < B − S is an insufficient criterion to guarantee that the patent holder will select L = R/p during the development of the standard. That is, even ex ante to a manufacturer's sunk costs, the SEP holder may sometimes view the chance of earning a relatively higher (but still non-opportunistic) royalty rate set at the net value L = B − S as more attractive than the guaranteed royalty rate of R/p that removes the risk the patents will not define the standard. Given how complicated that actual choice is for SEP holders, one might, as a practical matter, define FRAND as the lesser of the value-based and cost-based royalties. This combined rule would both preclude holdup and ensure that the patented technology could be chosen for the standard in some ex ante technology competition.[50]

Which of the two license fees is lower will, of course, depend on the real world values of B, S, R and p. To see this, extend our earlier numeric example in which B = $100 and S = $30. Under these parameters, L = B − S will be $70 (as before). Suppose that R = $36 and p = 0.6 (a 60% chance of successful workaround R&D). In this case, the licensing option of L = R/p would imply L = $36/0.6 = $60, less than the L = B − S option. Thus, under a combined interpretation of FRAND, the patent holder would need to set L = R/p to comport with its FRAND commitment. If instead R = $36 but p = 0.4 (that is, the workaround R&D is riskier, with only a 40% chance of success), then the R/p licensing option would imply L = $90, higher than the L = B − S option. In that case, to comport with FRAND the patent holder would need to charge L = B − S = $70. To implement the principle that FRAND means the minimum of B − S and R/p, one needs to estimate all four parameters with sufficient precision to rely on them. In practice, some of the parameters may be easier to estimate than others and one might have a reliable estimate of B − S *or* R/p, but not both. Under such circumstances, a practical policy would be to accept FRAND as either L = B − S or L = R/p, whichever one can be measured reliably. Such a policy guide would offer greater flexibility for the patent owner than the minimum of L = B − S and L = R/p, but would still offer protection to the patent user by limiting the ability of the patent owner to behave opportunistically.

[49] *See, e.g.*, Daniel G. Swanson & William J. Baumol *Reasonable and nondiscriminatory (RAND) royalties,standards selection, and control of market power*, 73 Antitrust L. J., at 1-58 (2005).

[50] The thought experiment of an ex ante technology auction is one approach to pinning down FRAND licensing, though it is generally viewed as a thought experiment rather than a practical solution to setting reasonable royalty rates. *See, e.g.*, Swanson & Baumol, *id.*, and Damien Geradin et al., *The Ex Ante Auction Model for the Control of Market Power in Standard Setting Organizations*, Eur. Competition J. (2008).

3.1 Patent Holders with Licensing Options Outside of the Standard—An Alternative Interpretation of B and S

Now that we have a definition of "FRAND" within our simple model, we can explore the implications of the standard setting context more fully. Thus far we have assumed that the patent holder can only earn a return on its investment in the patented technology if it licenses the single manufacturer. Within a standard setting context, this is analogous to assuming that the patented technology has no outside use and only has value if deployed in products compliant with the standard. In reality, pioneering technologies may have value to both a particular standard and to other products not compliant with the standard. This situation provides the patent holder with additional options and greater flexibility in setting its royalty rates. To explore this scenario, we need to move back to a model with two patents.

The two critical features giving rise to the need for cooperative standards are (1) competing technologies, each of which could serve as the standard (though perhaps with differing commercial success), and (2) network externalities. If a particular industry problem has only one technical solution, the firm that developed that solution will define a de facto standard—no cooperation among industry players is needed. As for condition (2), if there is no need for coordination on a single technical solution—that is, if it does not hinder efficient industry operations for each party to follow its own technology path—then there is again no need for a cooperative standard. It is only in the presence of network externalities, where the value of a technology for one user rises with the number of other users, that the selection of a common technical solution raises social welfare. We therefore extend the model to include two patent holders, competing to become the standard, and allow for three diverse manufacturers who place different values on the two competing technologies, which provides outside value to the patented technology not chosen to define the standard.

Assume that the two patent holders must set their licensing fees during the development of the standard, as a means to preclude any holdup licensing fees. Patent owner 2 has an outside licensing option, and can license its patented technology to a subset of manufacturers even if it does not win the standard competition. Patent owner 2 will set its license rate in the standard competition in light of what it expects to earn outside of the standard; it will never choose to set a rate in order to win the standard competition if that rate yields lower profits than it could earn through licensing the non-standard product maker. The outside option therefore puts bounds on how aggressively patent owner 2 will compete with patent owner 1 to win the standard. Patent owner 1 can therefore win the standard by setting its rate just below the amount it expects patent owner 2 will be willing to charge in the standard competition. In comparison, if the patent 2 technology has no value outside the standard, then there may be no floor to the rate patent holder 2 is willing to set during the competition for the standard. This scenario could lead to aggressive competition between the two patent owners, with low (or even

near-zero) royalty rates resulting.[51] In contrast, the stronger the outside option, the less flexible patent holder 2 will be during the standard competition.

The take away from this version of the model is that what defines an ex ante, no-hold-up royalty rate depends not only on the existence of competition among technologies to define the standard, but also on whether any of the technologies competing have value outside the standard. More generally, if the patent owners compete against each other to be included in multiple standards, licensing competition in practice might be either "soft" or "hard." In the real world, whenever competition over technologies involves patents with some outside value, competition is unlikely to lead the patent owners to set their rates at royalty free.[52]

3.2 *Licensing FRAND-Committed and Non-FRAND-Committed Patents Together*

We are finally ready to discuss the meaning of a FRAND commitment in relation to tying a FRAND-committed patent to a non-FRAND-committed patent. If two patents are complementary, why would it ever be the case that one has a FRAND commitment while the other does not? Oftentimes, the patent owner may have no choice: the owner is likely to be required to commit to FRAND if the patent is disclosed for use in a cooperative standard under development. In that instance, a portfolio license of all SEPs held for the standard will meet the criteria for the single rent theorem, as explained above, and bundling will pose no concerns. Other times, however, a particular patented technology may be included in an optional portion of a standard, which can render that patent non-essential. Another common occurrence is that the patented technology is not part of standard compliance at all, but still defines complementary and highly useful features for standard compliant products from a commercial point of view. In either of these latter scenarios, a patent complementary to an SEP may not be bound by a FRAND commitment, but both licensors and licensees may still be quite interested in including the patent in the license.

[51]Observe that the economic models that predict two patented technologies competing to define a standard will end up at zero licensing fees make the implicit assumptions that 1) the two patent holders have already sunk their R&D investments in developing the patented technologies and thus are willing to earn a zero return on those investments (i.e., the licensees can practice reverse holdup and expropriate the patent R&D costs) and 2) neither rival can earn any return outside of the standard (the standard acts as a monopsonist). Moreover, it is important to understand that economists are referring to economic profits in these models; accounting profits may be positive while economic profits, which include opportunity costs, are zero.

[52]This is a separate point from those SDOs that voluntarily choose to follow a royalty free licensing policy. For these SDOs, whether competition across technologies exists or not is irrelevant for the royalty rate – it is always royalty free. Such SDOs constitute the minority.

For simplicity, we return to the model with one patent holder, two patents (1 and 2), and one licensee/manufacturer. The two patents are complementary, but assume that the patent holder has made a FRAND commitment only on patent 1 and not on patent 2. The parameters are the same as above, with B defining the full value of the end product embodying the standard and S representing the manufacturer's sunk investment in commercializing the standard. Lastly, assume that the manufacturer can invest in potential workarounds for either or both of the patented technologies, with R_1 and R_2 representing the respective investment costs for each invent around effort, neither of which is guaranteed to be successful.

To form a baseline for considering patent bundling, first assume à la carte licensing only.

Suppose that the manufacturer successfully invents around patent 1 (displacing technology 1 as the standard) but fails to invent around technology 2. If the two patented technologies are complementary to one another, the manufacture will want a license to patent 2, which is not bound by any FRAND commitment. With licensing concluded after the manufacturer invests in S, the patent holder can set its license fee for patent 2 at the full holdup value for the standard-compliant product, that is $L_2 = B$. Suppose instead that the manufacturer fails to invent around either technology and needs a license to both patents 1 and 2. In this case, even when the patent holder honors its FRAND commitment on patent 1, say by setting $L_1 = B - S$, with ex post licensing the patent holder can set the license fee for patent 2 at $L_2 = B - L_1$, again netting the full value B of the end product in the aggregate ($L_1 + L_2$). Either way, the patent holder can earn the holdup amount with the manufacturer losing all its sunk costs (in complementary inputs and any R&D it performed).

It is the presence of the second patent without a FRAND commitment that allows the patent holder to increase its licensing revenues to the holdup amount ex post, even while honoring the FRAND commitment on patent 1. If both patents are needed by the manufacturer and one is not bound by a FRAND commitment, then the manufacturer's need for access to the second patent enables the patent holder to practice holdup. This finding suggests that tying non-FRAND-committed patents with FRAND-committed ones could affect the portfolio royalty rate and could offer the patent holder a means to avoid its FRAND obligation. In our technical paper we established that the value-based license fee for patent 1 in the absence of a FRAND commitment on patent 2 is less than the value-based license fee for a bundle of patents 1 and 2 given FRAND commitments on both. As a result, to comply with its FRAND commitment the patent owner can either license patent 1 separately at a non-holdup rate or in a bundle with patent 2 at the same rate as for patent 1 alone. In other words, the patent holder cannot justify a higher license fee on the grounds that the portfolio rate would have been FRAND had both patents been bound by FRAND. To be true to the FRAND commitment, the portfolio license fee must include the non- FRAND patent "for free".

This result bears a closer look, as it might seem contradictory because it suggests that a particular royalty for a license to a bundle of two patents can be reasonable in some circumstances but not in others. But the reason for the difference in license

fees for the exact same bundle of patents lies in the commitments encumbering those patents: whether a license fee to a bundle of patent 1 with patent 2 is consistent with FRAND depends on whether just one or both of the patents are bound by FRAND. Analyzing FRAND royalties entails in effect going back in time to imagine what terms the patent owner and manufacturer would have reached if they had contracted at an earlier date, before any sunk costs were made. Answering that question requires an understanding of what the expectations of both parties would have been at that earlier time. The presence or absence of a FRAND commitment on patent 2 affects the manufacturer's expectations and influences the meaning of a FRAND commitment on complementary patents like patent 1. Absent a FRAND commitment on patent 2, the manufacturer would expect to need to invent around patent 2 in order to commercialize patent 1 and that expectation would limit what the manufacturer would be willing to pay for a license for patent 1.

4 Policy Implications

The question explored in this chapter is whether a patent owner honors a FRAND commitment if it offers its FRAND-committed patent in a bundle with non-FRAND-committed patents. At the most basic level, the answer is simple. Bundling is common throughout the industry and often reflects efficient market operations in response to product complexity rather than nefarious anticompetitive strategies. Thus, offering a bundle of FRAND-committed patents and non-FRAND-committed patents does not violate a FRAND commitment—as long as the patent owner either offers the FRAND-committed patent separately on FRAND terms or sets the rate for the bundle at a level that is FRAND compliant for just the FRAND-committed patents. If a separate offer of FRAND-committed patents is made, then the FRAND commitment places no additional restriction on the license fee the patent owner can seek for bundles that include the FRAND-committed patents.[53] If a licensee views the bundled rate as somehow excessive or in violation of FRAND, that licensee can refuse to take the portfolio license and instead opt for the FRAND-committed patent license only.

[53]Strictly speaking, "mixed bundling" entails offering all the components of a bundle separately in addition to the bundle. However, a practical application of mixed bundling in patent licensing contexts would entail offering a license to the portfolio of FRAND-committed patents alone, offering a second license to the non-FRAND- committed patents (either as a portfolio or in rational subsets), and offering a third license with a bundle of the FRAND- and non-FRAND-committed patents together, rather than having to offer individual licenses of each FRAND-patent and each non-FRAND patent, for the product offering cost reasons we explain above. Yet another option would be for the patent holder to offer a license to the portfolio of FRAND-committed patents alone and offering a second license to the bundle of FRAND- and non-FRAND-committed patents, without offering a license to the non-FRAND-committed patents separately. As the non-FRAND-committed patents are not essential for any cooperative standard, the patent holder can choose to license them or not.

Even if we restrict our attention to the pure bundling of FRAND-committed and non-FRAND-committed patents, with no separate license of FRAND-only patents allowed, we still cannot condemn bundled portfolio licensing. That being said, the opportunity to bundle other patents with FRAND-committed patents and claim credit for their value in determining FRAND terms for the bundle creates a clear risk of using bundling to circumvent the FRAND commitment. As a result, the inquiry must shift to the rates and terms charged for the bundle to assess whether or not the FRAND commitment has been violated. Here it is important to recall that FRAND does not imply a single, magic number, but rather encompasses a range of values fair and reasonable to both parties. Thus, even though a minority of SDOs require royalty-free licensing terms and conditions, a patent owner working within an SDO without such a rule would not violate its FRAND commitment if it decided to offer a royalty-free license to a bundle of patents that includes both FRAND-committed and non-FRAND-committed patents. On the other end of the spectrum, the patent owner cannot account for the value of its non-FRAND-committed patents in determining a license fee for its FRAND-committed patents bundled into the license. The patent owner is within its rights to claim a stand-alone value for a non-FRAND-committed patent when that patent is licensed separately, but forcing the manufacturer to pay such a fee in order to access the FRAND-committed patent would amount to reneging on the FRAND commitment not to impose an opportunistic license fee. If the patent holder decides to offer its patents in bundled form only, then it needs to price that license as if it contains the FRAND-committed patents only. In short, a patent holder may include non-FRAND-committed patents for "free" when it chooses not to offer a separate FRAND-committed only license.

Refusing to offer a separate license to FRAND-committed patents cannot be inferred from simply observing that existing licenses cover bundled FRAND- and non-FRAND-committed patents. As explained in this chapter, the majority of licensees are likely to prefer bundled licenses, for freedom to operate and efficiency reasons. Particularly for older licenses, before the controversy over the potential for bundling to circumvent a FRAND commitment arose, it is probable that neither the patent holder nor the licensee ever mentioned (or even considered) a FRAND-only license, but rather focused all of their negotiations on the full set of patents of interest. This is not the same as refusing to grant a license to FRAND-committed patents only when asked to do so and instead reflects both parties' desire for the bundled option.

Moreover, the same economic logic that dictates that the patent holder cannot include the value of non-FRAND-committed patents within a license when determining a FRAND-consistent royalty fee also dictates that the licensee cannot demand a discount for the non-FRAND-committed patents included in a bundled license. Put differently, the licensee cannot assume that the bundled license price has been inflated above the rate the patent holder would have charged for a license to the FRAND-committed patents alone. As just noted, the patent holder may have included such non-FRAND-committed patents "for free", in which case no discount would be due.

Finally, we observe that including additional non-FRAND-committed patents "for free" is not a mere theoretical possibility. Licensing terms for patent portfolios exhibit clear nonlinearities. A portfolio license price is not simply the sum of the individual patent values but instead reflects both economies of scale and scope. Thus, given the transaction costs involved in negotiating and enforcing license agreements, as well as the complementarities common across patents in a given technology space, licensors may well find it is in their best interests to add in related non-FRAND patents "for free".

Chapter 4
Calculating FRAND Licensing Fees: A Proposal of Basic Pro-competitive Criteria

Gustavo Ghidini and Giovanni Trabucco

1 Introduction

The search for balanced criteria in assessing the "fair, reasonable and non-discriminatory" (henceforth "FRAND") licensing terms for standard-essential patents (henceforth "SEPs") shall, first of all, focus on a number of guidance criteria which are consistent with the overall evolutionary and pro-competitive juris-political inspiration which has been recently witnessed in the EU, in the USA and also in India.[1] This is of pre-eminent importance, even vis-à-vis the precise, sophisticated calculations, such as those applied by Justice Robarts in the well-known *Microsoft v. Motorola* case.[2] In practice, indeed, the actual case-by-case fixation of royalties will mostly occur upon private agreements or "arbitrations" (as suggested by Lemley and Shapiro)[3] or, in default, by Courts or Competition Authorities' individual adjudication.[4]

[1]This need has been particularly emphasized within the Indian market, which is known for its peculiar and human-rights oriented IP policies, *cf.* for instance, Raghavi Viswanath, *Demystifying the Indian FRAND Regime: The Interplay of Competition and Intellectual Property*, 21 J. Intell. Prop. Rts., 90-94 (2016).
[2]*Microsoft Corporation v. Motorola, Inc.*, No. C10-1823 JLR, 2013 WL 2111217, (W.D. Wa. April 25, 2013).
[3]Mark Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 Berkeley Tech. L. J. 1135 (2013).
[4]Of course depending, country by country, on which institution is more experienced in dealing with economics-related competitive disputes.

G. Ghidini (✉) · G. Trabucco
University of Milan, Milan, Italy
e-mail: ghidini@ghidini-associati.it

G. Ghidini
LUISS Guido Carli University, Roma, Italy

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_4

So, consistency with the rationale of the duty to licence on FRAND terms, requests that the actual end result of the negotiation reflects an *ultimately pro-competitive balance* of the conflicting interest at stake, namely the holders'/licensors' right to an appropriate remuneration—appropriate, not maximized (we borrow, as an indication of general scope, from the ECJ in *Premier League*)—and the 'licensees' right to obtain access conditions allowing them effective competitiveness.[5] This requires, first of all, the elaboration and application of basic criteria functional thereto, preferably to be established by *ad hoc* Guidelines of general application, and even possibly incorporated in regulatory norms—national and/or stemming from international and/or regional agreements. This is to avoid that the pure remittance to private agreements or to adjudications of mere individual scope, might translate, on the one hand, into an harlequin dress obnoxious to the need of (reliability and transparency and) harmonization of the standard-setting context, international by nature and participated by SSOs from all over the world.[6] And, on the other hand, into the subjugation of willing licensees to the superior contractual might of a licensor interested to maximize royalties, thus raising prospective rivals' costs. Hereafter, in this chapter we submit some criteria that we deem suitable to this purpose. They are four, expressed as progressive joint (cumulative) steps.[7]

[5]Joined Cases C-403 and 429/08, *Premier League Ltd v. QC Leisure* and *Murphy v. Media Protection Services Ltd.*, 4 October 2011, ¶¶ 108 - 109, where the Court stated that: "the specific subject-matter of the intellectual property does not guarantee the right holders concerned the opportunity to demand the highest possible remuneration. Consistently with its specific subject-matter, they are ensured – as recital 10 in the preamble to the Copyright Directive and recital 5 in the preamble to the Related Rights Directive envisage – only appropriate remuneration for each use of the protected subject-matter." Although the decision relates to copyright remuneration in view of the Copyright Directive recitals, we see no reason why hold that this is not a general principle for IPRs in general.

[6]Satisfying such need would translate in preempting risks of dangerous conflicts of approaches and decisions in different regions of the world, either stemming from 'technical' grounds (given the variety and diverse characteristics of SSOs), or – even more dangerously – fueled by geopolitical divisions.

[7]In the following we will focus on the fundamentally "monetary" aspects of the licensing agreement, i.e. the appropriate criteria to benchmark the patent value to a reasonable remuneration for its holder. However, it is worth pointing out that licensing agreements encompass a wide variety of clauses which shall be taken into account in order to verify their compliance to the FRAND rules (such as: duration, termination upon notice, territorial coverage, grant backs and the like).

2 First Step: Precise Identification of, and Fees' Strictly Proportional to, the Technology to Be Effectively Adopted by the Willing Licensees

At times, courts and scholars have postulated that every patent that is declared essential to a standard would be implemented—and thus potentially infringed—by every product that complies with said standard.[8] This assumption seems to be grounded on the following syllogism: because (i) the patent has been declared essential to a standard; and (ii) the product is compliant with the standardized technology; therefore (iii) the product must implement the patented technology.[9]

However, this assumption seems flawed by an imprecise understanding of the standard-setting rules, resulting in a fundamentally false syllogism. Indeed, not all patents that have been disclosed as essential are necessarily infringed by all products that are compliant with the standard at stake. In other words, there is no automatic infringement.[10] This is for three reasons, relating to the patent's validity, its essentiality for the standard and, most importantly, to the existence of optional features in many standards.

As a first consideration, it is quite obvious that the patent(s) at stake may be invalid or non-essential. On the one side, the number of effectively "strong" patents, meaning those that would survive an invalidity attack is notoriously low. Where some have suggested that, within some jurisdictions, the majority of granted patents

[8]A couple of examples of said theory may be drawn from Italian case-law on standard essential patents, cf. Court of Genoa (ord.), (8 May 2004), *Koniklijke Philips Electronics N.V. v. Computer Support Italcard s.r.l.*, published in Giur. ann. dir. ind. 4949 (2006); *Italtel S.p.A. v. Sisvel* et al., Court of Milan, (8 May 2008), available on https://www.darts-ip.com; Giur. ann. dir. ind., Court of Trieste, 23 August 2011, 5951 (2013). The same assumption is found in M. Franzosi, *Royalty per uso di brevetto standard: but for, Georgia Pacific, apportionment*, I RIV. DIR. IND., 259 (2015).

[9]A recent publication [Miguel Rato & Mark English, *An Assessment of Injunctions, Patents, and Standards Following the Court of Justice's Huawei/ZTE Ruling*, 7 J. Of Eur. Competition L. & Prac. 103 (2015)] suggests that the ECJ would have made the same assumption in the landmark Huawei/ZTE decision, where it held that "the fact that [a] patent has obtained SEP status means that its proprietor can prevent products manufactured by competitors from appearing or remaining on the market" [Case C-170/13, *Huawei Techs. Co. Ltd. v. ZTE Corp.*, Euro. Ct. Justice, (16 July 2015), emphasis added, ¶ 52 (hereinafter "*Huawei/ZTE*")]. Indeed, from the ECJ's wording, one may infer that the SEP status acquired by a particular technology, alone, would automatically imply that every standard-compliant product does implement said technology. It shall be noted, however, that the ECJ, within this judgement, also expressly recognized that "alleged infringer cannot be criticised either for challenging, in parallel to the negotiations relating to the grant of licences, the validity of those patents and/or the essential nature of those patents to the standard in which they are included and/or their actual use, or for reserving the right to do so in the future" (¶ 69 and passim). Nevertheless the Court does not address the potential optionality of a specific technical feature, for which cf. further ahead.

[10]*Cf. supra* note 8.

would be at least partially invalid,[11] the available data on SEPs would confirm this to be an exacerbated problem in the standard-setting context.[12] On the other side, the essentiality disclosure that SEP holders file before SSOs is a wholly unilateral act, which in most cases is not substantively examined nor weighed in any way by the organization. For instance, the ETSI Guide on Intellectual Property Rights states that, "ETSI has not checked the validity of the information, nor the relevance of the identified patents/patent applications to the ETSI standards and cannot confirm, or deny, that the patents/patent applications are, in fact, essential, or potentially essential".[13] Because of this, the so-called over-disclosure phenomenon—*i.e.* claiming essentiality for a non-essential patent—is considered to be wide-spread.[14]

However, both arguments do not appear very useful for the purposes of determining a FRAND rate: granted patents are presumptively valid and, to our knowledge, no major SSO is involved in a substantive examination of the disclosed patent's essentiality.

Conversely, in order to establish general principles on how FRAND royalties must be assessed, it is best to focus on the intrinsic characteristics of technological standards, especially in the ICT sector.

---

[11]For recent publications and discussion on patent invalidity data in Germany, *see* Peter Hess et al., *Are Patents Merely "Paper Tigers"?*, (2016) *available at* https://www.bardehle.com/fileadmin/Webdata/contentdocuments/broschures/Patent_Papiertiger.pdf; in reply, *see* Aloys Hüttermann, *Patents – Paper Tigers or Real Tigers?*, in Mitteilungen der deutschen Patentanwälte, 101 (2016) *available at* http://ssrn.com/abstract=2773628. Comments and references on both works can be found on The IPKat on-line blog, *available at* http://ipkitten.blogspot.com/. On the other side, patenting rates are rapidly increasing. For instance, *see* EPO statistics, whereby the number of total patent applications has been constantly growing for the past five years, *available at* http://www.epo.org/about-us/annual-reports-statistics/annual-report/2015/highlights.html.

[12]A 2013 study by Kang and Bekkers closely reviewed the patenting strategies of 3GPP standardization meetings participants, finding out high numbers of "just-in-time" patent applications, filed immediately before or during said meetings mostly by vertically integrated European firms, which showed allegedly low inventive merit and could be seen as more likely to be invalidated in court, *cf.* Byeongwoo Kang & Rudi Bekkers, *Just-in-time Patents and the Development of Standards*, 44 Res. Pol'y, 1948 (2015).

[13]*See ETSI Guide on Intellectual Property Rights ('IPRs')*, 19 September 2013, available at http://www.etsi.org/images/files/IPR/etsi-guide-on-ipr.pdf.; The ETSI Guide is a document providing further information and clarifications for applying the institute's IPR Policy. *Cf. also Huawei/ZTE* ¶¶ 20 and 69.

[14]*See* the study commissioned by the European Commission and drafted by researchers at the Fraunhofer Gesellshaft, Knut Blind et al., *Study on the Interplay Between Standards and Intellectual Property Rights (IPRS)*, 63-65 (April, 2001) *available at* http://www.iplytics.com/download/docs/studies/ipr_study_final_report_en.pdf. See also a number of studies conducted by Fairfield Resources International, Inc. on 3G, GSM, WDCMA and LTE standards from 2005 to 2010, where the company reviewed the patents declared as essential for those standards, and valued that the overall percentage of essential/probably essential patents varied between 30 and 50% (*cf.* http://www.frlicense.com/recent.html). Similar surveys were realized by Cyber Creative Institute Co. Ltd. in relation to the LTE standard, whereby the percentage of truly essential patents was weighed around 50% (*cf.* http://www.cybersoken.com/en/research/lte/).

Standards are complex sets of rules. They are continuously updated and amended by working groups and dedicated experts. For instance, the well-known 3G/UMTS standard for telecommunications was improved by way of several subsequent "*releases*" and accounts for hundreds of technical specifications (i.e. analytical documents addressing one specific function of the system). In turn, technical specifications are often modified and published, usually more than once for every release of the standard.[15] As a result of such relentless activity, standards often end up comprising both progressively added and "optional" technical features.[16]

The technical features (and specification) of a standard may be "optional" in relation to a specific product implementing the said standard in three different ways.[17] In the first place, technical features often concern just one of the elements of the standardized system. For instance, the portions of the standard relating to mobile devices may not regulate the functioning of mobile infrastructures, such as the network itself, and vice versa. In the second place, a technical feature which is added in a specific version of the standard, released after certain products have been placed on the market, will not be (necessarily) implemented by those earlier products. In the third place, a feature of the standard may be optional in the sense that the producer can freely decide, from the outset, whether to implement such technology or not, without affecting the product's interoperability.

[15]The first version of the UMTS standard was published as "Release '99" in the early 2000s. From then on, Releases 4 to 9 have been published, almost accounting for a new release every year. As to technical specifications, the one on "Spreading and modulation (TDD)", i.e. TS 25.223, for instance, was published in six different versions under release 4, namely version 4.1.0, 4.2.0 and so on (*cf.* http://www.3gpp.org/DynaReport/25223.htm). The UMTS standard evolved into the LTE standard, for which Releases 10-14 have been drafted. The industry is now developing the 5G standards. For additional information, *cf. The Third Generation Partnership Project (3GPP)* at http://www.3gpp.org/.

[16]ETSI as well, in defining the concept of standard for its purposes, allows that it "shall mean any standard adopted by ETSI including options therein or amended versions", *see* ETSI Intellectual Property Rights Policy, in ETSI Rules of Procedure, Annex 6, 18 November 2015, at 42. The very UMTS standard thus allows for alternative implementation choices in the radio interface and/or optional features. For instance, Knut Blind et al. *supra* note 14, at 65, suggest that there are "standards that allow for several implementations choices" such as the "UMTS [that] specifies both a so-called FDD and TDD radio interface option". *See also* Jay P. Kesan & Carol M. Hayes, *FRAND's Forever: Standards, Patent Transfers, and Licensing Commitments*, 89 Ind. L. J. 241 (2014), which introduced the concept of noncore patents, i.e. those essential patents relating to optional features.

[17]The following examples are suggested in: European Commission, *Patents and Standards, A modern framework for IPR-based standardization, Final Report (2014)*, at 115-116, *available at* http://ec.europa.eu/growth/industry/intellectual-property/patents/standards/index_en.htm.

If a specific feature of the standard is indeed optional, any patent that is declared as essential for that feature is only optionally implemented by the competitor's products placed on the market. Therefore, in all the above mentioned cases, the infringement of the SEP covering said optional technical features is merely potential. These considerations cannot be ignored in an attempt to determine a FRAND royalty. If a product does not implement a certain patented technology, why would it need to remunerate the patent owner for it? This nevertheless, the issue of optionality is often disregarded in real-world negotiations.

Besides, it is generally understood that a feature's optionality, as of itself, does not hinder the possibility for the relative patent to be *sensu stricto* essential. The patent at stake may well be essential, but only in relation to such optional feature. This is expressly confirmed, for instance, in the Standard Board Bylaws of the IEEE which convey that: "'Essential Patent Claim' shall mean any Patent Claim the practice of which was necessary to implement either a mandatory or optional portion of a normative clause of the IEEE Standard".[18] According to a 2013 study, seven of the most important SSOs include optional portions of the standard in the definition of essentiality.[19]

All this considered, we suggest that a first step for determining any FRAND royalty is to abide by a principle of strict proportion between the patented subject-matter and the standardized technology that is used by the licensee.

Only when the interference is effective, so that the essential patent is or will be effectively infringed by the competitor's product, the implementer shall be burdened by the obligation to pay FRAND royalties to the SEP holder. Symmetrically, it is only when the SEP is effectively implemented or infringed that the compensation for its use can be deemed fair and reasonable. This evaluation shall be made prior to any request for compensation by the SEP holder itself, as he is ostensibly the only subject with sufficient knowledge of the patents and standard at stake.

More specifically, at the beginning of the negotiations, the SEP holder should: (i) provide to the potential licensee claim-charts (or similar documentation), showing how the patent can be read on the technical specification of the standard;

[18]IEEE, *IEEE-SA Standards Board Bylaws, 15 (December, 2016)*, *available at* http://standards.ieee.org/develop/policies/bylaws/index.html.

[19]Rudi Bekkers & Andrew Updegrove, *IPR Policies and Practices of a Representative Group of Standards-Setting Organizations Worldwide*, 58 (2012), http://ssrn.com/abstract=2333445. However, the authors convey that there are other SSOs who do not mention distinctions between mandatory, optional and alternative elements. *Cf. also* in *Microsoft v. Motorola*, "Importantly, however, because an "essential" patent is one that is necessary to implement either an optional or mandatory provision of a standard, a specific SEP may contribute greatly to an optional portion of a given standard, but if that portion is not used by the implementer, the specific SEP may have little value to the implementer", *Microsoft v Motorola*, *supra* note 2 at 40.

(ii) assess whether those technical specifications constitute mandatory or optional portions of the standard for the products at stake; and (iii) in case of optional portions, the SEP holder should also show that the products at stake effectively implement those portions of the standard.[20] In the latter case, however, the SEP holder shall not provide full evidence of the effective implementation for the purposes of negotiating a license, as this would likely constitute an excessive burden for him; *prima facie* evidence would amount to a sufficient basis for the negotiation stage. Potential licensee may then be in the position to rebut such evidence, showing that the patent(s) at stake would not be effectively implemented within its products.

3 Second Step: Royalties Determination Ex ante, i.e., Taking into Account the Value of the Patent Prior to the Standard Setting

Once the standard-essential technology to be licensed has been circumscribed, the value of said technology—more specifically: the value of the patents covering said technology—must be assessed for the purposes of determining the FRAND royalty.

The standard selection process plays a fundamental role in the creation of value. Prior to the adoption of a standard, several technological alternatives for the same functionality usually compete as to which will be elected within the standard. In the commonly typified situation, different technological solutions will be weighed against each other by the SSO's members on the basis of their quality, their price and their added-value to the standard, in order to determine which will better fit the industry's needs.

However, when the standard is finally adopted, the owners of the IP rights covering the chosen technologies will see a dramatic increase of their patent's market power. This is because the SEPs will be implemented—within the optionality limits explained above—by every manufacturer within that sector, potentially allowing the SEP holder to extract revenues and even to "hold-up" competitors with requests for supra-competitive fees, paired up with the threat of an injunction.[21]

---

[20]The *Huawei/ZTE* decision too, in a noteworthy passage, seems to suggest the criteria of strict proportionality and to establish the burden of proof on the SEP holder, stating that before bringing an action for prohibitory injunction, a patent holder must "alert the alleged infringer of the infringement complained about by designating that SEP and specifying the way in which it has been infringed", *cf. Huawei/ZTE*, *supra* note 9, ¶ 61.

[21]The theory of hold-up—meaning, in the words of Judge Robart, "the ability of a holder of an SEP to demand more than the value of its patented technology and to attempt to capture the value of the standard itself", in *Microsoft v. Motorola, supra* note 2, at 21—has been widely discussed among scholars. Nevertheless, it appears to fall outside the scope of the present contribution to get involved in such fascinating matter. For the essential literature on this topic please refer to Jorge

Conversely, those patents that have not been adopted may turn out to be worthless, especially if there is no market for those technologies other than the standardized one.[22]

Against this background, the vast majority of scholars, economists and courts seem to agree on that a "*reasonable*" royalty should reflect only the value of the patent *qua* patent, and not the value potentially associated to its inclusion in the standard.[23] Swanson and Baumol were among the first scholars to suggest, in an influential article published in 2005, that "the concept of a 'reasonable' royalty for purposes of RAND licensing must be defined and implemented by reference to ex ante competition, i.e. competition in advance of the standard selection".[24] A few years later, Lemley and Shapiro conveyed that "[b]y construction, the reasonable royalty rate does not include the value attaching to the creation and adoption of the standard itself. To allow the patentees to capture that value, which flows from the collective adoption decisions of the group rather than from the underlying value of the technology chosen, would undermine the goals of the FRAND commitment".[25]

(Footnote 21 continued)

Contreras's comprehensive literature review, *Patents, Technical Standards and Standards-Setting Organizations: A Survey of the Empirical, Legal and Economics Literature* 13 (2015) *available at* http://ssrn.com/abstract=2641569. Besides, some have noticed that the potential for hold-out (or reverse hold-up) – i.e. the behaviour of implementers who wish to pay low or no royalties, e.g. by adopting delaying tactics or by refusing altogether to pay due licenses at FRAND terms – would constitute an equally concerning issue. An occurrence of hold-out, the implementers either delay the negotiations as much as possible. In this regard, *cf. id*. *Cf. also*, Pedro Henrique D. Batista & Gustavo C. Mazutti, *Comment on "Huawei Technologies" (C-170/13): Standard Essential Patents and Competition Law – How Far Does the CJEU Decision Go?*, 47 IIC 249 (2016), maintained that the CJEU's *Huawei v ZTE* decision "etiquette" would have minimized the effect of both hold-up and hold-out issues.

[22]Herbert J. H. Hovenkamp, *Competition in Information Technologies: Standard-Essential Patents, non-practicing entities and FRAND bidding*, Univ. Iowa Legal Stud. Res. Paper, No. 12-32, 12, *available at* http://ssrn.com/abstract=2154203.

[23]*See, for instance*, Thomas F. Cotter, *The Comparative Law and Economics of Standard Essential Patents and FRAND Royalties*, 22 Tex. Intell. Prop. L.J. 311 (2014), *available at* http://scholarship.law.umn.edu/faculty_articles/237; Josh Lerner & Jean Tirole, *Standard-Essential Patents*, 123 J. of Pol. Econ. 3 (2015), *available at* http://www.journals.uchicago.edu/doi/citedby/10.1086/680995; *Cf. also Microsoft v. Motorola supra* note 2, ¶¶ 25 and 26, as well as the well-known decision of Judge Posner in *Apple Inc. v. Motorola Inc.*, 869 F. Supp. 2d 901, 911, 18 (N.D. Ill. 2012).

[24]Daniel Swanson & William Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and the Control of Market Power*, 73 Antitrust L. J. 10 (2005).

[25]Mark Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 Berkeley Tech. L.J. 1148 (2013).

Similar *ex ante* approaches have been endorsed by the Federal Trade Commission,[26] the European Commission[27] and, most recently, within the IEEE Bylaws.[28]

The *ex ante* approach provides a first benchmark for what constitutes a FRAND royalty. In simple terms, the *ex ante* approach points to the reasonable royalty that the SEP holder could have obtained in an arms-length hypothetical negotiation with the prospective implementer just before the standard was adopted, whereas the adoption of the standard flags the *ex post* moment, when the patent has been included in the standard, thus potentially gaining substantial added-value on the market (when not a dominant one). The underlying assumption is, of course, that only an *ex ante* royalty would reflect the intrinsic value of the patent in a competitive environment.[29]

---

[26]Fed. Trade Comm'n, *The Evolving IP Marketplace, Aligning Patent Notice and Remedies with Competition*, (March, 2011), *available at* https://www.ftc.gov/reports/, suggest "Recommendation Courts should apply the hypothetical negotiation framework to determine reasonable royalty damages for a patent subject to a RAND commitment. Courts should cap the royalty at the incremental value of the patented technology over alternatives available at the time the standard was chosen".

[27]European Commission, *Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements*, 61 (Jan. 14, 2011), suggests that "[i]n case of a dispute, the assessment of whether fees charged for access to IPR in the standard-setting context are unfair or unreasonable should be based on whether the fees bear a reasonable relationship to the economic value of the IPR (1). In general, there are various methods available to make this assessment. […], it may be possible to compare the licensing fees charged by the company in question for the relevant patents in a competitive environment before the industry has been locked into the standard (ex ante) with those charged after the industry has been locked in (ex post). This assumes that the comparison can be made in a consistent and reliable manner". It shall be noted that the EU Commission's approach may be read as somehow more cautious towards an ex ante royalty determination principle, as it may suggest only to "compare" the ex ante and ex post licensing fees charged by the patent holder.

[28]IEEE Bylaws, *supra* note 18, at 16, emphasis added: "'Reasonable Rate' shall mean appropriate compensation to the patent holder for the practice of an Essential Patent Claim excluding the value, if any, resulting from the inclusion of that Essential Patent Claim's technology in the IEEE Standard".

[29]In addition to that, most theoretical contributions adopting the ex ante approach argue that the reasonable royalty for a SEP should be capped to the incremental value of that patent over the next-best technological alternative before the standardization. *See* Mark Lemley & Carl Shapiro, *supra* note, 25 at 1148; Joseph Farrell et al., *Standard Setting, Patents, and Hold-Up*, in 74 Antitrust L.J. 611 (2007). The latter authors clarified the meaning of "incremental value" – and thus their theoretical stance on the matter – by way of the following example: "consider the choice between a patented production technology and an unpatented alternative. The two technologies yield the same output, so the technology user simply seeks to minimize cost. Suppose that the patented technology requires the user to bear costs of $40, not including any royalty, and the alternative technology requires the user to bear costs of $50. The user would be willing to pay a royalty of up to the patented technology's inherent advantage of $10. This inherent advantage typically allows the patent holder profitably to charge a positive price (more generally, a price above marginal cost), perhaps $6 in this example". In this (oversimplified) case the incremental value is set at $10. This amount should constitute the benchmark for the maximum reasonable royalty.

From our perspective, the *ex ante* approach constitutes a fundamental criteria for determining a "reasonable" licensing rate. Given the underlying principle that, in order to be pro-competitive, the FRAND royalty must also be appropriate and not maximised, it seems rather logical to cap the reasonable royalty to the intrinsic value of the patent before it acquires inevitable (and possibly "hold-up") power following its inclusion in the standard.

However, this rule is to be applied ultimately when and if, given the specific circumstances of the case, there are (or were) available alternative and comparable technologies providing similar added-value to the standard, which may be used for determining the effective *ex ante* value of the patent. For the same purposes, one may also consider whether licensees for that same specific technology had been stipulated prior to the election within the standard.

(Footnote 29 continued)

If the general principles underlying the ex ante approach are rather straightforward, a number of issues emerged in their practical implementation (*cf.* Jonathan Faull & Ali Nikpay, The EU Law of Competition (2014) ¶¶ 4.775-4.780). In particular, whereas some have argued that capping the FRAND rate to the incremental value of the SEP, although theoretically sound, may lack "real-world applicability" [Judge Robart in *Microsoft v. Motorola, supra* note 2, at 26, others have contended that to limit the holder's remuneration to its incremental value could substantially undermine its investments and deter from further participation in the standard-setting process in the future.

As to the first objection, the prerequisite for assessing the incremental value of a technology over its next-best alternative is that there was, at the very outset, an available alternative. Lacking a valid alternative, it may be questioned if the "incremental value" criterion would still hold. In addition to this, some have also suggested that "if two technologies have different values it is not clear whether they actually qualify as true alternatives" Damien Geradin, *Pricing Abuses by Essential Patent Holders in a Standard-Setting Context: A View from Europe*, paper prepared for the "The Remedies for Dominant Firm Misconduct" Conference June 4-5, 2008 – University of Virginia, *available at* http://ssrn.com/abstract=1174922, that the determination of technological value is an inherently subjective one and that the factors to be taken into account would be too complex (Anne Layne-Farrar & Gerard Llobet, *Moving beyond simple examples: Assessing the incremental value rule within standards*, 36 Int'l J. Indus. Org., 57 (2014)).

As to the second objection, many authors have put into question the incremental value criterion from a conceptual standpoint. Geradin, for instance, argued that, even assuming that the incremental value can be calculated, due to the underlying economic model, "the rate that would have prevailed ex ante could indeed be equal to – or at least near – zero", being that it only reflects a competitive outcome: "To take a trivial example, if customer A buys shampoo X rather than shampoo Y, which is a close alternative, A will not pay the incremental value between X and Y, but rather the full price of X, ostensibly reflecting the average value of using shampoo X" (Geradin, *id.* at 18; *see also* J. Gregory Sidak, *The Meaning of FRAND, Part I: Royalties*, 9(4) J. Competition L. & Econ. 972, 984 (2013). Moreover, according to Geradin, a royalty rate that was limited to the incremental value of the standardized technology would often fail to adequately compensate the SEP holder (Geradin, *id.*).

4 Third Step: Looking at the Overall Licensing Scenario and Royalty Stacking Issues

The determination of the license fees should also take into account the overall licenses' scenario that may encumber potential licensees. This should lead to reckon with the fact that in the standard-setting context, in particular within the ICT sector, hundreds of patents may insist on a single final product, so that the implementers are normally obliged to pay royalties to multiple SEP holders. Ignoring this problem might determine a disproportionate "royalty stacking", potentially exceeding a reasonable portion of the product's value and price—hence crippling its market and/or discouraging the producer from the very adoption of the standard.

As a matter of fact, given that the sheer number of SEPs in the ICT sector and, more generally, in the electronics industry is very high,[30] many have argued there are serious chances for implementers to be burdened by a burdensome "*stack*" of royalty demands. For instance, an empirical research conducted in 2014 came to the conclusion that the potential royalty demand over a $400 smartphone would amount to a $120 stack, *i.e.* to 30% of the end product's price and almost equal to the cost of the device's components.[31]

An occurrence of "*royalty stacking*" clashes with the very concept of FRAND, as it cannot be deemed to be fair, nor reasonable, for the aggregate licensing fees to make "commercialisation of products compliant to the standard uneconomical or unprofitable".[32] Lemley and Shapiro add that the "*royalty stacking*" existence would exacerbate the hold-up problem, by multiplying the chances for an implementer to face infringement claims and supra-competitive price demands.[33] Obviously, the possibility of a "*royalty stacking*" is not dependent from the licence stipulated by the individual SEP holder, but rather from the aggregate amount of all SEP-related licenses. A number of decisions rendered in the US have recognized the potential harm caused by royalty stacking issues. In the 2013 *Microsoft v. Motorola* case, Judge Robart famously held that "a proper methodology for determining a RAND royalty should address the risk of royalty stacking by considering the aggregate royalties that would apply if other SEP holders made royalty

[30]A quick look at the ETSI database would account for 195.038 SEPs, cf. https://ipr.etsi.org/; whether other sources point to anything in between 100.000 (Alexander Italianer, *Shaken not stirred. Competition Law Enforcement and Standard Essential Patents*, speech rendered in Brussels (21 April 2015) *available at* http://ec.europa.eu/competition/speeches/text/sp2015_03_en.pdf) to 345.000 SEPs (Franzosi, *supra* note 8, at 262).

[31]Ann Armstrong et al., *The Smartphone Royalty Stack: Surveying Royalty Demands for the Components Within Modern Smartphones*, http://ssrn.com/abstract=2443848. Please note that the paper only takes into account the offered and face value of the licenses at stake, so that it does not consider any actual negotiation (however likely it is) between the parties.

[32]Anne Layne-Farrar, The Economics of FRAND, in The Cambridge Handbook of Antitrust, Intellectual Property, and High Tech Handbook (Roger Blair & Daniel Sokol eds., 2017).

[33]A seminal scientific contribution in this regard is Mark Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, in 85 Tex. L. Rev. 1991 (2007).

demands of the implementer", and that the potential for royalty stacking should be taken into account by SEP holders when setting prices.[34] Similar opinions have been rendered by the EU Commission,[35] the FTC[36] and, quite recently, by the Competition Commission of India (CCI), which pointed out to the fact that "FRAND licenses are primarily intended to prevent patent hold-up and royalty stacking".[37]

However, legal scholars and economists have raised substantial objections against the royalty stacking theory. Many argued, for instance, that it fails to duly take into account the "reductionist" impact of common practices such as cross-licensing, the possible non-exertion of patent rights and the real-world market dynamics (which would punish those companies that set excessive royalties). What is more, several authors underlined that there would be no empirical evidence of a royalty stacking phenomenon, at least enough to cause any kind of serious public concern.[38] Taking a stance in this debate, the Federal Circuit in *Ericsson v. D-Link* assessed that, while "*royalty stacking*" may be a potential problem posed by SEPs, in order for it to be weighed the defendants had to present evidence of an "*actual*" royalty stack, which could not be simply presumed.[39]

All in all, the existence and the issues possibly raised by royalty stacking, though much discussed, did not gather substantial consensus among academics and practitioners. On the one side, common sense would suggest that if hundreds, if not thousands of patents, insist on a single product, the royalty stacking is—to say the least—likely. On the other side, there may be cases where the potential for a royalty

[34]*Cf. Microsoft v. Motorola*, § 72; later reprised by Judge Holderman in *In re Innovatio IP Ventures, LLC Patent Litigation*, 2013 WL 5593609 (N.D. Ill. Oct. 3, 2013).

[35]Yann Ménière, *Fair, Reasonable and Non-Discriminatory (FRAND) Licensing Terms, Research Analysis of a Controversial Concept*, a publication sponsored by the Joint Research Centre, *available at* http://is.jrc.ec.europa.eu/pages/ISG/EURIPIDIS/documents/05.FRANDreport.pdf.

[36]U.S. Dep't of Justice & Fed. Trade Comm'n. (2007). Antitrust enforcement and intellectual property rights: promoting innovation and competition, 61, *available at* https://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf.

[37]*Cf. for instance*, *Best IT World (India) Private Ltd. v Telefonaktiebolaget LM Ericsson*, Case No. 4 of 2015, Competition Commission of India 5 (12 May 2015), *available at* http://www.cci.gov.in/May2011/OrderOfCommission/261/042015.pdf.

[38]For a recent example: J. Gregory Sidak, *Apportionment, FRAND Royalties, and Comparable Licenses After Ericsson v. D-Link.*, U. Ill. L. Rev. 1809 (2016), *available at* https://www.criterioneconomics.com/publications.html; *see also* Damien Geradin & Miguel Rato, *Can Standard-Setting lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of FRAND*, 3 Eur. Competition J. (2007); Alexander Galetovic & Kirti Gupta, *Royalty Stacking and Standard Essential Patents: Theory and Evidence from the World Mobile Wireless Industry*, (June 2016) http://www.law.northwestern.edu/research-faculty/searlecenter/events/innovation/documents/Galetovic_Royalty_stacking_060416_GG.pdf.

[39]*Cf. Ericsson v. D-Link*, 773 F.3d 1201, 1234 (Fed. Cir. 2014), "The mere fact that thousands of patents are declared to be essential to a standard does not mean that a standard-compliant company will necessarily have to pay a royalty to each SEP holder".

stack is neutralized (by way of cross-licensing, lowered prices, patent exhaustion, and so on) or absent.

Within this context, we hold that an occurrence of royalty stacking is nevertheless irreconcilable with FRAND requirements in any case where the expected outcome is a licensing fee that minimizes or eliminates any profit on the standard-implementing product. In order to neutralize such risk, negotiating parties must take the overall licensing scenario into account and rely on the available data when setting the royalty fees: SEP negotiations do not take place in a vacuum. Besides, most standards have been in place for years now and even when upgraded, they are usually improved gradually, within time. Therefore, parties attempting to negotiate a FRAND license will likely have some degree of understanding of the relevant licensing scenario, which—may that be the case—could be enough to weigh in a certain degree of stacking. On the contrary, if no information on the overall context is available, the parties may discuss a *prima facie* FRAND license, possibly coupled with a re-adjustment clause over the fee in case of changes in circumstances.[40]

These first considerations shall be backed up by regulatory and/or normative provisions, whereby the importance of referring to the overall scenario for the purposes of assessing FRAND royalties would be acknowledged.

Once again, the IEEE bylaws constitute a guidance example in this regard, as they suggest that the reasonable rate's determination shall include the consideration of "[t]he value that the Essential Patent Claim contributes […] in light of the value contributed by all Essential Patent Claims for the same IEEE standard practiced in that Compliant Implementation".[41] Similar instances should be implemented by other SSOs, under the Competition Authorities' guidelines and/or, eventually, by amending multilateral international treaties (such as: TRIPs Agreement).

5 Fourth Step: Dynamic Approach to FRAND Royalties' Determination

Finally, we consider that FRAND royalty rates should also be accounted for in a dynamic and innovation-oriented perspective. Innovation is, by definition, rooted into the ICT sector. Where new products are constantly introduced into the market, the standardization process is characterized by an ever-evolving nature. This is

[40]It is further suggested that a first remedy for royalty stacking would be for SSOs to implement better informative systems, which would enable implementers to get a sense of the SEP patents covering the portion of the standard at stake: think of the ETSI ipr.etsi.org website. This could speed up a cross-researches by which perspective implementers may have – at the outset – general information over the licensing context thus allowing them to conduct better negotiations. At the same time, the possibility to quickly overview the SEP scenario for a particular portion of the standard would not be an excessive burden when negotiating portfolio licenses.

[41]IEEE Bylaws, *supra* note 18, at 16.

clearly reflected also by the incessant patenting activity which takes place on most technical features relating to each standard in the sector.

Therefore, it is here suggested that any license negotiation concerning SEPs needs to take into account the dynamic evolution of ICT products, standards and patents in order to be compliant with FRAND terms. The underlying idea is that FRAND terms are to be determined in relation to the overall licensing scenario, as expressed in the previous part. Moreover, it is herein submitted that, because the licensing scenario is subject to rapid changes, the line between what is FRAND and what is non-FRAND may shift in time.

For instance, if "new" SEPs are discovered as being implemented by certain product(s)—whereby the parties did not take into account said rights when assessing the FRAND licensing rate either because these rights were not published or otherwise ignored[42]—it may be necessary to modify the negotiated royalties in the light the value and FRAND fees of the "new" SEPs.[43]

Besides, if the licensing agreement is drafted in broad terms, generally encompassing all the licensee's products (as it is usually the case for FRAND agreements), the FRAND rates may need to be adjusted to take into account the evolution of the standard. A license that the parties negotiated for all implementing products in 2014 may be compliant to FRAND obligations and yet, in consideration of major evolution both in the standard and patenting landscape which took place in 2016, become excessively onerous for all newly released products.[44]

Furthermore, the overall licensing scenario may also be appreciated from a "*subjective*" point of view. As a matter of fact, if the SEP holder has established a FRAND rate that adequately remunerates its inventive efforts in relation to a certain number of licensees (say, 5), the same rate may end up over-compensating him, in case the number of licensees grows (say, 25).

In conclusion, it is here submitted that FRAND terms shall be read as providing for a *permanent adjustment mechanism*, whereby changes and modifications in the technological and proprietary scenario are duly taken into account and calibrated on the industry dynamics. The said mechanism might well be contractually agreed upon—thus foreseeable from the start of negotiations. It might also involve in default, ADRs or formally arbitral resolution under pre-definite criteria.

[42]Cf. C-170/13, *Huawei v. ZTE*, *supra* note 9, ¶ 62, where the Court held that "in view of the large number of SEPs composing a standard such as that at issue […], it is not certain that the infringer of one of those SEPs will necessarily be aware that it is using the teaching of an SEP that is both valid and essential to a standard".

[43]As suggested also by Franzosi, *supra* note 8, at 267.

[44]The same reasoning may apply to a situation where a number of licensed patents within the SEP portfolio expire and/or are invalidated.

6 Conclusion

Might a wide consensus on these principles, and others of corresponding proportionate pro-competitive inspiration, be reached, the optimal seat for their embodiment would be by international or regional agreements (e.g. by addenda to Article 31 TRIPs or to the ASEAN treaty) or by *ad hoc* EU Horizontal Directive or EU Commission Guidelines. By default, each country should incorporate them in ad hoc Guidelines, entrusting their application to Judiciary Courts or Competition Authorities—whichever deemed more experienced and sophisticated in dealing with IP licensing disputes.

Chapter 5
Selected Issues in SEP Licensing in Europe: The Antitrust Perspective

Roberto Grasso

1 Introduction

In the last few years, Standard Essential Patents (henceforth "SEPs") have attracted the attention of a number of regulators and antitrust agencies, and triggered significant litigation in many jurisdictions around the world.[1]

In Europe, both the Court of Justice of the European Union (henceforth "ECJ") in Huawei v ZTE[2] and the European Commission (henceforth also the "Commission") in its *Motorola* and *Samsung* investigations[3] have clarified the limits—under EU com-

The views expressed in this chapter are entirely personal and cannot be attributed to the author's law firm or any of its clients.

[1] *See* Roberto Grasso, *The ECJ Ruling in Huawei and the Right to Seek Injunctions Based on FRAND- Encumbered SEPs under EU Competition Law: One Step Forward*, 39 World Compet'n. 213-238 (2016).

[2] Case C-170/13, *Huawei Techs. Co. Ltd. v. ZTE Corp.*, Euro. Ct. Justice, (16 July 2015). The ECJ ruled on the questions raised by the Landgericht Düsseldorf in connection with Huawei's request of injunctions against ZTE in Germany for the alleged infringement of an SEP related to Huawei's LTE technology.

[3] Commission decision COMP/AT.39985, *Motorola*, 29 Apr. 2014; Commission decision COMP/AT.39939, *Samsung*, 29 Apr. 2014.

R. Grasso (✉)
WilmerHale, Brussels, Belgium
e-mail: grasso.roberto@gmail.com

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_5

petition law—of the SEP-holder's rights to seek injunctions against a prospective licensee who has allegedly infringed that patent.[4]

The ECJ preliminary ruling in *Huawei*, however, just like the European Commission's decisions in *Motorola* and *Samsung*, leaves a number of important issues unresolved.

First, it is unclear in what circumstances the ownership of an SEP confers dominance. Second, while voluntary portfolio licensing is not illegal, an SEP-holder's 'all or nothing' licensing strategy may raise issues under both patent law and EU competition law. Third, although the European Commission has yet to scrutinize the refusal to license at component-level, it is not clear if such a refusal is contrary to the FRAND commitment and also to Art. 102 TFEU, as it may amount to a discriminatory refusal to deal, and/or lead to excessive royalties. Fourth, there is no official view on whether the SEP-holder's transfer of a subset of its SEPs to a Patent Assertion Entity (henceforth "PAE") may breach EU competition law, and if so, in what circumstances.[5]

In this chapter I provide a brief overview of the standardization process, its benefits and risks for competition. I elaborate on the concept of FRAND and the way it is defined in the European Commission's Horizontal Guidelines. I then analyze these issues and the principles underpinning them in light of the EU Competition rules.

2 The Standardization Process, Its Benefits and the Risks for Competition

Cooperative standard setting has played an important role in boosting innovation and growth across industries. The standard-setting process is based on an agreement among industry players to confer a monopoly on the holder of patents declared essential to a standard, thus excluding all alternative technologies existing before the adoption of the standard (ex-ante competition). The SEP-holder would not have such a monopoly without the industry agreement.

Standardization agreements are generally capable of generating significant efficiencies. They ensure compatibility and interoperability between products, encourage innovation, and lower costs by increasing the volume of manufactured products.

[4]This was a first for the ECJ. The preliminary ruling broadly confirmed the Commission's decisions in *Motorola* and *Samsung,* which were also a first for the Commission. The antitrust regulator historically investigated other issues concerning intellectual property rights ('IPRs'), FRAND terms and competition law. For instance, it acted on complaints that Qualcomm failed to honour its FRAND commitment. It also investigated the issue of '*FRAND succession*' in relation to IPCom's purchase of a Bosch portfolio of SEPs and Rambus' alleged '*patent ambush*'.

[5]Indeed, neither *Huawei* nor the European Commission's decisions provide guidance on a very important issue affecting SEP licensing, i.e. how to determine FRAND and what is a proper methodology that both SEP-holder and potential licensee should follow to arrive at a FRAND royalty, Roberto Grasso, *Standard Essential Patents: Royalty Determination in the Supply Chain,* 8 J. of Euro. Competition l. and Prac. 5, at 283-294 (2017).

They strengthen competition by enabling consumers to switch more easily between products and further market integration. This is why, subject to certain conditions, standardization agreements are not prohibited under Art. 101 TFEU.

By its very nature, however, the standardization process can also impair competition. Once a standard is implemented, holders of SEPs included in that standard are able to behave in anti-competitive ways. As the Commission explained in its Horizontal Guidelines:

> [b]y virtue of its IPR, a participant holding IPR essential for implementing the standard, could, in the specific context of standard-setting, also acquire control over the use of a standard. When the standard constitutes a barrier to entry, the company could thereby control the product or service market to which the standard relates. This in turn could allow companies to behave in anti-competitive ways, for example by 'holding-up' users after the adoption of the standard either by refusing to license the necessary IPR or by extracting excess rents by way of excessive royalty fees thereby preventing effective access to the standard.[6]

The hold-up problem is exacerbated when the standardized technology covers only a minor feature of a multifunctional product, for example a smartphone. In this case, the patented technology is considered "as essential" as any other technology declared essential to the standard, and gives the exact same monopoly power. Patent hold-up creates significant negative externalities, and ultimately harms competition and consumers. For example, the SEP-holder's threats to enforce its patents on its minor technology through litigation may lead to a significant increase in the price of the entire product.[7] This is the case when the SEP-holder demands royalties based on the entire sale price of a product such as a smartphone, even though its patents cover a technology embedded only in a component such as a baseband chipset, which represents only a fraction of the value of the device.[8]

3 The FRAND Commitment

To minimize the risk of hold-up, Standard Setting Organizations (henceforth "SSOs") such as the European Telecommunications Standards Institute (henceforth "ETSI") and the Institute of Electrical and Electronics Engineers (henceforth "IEEE"), require members to disclose their essential IPRs in a timely fashion and to commit to license their technologies on (F)RAND terms.[9] This reflects the Commission's approach in the Horizontal Guidelines:

---

[6]Horizontal Guidelines, at ¶ 269 and *Motorola,* at ¶ 76.

[7]The Commission acknowledged that the mere threat of injunction "*may significantly impede effective competition by … forcing the potential licensee into agreeing to potentially onerous licensing terms which it would otherwise not have agreed to*". *Google/Motorola Mobility*, at ¶ 107 (13 Feb. 2012). See also, more recently, *Motorola*, at ¶ 486.

[8]*See* discussion in *infra* Part V.A.

[9]*See* ETSI Guide on Intellectual Property Rights ('IPRs'), Sept. 19 2013. *See also* IEEE-SA Standards Board Bylaws and IEEE-SA Standards Board Operations Manual. While ETSI requires

> [i]n order to ensure effective access to the standard, the IPR policy [of the standard setting organisation] would need to require participants wishing to have their IPR included in the standard to provide an irrevocable commitment in writing to offer to license their essential IPR to all third parties on fair, reasonable and non-discriminatory terms ("FRAND commitment").[10]

In addition, the FRAND commitment aims at striking "a fair balance between the interests of technology owners to be appropriately remunerated for the use of their essential IPRs and the interests of technology implementers to have access to such essential IPRs".[11]

The economic and social objective of the FRAND commitment is expressed in the European Commission's Horizontal Guidelines:

> FRAND commitments are designed to ensure that essential IPR protected technology incorporated in a standard is accessible to the users of that standard on fair, reasonable and non-discriminatory terms and conditions. In particular, FRAND commitments can prevent IPR holders from making the implementation of a standard difficult by refusing to license or by requesting unfair or unreasonable fees (in other words excessive fees) after the industry has been locked-into the standard or by charging discriminatory royalty fees.[12]

The FRAND commitment represents the *quid pro quo* at the heart of the standard-setting process. In exchange for a timely disclosure of the IPR and a commitment to license on FRAND terms, SSO members give the SEP-holder an opportunity to obtain a monopoly it would not have obtained absent a decision to select its technology over the alternative technologies available at the time and to obtain FRAND royalties from a potential massive base of products that support the standard.

This is also the minimum safeguard to ensure that the standard-setting process is compatible with Article 101 TFEU, and that the SEP-holder does not abuse the

(Footnote 9 continued)

SEP-holders to commit to license on FRAND terms and conditions, the IEEE mandates a commitment to license on RAND terms. The difference is just in the terminology. In particular, under the IEEE-SA IPR policy, holders of a patent that is potentially essential to a standard must submit a Letter of Assurance ("LOA") stating they will either (i) not enforce such patents, or (ii) license such patents "for a compliant implementation of the standard … to an unrestricted number of applicants on a worldwide basis without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination." Just like the FRAND commitment, an LOA is "*irrevocable*" and "shall apply, at a minimum, from the date of the standard's approval to the date of the standard's" withdrawal or its transfer to inactive status. Furthermore, once accepted by the IEEE-SA, an LOA referencing a particular standard or amendment to a standard remains in force with respect to subsequent amendments to the extent the claim technology is carried forward. An SEP-holder's refusal to commit to license on royalty-free or RAND terms is a ground for excluding its proprietary technology from the standard.

[10]Horizontal Guidelines, at ¶285.

[11]*Motorola*, at ¶ 77.

[12]Horizontal Guidelines, at ¶ 287.

monopoly power it acquires after the adoption of the standard. Absent this safeguard, in certain circumstances the standard-setting process would be no different than an illegal and void agreement to confer a monopoly on certain SEP-holders and to exclude others.[13]

Abusive licensing practices in violation of the FRAND commitment create significant harm to society on many levels. They deter standard implementers from implementing the standard. Businesses fear that the SEP-holder might "hold them up" and ask unreasonable royalties or impose other unfair terms and conditions. Abusive licensing practices also discourage developers from investing in "add-on" innovation. More generally, the standard-setting process itself is negatively affected because companies would not want to invest in developing a standard that will not obtain broad acceptance because the rules failed to protect implementers from abusive conduct by licensees. Moreover, incentives to invest in developing truly valuable standardized technology would be chilled if the aggregate royalties for standardized technology are hogged by inventors who use abusive tactics to obtain more than their appropriate share.

4 Portfolio Licensing

SEP-holders and potential licensees may have a mutual interest in negotiating a license to an entire portfolio of SEPs. In this case, portfolio licensing is likely to create efficiencies, e.g. by reducing the administrative costs of multiple license negotiations. Portfolio licensing, however, may not be what both SEP-holder and prospective licensee want. There are a number of reasons why a prospective licensee may want to license only some of the SEPs in the SEP-holder's portfolio. For example, it may want to license only those SEPs implemented in the product it manufactures or sells, without having to pay for all the other patents it does not use. It may also be simply concerned that not all the SEPs are essential, valid, or infringed. More generally, licensees may be concerned that portfolio licensing may lead to inaccurate royalty determinations because calculations are based only on the number of declared SEPs in a portfolio rather than the strength of the overall portfolio. Indeed, recent studies confirm the existence of a significant "patent thicket" in the SEP space.[14]

[13]Horizontal Guidelines, at ¶ 288.

[14]A recent study shows that SEPs succeeded in only 12% to 16% of cases. See RPX Corp., *Standard Essential Patents: How Do They Fare?* 9, (2014), *available at* http://www.rpxcorp.com/wp-content/uploads/2014/01/Standard-Essential-Patents-How-Do-They-Fare.pdf.

While portfolio licensing is not per se illegal, the SEP-holder forcing the potential licensee to take a license to its entire portfolio of SEPs despite the latter's interest in only a subset of them may raise issues under both patent law and EU competition law.

4.1 Patent Law Issues

From a patent law perspective, the SEP-holder is required to prove the merits of the patents it asserts against a licensee, just like in any patent infringement dispute. It cannot therefore force a potential licensee to take a "black-box" license to its entire portfolio, and seek royalties based on the number of patents in the portfolio, because this would imply that all those patents are essential, valid, and infringed, without the need to prove it.

This is confirmed by the fact that generally courts only adjudicate FRAND royalties for the specific patents asserted in litigation, supposedly the strongest, not for the entire portfolio. For example, in *Vringo v ZTE*, ZTE did not agree to pay a global FRAND rate for Vringo's portfolio without proof that its products actually practiced Vringo's patents, and that those patents were valid.[15] The English High Court rejected the notion that ZTE should pay royalties for patents it did not use and/or were invalid, and added that this did not make ZTE an "unwilling licensee".[16] Notably, the court warned that SEP disputes resulting in a global portfolio license do not give Vringo the right to impose such a license on ZTE:

> [i]n some ways I believe the position adopted by Vringo in this dispute confuses the true nature of its legal rights. Its rights are and are nothing more than patent rights. Although it is a truism that disputes of this kind often end up with a global licence, one needs to be careful turning that truism into something like a right to compel a defendant to enter into such a licence. The truism does not alter the character of Vringo's underlying rights.[17]

The District Court for the Northern District of California reached the same conclusion in *Apple v Ericsson*.[18] Ericsson, which owned a number of allegedly standard-essential patents, argued that a license to its entire portfolio of SEPs was necessary to resolve what it called a "portfolio-wide" dispute with Apple. The court rejected Ericsson's contention that the potential licensee was under the obligation to license the SEP holder's entire portfolio, even if a portfolio license could be seen as "business realities".[19]

---

[15] *Vringo Infrastructure, Inc. v. ZTE (UK) Ltd*, EWHC 1591, (Pat, June 6, 2013).

[16] *Id.*, at ¶¶ 42-44.

[17] *Id.*, at ¶ 56.

[18] *See Apple Inc. v. Telefonaktiebolaget LM Ericsson, Inc.*, No. 15-cv-00154-JD, 2015 WL 1802467, at *2 (N.D. Cal. Apr. 20, 2015).

[19] *Id.*

4.2 EU Competition Law Issues

The SEP-holder forcing the potential licensee to take a license to its entire SEP portfolio may lead to the violation of EU competition rules, in particular in the context of injunctions related to FRAND-encumbered SEPs.

As recently confirmed by the ECJ in *Huawei*, the potential licensee has the right to challenge, in parallel to the negotiations relating to the grant of a license, the validity of those patents and/or to contest their essentiality to the standard and/or their actual use, or reserve the right to do so in the future.[20] The Court also clarified that the exercise of such right cannot be interpreted as a sign of unwillingness. The Commission reached the same conclusion in its *Motorola* investigation, where it found that Motorola's restriction of Apple's ability to challenge the validity of its patents was "capable of having a number of anti-competitive effects".[21] The SEP-holder making a license to one of its SEPs conditional upon the implementer taking a license to its entire SEP portfolio may effectively deprive the implementer of its right to challenge the validity, essentiality, or actual use of those patents.

Moreover, the ECJ in *Huawei* provided a list of obligations that the SEP-holder must follow to avoid that its action for a prohibitory injunction or for the recall of products against the potential licensee results in an infringement of Art. 102 TFEU. The ECJ required the SEP-holder to, *inter alia*, give notice or otherwise consult with the alleged infringer prior to initiating litigation, and to "alert the alleged infringer of the infringement complained about by designating that SEP and specifying the way in which it has been infringed".[22] The SEP-holder imposing a license to its entire portfolio of SEPs complies with such requirement only to the extent that the potential licensee is able to identify the patents allegedly infringed by its standard-compliant products and to understand why they are infringed. This may prove challenging in those cases in which a portfolio includes hundreds of patents. Indeed, if the SEP-holder does not comply with the *Huawei* obligation, it would not

[20] *See Huawei*, at ¶ 69.

[21] The Commission identified those effects in, *inter alia*, limiting *"Apple's ability to influence the level of royalties it will have pay to Motorola for the use of the SEPs covered by the Settlement Agreement"*, and leading *"other potential licensees of the SEPs covered by the Settlement Agreement to pay for invalid IP"*. *See Motorola*, at 336. This conclusion is also consistent with the Commission's approach in its Technology Transfer Regulation and Guidelines, where it is established that the exemption does not apply to *"any direct or indirect obligation of a party not to challenge the validity of intellectual property rights which the other party holds in the Union"*. The Regulation creates an exemption from antitrust scrutiny for some patent license agreements. *See* Commission Regulation 316/2014, Mar. 21, 2014 (on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements, Article 5(2), 2014 O.J. (L 93/17)). The Commission explained that this approach reflects the concern that to foster *"undistorted competition […] invalid intellectual property rights should be eliminated"* as it *"stifles innovation rather than promoting it"*. *See* Commission Communication (EC) of Mar. 28, 2014, guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements, 2014 O.J. (C 89) ¶ 134.

[22] *See Huawei*, at ¶¶ 60-61.

be able to benefit from the protection (safe harbor) of the ECJ- mandated licensing framework, and its pursuit of injunctions may amount to an abuse contrary to Art. 102 TFEU.

Finally, the SEP-holder may use the threat of injunctions to force the potential licensee to take a license to its entire portfolio of SEPs. This effectively perpetuates the abusive use of injunctions contrary to Art. 102 TFEU. As recognized by the Commission in *Motorola*, in undistorted licensing negotiations, a potential licensee can balance the pros and cons of engaging the SEP- holder in a long and costly legal battle. In the case of SEP licensing, however, a potential licensee facing the SEP-holder's threat of injunctions has little choice but to agree to the SEP- holder's un-FRAND licensing terms.[23] The alternative is permanent exclusion from the market and severe damages to the potential licensee's sales and reputation. Assuming the SEP is valid, infringed, and enforceable, the licensee cannot market its products without infringing the SEP- holder's patents since by definition there are no substitutes.[24]

4.3 Component-Level Licensing

Certain SEP-holders purport to license only manufacturers and sellers of the end-products incorporating their declared essential patents, while refusing to license any other implementer of the standard, including manufacturers and suppliers of the very components that provide the standardized functionality.

The strategic refusal to license at component-level is based on the patent exhaustion doctrine. Under this doctrine, which is widely recognized in a number of jurisdictions globally, including the EU and the United States, the first fully licensed or authorized sale of a patented product may extinguish the patent owner's right to seek royalties on subsequent sales. In practice, if an SEP- holder licenses the chip maker, it cannot also license the same patents to the manufacturer or seller of the end-product incorporating that chip.[25]

---

[23]The Commission considers that even the mere threat of an injunction is relevant in its abuse analysis. *See Motorola*, at 486. *See* also Case No COMP/M.6381, *Google/ Motorola Mobility*, at ¶¶ 53, 54, 111 (13 February 2012), at ¶ 107 (the mere threat of injunction "*may significantly impede effective competition by ... forcing the potential licensee into agreeing to potentially onerous licensing terms which it would otherwise not have agreed to*").

[24]*Motorola*, at ¶ 486. In the specific circumstances, the Commission concluded that:

Settlement discussions under the threat of an injunction on the basis of a SEP for which there is no alternative were unduly distorted in favour of Motorola, as Apple had no other viable option than agreeing to a settlement.

[25]*See*, *e.g.*, *Centrafarm BV & Adriaan de Peijper v. Sterling Drug Inc.*, Case C-15/74, 1974 ECR 11641147. The Court concluded that "the grant by a patentee of a sales licence in a member-State has the consequence that the patentee can no longer oppose the marketing of the patented product throughout the Common Market".

The incentives behind this strategic licensing are clear. The SEP-holder can extract higher royalties by licensing directly the manufacturers or sellers of the end-product, rather than component manufacturers. It could argue that its royalties should be based on the sale price of the end-product, rather than the price of just the component supplying the infringing functionality.[26]

The European Commission has yet to scrutinize the refusal to license at component-level. A cursory analysis of this conduct, however, shows that refusal is contrary to the (F)RAND commitment, to the ETSI and the IEEE's IPR policies, and also to Art. 102 TFEU, as it may constitute a discriminatory refusal to deal, and/or lead to excessive royalties.

1. *The refusal to license component-level implementers is contrary to the (F)RAND commitment and to the ETSI and the IEEE's IPR policies.*

The SEP-holder's refusal to license component-level implementers is contrary to both the "Fair" and the "Non-Discriminatory" requirements of the (F)RAND commitment. More generally, it is contrary to the purpose of the FRAND commitment to stimulate widespread adoption of standards.

As part of its commitment to license any interested implementer on (F)RAND terms and conditions, an SEP-holder loses its right to cherry-pick its licensees. The (F)RAND commitment mandates that an SEP-holder be prepared to license all implementers who wish to use the standard, including manufacturers of the components that provide the patented functionality used in the end-product and sellers of end-products.

The SEP-holder's refusal to license component-level implementers simply based on the implementer's position in the supply chain is contrary to its commitment not to discriminate. Non-discrimination mandates that an SEP-holder license anyone at the level where its patented technologies can be implemented. The SEP-holder should achieve the same royalty regardless of where it licenses in the supply chain. Rather than extract higher rents from end-products that incorporate the same technology, the SEP-holder should command a higher price based on their

[26]Certain SEP-holders engage in even more aggressive licensing strategies, by seeking royalties from the very final users of the end-products incorporating their standardized technology. For example, Innovatio IP Ventures, a U.S. company that owns certain patents declared essential to the 802.11 standard (i.e. Wi-Fi), sued and demanded royalties from more than 8.000 commercial activities, including cafés, restaurants, hotels, and grocery stores, all providing Wi-Fi networks. *In re Innovatio IP Ventures, LLC Patent Litigation*, No. 11C9308, 2013 WL 5593609, at *1 (N.D. Ill. Oct. 3, 2013). The court rejected Innovatio's claims that the royalty should be determined:

> as a percentage of the selling price of end-products with wireless functionality, including laptops, tablet computers, printers, access points, and the like", and held that royalties should be levied "not on the entire product, but instead on the 'smallest salable patent-practicing unit.

differentiating features.[27] This result can be achieved by using a common, non-discriminatory approach for all levels of the supply chain, based on the smallest saleable unit.

The non-discrimination obligation is part of the IPR policy of some of the most influential SSOs. The ETSI FRAND commitment, for example, requires SEP-holders to:

> give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licences on fair, reasonable and non- discriminatory ("FRAND") terms and conditions under such IPR to at least the following extent: MANUFACTURE, including the right to make or have made customized components and sub-systems to the licensee's own design for use in MANUFACTURE; […].[28]

Similarly, the IEEE's IPR policy states that a RAND undertaking includes a commitment to license "an unrestricted number of applicants on a worldwide basis".[29]

The International Telecommunications Union (henceforth "ITU") also mandates that a party committing to license on RAND terms and conditions be "prepared to grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions to make, use and sell implementations".[30] The Common Patent Policy that governs the ITU disclosure clarifies that the licensing "statement must not include additional provisions, conditions, or any other exclusion clauses in excess of what is provided for each case in the corresponding boxes of the form".[31] Indeed, the refusal to license component-level implementers qualifies as an "exclusion clause".

2. *The refusal to license component-level implementers is contrary to EU competition law*

The SEP-holder's refusal to license component-level implementers raises serious issues under EU competition law, in at least two respects. It may be constructed as an exploitative strategy aimed at extracting additional royalties from other standardized and non-standardized technologies that have "no reasonable relationship

[27] *See*, e.g., Florian Mueller, *Ericsson Explained Publicly Why it Collects Patent Royalties From Device (Not Chipset) Maker*, Foss Patents, Jan. 29, 2014, http://www.fosspatents.com/2014/01/ericsson-explained-publicly-why-its.html.

[28] *See* ETSI Intellectual Property Rights Policy, at ¶ 6.1, *available at* http://www.etsi.org/images/files/ipr/etsi-ipr-policy.pdf.

[29] IEEE-SA Standards Board Bylaws, at ¶ 6.2.

[30] *Patent Statement and Licensing Declaration for ITU-T or ITU-R Recommendation, ISO or IEC Deliverable*, ITU, *available at* https://www.itu.int/dms_pub/itu-t/oth/04/04/T04040000030004PDFE.pdf.

[31] *Common Patent Policy for ITU-T/ITU-R/ISO/IEC*, ITU, *available at* http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx. The only exception allowed under the RAND commitment is that an SEP-holder can make its license conditional upon the licensee licensing its SEPs for implementation of the relevant ITU "Recommendation".

to the economic value" of the SEP. It may also be seen as a discriminatory refusal to deal within the meaning of Art. 102 TFEU.

3. *The exploitative abuse*

Article 102(a) TFEU bars dominant companies from "directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions".[32] As explained above, the ECJ has long held—e.g. in *United Brands*—that demanding a price that is excessive in relation to the economic value of the good or services provided constitutes unfair pricing.[33] The Commission confirmed the relevance of the *United Brands* test for the appropriateness of royalties SEPs in its Horizontal Guidelines, stating that "In case of a dispute, the assessment of whether fees charged for access to IPR in the standard-setting context are unfair or unreasonable should be based on whether the fees bear a reasonable relationship to the economic value of the IPR."[34]

4. *The refusal*

As recognized by the EU Courts in a series of seminal cases, including *Magill*,[35] *Bronner*,[36] *IMS*,[37] and *Microsoft*,[38] a company abuses its dominant position if, without objective justification, (i) it refuses to license a product or service "indispensable to the exercise or a particular activity on a neighboring market"; (ii) the refusal is "of such a kind as to exclude any effective competition on that neighboring market"; and (iii) the refusal limits "production, markets or technical development to the prejudice of consumers".[39]

The refusal to license is a sub-category of the refusal to deal contrary to Art. 102 TFEU. Courts and the Commission have consistently interpreted this category broadly, to include not only outright refusals, but also constructive refusals to deal.[40] In *Deutsche Post*, for example, the Commission clarified that "the concept of refusal to supply covers not only outright refusal but also situations where dominant

[32] *See* Art. 102(a) TFEU.

[33] *See* Case 27/76 *United Brands Company and United Brands Continentaal BV v. Commission* [1978] ECR 207, ¶¶ 218–220 and 228.

[34] Horizontal Guidelines, at ¶ 289.

[35] *See* Joined Cases C-241/91 P and C-242/91 P, *RTE and ITP v. Commission ('Magill')* [1995] ECR I-743, at 50. *See also* Case 238/87, *Volvo v. Veng* [1988] ECR 6211, at ¶ 9.

[36] Case C-7/97, *Bronner* [1998] ECR I-7791, at ¶ 39.

[37] Case C-418/01, *IMS Health* [2004] ECR I-5039, at ¶ 35.

[38] *See* Case T-201/04, *Microsoft v. Commission* [2007] ECR II-3601, at ¶ 331.

[39] *See* Case C-241/91 P *Magill* at ¶¶ 54 to 56 and Case T-201/04 *Microsoft*, at paras. 332, 333, 643 and 647.

[40] *See* Commission Communication, Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings ('Commission Enforcement Priorities') [2009] OJ C 45/7, at ¶ 79. *See also* DG Competition, Discussion Paper on the application of Article 82 of the Treaty to exclusionary abuses, December 2005, available at http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf.

firms make supply subject to objectively unreasonable terms".[41] The SEP-holder's refusal to license a component manufacturer or seller is a clear example of outright refusal.

5. *An input essential to be active on a neighboring market*

A patent declared essential to a standard, if valid, infringed, and enforceable, is by definition essential to be active on a neighboring market. As recently confirmed by the ECJ in *Huawei*, a standard-essential patent, unlike differentiating IP, is "essential to a standard established by a standardisation body, rendering its use indispensable to all competitors which envisage manufacturing products that comply with the standard to which it is linked".[42]

6. *The refusal is "of such a kind as to exclude any effective competition on that neighboring market", thus limiting "production, markets or technical development to the prejudice of consumers"*

Art. 102 TFEU does not require proof that the SEP-holder's refusal to license a standard implementer has substantially eliminated competition on a market.[43] Art. 102 TFEU requires that the SEP-holder's refusal "tends to restrict competition or is capable of having that effect",[44] regardless of whether it is successful.[45] In its Enforcement Priorities, the Commission stated that with regard to essential inputs "a dominant undertaking's refusal to supply is generally liable to eliminate, immediately or over time, effective competition in the downstream market".[46]

Logically, by refusing to license its SEPs, the patent holder can exclude "even the most innovative standard-compliant products from the market as, by definition, the patented technology cannot be worked around", and eventually limit consumer choice and partially eliminate downstream competition.[47]

7. *The objective justification*

Under the above-mentioned case law of the EU Courts on refusal to license, an SEP-holder whose conduct is liable to infringe Art. 102 TFEU can still avoid liability for abuse of dominance under Art. 102 TFEU if it can prove that its refusal

---

[41]Commission decision COMP/C-1/36915, *Deutsche Post AG*, 25 Jul. 2001, at ¶ 103. *See also* Commission Enforcement Priorities, at ¶ 79.

[42]*Huawei*, at ¶¶ 49–50. *See* also the Commission's decision in *Motorola*, at ¶¶ 51–53.

[43]*Microsoft*, supra note 74, at ¶ 564.

[44]Case C-549/10 P, *Tomra v. Commission*, judgment of 19 Apr. 2012, not yet reported, at ¶ 68. *See also Microsoft*, *supra* note 74, at ¶¶ 563 and 564, and Case T-301/04, *Clearstream v. Commission* [2009] ECR II-3155, at ¶ 148.

[45]*Microsoft*, at ¶ 564.

[46]*Motorola*, at ¶ 312.

[47]Case 27/76 *United Brands Company and United Brands Continentaal BV v. Commission* [1978] ECR 207, ¶¶ 218–220 and 228. *See* Roberto Grasso, *The ECJ Ruling in Huawei and the Right to Seek Injunctions Based on FRAND-Encumbered SEPs under EU Competition Law: One Step Forward*, 39 World Competition 213-238 (2016).

was objectively necessary, or that it generated efficiencies that may outweigh or counterbalance its exclusionary effects to the benefits of consumers.[48] The SEP-holder's refusal to license standard implementers at the component level, however, serves no other purpose than collecting higher/excessive royalties from the manufacturer or seller of the end-product. This cannot possibly constitute an objective justification for refusing to license a component maker under Art. 102 TFEU.

5 SEP Transfers and PAEs

The monetization of patent rights, including through the transfer of ownership of one or more SEPs is perfectly legitimate, provided that the entity acquiring the IPR honours the patent pledges made by the previous owner, e.g. to license under royalty-free or FRAND terms. For example, the transfer of an SEP may reflect a legitimate need of a small-to-medium-sized company to obtain a return on its investment, e.g., when the company is under-capitalized and/or cannot afford the cost of litigation against implementers of its technology allegedly infringing its IPRs. It may also create efficiencies by helping an operating company to manage a large patent portfolio—e.g., when a company decides to close a business line, it may outsource to a PAE the patents related to such business that it no longer needs.[49]

Issues arise when the new SEP-holder (transferee of the IPR) has an "enhanced" ability and strong incentives to disregard the patent pledges made by the original SEP-holder. This is the case when the purchaser of the SEPs is a PAE.[50]

Unlike operating companies active in the downstream markets or innovators/patentees active in the upstream input technology markets, PAEs normally do not manufacture or sell products, nor invest in R&D.[51] Their business model consists of purchasing patents from patent-holders for the sole purpose of

[48]Case 27/76 *United Brands Company and United Brands Continentaal BV v. Commission* [1978] ECR 207, ¶¶ 218–220 and 228. *See also* Case C-209/10 *Post Danmark A/S v. Konkurrencerådet*, judgment of 27 March 2012.

[49]*See* Mark S. Popofsky & Michael D. Laufert, *Patent Assertion Entities and Antitrust: Operating Company Patent Transfers*, Antitrust Source 3–4 (Apr. 2013); *See also* Brian Yeh, *An Overview of the 'Patent Trolls' Debate*, Congressional Research Service Report for Congress, Aug. 20, 2012, *available at* https://www.eff.org/sites/default/files/R42668_0.pdf.

[50]A recent academic paper shows that, while in principle enhanced monetization can promote innovation,overall, enhanced monetization by PAEs discourages innovation and harms consumers. *See* Fiona M. Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 Antitrust L. J. 484 (2014).

[51]The distinction between operating companies and PAEs is not always straightforward. For example, certain operating companies are also very active in the monetization of their patents, which may qualify them as PAEs.

monetizing them through assertion.[52] Importantly, the PAEs' decision to assert their patent rights against an implementer is not constrained by the risk that the implementer retaliates, e.g. by countersuing for infringement of its own patents. PAEs are also less sensitive to procompetitive outcomes such as cross-licenses with the other patent holders.[53] PAEs are not exposed to reputational damages vis-à-vis the members of the relevant SSO because generally they are not members of an SSO, or at least are not "repeat players".

Moreover, PAEs do not suffer the pressure that customers and shareholders often put on the management of an operating company to settle a patent dispute and avoid costly litigation.[54]

The nature of PAEs enables them to create an "outsized threat" for the implementers, i.e. a threat that is much greater than the value to the user of the patented technology.[55] This increases the risk of patent hold-up. The PAE may decide not to honour the FRAND commitment given by the previous SEP-holder to an SSO. It may use the threat of injunctions to force implementers on a downstream market to agree to un-FRAND/excessive royalties. It may also discriminate against a group of implementers—e.g. a PAE may decide to license only end-product manufacturers or sellers in order to be able to charge higher royalties.

Regardless of whether the new SEP-holder honours the FRAND commitment given by the previous patent owner, the SEP-holder's transfer of only a subset of its SEP portfolio (henceforth "portfolio splitting") is a clear example of the "complements problem" and likely to lead to royalty stacking.

Finally, the SEP transfer raises special concerns in case of "hybrid-PAEs", i.e. when the operating company transferring the SEP maintains some level of influence or control over the PAE's licensing business. The SEP transfer, in this case,

---

[52]This is also the definition adopted by the U.S. FTC. In its report the FTC stated: *"*The business model of PAEs focuses on purchasing and asserting patents against manufacturers already using the technology, rather than developing and transferring technology*"*, Fed. Trade Comm'n, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, (March, 2011), https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf. Moreover, while in principle PAEs could invest the revenues from their licensing activity in innovation or to expand a business in a downstream market, recent studies found that less than 25% of PAEs' revenues contributed to innovation, and that *"less than two percent of losses in wealth caused by PAEs passed through to independent inventors". See* Popofsky & Laufert, *supra* note 49, at 2 and related sources.

[53]Operating companies generally purchase SEPs for perfectly legitimate defensive purposes. For example, to dissuade other SEP-holders from initiating litigation, thus avoiding unnecessary costs, or simply to be able to cross-license with other SEP-holders. In both cases, the purchase of SEPs yields a procompetitive outcome. See, *inter alia*, Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in Innovation Policy And The Economy 119, 127 (Adam B. Jaffe, Josh Lerner & Scott Stern eds., 2001), available at http://faculty.haas.berkeley.edu/shapiro/thicket.pdf. *See also* Popofsky & Laufert, *supra* note 49, at 5.

[54]*See* Popofsky & Laufert, *supra* note 49, at 4.

[55]Morton & Shapiro, *supra* note 50, at 471.

increases the risk that the operating company may use the PAE as a vehicle to aggressively enforce its patents against competitors.

5.1 Potential Issues

1. Risk of patent hold-up

Since PAEs have much stronger incentives than operating companies to extract the highest value from their IP, the SEP transfer increases the risk of patent hold-up by raising the costs to implement the standard.

PAEs can disregard the FRAND commitment given by the previous owner to the SSO, and demand exorbitant/excessive royalties. PAEs may also attempt to extract higher royalties by licensing only end-product manufacturers or sellers, and exclude component-level implementers. Although the case law in Europe is clear that the FRAND commitment binds not only the original owner but also the purchaser of an SEP,[56] in practice PAEs often find a way to circumvent this obligation and demand higher/un-FRAND royalties.[57]

PAEs may use the threat of injunctions to force implementers on a downstream market to agree to un-FRAND/excessive royalties. The threat of litigation is indeed a "nuclear weapon" that PAEs have and often use to extract monopoly rents from their IP. In the U.S., PAEs have become one of the main sources of litigation. In 2012, PAE-initiated litigation accounted for 62% of all infringement suits.[58] A recent study concluded that the direct costs of PAEs litigation amounted to $29 billion in 2011[59]—a 400% increase compared to 2005.[60] The situation is not much different in Europe, where a study commissioned by the European Commission concluded that the total cost of IP litigation in 2004 amounted to over €306 million.[61] Similarly, a

[56]*See* Commission Horizontal Guidelines, at ¶ 285. See also the Commission's Press Release concerning Bosch's transfer of declared SEPs to IPCom, Press Release, European Commission, Antitrust: Commission Welcomes IPCom's Public FRAND Declaration, Memo/09/549, Dec. 10, 2009, available at http://europa.eu/rapid/press-release_MEMO-09-549_en.htm.

[57]Moreover, certain PAEs conceal their patent portfolios through holdings. *See* Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 Stan. Tech. L. Rev. 1, at ¶¶ 14, 27 (2012), http://stlr.stanford.edu/pdf/ feldmangiants - among-us.pdf.

[58]Alexander Italianer, *Shaken, not Stirred. Competition Law Enforcement and Standard Essential Patents*, Mentor Group – Brussels Forum, Brussels, Apr. 21, 2015.

[59]These costs include legal costs, settlement costs, and other costs for resolved lawsuits, unresolved lawsuits, and non-litigated assertions.

[60]James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 22-24, 48 (Boston Univ. School of Law Working Paper No. 12-34, 2012), 99 Cornell L. Rev., *available at* http://www.bu.edu/law/faculty/scholarship/ workingpapers/revcov.html.

[61]*See* CJA Consultants Ltd, European Policy Advisors, *Patent Litigation Insurance – A Study for The European Commission on The Feasibility of Possible Insurance Schemes Against Patent Litigation Risks*, 46 (2006), *available at* http://ec.europa.eu/ internal_market/indprop/docs/patent/studies/pli_appendices_en.pdf.

study of patent litigation in the United Kingdom concluded that PAEs litigation amounted to 11% of the total patent litigation between 2000 and 2010.[62]

In sum, if the PAE's "outsized threat" is large and credible enough, the targeted implementer is likely to pay more than a reasonable royalty, especially if the management is risk averse.[63]

2. *Risk of royalty stacking*

Economic theory known as the "Cournot complements" suggests that the splitting of complements among multiple owners results in an inefficient outcome: cumulatively higher prices.[64] The theory suggests that consumers are better off if products that are complementary from the demand side are produced and sold by a single company.

Royalty stacking is just a modern example of the complements problem. Royalty stacking occurs when a standard implementer faces license claims and related royalty requests from multiple patent-holders, each of whom expects to negotiate a license without taking other patent-holders into consideration. Thus, the standard implementer faces a royalty stack, which can reach the point of making the implementer's business uneconomical and ultimately harm competition, innovation, and consumers.

As mentioned above, royalty stacking is particularly acute in the ICT industry, which is characterized by significant horizontal complementarities, "cumulative innovation" and dispersed patent ownership. Devices, such as smartphones and computers, implement thousands of patents, including patents declared essential to a standard (e.g. the Wi-Fi alone is estimated to implement some 3,000 complementary SEPs).[65]

Certain SEP-holders publicly pledge to avoid royalty stacking, e.g. by self-imposing a cumulative royalty cap.[66] This pledge becomes ineffective, however, if only some SEPs, rather than the entire portfolio, are transferred. Unless the original SEP-holder reduces its royalty demands in proportion to the royalties

[62] *See* Christian Helmers et al., *Is There a Patent Troll Problem in the U.K.?*, 24 Fordham Intell. Prop. Media & Ent. L.J. 509, 511510-12 (2014).

[63] Morton & Shapiro, *supra* note 50, at 471-472.

[64] Augustin Cournot, Researches Into The Mathematical Principles Of The Theory Of Wealth (Nathaniel T. Bacon trans., The Macmillan Co. 1987) (1838).

[65] We have explained above why it is important to consider the aggregate level of royalties when negotiating a FRAND license.

[66] For example, for its declared cellular SEPs spanning multiple generations of standards, Nokia pledged not to demand royalties exceeding 2% of the price of the end-product. *See* Eric Stasik, *Royalty Rates And Licensing Strategies For Essential Patents On LTE (4G) Telecommunication Standards*, Les Nouvelles, Sept. 2010, 117, *available at* http://www.investorvillage.com/uploads/82827/files/LESI-Royalty-Rates.pdf.

sought by the new owner, the implementer will need a license from, and pay royalties to, two patent holders rather than just one. This is assuming that the operating company splits its portfolio with only one entity. The risk and magnitude of royalty stacking increases with the number of entities each buying a piece of the portfolio. Recent examples of SEP-holders who engaged in these "multiple splits" include Nokia and Ericsson.[67]

3. *Transfer of an SEP-holder's subset of its portfolio to a hybrid-PAE*

The transfer of only part of a portfolio of SEPs is even more concerning when an operating company maintains some level of influence or control over the PAE's licensing business (henceforth "hybrid-PAE"). For example, the operating company may transfer certain SEPs in exchange for a portion of the royalties that the PAE will collect, while continuing to be fully licensed to the transferred SEPs.

In this case, the interests of the operating company and the PAE are fully aligned. They both want to secure the highest return on their respective investment. Moreover, the operating company may have an incentive to raise its rivals' costs as a strategy to gain market share, i.e. beyond the simple interest in the revenues generated through licensing.[68]

4. *The regulators' approach to SEP transfers*

The risks behind SEP transfers outlined above are well known, and key enforcers have recently criticized certain transfers of SEPs to PAEs. For example, in The Evolving IP Marketplace, the U.S. FTC recognized that PAEs "can distort competition in technology markets, raise prices and decrease incentives to innovate".[69] In 2011, the White House found that "a review of the evidence suggests that, on balance, patent assertion entities have had a negative impact on innovation and economic growth".[70] More recently, however, the White House revised its initial assessment, using softer tones to describe the potential outcome of these licensing practices.[71]

In Europe, there is no precedent or guidance from the European Commission on the compatibility of these licensing practices with EU competition law. In general,

[67]Nokia, e.g., has transferred some of its patents declared essential to wireless telecommunications standards to Vringo, others to Sisvel, Core Wireless Licensing. Ericsson has transferred patents declared essential to communications standards to Sisvel and Unwired Planet. *See, e.g.*, Florian Mueller, *Privateering: Let's Name And Shame Companies That Feed Patent Trolls – Please Help Complete The List*, Foss Patents, May 12, 2015, http://www.fosspatents.com/2015/05/privateering-lets-name-and-shame.html.

[68]In this case, for example, the operating company may suggest a list of rivals that the PAE can target.

[69]*See* Fed. Trade Comm'n, *supra* note 52.

[70]*See* Executive Office of the President, *Patent Assertion and US Innovation*, Jun. 2013, *available at* https://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf.

[71]*See* Ron D. Katznelson, White House "Patent Troll" Report Challenged under the Federal Information Quality Act, Patently O, Apr. 2015, *available at* http://patentlyo.com/patent/2015/04/challenged-federal-information.html.

the Commission seems less concerned than its U.S. counterparts. The European Commission's former Director General for Competition, Alexander Italianer not too long ago commented that PAEs have been less active in Europe, for several reasons, including: (i) the loser pays principle that applies in litigation before EU courts that makes litigation less attractive to PAEs; (ii) damage awards that are generally significantly lower in Europe compared to the U.S.; and (iii) the fact that EU courts are specialist patent courts, which reduces uncertainty concerning the outcome of litigation. It remains to be seen if this means that the European Commission will not intervene in the debate with something more than a statement by its Director General. It has been observed that the introduction of a Unitary European patent enforceable in all participating Member States may further increase the PAEs' incentives to litigate, as it will bring down litigation costs.[72]

In the meantime, the legality of the transfer of a subset of the SEP-holder's portfolio to a PAE continues to be debated before national courts. In a series of judgments from January 2016, the Düsseldorf Regional Court concluded that the SEP transfer did not amount to an abuse of dominant position contrary to Art. 102 TFEU (nor Art. 101 TFEU).[73] The court stated that the goal to increase licensing profits from the transferred SEPs does not restrict competition and therefore is not abusive under Art. 102 TFEU, as long as the SEP-holder abides by its FRAND commitment.[74]

This is the LG Düsseldorf's opinion. Other courts in Germany and other EU Member States may take a different approach to portfolio splitting and its potential to restrict competition. For example, the LG Düsseldorf's decision may be criticized because, logically, in order to continue to be FRAND post-transfer, the FRAND royalty demanded pre-transfer must have been under- FRAND. Or at least, the court's decision implies that the SEP-holder did not charge as much as it legally could before the transfer. This, however, seems unlikely and contrary to the very purpose of PAEs' patent acquisitions – i.e. to enhance the monetization of the acquired patents.[75]

[72] *See* Helmers, *supra* note 62.

[73] *See* Cases 4b O 120/14, 4b O 122/14 and 4b O 123/14. The court also rejected the plaintiff's allegations that the SEP transfer infringed Art. 101 TFEU.

[74] Unwired Planet sued Samsung for alleged infringement of certain SEPs declared essential to the GSM and the LTE standards. Ericsson was the original owner of the patents at issue and had transferred them in 2013, together with claims for past damages to Unwired Planet. Samsung argued that the transfer infringed, *inter alia,* Art. 101 and/or Art. 102 TFEU because it reflected Ericsson and Unwired Planet's "portfolio splitting" strategy to increase the royalty rates contrary to Ericsson's FRAND commitment. Under the SEP transfer agreement between Ericsson and Unwired Planet, the latter honoured Ericsson's FRAND commitment. It seems that Unwired Planet had issued a separate FRAND declaration to ETSI. See cases 4b O 120/14, 4b O 122/14 and 4b O 123/14. *See also Düsseldorf Regional Court rules on SEP "portfolio splitting"*, Apr. 8, 2016, available at http://www.lexology.com/library/detail.aspx?g=82603b83-1378-4032-a638-b8c7cdc2856d.

[75] Morton & Shapiro, *supra* note 50, at 482.

Chapter 6
Competition, Intellectual Property Rights and Collaboratively Set Standards: Federal Trade Commission Advocacy and Enforcement

John E. Dubiansky

1 Introduction

Since its inception, the Federal Trade Commission (henceforth "FTC") has served as an expert agency on matters of competition and consumer protection. Its mandate not only includes enforcement of the antitrust laws but also extends to economic and policy research on matters of competition and—when appropriate—dissemination of that research through the issuance of public reports and through competition advocacy. The FTC uses all of these tools to address issues at the intersection of intellectual property and antitrust law. Often, this is necessary because the issues touch upon not only the application of the antitrust law by the FTC but also the application of the patent law by the courts and other federal agencies.

The incorporation of patented technologies into voluntary and collaboratively-set interoperability standards raises issues that touch upon both of these disciplines. It also raises economic issues that may not necessarily implicate either body of law. Many fora—both public and private—and many jurisdictions around the world are in the midst of developing frameworks to address these issues. Much contemporary debate is focused on standard setting organizations' (henceforth "SSOs") use of internal procedures that allow participants to commit to licensing on fair, reasonable, and non-discriminatory (henceforth "FRAND") terms.[1]

The views expressed herein are those of the author and do not necessarily reflect the views of the Federal Trade Commission or any individual Commissioner.

[1]This chapter will treat the terms FRAND and RAND interchangeably. For simplicity, it will use the term FRAND unless quoting text that uses the term RAND.

J.E. Dubiansky (✉)
Office of Policy Planning, Federal Trade Commission (FTC), Washington, D.C., USA
e-mail: jdubiansky@ftc.gov

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_6

The FTC's most recent work regarding collaborative standard setting relates to the FRAND commitment. The FTC has focused its advocacy and enforcement primarily on one issue: the impact that the voluntary FRAND commitment has on patent holders' ability to obtain an injunction as a remedy for patent infringement. The FTC's approach to this issue had dual prongs: the FTC advocated that tribunals applying the patent law take economic considerations into account when crafting their remedies and the FTC used its enforcement authority to police instances of firms engaging in licensing conduct inconsistent with voluntary FRAND commitments that they had made. The FTC's most recent work is illuminated by a lengthy history of enforcement and advocacy related to the collaborative standard setting process. This chapter provides an overview of that work.

1.1 The FTC's Tools to Promote Innovation and Competition

The FTC promotes innovation and competition through both law enforcement and competition advocacy. Section 5 of the FTC Act empowers the agency to prevent the use of "unfair methods of competition in or affecting commerce."[2] In addition, Section 6 of the FTC Act provides the FTC with the ability to "gather and compile information," thereby developing economic expertise relevant to competition in a number of markets.[3] The FTC has a long history of sharing this expertise by engaging in competition advocacy before regulators, legislatures, the courts and others when these entities contemplate action that may affect competition.[4]

The scope of the prohibition on "unfair methods of competition" in Section 5 of the FTC Act encompasses the scope of the Sherman Act.[5] Section 1 of the Sherman Act prohibits "every contract … or conspiracy, in restraint of trade."[6] Section 2 of the Sherman Act prohibits monopolization and attempts to monopolize.[7]

[2] 15 U.S.C. § 45. The FTC's enforcement authority pursuant to Section 5 also extends to "unfair or deceptive acts or practices in or affecting commerce," providing the FTC with the authority to police conduct related to consumer protection Id. This chapter will focus on the FTC's application of its competition authority—not its consumer protection authority.

[3] 15 U.S.C. § 46.

[4] See Tara Koslov, *Competition Advocacy at the Federal Trade Commission: Recent Developments Build on Past Successes*, CPI ANTITRUST CHRONICLE (August 2012).

[5] Fed. Trade Comm'n, STATEMENT OF ENFORCEMENT PRINCIPLES REGARDING "UNFAIR METHODS OF COMPETITION" UNDER SECTION 5 OF THE FTC ACT (August 15, 2015).

[6] 15 U.S.C. § 1.

[7] 15 U.S.C. § 2.

In addition, Section 5 of the FTC Act can also reach "acts or practices that are anticompetitive but may not fall within the scope of the" Sherman Act.[8]

The FTC generally enforces Section 5 of the FTC Act through administrative proceedings.[9] Most proceedings are resolved through consent decrees negotiated with the parties resulting in agreed-upon cease and desist orders.[10] In the cases where the party does not agree to a consent decree, proceedings are tried by an administrative law judge, whose findings are subject to review by the FTC Commissioners.[11] Final Commission decisions can be appealed to a federal court of appeal.[12]

In addition to law enforcement, Section 6 of the FTC Act provides the FTC with the authority to conduct economic and policy research and public reporting. Section 6(f) of the FTC Act provides it with the authority to "make public from time to time such portions of the information obtained by it hereunder as are in the public interest," and to "make annual and special reports to the Congress and to submit therewith recommendations for additional legislation."[13] The FTC has a large staff of economists and legal and policy experts focused on this work.[14]

Leveraging this expertise, the FTC uses competition advocacy to address markets where regulation or legislation may impact competition.[15] It has conducted workshops and disseminated public reports to educate public and private stakeholders. It has filed *amicus curiae* briefs with courts. It has submitted written comments to state and federal legislatures and federal agencies.

Recently, it has addressed issues such as taxicab regulations which may prevent entry from innovative ridesharing services[16] and regulations which may prevent non-physicians, such as nurses and dental hygienists, from providing certain health care services in competition with physicians.[17]

---

[8]Fed. Trade Comm'n., *supra* note 5.

[9]*See* Phillip E. Areeda & Herbert Hovenkamp, AntitrustLaw: An Analysis Of Antitrust Principles And Their Application (1995), ¶ 302.

[10]*Id.*

[11]*Id.*

[12]*Id.*

[13]15 U.S.C. § 46.

[14]*See generally* William E. Kovacic, *Measuring What Matters Most: The Federal Trade Commission and Investments in Competition Policy Research and Development*, 72 Antitrust L.J 861 (2005).

[15]Koslov, *supra* note 4.

[16]*See, e.g.*, Comment of the Staff of the Office of Policy Planning, Bureau of Competition and Bureau of Economics of the Fed. Trade Comm'n to Mr. Brendan Reilly, Alderman – 42nd Ward, City of Chicago, regarding Proposed Ordinance O2014-1367. (April 15, 2014).

[17]Koslov, *supra* note 4, at 8.

1.2 The Intersection of Intellectual Property Law and Antitrust Law

The FTC has used both enforcement and advocacy to address issues at the intersection of intellectual property and competition. When addressing these matters, the FTC adopts the contemporary view that intellectual property laws and antitrust laws can work in harmony and share the same fundamental goals: enhancing consumer welfare and promoting innovation.[18] This now-widely-held view is a significant shift from the view prevalent in the early twentieth century that the two areas of law were in conflict.[19]

Intellectual property laws create exclusive rights that can provide their holders with incentives for innovation.[20] The rights allow their owners to prevent others from appropriating the value of their inventions.[21] These rights can also facilitate the commercialization of products embodying the inventions.[22] Similarly, the antitrust laws ensure that innovative technologies and product are traded and licensed in a competitive environment.[23] As a result, both bodies of law work together to bring innovation to consumers: antitrust laws protect competition in the marketplace, while intellectual property laws provide incentives to invest in innovation.[24]

The FTC has also recognized that the licensing of intellectual property often benefits competition.[25] Intellectual property is often just one of many inputs necessary to bring an innovative product to market and it only creates value when combined with complementary factors of production such as manufacturing and distribution facilities, workforces, and other complimentary intellectual property.[26] Licensing can facilitate integration of intellectual property with these complementary factors, leading to more efficient exploitation of the intellectual property and benefiting consumers through the reduction of costs and the availability of innovative products.[27]

---

[18] U.S. Dep't of Justice & Fed. Trade Comm'n. (2007). ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION, at 1. [hereinafter *2007 Report*].

[19] *Id.*

[20] *Id.*

[21] *Id.*

[22] *Id.*

[23] *Id.*

[24] *Id.*

[25] *See* U.S. Dep't of Justice & Fed. Trade Comm'n., ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY, at 4-5 (1995). [hereinafter *1995 Guidelines*].

[26] *Id.*

[27] *Id.*

The FTC has provided guidance on the application of the antitrust laws to the exploitation of intellectual property. In 1995, it joined the Department of Justice in issuing Antitrust Guidelines for the Licensing of Intellectual Property, which the agencies revised in 2017.[28] In 2007, it joined the Department of Justice in issuing a report on Antitrust Enforcement and Intellectual Property Rights (henceforth "2007 Report").[29] In addition, the FTC has used its law enforcement authority to address situations where it alleged that parties' patent licensing practices ran afoul of the antitrust laws.[30]

In addition, the FTC has provided competition advocacy to the courts and policymakers regarding the application of patent law. In 2003, it issued a report on "The Proper Balance of Competition and Patent Law and Policy," which surveyed a number of economic issues and provided recommendations on how the Patent Office could improve patent quality to benefit competition.[31] In 2011, the FTC issued a report on "The Evolving IP Marketplace," (henceforth "2011 Report") which studied how patent law motivates market behavior for patent licensing and issued a number of recommendations to the courts regarding both patent notice and remedies.[32]

2 FTC Policy Reports Discuss Economic Issues Raised by Collaborative Standard Setting

The FTC has engaged in policy and economic research into a number of issues related to collaborative standard setting. In 1996, FTC staff issued a report on competition policy in high-technology industries, which included one chapter on competitive concerns related to networked industries and interoperability standards.[33] In 2007, the FTC issued its first guidance on the role of patents in standardization, as part of a joint report with the Department of Justice on antitrust enforcement and intellectual property rights.[34] Most recently, in 2011, the FTC issued a report offering policy recommendations addressing judicially-awarded remedies for patent infringement including guidance regarding the appropriate remedies for infringement of FRAND-encumbered patents.[35] Each of these reports

[28] *See id. See also* U.S. Dep't of Justice & Fed. Trade Comm'n., ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY (2017).

[29] *See 2007 Report*, *supra* note 18.

[30] *See, e.g., In the Matter of Summit Tech., Inc.* 127 F.T.C. 208 (1999).

[31] *See* Fed. Trade Comm'n., TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION LAW AND POLICY (2003) [hereinafter *2003 Report*].

[32] *See* Fed. Trade Comm'n., THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION (2011) [hereinafter *2011 Report*].

[33] *See* Fed. Trade Comm'n. Staff, ANTICIPATING THE 21ST CENTURY: COMPETITION POLICY IN THE NEW HIGH-TECH, GLOBAL MARKETPLACE (1996) [hereinafter *1996 Report*].

[34] *See 2007 Report*, *supra* note 18.

[35] *See 2011 Report*, *supra* note 32.

was based upon workshops soliciting the testimony of experts and written comments of interested members of the public. In addition to these workshops, the FTC has engaged in additional research in 2011, hosting a workshop on IP Rights in Standard Setting.[36]

There are many different types of standards. Interoperability standards guarantee that products made by different firms can interoperate.[37] Safety or quality standards set minimum requirements for all products sold in a general category.[38] Standards also vary depending on how they are created. Collaboratively-set standards are created jointly by businesses working together through SSOs to select technology for incorporation into the standard.[39] *De facto* standards, in contrast, are often created unilaterally and become adopted by the market following competition with rival standards.[40]

As a general matter, one way that standardization impacts competition and innovation is by altering the dynamics of competition between technologies. In the absence of interoperability standards, complex products may be offered to consumers in an integrated form. Competition between technologies would take place when rival firms introduced differing products to consumers in the marketplace. Peripherals—be they mobile handsets connected to a wireless network or a printer connected to a computer—would be purchased along with the accompanying platform. Standardization often changes this dynamic and facilitates competition by creating interfaces around which products produced by rival manufacturers can interoperate and—in many cases—be sold independently.

Interoperability standards often arise in networked technologies, such as the telegraph, telephone, or wireless smartphone.[41] The standards govern the interaction between components of the network.[42] Many networked industries demonstrate substantial demand-side scale economies—i.e., network effects[43]:

> Networks and standards are intertwined in the sense that every network is based on certain standards that permit linking different users or terminals in the first place. Both share the distinctive characteristic that their value tends to rise as more users subscribe. Just as a telephone system becomes more valuable as new customers join because more parties can be reached through it, so, too, the English language becomes more important to learn as it becomes more prevalent throughout the world. Thus, in addition to the cost savings that suppliers frequently derive from conventional economies of scale, standards and networks exhibit economies of scale on the demand side as well.[44]

---

[36] *See* Fed. Trade Comm'n, Event Description, Workshop on Tools to Prevent Patent "Hold-up:" IP Rights in Standard Setting (June 21, 2011), *available at* https://www.ftc.gov/news-events/events-calendar/2011/06/tools-prevent-patent-hold-ip-rights-standard-setting.

[37] *See 2007 Report*, *supra* note 18, at 33 n.1.

[38] *Id.*

[39] *Id.* at 33.

[40] *Id.*

[41] *See 1996 Report*, *supra* note 33, Ch. 9 at 1.

[42] *Id.* at 1.

[43] *Id.* at 2.

[44] *Id.* at 1.

The adoption of standardized interfaces can facilitate competition between products and services that are complimentary to networks.[45] Standardization could be achieved through either competitive rivalry between different proprietary standards in the market or through cooperation between competitors to create a standard jointly.[46] On the one hand, marketplace competition between products implementing different standards would provide consumers with a choice between competing technologies incorporated into the standards.[47] Such competition may also provide incentives for the development of innovative standards.[48] On the other hand, competition between rival standards can impose costs upon consumers and firms that use the standards.[49]

One potential source of costs is the possibility of a standards war where substitute products with incompatible designs are introduced into a market.[50] Standards wars may result in a single *de facto* standard in markets where network effects are strong.[51] During a standards war, however, some consumers may delay purchasing until the *de facto* standard is chosen because they do not want to be stuck with the costs of moving from a losing standard to the winning standard.[52] In contrast, by agreeing on an industry standard, firms may be able to avoid many of the costs and delays of a standards war, thus substantially reducing transaction costs to both consumers and businesses.[53]

The FTC has observed that, "in many contexts, [collaborative standard setting] can produce substantial benefits."[54] The collaborative standard setting process does replace the agreement of competitors for marketplace competition as a means of selecting technology. While technologies still compete with one another to be chosen by the SSO for inclusion into the standard, this competition occurs pursuant to the policies and practices of the SSOs. This competition can only occur until the point in time in which the standard is finalized. Following that point, competition between technologies for inclusion into the standard no longer occurs and competition between technologies can only occur in the product market if the technologies are incorporated into rival standards—or rival integrated products.

After a standard is adopted, competition between technologies is often frustrated due to high switching costs faced by consumers and businesses. There are several sources of switching costs:

---

[45] *Id.* at 11.
[46] *Id.* at 27.
[47] *Id.*
[48] *Id.*
[49] *Id.*
[50] *See 2007 Report*, *supra* note 18, at 34 n.6.
[51] *Id.*
[52] *Id.* at 34 n.8.
[53] *Id.* at 34.
[54] *Id.*

> The most direct source of switching costs is the difference between the costs of acquiring new infrastructure to implement a new standard and the salvage value of current infrastructure that is supporting the existing standard but would not be used to support a new standard…. A second source of switching costs can be network effects such as compatibility. It may be impractical to change the existing standard for one piece of infrastructure if that piece must be compatible with other pieces of infrastructure. Thus, for example, a person wanting to upgrade his word processing software may be locked in to his current software if there is a large benefit to maintaining compatibility with the software of other colleagues.[55]

These high switching costs can also create issues when standards incorporate technologies that are protected by patents. These issues include the potential for "hold-up" by the owner of patented technology after its technology has been chosen by the SSO[56]:

> The hold-up problem indicates the prospect of under-investment in collaborations in which parties must sink investments that are specific to the collaboration, investments that may be costly to redeploy or have a significantly lower value if redeployed outside of the collaboration. The potential for one party to hold up another party that has sunk investments specific to the relationship may discourage that other party from investing efficiently in the collaboration in the first place…. In the standard-setting context, firms may make sunk investments in developing and implementing a standard that are specific to particular intellectual property. To the extent that these investments are not [re-deployable] using other IP, those developing and using the standard may be held up by the IP holders.[57]

This hold-up may give the owner of a patented technology necessary to implement the standard the power to extract higher royalties or other licensing terms that reflect the absence of competitive alternatives.[58] This illustrates the distinction between licensing terms a patent holder could obtain solely based on the merits of its technology and the terms that it could obtain because its technology was included in the standard.[59] The former reflects the value, if any, that the patent owner obtains from its intellectual property. The latter reflects the value that derives from the standard setting process and the elevation of chosen technologies over others.

The FTC has recognized that there are a number of market forces that may reduce the potential for hold-up. Reputational concerns may discourage many firms out of concern that their technologies will not be incorporated into future standards.[60] In addition, some firms may not engage in hold-up because they focus on utilizing the advantages that come from having their product adopted into the standard.[61] Patent holders "that produce and sell a product using the standard

[55] *Id.* at 38 n.25.
[56] *Id.*, at 35.
[57] *Id.* at 35 n.11.
[58] *Id.*
[59] *Id.* at 39.
[60] *Id.* at 40-41.
[61] *Id.*

sometimes may find it more profitable to offer attractive licensing terms in order to promote the adoption of the product using the standard, increasing demand for its product rather than extracting high royalties."[62]

In addition, many SSOs utilize internal policies to prevent the risk of hold-up. Many of these policies require SSO participants to disclose patents related to a standard under consideration.[63] Such disclosure rules can help avoid hold-up by informing SSO members about relevant patents held by those participating in the standard-setting process and allowing SSO members jointly to decide whether to incorporate the patented technology.[64] In addition to disclosure rules, some SSOs also use licensing rules which rules require SSO participants to commit to license their patents on certain terms once the standard is set.[65]

3 The FTC's Enforcement and Advocacy Regarding Standardization in the 1980s

The collaborative standard setting process relies upon the voluntary cooperation of groups of competitors. While contemporary concerns may relate to patent hold-up, this competitor collaboration has given rise to a number of antitrust concerns for some time. The FTC first addressed competitive concerns regarding the standard setting process in the 1980s through policy reports, amicus filings and enforcement actions.[66] During this time, the Supreme Court issued a number of decisions regarding the application of antitrust law to the collaborative standard setting process.[67] The FTC participated as *amicus curiae* in *American Society of Mechanical Engineers v. Hydrolevel Corporation* and *Allied Tube & Conduit*

[62] *Id.*

[63] *Id.* at 42.

[64] *Id.*

[65] *Id.*

[66] Although the FTC's action during this time primarily involved safety standards as opposed to interoperability standards, it addressed the same types of issues regarding the manipulation of SSO procedures that later arose in the context of interoperability standards. Safety standards specify aspects of a product's design or performance that are deemed necessary for the product's safe use. Fed. Trade Comm'n. Bureau of Consumer Prot., FINAL STAFF REPORT: STANDARDS AND CERTIFICATION (1983) [hereinafter *1983 Report*] at 14-15. Such standards can facilitate product sales in situations where the buyer may lack the resources or knowledge to independently verify that the product will perform suitably and safely in actual use. *Id.* at 12-13. Collaboratively-set safety standards are often incorporated by state or municipal governments into regulations such as building codes and workplace safety regulations. *Id.* at 28-32. In addition to creating such standards, SSOs are also involved in certifying that particular products are compliant with those standards. *Id.* at 23-24.

[67] *See, e.g.*, *American Soc. of Mechanical Engineers*, 456 U.S. 556 (1982); *Northwest Wholesale Stationers, Inc. v. Pacific Stationery and Printing Co.*, 472 U.S. 284 (1985); *Allied Tube & Conduit Corporation v. Indian Head, Inc*, 486 U.S. 492 (1988). *See also Radiant Burners, Inc. v. Peoples Gas Light & Coke Co.*, 364 U.S. 656 (1961).

Corporation v. Indian Head, Inc.[68] The FTC participated in both cases to advocate for the advancement of the antitrust law in its application to standard setting; in addition, the facts of both cases—as well as the policy arguments articulated in the *amicus* filings—reflect more general competition concerns. As discussed below, the competitive harm in these cases followed from attempts by competitors to use the collaborative standard setting process as means to enact standards that kept rival technologies out of the product market. Recognizing the value of the standard setting process, the cases focused on the SSO's internal policies that self-policed such misconduct. The FTC applied similar theories in its own enforcement in *In re American Society of Sanitary Engineering*.[69]

These concerns were also raised in the FTC's policy reporting. In 1983, the staff of the FTC's Bureau of Consumer Protection issued a staff report on Standards and Certification.[70] The staff report observed that product standards and certification "play a vital role in the nation's economy," and can "produce significant societal benefits by aiding information flow, hastening technology transfer and promoting efficiencies in production and distribution."[71] Nevertheless, it also noted that participants in the standards process "often have incentives to promulgate standards that enhance their own competitive position at the expense of their competitors or consumers[72]:"

> Standards are developed by committees composed substantially of representatives of competing firms within the affected industry and others with clear commercial interests. These representatives have incentives to make standards decisions which benefit their commercial interests at the expense of competition.… Participation in the standards development process provides these representatives with the opportunity, though shaping resulting standards actions, to restrict competitors' markets or protect their own markets from the rigors of competition.[73]

Based upon its research, FTC staff observed that, "when standards developers lack procedural safeguards … there is no effective check upon unreasonable standards decisions."[74] Similarly, in a later speech, Commissioner Christine Varney observed that, "when the imposition of a standard might restrain or prohibit market

[68]In addition, the FTC joined the Department of Justice on several *amicus curiae* filings before circuit courts of appeal. *See* Brief of the United States and the Federal Trade Commission Amicus Curiae, *Indian Head, Inc. v. Allied Tube & Conduit Corporation,* 817 F.2d 938 (2d Cir. 1987) (Nos. 86-7734; 86-7758); Brief of the United States and the Federal Trade Commission Amicus Curiae, *Sessions Tank Liners, Inc. v. Joor Manufacturing, Inc.* et al., 827 F.2d 458 (9th Cir.1987) (Nos. 86-6208, 86-6407).

[69]*In the Matter of American Society of Sanitary Engineering*, 106 F.T.C. 324 (1985).

[70]*1983 Report*, *supra* note 66, at 12.

[71]*Id.*, at 12.

[72]*Id*. at 2.

[73]*Id*. at 333.

[74]*Id*. at 334.

access, the fairness of the standard setting procedure and the procedural safeguards extended to interested parties will be evaluated ….”[75]

3.1 American Society of Mechanical Engineers v. Hydrolevel Corporation

American Society of Mechanical Engineers v. Hydrolevel Corporation, decided by the Supreme Court in 1982, concerned the failure of the American Society of Mechanical Engineers (henceforth “ASME”) to certify a low-water fuel cutoff device as being compliant with its Boiler and Pressure Vessel Code.[76] The fuel cutoff was a safety device intended to prevent boiler explosions that could result from the operation of a boiler without adequate water; the device would automatically stop the flow of fuel to the boiler in the event that the water level fell low.[77]

The case concerned the actions of a manufacturer of a fuel cutoff device, M&M, whose vice-president John James was also the vice chairman of the ASME subcommittee responsible for drafting and interpreting the Boiler and Pressure Vessel Code.[78] M&M faced competition from Hydrolevel, a manufacturer of competing fuel cutoff devices, and had lost a major customer to Hydrolevel.[79] Following the loss of this customer, M&M’s management met with T.R. Hardin, an executive of another competitor, who was also the chairman of the ASME subcommittee.[80] The group—including James and Hardin—wrote a letter to the secretary of the ASME subcommittee.[81] The letter inquired whether the Hydrolevel fuel cutoffs complied with the ASME standard.[82] Its drafters wrote the letter in such a way as to solicit a negative response.[83] M&M sent the letter on its letterhead and signed by one of its executives.[84]

In accordance with ASME procedures, upon its receipt, the letter was referred to Mr. Hardin to draft a response in his capacity as the subcommittee chairman.[85]

---

[75]Christine A. Varney, *Antitrust Implications in Standard Setting*, Remarks Before the District of Columbia Bar Annual Seminar on Antitrust and Trade Associations (Feb. 22, 1995).

[76]456 U.S. at 559-60.

[77]*Id.*

[78]*Id.* at 560.

[79]*Id.*

[80]*Id.*

[81]*Id.*

[82]*Id.*

[83]*Id.* at 560-61.

[84]*Id.*

[85]*Id.* at 561.

Mr. Hardin prepared a letter stating that the Hydrolevel product did not comply with the ASME standard.[86] The committee secretary accepted this draft, signed it and sent it to M&M on ASME stationary.[87] Upon receipt, M&M used this letter in its sales materials to tell its customers that Hydrolevel's products did not comply with the ASME standard.[88]

Hydrolevel brought suit alleging violation of the antitrust laws against both ASME and the successors to M&M, which had since been acquired.[89] Only the case against ASME proceeded to trial and appeal through the Supreme Court. The Court affirmed the finding that ASME was liable under Section 1 of the Sherman Act—prohibiting agreements in restraint of trade—due to the conduct of its agents, *i.e.*, James and Hardin.[90]

The Supreme Court took the case to address the issue of whether ASME could be held liable for violating the antitrust laws solely due to the acts of its agents.[91] The FTC joined the Department of Justice as *amicus curiae* in a brief before the Supreme Court.[92] The brief supported affirming the judgement against ASME.[93] In general discussion, the brief recognized the value of collaborative standard setting, as well as its potential to distort competition:

> We do not for a moment question the substantial social contribution made by organizations such as ASME. But it cannot be disputed that ASME is a standard-prescribing body whose actions effectively govern competitive entry of new products into numerous lines of commerce. As the facts in this case demonstrate,a ruling by ASME that a product is dangerous or not in compliance with its Code can deprive a manufacturer of its customers….[94]

The brief then noted the importance of promoting adoption of internal safeguards by SSOs to prevent competitive harm:

> Application of the antitrust laws … is necessary to assure the survival of competitive conditions in the lines of commerce that are subject to their code-making activities. Indeed, exposure to actions such as the present … will spur organizations such as ASME … to adopt the very kinds of procedural safeguards which this Court has determined to be essential to avoid antitrust violations in similar cases.[95]

The Court similarly observed in its decision that, in "holding ASME liable under the antitrust laws … we recognize the important role of ASME and its agents in the

---

[86] *Id.*

[87] *Id.*

[88] *Id.* at 562.

[89] *Id.* at 564.

[90] *Id.* at 565.

[91] *Id.*

[92] Brief for United States as Amici Curiae, American *Soc. of Mechanical Engineers, Inc. v. Hydrolevel Corp.*, 456 U.S. 556 (1981) (No. 80-1765) (joined by Ernest J. Isenstadt, Acting General Counsel, Federal Trade Commission).

[93] *Id.* at 15.

[94] *Id.* at 31.

[95] *Id.* at 31 (citations omitted).

economy, and we help to ensure that standard setting organizations will act with care when they permit their agents to speak for them.…"[96]

3.2 *In re American Society of Sanitary Engineering*

In 1985, the FTC brought an enforcement action against the American Society of Sanitary Engineering (henceforth "ASSE") pursuant to Section 5 of the FTC Act.[97] The matter settled by consent decree. The ASSE was a private standard setting organization that promulgated plumbing product standards.[98] Its members included plumbers, contractors, inspectors, equipment manufactures and engineers, amongst others.[99] Many state and municipal governments incorporated its standards into their building codes.[100] The FTC's complaint related to the ASSE 1002 standard for backflow prevention products in toilets.[101] These products prevented the contamination of the water supply with septic water.[102] The ASSE 1002 standard required the use of a particular type of valve to meet this goal: a ballcock valve.[103]

J.H. Industries, Inc. (J.H.) manufactured an innovative backflow prevention system that did not use a ballcock valve and relied upon a different structure to prevent backflow.[104] The J.H. design offered several advantages over ballcock valves, including lower costs and lower maintenance requirements.[105] J.H. also commissioned expert testing and analysis showing that it protected against backflow at least as well as ballcock valves.[106] Nevertheless, because it did not utilize a ballcock valve, the J.H. product did not comply with the ASSE 1002 standard.[107]

The ASSE refused J.H.'s request to modify ASSE 1002 to permit the use of its type of valve for backflow prevention.[108] It did so despite the fact that J.H. provided expert evidence of its performance.[109] In its complaint, the FTC alleged that the ASSE failed to address or identify any inadequacies in the evidence that

---

[96] *American Society of Mechanical Engineers,* 456 U.S. at 577-78.

[97] 106 F.T.C. 324.

[98] Complaint, *In the Matter of American Society of Sanitary Engineering*, F.T.C. Docket No. C-3169, 106 F.T.C. 324, 324 at ¶ 2 (1985).

[99] *Id.* at ¶ 1.

[100] *Id.* at ¶ 9.

[101] *Id.* at ¶ 11.

[102] *Id.*

[103] *Id.* at ¶ 12.

[104] *Id.* at ¶ 14.

[105] *Id.*

[106] *Id.* at ¶ 16.

[107] *Id.* at ¶ 15.

[108] *Id.* at ¶ 18; 21.

[109] *Id.*

J.H. offered.[110] The FTC alleged that the ASSE lacked a reasonable basis or justification for refusing J.H.'s request to modify that ASSE 1002 standard.[111]

The FTC alleged that this conduct constituted a concerted refusal to deal with J. H. on the part of ASSE's members.[112] The FTC alleged that this conduct hindered competition in the manufacture and sale of plumbing devices and harmed consumers for several reasons.[113] The FTC alleged that this conduct violated Section 5 of the FTC Act.[114]

3.3 Allied Tube & Conduit Corporation v. Indian Head, Inc.

Allied Tube & Conduit Corporation v. Indian Head, Inc., decided by the Supreme Court in 1988, concerned the manipulation of voting at the National Fire Protection Association (henceforth "NFPA") for updates to its National Electrical Code (henceforth "NEC") standard.[115] The NEC concerned the design and installation of electrical wiring systems.[116] The NFPA was a private organization with members representing industry, academia, firefighters, and many other stakeholders. Its NEC was routinely adopted into regulations promulgated by state and local governments.[117] In addition, its code was frequently relied upon by insurance underwriters, building inspectors and electrical contractors.[118] The case involved electrical conduit, the hollow tubing used to carry electrical wires through the walls and floors of buildings.[119] At the time of the conduct in question, conduit was traditionally made of steel; however, innovative firms began to offer conduit made of plastic that offered cost and performance advantages over steel.[120] The NEC only permitted the use of steel conduit.[121]

Indian Head manufactured plastic conduit and initiated a proposal that NFPA include plastic conduit in an upcoming edition of the NEC.[122] NFPA scheduled this proposal for consideration at its annual meeting.[123] According to NFPA procedures,

---

[110] *Id.* at ¶ 19; 23.
[111] *Id.* at ¶ 18.
[112] *Id.*
[113] *Id.* at ¶ 24.
[114] *Id.* at ¶ 18.
[115] 486 U.S. 492.
[116] *Id.*
[117] *Id.* at 495.
[118] *Id.* at 495-96.
[119] *Id.* at 496.
[120] *Id.*
[121] *Id.*
[122] *Id.*
[123] *Id.*

a majority vote of members present at the meeting would determine whether NFPA approved or rejected the proposal.[124]

A number of producers of steel conduit agreed to pack the annual meeting with new members for the purpose of voting against the proposal.[125] They recruited 230 persons to join NFPA and to attend the annual meeting.[126] The group of producers paid the expenses of these new members and directed their voting at the annual meeting through group leaders using radios and hand signals.[127] As a result, the members present at the meeting voted 394 to 390 to reject the proposal.[128]

Indian Head brought suit against a number of steel manufacturers, alleging violation of Section 1 of the Sherman Act.[129] At trial, the manufactures conceded that they had conspired to exclude Indian Head's product from the NEC.[130] Applying the rule of reason, the jury found that the manufacturers unreasonably restrained trade in violation of Section 1 of the Sherman Act.[131]

The district court set aside the verdict following trial because it found that the steel manufacturers' conduct was government petitioning protected by the *Noerr-Pennington* doctrine.[132] The manufacturers argued that their conduct before the NFPA was akin to government petitioning because many state and local governments adopted the NFC into law.[133]

This issue was presented to the Supreme Court, which rejected this argument, finding that the conduct was not protected because the ASME was a private standard setting organization.[134]

The Supreme Court's decision articulated the antitrust concerns raised by the collaborative standard setting process:

> Typically, private standard-setting associations, like the Association in this case, include members having horizontal and vertical business relations. There is no doubt that the members of such associations often have economic incentives to restrain competition and that the product standards set by such associations have a serious potential for anticompetitive harm. Agreement on a product standard is, after all, implicitly an agreement not to manufacture, distribute, or purchase certain types of products.
>
> Accordingly, private standard-setting associations have traditionally been objects of antitrust scrutiny.[135]

---

[124] *Id.*

[125] *Id.*

[126] *Id.* at 497.

[127] *Id.*

[128] *Id.*

[129] *Id.*

[130] *Id.*

[131] *Id.* at 498.

[132] *Id.* at 498-99; *Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961); *Mine Workers v. Pennington*, 381 U.S. 657 (1965).

[133] *Allied Tube*, 486 U.S. at 499.

[134] *Id.* at 511.

[135] *Id.* at 500 (citations omitted).

Nevertheless, the Court recognized the value of collaborative standard setting, when the standard setting process reflected unbiased expert analysis:

> When, however, private associations promulgate safety standards based on the merits of objective expert judgments and through procedures that prevent the standard-setting process from being biased by members with economic interests in stifling product competition those private standards can have significant [pro-competitive] advantages.[136]

In addition, the Court noted the importance of internal SSO safeguards to prevent anticompetitive conduct, explaining that "the hope of pro-competitive benefits depends upon the existence of safeguards sufficient to prevent the standard-setting process from being biased by members with economic interests in restraining competition."[137]

The FTC joined the Department of Justice as *amicus curiae* in a brief before the Supreme Court.[138] The brief argued that *Noerr-Pennington* immunity should not apply to exempt conduct before private standard setting organizations from antitrust scrutiny.[139] The brief further observed:

> Private standard-making organizations play an important role in the marketplace. But as this Court observed in *Hydrolevel*, such organizations may have power that can "'result in economic prosperity or economic failure, for a number of businesses of all sizes throughout the country,' as well as entire segments of an industry." Private standard-making also "can be rife with opportunities for anticompetitive activity," in part because the proceedings of such organizations are conducted in private and are not open to public scrutiny. Application of the antitrust laws to standard-making organizations is necessary to assure the survival of competitive conditions in those industries that engage in such activities.[140]

4 The FTC's Enforcement Regarding Standard Setting Conduct Involving Patented Technologies

The FTC's initial advocacy and enforcement in the 1980s focused on efforts by competitors to use collaboratively set standards to exclude their rivals from product markets. The cases highlighted the importance of procedural safeguards at SSOs to prevent misconduct by their members. Beginning in the 1990s, the FTC examined

---

[136] *Id.*

[137] *Id.* at 509 (citations omitted).

[138] Brief for United States & Fed. Trade Comm'n as Amici Curiae Supporting Respondent, *Allied Tube & Conduit Corp. v. Indian Head, Inc.* 486 U.S. 492 (1987) (No. 87– 157).

[139] *Id.* at 1.

[140] *Id.* at 24 (quoting *American Society of Mechanical Engineers, Inc. v. Hydrolevel Corp.*, 456 U. S. 556, 570-71 (1982)) (citations omitted).

the effect of such safeguards in cases where competitors abused the standard setting process not as a means of excluding their rivals from product markets, but rather as a means of ensuring that their patented technology was incorporated into standards.

The first three cases, *Dell*, *Unocal* and *Rambus*, each addressed a similar factual scenario. Each party was a participant in the standard setting process and—during deliberations on the technical content of the standard—made deceptive or misleading comments to other participants that hid the existence of patents or patent applications that related to the content of the standard. In each case—without knowledge of the patents or applications—the SSO adopted technology that was covered by the parties' patents. In each case, the party subsequently attempted to obtain royalties from firms that practiced the standard.

The FTC brought *Dell* and *Unocal* as actions pursuant to Section 5 of the FTC act. In *Rambus*, however, it expressly limited its claims to the scope of Section 2 of the Sherman Act and its prohibition on monopolization. While *Dell* and *Unocal* settled by consent decree, *Rambus* was ultimately appealed to a federal appellate court which did not find liability.

Unlike the previous three cases, *N-Data* dealt with conduct that took place after a standard was set. In this case, a patent holder made an explicit commitment to license a patent for set fee if the patent was incorporated into the standard. After the standard was adopted, it assigned the patent to a party who reneged on the commitment, asking for royalties higher than the commitment. The FTC alleged that this conduct threatened to undermine the integrity of the standard setting process and constituted a standalone violation of Section 5 of the FTC Act.

4.1 In re Dell Computer Corporation

In re Dell Computer Corporation, which settled by consent decree in 1996, concerned conduct before the Video Electronics Standards Association (henceforth "VESA").[141] VESA set the VESA Local Bus, or "VL-bus," standard.[142] The standard related to the design of a computer bus, which carried information and instructions between a computer's central processing unit and its peripheral devices, such as a hard disk drive, video display, or modem.[143]

Dell concerned conduct by Dell Computer Corporation (henceforth "Dell").[144] Dell became a VESA member in February 1992.[145] Dell's representatives were

[141]Complaint, *In the Matter of Dell Computer Corporation*, F.T.C. Docket No. C-3658, 121 F.T.C. 616, 616 at ¶ 4 (May 20, 1996).

[142]*Id.* at ¶ 5.

[143]*Id.* at ¶ 5.

[144]*Id.* at ¶ 1.

[145]*Id.* at ¶ 4.

members of VESA's Local Bus Committee when the committee approved the VL-bus design in June 1992.[146] Following committee approval of the VL-bus design, VESA sought approval by all of its voting members.[147] In July and August 1992, Dell voted to approve the preliminary proposal and the final version of the VL-bus standard.[148] In each instance, its representative certified in writing that the "proposal does not infringe on any trademarks, copyrights, or patents" possessed by Dell.[149] This certification was part of the VESA approval process.[150] As the Statement accompanying the consent explains:

> The Dell case involved an effort by [VESA] to identify potentially conflicting patents and to avoid creating standards that would infringe those patents. In order to achieve this goal, VESA—like some other standard-setting entities—has a policy that member companies must make a certification that discloses any potentially conflicting intellectual property rights. VESA believes that its policy imposes on its members a good-faith duty to seek to identify potentially conflicting patents. This policy is designed to further VESA's strong preference for adopting standards that do not include proprietary technology.[151]

The VL-bus standard was widely adopted, being included in over 1.4 million computers sold within the first eight months of its adoption.[152] Dell was the owner of U.S. Patent No. 5,036,481 (henceforth "481 patent"), which it received in June 1991.[153] As Dell later asserted, the '481 patent claimed a feature used on motherboards compliant with the VL-bus standard.[154] Following the successful adoption of the VL-bus standard, Dell requested meetings with several VESA members, claiming that their implementation of the VL-bus standard violated Dell's patent rights.[155]

In its Statement, the FTC explained its analysis that "had VESA known of the Dell patent, it could have chosen an equally effective, non-proprietary standard."[156] In addition, the Statement explained that "the Commission has reason to believe that once VESA's VL-bus standard had become widely accepted, the standard effectively conferred market power upon Dell as the patent holder."[157] In its complaint, the FTC alleged that Dell's conduct constituted an unfair method of

---

[146] *Id.* at ¶ 5.
[147] *Id.*
[148] *Id.* at ¶ 7.
[149] *Id.*
[150] *Id.*
[151] Statement of the Federal Trade Commission, *In the Matter of Dell Computer Corporation*, F.T.C. Docket No. C-3658, 121 F.T.C. 616 at 623-24.
[152] Complaint, *In the Matter of Dell Computer Corporation*, at ¶ 8.
[153] *Id.* at ¶ 6.
[154] *Id.*
[155] *Id.* at ¶ 8.
[156] Statement of the Federal Trade Commission, *In the Matter of Dell Computer Corporation*, at 624 n. 2.
[157] *Id.*

competition in violation of Section 5 of the FTC act.[158] The FTC settled the complaint with a consent decree.[159]

It its Statement, the FTC explained that enforcement was appropriate "in the limited circumstances presented by this case," specifically "where there is evidence that the association would have implemented a different non-proprietary design had it been informed of the patent conflict during the certification process, and where Dell failed to act in good faith to identify and disclose patent conflicts."[160]

Responding to public comments, the Statement explained that the decision was not intended to express an endorsement of any certain type of standard or standard-setting process, or to "signal that there is a general duty to search for patents when a firm engages in a standard- setting process."[161] The FTC explained that the decision was not intended to signal a preference for standards that incorporated non-proprietary technology over those that incorporated proprietary technology.[162] Rather, the Statement explained that its action "is not intended to address … these broader issues."[163]

Another issue of discussion was whether defenses under patent law were adequate to address Dell's conduct without the need for FTC enforcement. FTC Commissioner Mary Azcuenaga dissented from the decision and argued that antitrust enforcement may not be necessary because "the private remedy of patent estoppel should suffice to remedy expectations based on Dell's conduct by barring inappropriate enforcement of a patent claim." The majority's Statement disagreed with this view and, while acknowledging that such conduct could be addressed through equitable estoppel defenses to patent infringement, noted that FTC enforcement also "serves an important role in this type of case, where there is a likelihood of consumer harm."[164]

4.2 *In re Union Oil Company of California*

In 2005, the FTC entered into a consent decree settling its case against Union Oil Company of California (henceforth "Unocal").[165] The consent was part of a larger

[158]Complaint, *In the Matter of Dell Computer Corporation*, at 10.

[159]Decision and Order, *In the Matter of Dell Computer Corporation*, F.T.C. Docket No. C-3658 121 F.T.C. 616, 618 at § III.

[160]Statement of the Federal Trade Commission, *In the Matter of Dell Computer Corporation*, 121 F.T.C. at 626.

[161]*Id.* at 625.

[162]*Id.*

[163]*Id.*

[164]*Id.*

[165]Statement of the Federal Trade Commission, *In the Matter of Union Oil Company of California*, F.T.C. Docket No. 9305 and *In the Matter of Chevron Corporation and Unocal Corporation*, F.T.C. Docket No. C-4144.

consent arrangement that allowed Chevron Corporation to acquire Unocal.[166] The case involved Unocal's conduct before the California Air Resources Board (henceforth "CARB").[167] CARB promulgated standards for low- emissions reformulated gasolines (henceforth "RFG") through a rulemaking process initiated in the late 1980s.[168]

Unocal filed a patent application in December 1990 which lead to the issuance of a number of patents related to low-emissions gasoline between 1994 and 2000.[169] At the same time, beginning in 1990, Unocal participated in the CARB rulemaking process.[170] During the course of this participation, Unocal presented the technical work leading to its patent applications to CARB staff, although it did not disclose the existence of the pending patent application.[171] Rather, Unocal represented that its research was nonproprietary:

> Please be advised that Unocal now considers this data to be non-proprietary and available to CARB, environmental interest groups, other members of the petroleum industry, and the general public upon request.[172]

Unocal did not disclose the existence of its patent rights until 1995, shortly before the relevant CARB RFG regulations took effect.[173] At that point, it began a campaign of litigating and licensing its patent rights and obtained infringement verdicts against a number of major refiners.[174]

The FTC alleged that Unocal obtained market power in markets for the technology claimed in its issued patents and the market for CARB-compliant RFG gasoline.[175] The complaint alleged that it obtained this market power illegally through engaging in fraudulent conduct, citing a number of "knowing and willful misrepresentations to CARB," and alleging that, but for this fraud, CARB would not have adopted RFG technology that overlapped with its claims.[176] The FTC alleged that this conduct violated Section 5 of the FTC Act.[177] The FTC resolved the matter by a consent decree.[178]

---

[166] *Id.*

[167] Complaint, *In the Matter of Union Oil Company of California*, F.T.C. Docket No. 9305 at 1.

[168] *Id.*

[169] *Id.* at ¶¶ 15, 32.

[170] *Id.* at ¶ 36.

[171] *Id.* at ¶¶ 37-38.

[172] *Id.* at ¶ 41.

[173] *Id.* at ¶ 6.

[174] *Id.* at ¶¶ 5; 9.

[175] *Id.* at ¶¶ 73-75.

[176] *Id.* at ¶¶ 76-80.

[177] *Id.* at ¶¶ 97-103.

[178] Decision and Order, *In the Matter of Union Oil Company of California*, F.T.C. Docket No. 9305, § II. Prior to entering into the consent, the FTC issued a Commission Opinion on the issue of whether *Noerr-Pennington* immunity protected Unocal's conduct before CARB. Opinion of the Commission, *In the Matter of Union Oil Company of California*, F.T.C. Docket No. 9305.

4.3 *In re Rambus, Incorporated*

Unlike *Dell* and *Unocal*, *In re Rambus, Incorporated* did not settle by consent decree. Rather, the FTC pursued an administrative action with a hearing before an administrative law judge that culminated in an opinion by the Commission, which Rambus ultimately appealed to federal court. Unlike the prior actions, the FTC explicitly limited its theory to Section 2 of the Sherman Act. The FTC filed its administrative complaint against Rambus in 2002, and the D.C. Circuit issued its decision on appeal in 2008.

Rambus concerned conduct before the Joint Electron Device Engineering Council (henceforth "JEDEC").[179] The JEDEC JC 42.3 committee developed standards for dynamic random access memory (henceforth "DRAM") technology used in computer memory.[180] The case involved the development of JEDEC's SDRAM and DDR SDRAM standards, which JEDEC approved in 1993 and 1999, respectively.[181] The case concerned four different technologies that JEDEC ultimately incorporated into its SDRAM and DDR SDRAM standards.[182] In April 1990, Rambus filed U.S. Patent Application No. 07/510,898.[183] Through filing continuation and divisional applications, this application was the original source of patents that Rambus later asserted against each of the four technologies at issue in the case.[184]

Rambus joined JEDEC and began attending its meetings in December 1991.[185] At that time, JEDEC was in the early stages of developing the SDRAM standard.[186] Rambus also participated in JEDEC's JC 42.3 subcommittee.[187] During this time, Rambus took information that it gathered from its participation in JEDEC and used the information to amend the claims of its pending patent applications, such that developing standards would infringe its claims.[188] Nevertheless, Rambus did not disclose the existence of these applications to JEDEC while it participated in JC 42.3.[189]

Rambus continued this participation until June 1996, when Rambus sent a letter to JEDEC indicating that it was not renewing its membership.[190] The letter enclosed a partial list of Rambus' patents, but omitted several patents relevant to the

[179] *Rambus, Inc. v. F.T.C.*, 522 F.3d 456, 460 (D.C. Cir. 2008).
[180] *Id.*
[181] *Id.*
[182] *Id.*; Opinion of the Commission, *In the Matter of Rambus, Inc.*, F.T.C. Docket No. 9302 at 5.
[183] *Id.* at 7.
[184] *Id.*
[185] *Id.* at 37.
[186] *Id.*
[187] *Id.* at 8, 39.
[188] *Id.* at 41-43.
[189] *Id.*
[190] *Id.* at 45.

technology then under consideration by JEDEC.[191] The letter also explained that Rambus "reserves all rights regarding its intellectual property."[192] Beginning in 1999, Rambus began a campaign of licensing its patents that claimed technology incorporated in SDRAM and DDR SDRAM.[193] It informed a number of manufacturers of DRAM and chipsets that the continued manufacture of its products infringed those rights.[194] Many manufacturers opted to take a license.[195]

The FTC's Opinion reviewed JEDEC's rules and evidence of its procedures regarding patent disclosure. It noted that JEDEC's patent policies were "not a model of clarity," but it did conclude that JEDEC's members had an expectation that Rambus would disclose its pending patent applications to the JC 42.3 committee.[196] For example, an appendix to the JEDEC manual explained that:

> Standards that call for use of a patented item or process may not be considered by a JEDEC committee unless all of the relevant technical information covered by the patent or pending patent is known to the committee, subcommittee, or working group,"[197]

Based upon the evidence of JEDEC's practices and procedures, the Commission concluded that:

> JEDEC's policies (fairly read) and practices, as well as the actions of JEDEC participants, provide a basis for the expectation that JEDEC's standard-setting activity would be conducted cooperatively and that members would not try to distort the process by acting deceptively with respect to the patents they possessed or expected to possess. Those policies rested on an express duty of good faith, as well as an objective of avoiding creation of unnecessary competitive advantages. The policies also included rules to ensure that members periodically were reminded to disclose patents and patent applications, and that patented technologies would be included in standards only after receipt of RAND assurances.[198]

As a result, the Commission observed, "JEDEC's members expected disclosure of both patents and patent applications that might be applicable to the work JEDEC was undertaking, if the patents ever were going to be enforced against JEDEC-compliant products."[199] The Commission also found that Rambus acted deceptively in light of its obligation to disclose:

> Rambus's course of conduct played on these expectations. Rambus sat silently when other members discussed and adopted technologies that became subject to Rambus's evolving patent claims…. At the same time that Rambus was avoiding disclosure of its patent activity, Rambus was engaged in a program of amending its applications to develop a

[191] *Id.* at 45-46.
[192] *Id.*
[193] *Rambus,* 522 F.3d at 460-61.
[194] *Id.*
[195] *Id.*
[196] Opinion of the Commission, *In the Matter of Rambus, Inc.*, at 52.
[197] *Id.* at 66.
[198] *Id.*
[199] *Id.*

> patent portfolio that would cover JEDEC's standards. Rambus made full use of information gleaned from its JEDEC participation to accomplish this objective.[200]

Ultimately, the Commission found that "Rambus violated Section 5 of the FTC Act by engaging in exclusionary conduct that contributed significantly to the acquisition of monopoly power in four relevant and related markets."[201] Rambus appealed this decision to the Court of Appeals for the D.C. Circuit, which found that the FTC "failed to sustain its allegation of monopolization."[202]

4.4 *In re Negotiated Data Solutions*

In re Negotiated Data Solutions, which settled by consent decree in 2008, related to standardization at the Institute of Electrical and Electronics Engineers (henceforth "IEEE").[203] The case related to an update to the IEEE 802.3 Ethernet standard, used to connect computer equipment attached to local area networks (LAN).[204] Around 1993, IEEE authorized its 802.3 Working Group to develop a new, "Fast Ethernet" standard that would support even faster data transmission rates.[205]

In 1992, National Semiconductor (henceforth "National") filed a patent application related to its "NWay" technology.[206] In 1994, National proposed that the 802.3 Working Group adopt this NWay technology into its pending Fast Ethernet standard.[207] National represented, both at IEEE meetings and in writing, that it would license its pending patents should NWay be incorporated into the Fast Ethernet standard:

> In the event that the IEEE adopts an [auto-detection] standard based upon National's NWay technology, National will offer to license its NWay technology to any requesting party for the purpose of making and selling products which implement the IEEE standard. Such a license will be made available on a nondiscriminatory basis and will be paid-up and royalty-free after payment of a one-time fee of one thousand dollars ($1,000.00).[208]

IEEE ultimately adopted NWay as part of the Fast Ethernet standard and published the standard in 1995.[209] In 1997, National's patent applications covering NWay issued as granted patents.[210] In 1998, National assigned the patents to

---

[200] *Id.*

[201] *Id.* at 5.

[202] *Rambus*, 522 F.3d at 459.

[203] Complaint, *In the Matter of Negotiated Data Solutions, LLC*, F.T.C. Docket No. C-4234.

[204] *Id.* ¶ 6.

[205] *Id.* ¶ 7.

[206] *Id.* ¶ 9.

[207] *Id.* ¶ 10.

[208] *Id.* ¶¶ 12-13.

[209] *Id.* ¶¶ 14; 16.

[210] *Id.* ¶ 22.

Vertical Networks (henceforth "Vertical").[211] In 2002, Vertical sent a letter to the IEEE offering to license the NWay patents on "reasonable terms and conditions," and stating that the "assurances provided in this letter supersede any assurances provided by National…"[212] Soon thereafter, Vertical began a campaign to license the NWay patents, demanding fees that were a "substantial increase" over National's $1,000 commitment.[213]

The FTC's complaint challenged Vertical's conduct under both the competition and consumer protection prongs of Section 5 of the FTC Act, alleging that it was both an "unfair method of competition" and an "unfair act or practice."[214] The accompanying Analysis explained that the FTC's Section 5 theories were stand-alone theories that—unlike, for example, *In re Rambus*—were not premised upon a violation of the Sherman Act.[215] The FTC settled the case by consent decree.[216]

The FTC's action was accompanied by discussion as to whether conduct taking place after standard adoption could give rise to a claim under Section 5. Chairman Majoras wrote a dissenting opinion explaining that "[t]his case departs materially from the prior line … in that there is no allegation that National engaged in improper or exclusionary conduct to induce IEEE to specify its NWay technology in the 802.3u standard."[217] Similarly, in a later speech, Commissioner Rosch explained his view that the facts differed from the prior actions:

> The facts in N-Data were different from those of the Commission's earlier standard setting cases. For example, unlike in *Rambus*, there were no allegations of misconduct or [anti-competitive] behavior at the time the standard was adopted by the IEEE. Nor were there any allegations of anticompetitive behavior that led the market to subsequently implement IEEE's standard. The conduct in the case – the breach of the licensing commitment – did not cause N-Data to either acquire or maintain its monopoly power. The monopoly power exploited by N-Data was conferred by the standard setting organization and the subsequent marketplace adoption of the standard.[218]

The majority Statement explained that N-Data's conduct constituted a harm to the standard setting process:

---

[211] *Id.* ¶ 23.

[212] *Id.* ¶ 27.

[213] *Id.*

[214] *Id.* ¶¶ 38-39. This paper focuses on the competition claims raised under the "unfair method of competition" prong of Section 5.

[215] Analysis of Proposed Consent Order to Aid Public Comment, *In the Matter of Negotiated Data Solutions LLC*, F.T.C. File No. 051-0094, at 4.

[216] Decision and Order, *In the Matter of Negotiated Data Solutions LLC*, F.T.C. File No. 051-0094.

[217] Dissenting Statement of Chairman Majoras, *In the Matter of Negotiated Data Solutions LLC*, F. T.C. File No. 051-0094.

[218] J. Thomas Rosch, *Section 2 and Standard Setting: Rambus, N-Data & The Role of Causation*, LSI 4th Antitrust Conference on Standard Setting & Patent Pools (Oct. 2, 2008).

> The impact of Respondent's alleged actions, if not stopped, could be enormously harmful to standard-setting. Standard-setting organization participants have long worried about the impact of firms failing to disclose their intellectual property until after industry lock-in. Many standard-setting organizations have begun to develop policies to deal with that problem. But if N-Data's conduct became the accepted way of doing business, even the most diligent standard-setting organizations would not be able to rely on the good faith assurances of respected companies.[219]

In addition, the dissent questioned whether reneging on contractual commitments alone would constitute an antitrust violation.[220] In contrast, the analysis explained that "Section 5 intervention may serve an unusually important role" in the case because, "contract remedies may prove ineffective" in the standard-setting context as N-Data's conduct impacts "numerous, injured third parties who lack privity with patentees" and could "raise costs market-wide."[221] The Analysis further explained that a "mere departure from a previous licensing commitment is unlikely to constitute an unfair method of competition under Section 5," but that it may be so in the case of "conduct that threatens to undermine the standard-setting process or to render it anticompetitive."[222]

5 The FTC's Enforcement and Advocacy Regarding the Voluntary FRAND Commitment

5.1 The Interpretation of the FRAND Commitment

Dell, *Unocal* and *Rambus* each involved a SSO participant's failure to disclose patents during the standard setting process. As a result, when the SSO members selected technologies for inclusion into the standard, they lacked knowledge that some technologies may be covered by patents. This knowledge would have shed light on the potential costs involved in incorporating those technologies, as the SSO could have considered the likely royalty that each patent holder may seek on its relevant patents. With knowledge of the patent rights, the SSO could have weighed whether alternative technologies would have presented an overall better value.

N-Data also involved information regarding future royalties associated with a technology under consideration by a SSO. Unlike *Dell*, *Unocal* and *Rambus*, this information did not merely include the fact that N-Data held relevant patents. It also included explicit information regarding the future royalty associated with those patents. In the case of N-Data, it committed to license its patents for $1,000 if they

---

[219]Statement of the Federal Trade Commission, *In the Matter of Negotiated Data Solutions LLC*, F.T.C. File No. 051-0094.

[220]*Id*.

[221]Analysis of Proposed Consent Order to Aid Public Comment, *In the Matter of Negotiated Data Solutions LLC*, F.T.C. File No. 051-0094, at 4.

[222]*Id* at 6.

were included in the standard. The SSO could weigh this cost when evaluating the overall value of N-Data's technology.

Similar to *N-Data's* unilateral license offer, many SSOs make use of some form of licensing rule as part of their internal procedures. Licensing rules allow SSO participants to commit to some form of licensing term for patents that may cover technologies incorporated in the standard. Depending on the SSO, they may accompany the disclosure of patents, or be a blanket commitment that covers any patents subsequently found to cover the standard. The licensing rule requires that a commitment be made before the standard is set. That way, the nature of commitment given is known to the SSO as it chooses between technologies for incorporation into the standard. The commitment then governs the licensing that may occur after the standard is set.

Licensing rules can mitigate hold-up of a standard. Because they provide information regarding future royalties at the time that the standard is set; they allow the SSO's to choose between competing technologies—which may come with differing licensing commitments—at the time when technologies can be chosen without incurring switching costs. This avoids some of the distortive effects that standardization can have on competition between technologies.

The FRAND commitment is a licensing rule.[223] The 2007 Report explained that SSOs may use FRAND licensing commitments to mitigate hold-up.[224] Nevertheless, it noted varying views from commentators regarding whether the FRAND commitment was specific enough to effectively combat hold-up.[225] Some commentary suggested that the FRAND commitment was effective.[226] Others suggested that terms such as "reasonable" and "non-discriminatory" were difficult to define.[227]

In addition to licensing rules, a similar method of combatting hold-up by SSO members would be to agree upon royalty rates before the standard was set. If parties were to explicitly disclose the royalties that they would require, similar to *N-Data*, then this information would unambiguously be available at the time that the standard is being set. In addition to unilaterally announcing royalty rates, patent holders could also engage in *ex ante* negotiations of royalty rates before the standard was set.

The 2007 Report noted some practical challenges for the use of *ex ante* license negotiations. Such negotiations may lead to increased administrative costs and delays and may therefore not be adopted by many SSOs.[228] One reason was that the selection of technologies for inclusion in a standard was often done by participants'

---

[223] *2007 Report*, *supra* note 18, at 47-48. In addition to the FRAND commitment, the 2007 report also discussed royalty-free licensing commitments.

[224] *Id.* at 46.

[225] *Id.* at 47-48.

[226] *Id.*

[227] *Id.*

[228] *Id.* at 50.

engineers and technical experts whereas license negotiation involved different personnel such as lawyers.[229] For such reasons, one commentator noted that the use of the FRAND commitment functioned by allowing SSO participants to delay licensing negotiation until after the standard is set, while still mitigating hold-up based upon technology selection.[230]

1. *FTC Guidance Regarding Licensing Negotiations*

The FTC's 2007 Report provided guidance regarding the use of licensing rules and *ex ante* licensing discussions. Absent certain group *ex ante* licensing conduct, however, the report did not suggest that SSO's choice of any particular licensing approach would raise antitrust issues. Nor did it recommend that SSOs adopt any particular approach.

The 2007 Report made clear that the FTC and DOJ did not endorse any particular type of licensing rule. The report explained that there may be a number of business motivations that a SSO would have to consider when selecting a policy that worked for its membership.[231] The 2007 Report explained:

> Neither Agency advocates that SSOs adopt any specific disclosure or licensing policy, and the Agencies do not suggest that any specific disclosure or licensing policy is required.[232]

The report addressed one type of antitrust concern related to *ex ante* licensing: that the collective negotiation of royalty rates prior to the standard being set could sometimes raise concerns under Section 1 of the Sherman Act.[233] The 2007 Report addressed two types of concerns. First, discussions between either patent holders or SSO members could constitute a naked restraint of trade that may be *per se* illegal.[234] This may include conduct such as using licensing negotiations as a cover for discussing downstream product pricing, or if patent holders would reach naked agreements on the license terms they would offer SSOs.[235] Second, SSO members could exercise group buying power when negotiating for licenses to relevant patents.[236]

---

[229] *Id*. at 50.

[230] Suzanne Michel, *Bargaining for RAND Royalties in the Shadow of Patent Remedies Law,* 77 Antitrust L. J 889, 893 (2011).

[231] *2007 Report*, *supra* note 18, at 50.

[232] *Id*. at 48.

[233] *Id*. at 51. In addition to guidance regarding licensing discussions in the standard setting context, the FTC and DOJ have jointly issued guidance regarding patent licensing which would apply to conduct involving the licensing of both standard essential patents as well as all other patents. *See 1995 Guidelines*, *supra* note 25.

[234] *2007 Report*, *supra* note 18, at 50-51.

[235] *Id*. at 51.

[236] *Id*. at 52-53.

The 2007 Report noted that *ex ante* discussion of licensing terms had the potential to be a pro-competitive means of preventing patent hold-up and that such conduct would be evaluated under the rule of reason.[237] When considering such conduct, the report laid out three considerations. First, the report noted that a unilateral disclosure of licensing terms would not constitute a collective act subject to review under Sherman Act Section 1.[238] Second, the report similarly noted that bilateral *ex ante* license negotiations were unlikely to require special antitrust scrutiny.[239] Finally, the report noted that joint SSO activities undertaken to mitigate hold-up would likely be evaluated under the rule of reason, although the sham use of licensing negotiations to cover up naked agreements on licensing terms may be accorded *per se* treatment.[240]

Nevertheless, the 2007 Report expressed that SSOs may choose not to adopt *ex ante* licensing practices "for practical reasons, independent of antitrust considerations[241]:"

> The Agencies do not suggest that SSOs are required to sponsor such discussions during the standard-setting process …. Moreover, it is fully within the legitimate purview of each SSO and its members to conclude that *ex ante* licensing discussions are unproductive or too time consuming or costly … The Agencies take no position as to whether SSOs should engage in joint *ex ante* discussion of licensing terms ….[242]

2. *Policy Research Regarding the FRAND Commitment*

While the 2007 Report touched upon the use of FRAND commitments during the standard setting process by SSOs, the 2011 Report shared several observations regarding the impact of FRAND commitments on licensing taking place after standards are set. The 2011 Report observed that parties attempting to determine a FRAND rate would look to the law of patent remedies as a guide.

The 2011 Report recommended that the "reasonable royalty" remedy for patent infringement serve as a guidepost for determining the FRAND rate. A "reasonable royalty" is one measure of damages for patent infringement available to patent holders.[243] One common framework used by courts to compute a reasonable royalty is that of the "hypothetical negotiation."[244] Under this framework, the reasonable

---

[237] *Id.* at 53-54.

[238] *Id.* at 54.

[239] *Id.*

[240] *Id.* at 54-55.

[241] *Id.* at 50.

[242] *Id.* at 55.

[243] Under U.S. law, a patent holder is entitled to "damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer." 35 U.S.C. § 284.

[244] *See 2011 Report*, *supra* note 32, at 166.

royalty would approximate the royalty that a willing licensor and a willing licensee would have agreed to, assuming that the relevant patents were valid and infringed.[245]

The 2011 Report observed that courts considering contract disputes over the determination of a FRAND rate "may look to reasonable royalty damages law for guidance," noting that "commentators have observed a close relationship between the 'reasonable' prong of a RAND commitment and the legal rules for determining reasonable royalty damages."[246] In addition to serving as a guide for the judicial determination of a FRAND rate, the 2011 Report explained that patent remedies law could influence real-world negotiations for FRAND-licenses:

> When a patentee and implementer of standardized technology bargain for a licensing rate, they do so within a framework defined by patent remedies law. That law sets the implementer's liability if negotiations break down and the parties enter patent litigation, and therefore heavily influences the negotiated amount.[247]

5.2 *Competition Advocacy Regarding Remedies for Infringement of a FRAND-Encumbered Patent*

1. *Background*

Patent holders are often entitled to request injunctive relief as a remedy to patent infringement. It is available as a remedy in litigation brought in district court. In addition, one specialized tribunal in the United States, the International Trade Commission (henceforth "ITC"), can issue orders prohibiting the import of patented goods. Both district courts and the ITC apply multi- factor inquiries to determine whether to grant an exclusionary remedy. The FTC's 2011 Report offered economic considerations for both tribunals to consider when applying these tests. Much of the analysis in the 2011 Report addressed considerations that applied to all patents—both SEPs and others. In addition, the report offered some specific observations regarding SEPs.

---

[245] *Id*.

[246] *Id*. After the issuance of the report, the Ninth Circuit Court of Appeals affirmed one district court's use of a modified version of the reasonable royalty analysis to compute a FRAND rate in a breach of contract dispute *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1031-34 (9th Cir. 2015).

[247] *2011 Report*, *supra* note 32 at 138.

The FTC's 2011 Report discussed how—for all patents including non-SEPs—the grant of injunctive relief influenced the economic incentives provided by the patent system.[248] It observed that innovation is best served "by awarding a permanent injunction in the large majority of cases."[249] The report discussed three reasons that generally supported granting injunctive relief.[250] First, injunctive relief preserves the exclusivity that provides the foundation of the patent system's incentives to innovate.[251] Second, the credible threat of an injunction provides a significant deterrent to infringement.[252] Third, a predictable injunction threat will encourage private ordering and licensing by the parties.[253]

The 2011 Report also discussed the ability of an injunction to cause patent hold-up[254]:

> The threat of an injunction will lead the manufacturer to pay royalties up to its switching costs, which may be higher than the cost at the time of product design. Commentators explain that the threat of hold-up gives patent holders excessive bargaining power in component-based industries that allows the "patent owner to capture value that has nothing to do with its invention, merely because the infringer cannot separate the infringing component from the non-infringing ones" after it has sunk costs into the design and marketing of a product. The implementers of the patented technology do not receive the price benefits that competition among technologies can provide…[255]

The 2011 Report did note that some commentators were critical of allowing concerns about hold- up inform the injunction analysis. The report noted that such critics argued that decreasing the likelihood of an injunction would lead implementers to choose infringement over licensing.[256] Some commenters also argued that it would result in lower royalties that provide insufficient incentives for inventors to invests in optimal levels of research and development.[257]

The 2011 Report expressed that the proper balance between intellectual property and competition policy could be met by balancing the reasons militating for and against the grant of an injunction.[258] The report explained that "although the potential costs from hold-up should be considered, not all hold-up warrants denial of an injunction."[259]

---

[248] *See 2011 Report, supra* note 32, at 215.
[249] *Id.* at 224.
[250] *Id.*
[251] *Id.*
[252] *Id.*
[253] *Id.*
[254] *Id.* at 225.
[255] *Id.*
[256] *Id.*
[257] *Id.*
[258] *Id.* at 227.
[259] *Id.*

2. *Advocacy Regarding Injunctive Relief in the District Courts*

(a) *The 2011 Report on the Evolving IP Marketplace*

The 2011 Report discussed how economic considerations should factor into the analysis that courts perform to determine when to grant an injunction. The patent statute provides that courts "may grant injunctions in accordance with the principles of equity … on terms as the court deems reasonable."[260] The Supreme Court's 2006 *eBay v. MercExchange* decision reaffirmed that the traditional four-factor test for equitable relief applied.[261] The test requires that a party seeking an injunction demonstrate:

1. that it has suffered an irreparable injury;
2. that remedies available at law, such as monetary damages, are inadequate to compensate for that injury;
3. that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and
4. that the public interest would not be disserved by a permanent injunction.[262]

The 2011 Report offered economic considerations regarding the application of these factors. Regarding the fourth factor, "that the public interest would not be disserved by a permanent injunction," the report recommended that, "when warranted by the facts," courts should consider the public's interest in avoiding patent hold-up, "which can increase costs and deter innovation."[263] The report noted that the patent system would nevertheless, "very often award injunctions to patentees," outside of exceptional circumstances.[264] The report cautioned against expanding the public interest analysis "to include the benefit of lower prices."[265] The report explained:

> Beyond the circumstances of hold-up that can raise prices by distorting competition with unpatented technology … the public's interest in lower-priced goods generally should not influence the injunction analysis. In enacting the Patent Act, Congress made the judgment that an exclusive right, through its ability to allow patentees to charge higher prices, encourages innovation to the public benefit. Courts should not second-guess that judgment as a general matter.[266]

The 2011 Report also addressed the application of the *eBay* analysis to SEPs. It noted that "hold- up in the standard setting context can be particularly acute," because lock-in due to standardization can make an entire industry susceptible to

[260] 35 U.S.C. § 285.
[261] 547 U.S. 388, 391.
[262] *Id.*
[263] *Id.* at 233.
[264] *Id.* at 234.
[265] *Id.*
[266] *Id.*

hold-up.[267] The report recommended that courts "give careful consideration" to each *eBay* factor when considering an injunction prohibiting use of patented technology incorporated into an industry standard.[268] It also explained that the presence of a FRAND commitment would be relevant to the injunction analysis.[269]

(b) *Apple v. Motorola*

The FTC submitted a brief as *amicus curiae* before the Court of Appeals for the Federal Circuit in *Apple v. Motorola*. The case was an appeal from a decision dismissing a patent infringement lawsuit in the Western District of Wisconsin following summary judgment.[270] The FTC's brief addressed the district court's application of the *eBay* analysis to determine whether it would issue a permanent injunction on one of Motorola's patents, which Motorola had declared essential to ETSI for the UMTS standard used in some 3G cellular telephones.[271]

The *amicus* brief explained concerns regarding hold-up:

> High switching costs combined with the threat of an injunction could allow the patentee to obtain unreasonable licensing terms despite its RAND commitment because implementers are locked into practicing the standard. The resulting imbalance between the value of the patented technology and the rewards to the patentee may be especially acute where the injunction is based on a patent covering a minor component of a complex multicomponent product, as is often the case with standard-essential patents in information technology industries.

The brief explained that hold-up could allow a patent holder to negotiate royalties beyond the "competitive value" of the technology:

> Under these circumstances, the threat of an injunction may allow the holder of a RAND-encumbered SEP to realize royalty rates that reflect the investments firms make to implement the standard, rather than the competitive value of the patented technology, which could raise prices to consumers while undermining the standard- setting process.[272]

The brief described how the FRAND commitment could mitigate the risk of hold-up and the impact of the threat of an injunction:

> RAND commitments mitigate the risk of patent hold-up, and encourage investment in the standard. After a RAND commitment is made, the patentee and the implementer will typically negotiate a royalty or, in the event they are unable to agree, may seek a judicial determination of a reasonable rate. However, a royalty negotiation that occurs under the

[267] *Id.*

[268] *Id.* at 235.

[269] *Id.*

[270] *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1294 (Fed. Cir. 2014).

[271] Brief of Amicus Curiae Federal Trade Commission Supporting Neither Party at 13 n. 11, *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286 (Fed. Cir. 2014) (No. 2012-1548, 2012-1549).

[272] *Id.* at 6.

> threat of an injunction may be heavily weighted in favor of the patentee in a way that is in tension with the RAND commitment.[273]

The legal argument in the brief focused on how the presence of a FRAND commitment would affect the injunction analysis under the *eBay* standard. The *amicus* brief discussed the application of each *eBay* factor to the situation of a FRAND-encumbered SEP.

The brief discussed the application of the first two *eBay* factors: that the patent holder be irreparably harmed and that monetary relief would be inadequate.[274] Citing the decision below, the brief argued that "a RAND commitment means that the patentee 'implicitly acknowledged that a royalty is adequate compensation for a license to use that patent."[275] The brief also cited to decisions holding "that a practice of widespread licensing, including offers to license to the defendant, strongly militates against a finding of irreparable harm."[276] In sum, the brief concluded:

> *A fortiori*, a commitment to offer a license to *all* comers on FRAND terms should be sufficient to establish that a reasonable royalty is adequate to compensate the patentee for infringement by any particular implementer willing and able to abide by those terms.[277]

Addressing the other factors, the brief argued that the public interest would also support denial of an injunction:

> The public interest in promoting innovation and protecting consumers also weighs heavily against an injunction here. To be sure, consumers would be harmed by the immediate impact of being deprived of a popular product. But consumers would also suffer in the longer run because an injunction would reduce the returns to innovation by Apple and other patent holders who have patents that are essential to the same standard or otherwise read on Apple's excluded products, who may face lower royalties….[278]

In addition to this argument, Commissioner Rosch expressed a separate view in the FTC's *amicus* brief, concurring yet separately arguing that issuing injunctive relief is "inappropriate where the patent holder had made a FRAND commitment."[279] He argued that, "even if the patentee contends that it has met its FRAND obligation," the FRAND commitment is a commitment to license that is inconsistent with seeking injunctive relief.[280] He argued that "the only exception to this is when the licensee refuses to comply with the decision of a federal court or some other neutral arbitrator defining the FRAND terms."[281]

---

[273] *Id.* at 5-6.
[274] *Id.* at 8.
[275] *Id.* at 9.
[276] *Id.* at 10.
[277] *Id.* at 11.
[278] *Id.* at 12-13.
[279] *Id.* at 2 n.3.
[280] *Id.*
[281] *Id.*

The Federal Circuit issued a decision finding that Motorola was not entitled to an injunction on its SEP.[282] The court declined to adopt a *per se* rule that injunctions are unavailable for SEPs. Rather, it held that courts should apply the *eBay* analysis, taking the FRAND commitment into account.[283] Performing the analysis, the court reasoned that "a patentee subject to FRAND commitments may have difficulty establishing irreparable harm."[284]

In so doing, the decision recognized that there may be situations where an injunction would still be warranted, notwithstanding the presence of a FRAND commitment:

> [A]n injunction may be justified where an infringer unilaterally refuses a FRAND royalty or unreasonably delays negotiations to the same effect… To be clear, this does not mean that an alleged infringer's refusal to accept any license offer necessarily justifies issuing an injunction. For example, the license offered may not be on FRAND terms. In addition, the public has an interest in encouraging participation in standard-setting organizations but also in ensuring that SEPs are not overvalued.[285]

Several justices expressed differing views on the circumstances where it would be appropriate to grant an injunction on a FRAND-encumbered patent. Judge Rader dissented from the Federal Circuit's opinion, noting that the determination of whether a licensee was willing required "requires intense economic analysis of complex facts" and is "not likely to be susceptible to summary adjudication."[286] Judge Prost, on the other hand, concurred, yet "disagree[d] that an alleged infringer's refusal to enter into a licensing agreement justifies entering an injunction against its conduct…." He expressed that an injunction would be appropriate only in limited situations, such as when an infringer were judgement-proof or refused to pay a court-ordered damages award after being found to infringe a valid patent.[287]

3. *Advocacy Regarding Exclusion Orders at the International Trade Commission*

(a) *The 2011 Report on the Evolving IP Marketplace*

The FTC has also engaged in competition advocacy before the ITC. The ITC provides a specialized tribunal for patent holders to block the importation of goods that infringe their patents.[288] Remedies in the ITC are generally limited to an

---

[282] *Apple*, 757 F.3d at 1332.
[283] *Id.*
[284] *Id.*
[285] *Id.*
[286] *Id.* at 1333.
[287] *Id.* at 1342-43.
[288] *2011 Report*, *supra* note 32, at 239.

exclusion order that directs U.S. Customs to bar articles from entry into the United States.[289]

The ITC's grant of an exclusion order is not governed by the *eBay* standard.[290] Rather, it is governed by a public interest inquiry, provided in Section 337, which has four prongs:

1. the public health and welfare;
2. competitive conditions in the United States economy;
3. the production of like or directly competitive articles in the United States; and
4. United States consumers.

The ITC considers these factors when issuing an exclusion order, but it "has rarely used the provision to deny an order."[291] In addition, should the ITC grant an exclusion order, Section 337 provides that the President has the ability to review to order to ensure that its grant is consistent with the public interest.

The 2011 Report recommended that the ITC take hold-up concerns into account when applying the public interest factors, arguing that the analysis "should allow consideration of how an exclusion order can cause hold-up, raise prices and decrease innovation."[292] The report also raised concerns regarding standard essential patents, recommending that "the ITC incorporate concerns about patent hold-up, especially of standards, into the decision of whether to grant an exclusion order in accordance with the public interest."[293] Nevertheless, the report also explained that "the instances in which the ITC would deny an exclusion order based on these considerations would be rare."[294] The report also explained that such a denial would leave the patent holder without an infringement remedy in the ITC because that agency lacks the power to award monetary damages. In conclusion, the report explained that "potential solutions deserve further study."[295]

(b) *Public Interest Statements*

The FTC submitted statements on the public interest in two ITC investigations, 337-TA- 745 and 337-TA-752.[296] The investigations involved complaints by Motorola against Apple and Microsoft. The FTC's comments raised the concern

[289] *Id.*

[290] *Id.* at 230.

[291] *Id.* at 242.

[292] *Id.* at 243.

[293] *Id.*

[294] *Id.*

[295] *Id.*

[296] Third Party United States Federal Trade Commission's Statement on the Public Interest, *In the Matter of Certain Gaming and Entertainment Consoles, Related Software, and Components Thereof,* Inv. No. 337-TA-752 (June 6, 2012); Third Party United States Federal Trade Commission's Statement on the Public Interest, *In the Matter of Certain Wireless Communication Devices, Portable Music and Data Processing Devices, Computers and Components Thereof*, Inv. No. 337-TA-745 (June 6, 2012).

that "patentee can make a RAND commitment as part of the standard setting process, and then seek an exclusion order for infringement of the RAND-encumbered SEP as a way of securing royalties that may be inconsistent with that RAND commitment."[297] Each comment observed that "high switching costs combined with the threat of an exclusion order could allow a patentee to obtain unreasonable licensing terms despite its RAND commitment," and that these concerns "may be especially acute where the exclusion order is based on a patent covering a small component of a complex multicomponent product."[298]

The FTC provided several suggestions to the ITC to mitigate the risk of hold-up. First, it suggested that the ITC consider the risk of hold-up in its public interest analysis.[299] Alternatively, it suggested that the ITC craft its exclusion order remedy to provide time for parties to mediate for an ongoing royalty prior to the exclusion of its products.[300] Nevertheless, the FTC's comments acknowledged that there would be circumstances when the public interest would support the grant of an exclusion order, such as when "the holder of the RAND-encumbered SEP has made a reasonable royalty offer."[301]

1. *Ongoing Developments*

Following the FTC's comments, other federal agencies also addressed the grant of ITC exclusion orders in cases involving FRAND-encumbered SEPs. The Department of Justice and the Patent and Trademark Office issued a joint Policy Statement raising concerns regarding the potential for hold-up from the grant of exclusion orders.[302] The Statement noted that "[i]n some circumstances, the remedy of an injunction or exclusion order may be inconsistent with the public interest," particularly "where an exclusion order based on a F/RAND-encumbered patent appears to be incompatible with the terms of a patent holder's existing F/RAND licensing commitment to an SDO."[303] Nevertheless, the Statement also indicated:

> An exclusion order may still be an appropriate remedy in some circumstances, such as where the putative licensee is unable or refuses to take a F/RAND license and is acting outside the scope of the patent holder's commitment to license on F/RAND terms.… An exclusion order also could be appropriate if a putative licensee is not subject to the jurisdiction of a court that could award damages. This list is not an exhaustive one.[304]

[297] *Id.* at 1.
[298] *Id.* at 3.
[299] *Id.* at 4.
[300] *Id.*
[301] *Id.*
[302] U.S. Dep't. of Justice & Pat. & Trademark Off., Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/Rand Commitments (January 8, 2013).
[303] *Id.* at 6.
[304] *Id.* at 7.

In 2014, the Executive Office of the President took these considerations into account when conducting its review of an exclusion order granted in 337-TA-794, a complaint by Samsung against Apple.[305] Relying upon the analysis laid out in the Policy Statement, the office found the grant of the exclusion order was inconsistent with the public interest and instructed the ITC to consider the possibility of patent hold-up when conducting its public interest analyses in the future:

> [I]n any future cases involving SEPs that are subject to voluntary FRAND commitments, the Commission should be certain to (1) to examine thoroughly and carefully on its own initiative the public interest issues presented both at the outset of its proceeding and when determining whether a particular remedy is in the public interest and (2) seek proactively to have the parties develop a comprehensive factual record related to these … including information on the standards-essential nature of the patent at issue if contested by the patent holder and the presence or absence of patent hold-up or reverse hold-up. In addition, the Commission should make explicit findings on these issues to the maximum extent possible.[306]

In June 2015, the ITC issued a request for written submissions with respect to its review of a decision in 337-TA-613, which found infringement of a FRAND-encumbered SEP.[307] The request solicited responses on a number of questions regarding how the public interest analysis should be implemented to account for the FRAND commitment. Chairwoman Ramirez and Commissioners Ohlhausen and Wright offered differing suggestions. Chairwoman Ramirez suggested that "the SEP holder should have the burden of establishing that the putative licensee is unwilling or unable to take a license on FRAND terms."[308] In contrast, Commissioners Ohlhausen and Wright argued "[t]he ITC should not begin its analysis by initially imposing upon the SEP holder the burden of proving that the accused infringer is unwilling or unable to take a license on FRAND terms."[309]

---

[305]Letter from Michael B.G. Froman, Amb., U.S. Trade Rep., to Irving A. Williamson, Chairman, U.S. Int'l Trade Comm'n (Aug. 3, 2013).

[306]*Id*. at 3.

[307]Notice of Commission Decision to Review in Part a Final Initial Determination on Remand; Request for Written Submission, *In the Matter of Certain 3G Mobile Handsets and Components Thereof*, 337-TA-613.

[308]Written Submission on the Public Interest of Federal Trade Commission Chairwoman Edit Ramirez, *In the Matter of Certain 3G Mobile Handsets and Components Thereof*, 337-TA-613 (June 25, 2015).

[309]Reply Submission on the on the Public Interest of Federal Trade Commission Commissioners Maureen K. Ohlhausen and Joshua D. Wright, *In the Matter of Certain 3G Mobile Handsets and Components Thereof*, 337-TA-613.

5.3 *Enforcement Actions Regarding Seeking Injunctive Relief on FRAND-Encumbered Patents*

The FTC has brought two cases under Section 5 of the FTC Act related to parties who sought injunctive relief on patents for which they have made voluntary FRAND commitments. Both cases build upon the theory first laid out in the *N-Data* consent: that a party can violate Section 5 of the FTC Act by making a voluntary licensing commitment during the standard setting process and subsequently reneging on that commitment. In these cases, the licensing commitment was a FRAND commitment, and the parties reneged on the commitment by seeking injunctive relief in the district courts and before the ITC.

5.3.1 In re Robert Bosch GmbH

In 2012, the FTC entered into a consent decree with Robert Bosch GmbH (henceforth "Bosch") relating to its acquisition of SPX Service Solutions (henceforth "SPX").[310] During the course of investigating the merger, the FTC uncovered evidence that SPX was pursuing claims for injunctive relief on patents it had committed to license on FRAND terms.[311] The patents were essential to J-2788 and J-2843 standards for automotive air conditioning equipment promulgated by SAE International.[312] SAE's policies required firms to license standard essential patents on either royalty-free or FRAND terms:

> [The SAE Policy Manual] requires that a working group member that owns, controls or licenses potentially standard essential patents make such patents available for licensing either (1) without compensation or (2) under reasonable terms and conditions that are demonstrably free of any unfair discrimination.[313]

Nevertheless, SPX sued several competitors for patent infringement for technologies related to the J-2788 and J-2843 standards and asserted claims for injunctive relief.[314] The FTC alleged that this conduct violated Section 5 of the FTC act, and Bosch settled this claim by consent.[315]

The FTC's Statement accompanying the consent cited "increasing judicial recognition, coinciding with the view of the Commission, of the tension between

---

[310] *See* Complaint, *In the Matter of Robert Bosch GmbH*, F.T.C. Docket No. C-4377 (November 21, 2012).

[311] *See* Analysis of Agreement Containing Consent Orders to Aid Public Comment, *In the Matter of Robert Bosch GmbH*, F.T.C. Docket No. C-4377, at 4.

[312] *See* Complaint, *In the Matter of Robert Bosch GmbH*, at ¶¶ 11-14.

[313] *Id.* ¶ 15.

[314] *Id.* ¶ 16.

[315] Decision and Order, *In the Matter of Robert Bosch GmbH*, F.T.C. Docket No. C-4377 at § IV.

offering a RAND commitment and seeking injunctive relief."[316] The accompanying Analysis to Aid Public Comment further observed that "SPX's suit for injunctive relief against implementers of its standard essential patents constitutes a failure to license its standard-essential patents under the FRAND terms it agreed to while participating in the standard setting process…". The Analysis further noted that "[s]eeking injunctions against willing licensees of FRAND-encumbered standard essential patents … is a form of FRAND evasion and can reinstate the risk of patent hold-up that FRAND commitments are intended to ameliorate."[317] The Statement further explained that—when such patent holders seek an injunction against a willing licensee—"in appropriate cases the Commission can and will challenge this conduct as an unfair method of competition under Section 5 of the FTC Act."[318]

Commissioner Ohlhausen dissented from the *Bosch* consent.[319] She raised concerns that—because the conduct related to the seeking of relief in the courts or ITC—the FTC's enforcement action raised issues of jurisdictional conflict and regulatory humility.[320] Commissioner Ohlhausen did express support for the FTC's advocacy filings related to injunctive relief, noting that "the FTC is well positioned to offer its views and to advocate on the important issue of patent hold-up using its policy tools." Nevertheless, she took issue that the use of an enforcement action "implies that our judgment on the availability of injunctive relief on FRAND-encumbered SEPs is superior to that of these other institutions." In response, the majority Statement explained that SPX's conduct included that it "voluntarily gave up the right to seek an injunction against a willing licensee" which fell within the scope of Section 5.

Commissioner Ohlhausen also questioned whether other law would be better-suited to police SPX's conduct, noting that "breaches of FRAND commitments, including potentially the seeking of injunctions if proscribed by SSO rules, are better addressed by the relevant SSOs or by the affected parties via contract and/or patent claims resolved by the courts or through arbitration." In response, the Statement explained that "in the standard-setting context …, long an arena of concern to the Commission, a breach of contract risks substantial consumer injury," and that enforcement was justified because of "the standard setting context, together with the acknowledgment that a FRAND commitment also depends on the presence of a willing licensee."

---

[316] *See* Analysis of Agreement Containing Consent Orders to Aid Public Comment, *In the Matter of Robert Bosch GmbH* at 4.

[317] *Id.* at 4-5.

[318] *See* Statement of the Federal Trade Commission, *In the Matter of Robert Bosch GmbH*, F.T.C. Docket No. C-4377, 2.

[319] *See* Statement of Commissioner Maureen K. Ohlhausen, *In the Matter of Robert Bosch GmbH*, F.T.C. File No. 121-0081.

[320] *Id.* at 1.

5.3.2 In re Google, Inc. and Motorola Mobility, Inc.

In 2013, the FTC entered into a consent agreement with Google ending its investigation into Motorola Mobility's SEP licensing practices, which Google continued after acquiring Motorola Mobility.[321] This conduct related to FRAND commitments that Motorola Mobility made to IEEE, ETSI and ITU.[322] It related to ETSI's 3G and 4G standards, IEEE's 802.11 Wi-Fi standards and ITU's H.264 video compression standards.[323] The FTC alleged that Motorola Mobility breaching its promises to license its SEPs on FRAND terms:

> ETSI, ITU, and IEEE require that firms disclose whether they will commit to license their SEPs on FRAND terms in order for the SSO to decide if the patents should be included in the relevant cellular, video codec, or wireless LAN standards. Motorola promised to license its patents essential to these standards on FRAND terms, inducing ETSI, ITU, and IEEE to include its patents in cellular, video codec, and wireless LAN standards.
>
> These commitments created express and implied contracts with the SSOs and their members….

The Complaint alleged that, after making these commitments, Motorola violated them through seeking injunctive relief:

> Motorola then violated the FRAND commitments made to ETSI, ITU, and IEEE by seeking, or threatening, to enjoin certain competitors from marketing and selling products compliant with the relevant standards, like the iPhone and the Xbox, from the market unless the competitor paid higher royalty rates or made other concessions. At all times relevant to the allegations in the Proposed Complaint, these competitors –Microsoft and Apple– were willing to license Motorola's SEPs on FRAND terms.[324]

The FTC alleged that Motorola Mobility's conduct constituted an unfair method of competition in violation of Section 5 of the FTC Act. In its accompanying Analysis, the FTC explained that "FRAND commitments help ensure the efficacy of the standard-setting process and that the outcome of that process is [pro-competitive]" and that the "process is undermined when those promises are reneged."[325] The Analysis went on to explain that such conduct could be reached by Section 5 of the FTC Act:

> Consistent with these principles, courts have found that patent holders may injure competition by breaching FRAND commitments they made to induce SSOs to standardize their patented technologies. Each of these cases, brought under Section 2 of the Sherman Act, involved allegations of bad faith or deceptive conduct by the patent holder before the standard was adopted. However, under its stand-alone Section 5 authority, the Commission

---

[321] Complaint, *In the Matter of Motorola Mobility, LLC and Google, Inc.*, F.T.C. Docket No. C-4410 (July 23, 2013).

[322] *Id.*at ¶ 8.

[323] *Id.* at 11.

[324] Analysis of Proposed Consent Order to Aid Public Comment, *In the Matter of Motorola Mobility, LLC and Google, Inc.*, F.T.C. File No. 121-0120.

[325] *Id.* at 4.

> can reach opportunistic conduct that takes place after a standard is adopted that tends to harm consumers and undermine the standard-setting process.[326]

The accompanying Statement explained that "[b]y taking action that may deter the owners of standard-essential patents from unilaterally defining the terms of FRAND agreements through the exercise of leverage acquired solely through the standard-setting process, we protect the integrity of that process."[327]

Citing its *N-Data* consent, the Analysis further explained that "courts have traditionally viewed opportunistic breaches as conduct devoid of countervailing benefits." Nevertheless, the Analysis also repeated N-Data's explanation that a "mere departure from a previous licensing commitment is unlikely to constitute an unfair method of competition under Section 5," but that the present case was an exception because the "context here is standard setting."[328]

The case settled by a consent decree. As the Analysis explained, it "does not define FRAND but requires Google to offer, and follow, specific procedures that will lead to that determination." The procedures were "tailored to prevent Google … from using injunctions or threats of injunctions against current or future potential licensees who are willing to accept a license on FRAND terms."[329]

6 Conclusion

Collaborative standard setting can influence competition between technologies. In many cases, it can be extremely beneficial. Interoperability standards facilitate the commercialization of new technologies that are compatible with the standard, and they can make competition between such complimentary goods possible. Nevertheless, the standard setting process does change the nature of competition between technologies that are incorporated into the standard itself. Due to the high costs of switching to alternatives once a standard is set, competition between technologies after the standard is set is diminished. Opportunistic firms can exploit this change.

The FTC's law enforcement efforts were preceded by antitrust cases addressing the fact that collaborative standard setting leaves product design to the collective decision making of competitors. Early decisions recognized the incentives that participants in this process would have to advance the interest of their own firms by excluding technologies produced by their rivals. These decisions noted that—if unbiased by commercial interests—collaborative standard setting offered technical and competitive advantages. These decisions recognized the importance of SSO

---

[326] *Id*. at 4-5.

[327] *Id*. at. 4.

[328] *Id*. at 5.

[329] Analysis of Proposed Consent Order to Aid Public Comment, *In the Matter of Motorola Mobility, LLC and Google, Inc.*, F.T.C. File No. 121-0120 at 6.

policies and procedures that ensured that technology selection was made on the merits of the technology itself. The FTC's enforcement actions regarding SEP-licensors related to concerns regarding the integrity of the standard setting process and the safeguards implemented by SSOs. *Dell*, *Unocal* and *Rambus* all concerned deceptive conduct that took place during the standard setting process. *N-Data*, *Bosch* and *Google* all concerned voluntary commitments that patent holders made before standards were set.

The FTC has also engaged in competition advocacy to address concerns regarding patent hold-up. These concerns relate to remedies granting exclusionary relief because a patent holder seeking an injunction is poised to negotiate a royalty that captures the costs of switching an existing product to an alternative design. The standard setting process enhances these switching costs. When it has raised these concerns, the FTC has articulated how existing legal standards could take hold up concerns into account.

Chapter 7
Standard Setting Organizations and Competition Laws: Lessons and Suggestions from the United States

Donald E. Knebel

1 Introduction

As is now well known, more and more of the products people rely upon every day depend on so-called "standards" to assure they operate correctly and with products of other manufacturers.[1] Standards can be established over time by the competitive process, as consumers opt for one design over others. Consumer preference for the VHS format for video recorders over the Betamax format, eventually leading to VHS becoming the "*de facto*" standard, is a frequently-cited example.[2] Waiting for consumers to settle on a standard can be time consuming and inefficient because consumers can end up with useless products, as they did when producers stopped making video recordings in the Betamax format.[3] As a result, "[s]tandard-setting

[1]Standards are particularly important for products and services, such as telephones, that exhibit so-called "network effects," in which the value of the product or service increases with the number of other users or products that can be used with it.

[2]U.S. Dep't of Justice & Fed. Trade Comm'n. (2007). Antitrust enforcement and intellectual property rights: promoting innovation and competition, 34 n. 6, *available at* https://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf.

[3]*Id*., at 34 ("By agreeing on an industry standard, firms may be able to avoid many of the costs and delays of a standards war, thus substantially reducing transaction costs to both consumers and firms.").

D.E. Knebel (✉)
Of Counsel Barnes & Thornburg LLP, Indianapolis, IN, USA
e-mail: Donald.Knebel@btlaw.com

D.E. Knebel
Indiana University Maurer School of Law, Bloomington, IN, USA

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_7

organizations (henceforth "SSOs") represent the most common vehicle to develop industry standards."[4]

Although SSOs and their procedures and operations vary, standards for a new product or service are typically set by representatives of companies producing or selling a particular type of product, such as a smart phone or a wireless router, which requires the standard.[5] The representatives consider various possible features or characteristics for the standard, often suggested by one or more of them. The period of consideration of alternative technologies and features, before the final determination of the standard, is commonly referred to as "ex ante." The representatives then vote on proposed standards. After the determination of a standard, considered "ex post," manufacturers can then produce and/or sell devices that conform to this standard.

One or more of the features included in a standard are often covered by patents, typically owned by one or more of the companies participating in the standard-setting process. As a result, practicing the invention claimed in that patent becomes essential to the standard, resulting in a "standard-essential patent" or "SEP." Manufacturers and sellers of products or services conforming to the standard must obtain a license from the owner of the SEP to avoid charges of patent infringement.

This collective standard-setting process creates the possibility that the owner of an essential patent will gain the ability to engage in what is seen as anticompetitive and anti-consumer behavior by charging excessive royalties. As the Ninth Circuit Court of Appeals recently stated:

> The development of standards thereby creates an opportunity for companies to engage in anti-competitive behavior. Most notably, once a standard becomes widely adopted, SEP holders obtain substantial leverage over new product developers, who have little choice but to incorporate SEP technologies into their products. Using that standard-development leverage, the SEP holders are in a position to demand more for a license than the patented technology, had it not been adopted by the SSO, would be worth. The tactic of withholding a license unless and until a manufacturer agrees to pay an unduly high royalty rate for an SEP is referred to as "hold-up.[6]

"[H]oldup is of particular concern when the patent itself covers only a small piece of the product…."[7] Under those circumstances, a seller may succumb to demands for royalties that are excessive compared to the value of the patent to preserve the potential profits from sales of the product in light of the costs of litigation and the threat of an injunction against continued sales.

In an effort to prevent owners of SEPs from demanding excessive royalties after a standard has been determined, the "vast majority" of SSOs now require

---

[4]Valerio Torti, Intellectual Property Rights And Competition In Standard Setting, 48 (2016).

[5]One procedure is outlined in the *Operations Manual* of the Institute of Electrical and Electronics Engineers, Inc. (2015), *available at* http://standards.ieee.org/develop/policies/opman/sb_om.pdf.

[6]*Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1030–31 (9th Cir. 2015).

[7]Mark Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 Tex. L. Rev. 2009 (2007).

participants either to license those patents royalty free to anyone using the standard or to license them on what have become known as "RAND" or "FRAND" terms.[8] The two terms, which have identical meanings,[9] require owners of SEPs participating in standard setting to commit to license those patents to anyone practicing the standard on [**F**air], **R**easonable **A**nd **N**on-**D**iscriminatory terms.

A recent Discussion Paper prepared by the Government of India states that RAND commitments "ensur[e] that the holder of SEPs should not abuse the dominant market position it gains from widespread adoption of a voluntary technical standard."[10] Unfortunately, that statement may well be overly optimistic. Experience has shown that RAND standards may be "ineffectual"[11] in preventing holdups because they are "intentionally vague."[12] Vague RAND commitments can also create anticompetitive results by concealing from the standard-setting process the actual costs of incorporating a patented feature into a standard.

Various procedures have been suggested for avoiding holdups and making the standard-setting process more responsive to economic issues. The simplest procedure allows or even requires the participants in the process to declare *ex ante* the maximum royalty rates and other license terms they would demand for their SEP should it be accepted into the standard. Ironically, as seems to be the case in the Discussion Paper, the primary justification for RAND commitments instead of more open discussion of royalty rates is a desire to avoid running afoul of antitrust and similar competition laws.[13] At least as interpreted by some, those "antitrust rules may unduly restrict SSOs even when those SSOs are serving procompetitive ends."[14]

The possibilities of holdup and other anticompetitive consequences of the standard-setting process are gaining increasing global attention because "[s]tandards that incorporate patented technologies are the backbones of rapidly expanding worldwide markets in the information and communications technology (ICT) sector, such as global smartphone markets that have nearly tripled in size since

---

[8]Mark Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard Essential Patents*, 28 Berkeley Tech. L. J. 1136 (2013).

[9]*Apple Inc. v. Motorola Inc.*, 869 F. Supp. 2d 901, 911–12 (N. D. Ill. 2012) ("the word 'fair' adds nothing to 'reasonable' and 'non-discriminatory'"), *reversed on other grounds*, 757 F.3d 1286 (Fed. Cir. 2014).

[10]Government of India Department of Industrial Policy and Promotion Ministry of Commerce & Industry, Discussion paper on standard essential patents and their availability on FRAND terms, 9 (2016), *available at* http://www.ipindia.nic.in/Whats_New/standardEssentialPaper_01March2016.pdf [hereinafter DIPP].

[11]Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 Antitrust L. J. 733 (2005).

[12]Wright, *SSOs, FRAND, and Antitrust: Lessons from the Economics of Incomplete Contracts*, 10, (September 12, 2013), *available at* https://www.ftc.gov/sites/default/files/documents/public_statements/ssos-frand-and-antitrust-lessons-economics-incomplete-contracts/130912cpip.pdf.

[13]DIPP, *supra* note 10, at 8.

[14]Mark Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 Calif. L. Rev. 1895 (2002).

2009."[15] As a result, the experiences in the United States may be helpful as India and other countries deal with these issues.[16]

This chapter will examine the causes of holdups and methods, including RAND commitments, that have been used in the United States to try to avoid them. It will look at possible anticompetitive consequences of RAND commitments and investigate whether antitrust and competition laws, properly understood and applied, require such vague and potentially anticompetitive commitments. It will look at ex ante disclosure of royalty rates and whether competition laws should allow SSOs to require such disclosures or merely allow them. It will conclude that competition laws do not require RAND commitments and should be interpreted to allow SSOs to require ex ante disclosure and discussion of royalty rates so long as certain precautions are implanted to avoid legitimate antitrust concerns.

2 The Holdup Problem

2.1 Disclosure of Standard-Essential Patents

1. *Anticompetitive Consequences of Failure to Disclose*

A holdup can occur when the owner of a standard-essential patent demands what can be considered an excessive royalty for using the claimed invention after a company has invested in creating products including the standard. At that point, producers and sellers must (1) give in to the demands of the patent owner, (2) face expensive litigation, or (3) give up their investment. Efforts to eliminate holdups focus on eliminating these troubling and potentially anticompetitive choices.

The easiest way for a holdup to occur is for a participant in the standard-setting process to fail to disclose in a timely manner[17] that it has a patent covering an element of the standard being considered. Had the patent been disclosed before the determination of the standard, the SSO might not have included the feature covered by the patent. The SSO could either have eliminated the feature altogether or selected a version not covered by any patent or covered by a patent requiring a

[15]Edith Ramirez, *Standard-essential patents and licensing: an antitrust enforcement perspective* 1, (September 10, 2014), *available at* https://www.ftc.gov/system/files/documents/public_statements/582451/140915georgetownlaw.pdf.

[16]Kirti Gupta, *FRAND in India: emerging developments*, Antitrust in Emerging and Developing Countries – Conference Papers 1 (March 1, 2016) ("What policies India implements and how the jurisprudence evolves is of key importance towards the long term prospects of the wireless and telecommunications technologies that heavily rely on the creation and use of common technology standards."), *available at* http://papers.ssrn.com/sol3/papers.cfm?Abstract_id=2771465.

[17]The patent must be disclosed sufficiently early in the process so that it can be taken into account along with other patents and features. *See* Ferrell, J., et al., *Standard setting, patents, and hold-up*, 74 Antitrust L. J. 624 (2007) ("Patent hold-up often arises when participants learn too late about patents essential to the standard.").

lower royalty. As a result of this obvious opportunity for holdups, many SSOs require participants to disclose patents known to cover a feature being considered for a standard.[18]

A failure to disclose a patent incorporated into a standard can have anticompetitive consequences. If the holder of an SEP can dictate the costs of using that patent, the price to consumers will inevitably rise more than the value of the patent.[19]

2. *Use of Antitrust Laws to Police Non-disclosure*

Because of the potential anticompetitive consequences of the failure of an SSO participant timely to disclose a patent essential to a standard, U.S. antitrust laws have been used to police situations involving such non-disclosure. The results to date have been mixed.

In 1996, the Federal Trade Commission (henceforth "FTC"), which has the power to enforce American antitrust laws, settled a case against Dell Computer Corporation.[20] According to the allegations, Dell had participated in developing a standard for a computer data bus design without disclosing that it held a patent covering that design and certifying to the SSO that the standard would not infringe any Dell patents. After the standard was approved, Dell asserted that practicing the standard did, in fact, infringe its patent. The FTC alleged that if Dell had disclosed its patent during the standard-setting process, the SSO would have selected a different, unpatented, design for the standard. The FTC alleged that the action of Dell unreasonably restrained competition by, among other things, creating delays and uncertainty in the implementation of the standard. Without admitting liability, Dell settled the case by agreeing not to enforce its patent against anyone using the adopted standard.

Liability under American antitrust laws for actions that are not illegal per se[21] usually requires the unlawful creation of significant market power.[22] It was therefore important to the claim in the *Dell* case that, by adopting the standard, the SSO "effectively conferred market power upon Dell as the patent holder," which could have been avoided if, with knowledge of Dell's patent, "it could have chosen an equally effective, non-proprietary standard."[23] Consequently, the result can be different if the SSO would not have chosen a different standard even if the SEP had been disclosed.

---

[18]Lemley, *supra* note 14, at 1904.

[19]*Id. at* 1930 ("It is certainly feasible for an IP owner to gain a market advantage by concealing its IP rights from an SSO long enough for the SSO to adopt a standard. And where adoption of the standard is likely to determine the way the market develops, one wielding to control that standard may ultimately control the market.").

[20]*In re Dell Computer Corp*., 121 F.T.C. 616 (1996).

[21]*See United State v. Socony-Vacuum Oil Co*., 310 U.S. 150 (1950).

[22]*See Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co*., 472 U.S. 284 (1985).

[23]*In re Dell, supra* note 20, at 624 n. 2.

For example, a decision of the FTC finding liability against Rambus, Inc. based on its failure to disclose an SEP was reversed.[24] The court held that the FTC did not rule out the possibility that the SSO would have selected the patented feature "even if Rambus had disclosed its intellectual property."[25] In reaching this result, the court stated: "[A]n antitrust plaintiff must establish that the standard-setting organization would not have adopted the standard in question but for the misrepresentation or omission."[26]

Because of the requirements for establishing an antitrust claim, even a deliberate failure to disclose an SEP might not be sufficient. As one author recently wrote: "[i]n case there is no evidence of harm to the competitive process (e.g., if the standard-setting organization (SSO) could not select an alternative technology), the IP owner may escape antitrust liability" even for "pure exploitive abuses."[27]

The potential limitation of antitrust law does not mean that victims of a failure to disclose an SEP are without remedies. Other doctrines, including estoppel, can be used to prevent the owner of an SEP from profiting from an intentional failure to disclose.[28] What it does mean is that competition laws, to the extent they require proof of an increase in market power, may not be particularly effective in dealing with failures to disclose an SEP.

2.2 RAND Commitments

1. *RAND Commitments as Holdup Solution*

However effective may be efforts to police the non-disclosure of SEPs, under the antitrust laws or otherwise, timely disclosure of a patent that might be essential to a standard is not by itself sufficient to avoid holdups.[29] After a standard has been established that requires use of a disclosed patented feature, manufacturers and sellers of products conforming to the standard must still obtain a license to use the patent or face the threat of potentially expensive and protracted legal action. At that time, especially if they have invested in development of the product and perhaps established a market, the patent owner is often in a position to demand what might

[24] *Rambus, Inc. v. FTC*, 522 F.3d 456, 466 (D.C. Cir. 2008).

[25] *Id.*, *at* 466.

[26] *Id.*, quoting 2 H. Hovenkamp et al., *Intellectual Property and Antitrust* § 35.5 at 35 – 45 (Supp. 2008).

[27] TORTI, *supra* note 4, at 13.

[28] Lemley, *supra* note 14, at 1919 and cases cited at note 105.

[29] *E.g.*, Thomas F. Cotter, *Patent Holdups, Patent Remedies, and Antitrust Responses,* J. CORP. L., 34, 1201 (2009) ("Disclosure policies alone do not require patentees to refrain from charging supra competitive licensing fees, and a commitment merely to charge a reasonable and nondiscriminatory royalty can be vague.").

be considered an excessive royalty even if the patent was disclosed before the standard was adopted.[30]

Requiring that participants in the standard-setting process agree to license any SEPs on RAND terms was originally seen as a solution to the holdup problem with disclosed patents. The essential idea was that if royalties demanded of the user of a standard were required to be "fair and reasonable," owners of SEPs would not be able to charge excessive royalties. That appears to be the view of the Indian Government in its Discussion Paper.[31] That view seems to have been, at the very least, optimistic.

Experience in the United States has shown that "[w]hen disputes occur, they reveal a stark disparity of views on the meaning of FRAND obligations."[32] What may seem a fair and reasonable royalty to the patent owner may seem excessive to the user of the standard. On the other hand, what may seem fair and reasonable to the user of the standard may seem grossly inadequate to the patent owner. For example, in a dispute between Microsoft and Motorola involving standards for video coding and wireless local networks, the parties' respective views of the amount of royalty required by a RAND commitment differed by a factor of 100.[33]

Courts or arbitrators can, of course, determine what is fair and reasonable in any particular case and have done so. But the process can be extraordinarily time consuming and expensive. In what may be an extreme example, the dispute between Microsoft and Motorola over the meaning of RAND took more than five years to resolve. In determining the amount of royalty due for infringement of Motorola's patents, the trial court took testimony from 18 witnesses and ultimately issued a 207-page order explaining the basis for its royalty determination.[34] Academic literature shows the complexity of the process even in the typical case.[35]

What is fair and reasonable in the context of an SEP is no more certain or easily ascertainable than the ordinary standard for determining a "reasonable royalty" in a typical patent case. As anyone who has litigated patent infringement cases knows, determining what is reasonable in a particular case is often as difficult and expensive as determining infringement and validity. One common test for determining a reasonable royalty requires consideration of up to fifteen different factors.[36]

---

[30]John J. Kelly & Daniel I. Prywes, *A Safety Zone for the Ex Ante Communication of Licensing Terms at Standard-Setting Organizations: The Antitrust Source*, ABA 2 (Mar., 2006), *available at* http://www.americanbar.org/content/dam/aba/publishing/antitrust_source/Mar06_Prywes3_22f.pdf.

[31]DIPP, *supra* note 10, at 9.

[32]Daryl Lim, *Standard Essential Patents, Trolls, And The Smartphone Wars: Triangulating The End Game*, 119 Penn State L. Rev. 5 (2014).

[33]*Id*. at 4; *Microsoft Corp*. *v*. *Motorola*, *Inc*., 795 F.3d 1024, 1032-33 (9th Cir. 2015).

[34]*Id*. at 1033.

[35]Anne Layne-Farrar, *Pricing Patents for Licensing in Standard-Setting Organizations: Making Sense of FRAND Commitments*, 74 Antitrust L. J. 671 (2007).

[36]The test is based on *Georgia-Pacific Corp*. *v*. *United States Plywood Corp*., 318 F. Supp. 1116 (S.D.N.Y. 1970), *mod*. *and aff'd,* 446 F.2d 295 (2d Cir. 1971), *cert*. *denied*, 404 U.S. 870 (1971). Not all of these factors may be required to determine a RAND royalty. *Microsoft*

In 2005, the Assistant Attorney General in charge of the Antitrust Division of the United States Department of Justice (henceforth "Antitrust Division") said that RAND commitments are only a "partial solution" to the holdup problem because "[a] difficulty of RAND… is that parties tend to disagree later about what level of royalty rate is 'reasonable.'"[37] That same year, the Chairman of the FTC said in a speech that "[e]xperience has shown, however, that some agreements on RAND rates can be vague and may not fully protect industry participants from the risk of hold up."[38] In 2013, a succeeding Chairman noted the less than clear "meaning of a F/RAND commitment or, for that matter, how one should go about ascertaining that meaning."[39] The author of a recent book on competition in the standard-setting process concludes: "A (F)RAND licensing model probably asks more questions than it answers, and cannot represent the optimal solution" to the holdup problem.[40]

In sum, there is growing support for the conclusion that RAND commitments are not the complete solution[41] to the holdup problem.[42]

(Footnote 36 continued)

Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1041 (9th Cir. 2015);* Ericsson, Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201, 1230 (Fed. Cir. 2014). The applicable factors are fact dependent and usually require expert testimony to resolve, making the process lengthy and its outcome uncertain.*

[37]Pate, *Competition and Intellectual Property in the U.S.: Licensing Freedom and the Limits of Antitrus*t, 9, (June 3, 2005), *available at* https://www.justice.gov/atr/public/speeches/209359.pdf.

[38]Deborah Platt Majoras, Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting, 5-6, (September 23, 2005), *available at* https://www.ftc.gov/sites/default/files/documents/public_statements/recognizing-procompetitive-potential-royalty-discussions-standard-setting/050923stanford.pdf.

[39]Wright, *supra* note 12, at 8. In the immediately preceding sentence, Chairman Wright said: "It is well understood that the F/RAND commitment can help minimize the risk of patent hold-up." *Id.* Chairman Wright did not explain how both sentences could be true.

[40]TORTI, *supra* note 4, at 96.

[41]Some commentators have argued that RAND obligations can reduce the risk of holdups because they represent an irrevocable commitment not to seek an injunction against patent infringement, but instead to negotiate in good faith over the amount of royalties to be paid. *E.g.*, Miller, J. (2007). Standard setting, patents, and access lock-in: RAND licensing and the theory of the firm. *Ind. L.R.*, 40, 358. However, RAND commitments do not, *ipso facto*, guarantee that injunctions will not be granted to prevent infringement of SEPs. *Apple Inc. v. Motorola Inc.*, 757 F.3d 1286, 1331 (Fed. Cir. 2014); U.S. Dep't of Justice and U.S. Patent & Trademark Office. (January 8, 2013). Policy statement on remedies for standards-essential patents subject to voluntary F/RAND commitments, 7 ("That is not to say that consideration of the public interest factors set out in the statute would always counsel against the issue of an exclusion order to address infringement of a F/RAND-encumbered, standards-essential patent."), *available at* https://www.justice.gov/sites/default/files/atr/legacy/2014/09/18/290994.pdf.

[42]Not everyone agrees that holdups have been proven to be a significant problem in standard setting. *E.g.*, Gregory J. Sidak, *The Antitrust Division's Devaluation of Standard-Essential Patents*, 104 The Georgetown L. J. Online 61.

2. *Potential Anticompetitive Consequences of RAND Commitments*

Not only do mandated RAND commitments not solve the holdup problem, they also create the possibility for additional anticompetitive behavior and outcomes. In the first place, the uncertainty over the meaning of RAND commitments can itself create "considerable delays in the implementation of standardized technology."[43] For example, the Institute of Electrical and Electronics Engineers, Inc. (henceforth "IEEE"), which often engages in standard-setting activities, has concluded that "ambiguities in RAND commitments can lead to litigation that can delay the introduction of standardized products."[44] During that period of uncertainty, the public is deprived of the product or service incorporating the standard and the producer or seller has an incentive to settle the dispute at an excessive royalty just to get its product on the market.

In addition, the inherent vagueness of RAND commitments can distort the standard-setting process. SSOs are forced to select among proposed features and patents for a standard without knowing their respective costs. The entire standard-setting process is intended to determine which combination of features is most attractive to manufacturers and ultimately to consumers. As one author, who ironically seems to be a proponent of RAND commitments, states: "[i]f it is to succeed, the standard-setting process entails evaluating a participant's contributions and suggestions primarily on their technical, practical merit (*including cost-effectiveness*), rather than on the identity of the firm she represents in the standard-setting process."[45] As IEEE has noted, lack of knowledge of royalty terms ex ante "prevents its members from making 'sensible cost-benefit comparison' when voting on competing technological proposals."[46] Without knowing what any feature might cost in the way of royalties to the owner of an SEP, making an informed choice of a standard based on cost-effectiveness is impossible.

It is often said that during the standard-setting process, "technologies compete to be the standard."[47] It is a strange type of competition that does not involve a consideration of the respective costs of various options. Being forced to choose among possible standards without knowing their respective costs is akin to choosing between competing models of automobiles without knowing their respective sales prices until after the choice has been made or learning the price of a

---

[43]TORTI, *supra* note 4, at 95. *See Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3d Cir. 2007) (failure of owner of SEP to license on what user asserts is required by RAND commitment can lead to holdup).

[44]Letter from Thomas O. Barnett to Michael A. Lindsay 4 (April 30, 2007), *available at* https://www.justice.gov/archive/atr/public/busreview/222978.htm.

[45]Miller, *supra* note 41, at 365 (emphasis added).

[46]Letter, *supra* note 44, at 4.

[47]*E.g.*, Majoras, *supra* note 38, at 3.

piece of art after becoming the winning bidder.[48] No system can be expected to operate rationally in such an environment.

Because of their ambiguity, RAND commitments do not really solve the holdup problem, which itself can lead to higher consumer costs. In addition, RAND commitments do not allow economically rational selection of a standard, which can also lead to economic inefficiencies. If no other possibilities existed for making the standard-setting process more effective in eliminating holdups and enabling an evaluation of the cost effectiveness of a proposed standard, the problems with RAND commitments would be unavoidable.

There *are* other possibilities, including requiring, or at least allowing, owners of potential SEPs to disclose ex ante the maximum royalty rate and other license terms they would demand from users if their patent were included in the standard.[49] Such disclosures would solve both problems inherent in RAND commitments. They would prevent owners of SEPs from demanding ex post royalties in excess of what they could demand ex ante and would allow SSOs to take prospective royalty costs into account in determining a standard. Ironically, the reason such disclosures are not typical in the standard-setting process is said to be the antitrust and similar competition laws that are intended to eliminate the very problems created by the vague RAND requirements.

3. *Antitrust Explanations for RAND Commitments*

As authors involved in the standard-setting process write: "SSO members fear, with justification, that any communications with patent holders during the standards development process regarding the latter's royalty demands can expose the SSO and its participants to antitrust claims."[50] To avoid antitrust problems, SSOs are typically advised to avoid any discussion of the "[v]alidity of patents or the costs of using them."[51] As a result, "some SSOs expressly forbid discussion of [royalty rate] issues when a standard is under consideration, presumably for fear of antitrust liability."[52] In 2005, the Chairman of the FTC reported that because of antitrust

[48]*See* Jorge Contreras, *Technical Standards and ex ante Disclosure: Results and Analysis of an Empirical Study*, 53 JURIMETRICS J. 164 (2013) ("When I go to my neighborhood diner and open the breakfast menu, I expect to see a price listed for each entrée, beverage, and side dish. Deciding what to order would be more difficult if I didn't have this pricing information.").

[49]Kelly & Prywes, *supra* note 30, at 8 ("The mere disclosure of royalty demands, with nothing more, will reduce some of the uncertainty in the standards selection process.").

[50]*Id.* at 1. *Accord*, *e.g.*, Skitol, *supra* note 11, at 734 ("SSOs fret that 'concerted' consideration of license terms during standard setting would expose all participant to 'buyer cartel' antitrust allegations.").

[51]Jennifer L. Gray, *Antitrust Guidelines for Participating in Standard Setting Efforts*, Corporate Counseling Report (Newsletter of the Corporate Counseling Committee of the Antitrust Section of the ABA) (Spring 2001) 8.

[52]Lemley, *supra* note 14, at 1965.

concerns, "some SSOs and their participants have hesitated to allow unilateral announcements of royalty rates by, let alone ex ante joint royalty rate discussions with, firms that own the technology being considered for incorporation into the standard, settling instead for rules that demand RAND terms for members."[53] Noting that the "antitrust concerns are understandable," she lamented that "they may have unduly prevented announcements of pricing intentions or royalty discussions that may, in fact, provide procompetitive benefits."[54]

Professor Shapiro also noted the irony in the claim that the antitrust laws may be leading to the very evils they were designed to attack:

> Unfortunately, antitrust concerns have led at least some of these bodies to steer clear of such ex ante competition, on the grounds that their job is merely to set technical standards, not to get involved in prices, including the terms on which intellectual property will be made available to other participants. The ironic result has been to embolden some companies to seek substantial royalties after participating in formal standard setting activities.[55]

"Perversely, by leaving the precise licensing terms vague, this caution can in fact lead to ex post holdup by particular rights holders, contrary both to the goal of enabling innovation and to consumers' interests."[56]

The notion that competition laws require the use of vague RAND commitments in lieu of specific royalty demands has made its way to India. In its recent Discussion Paper, the Indian Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, attributed the use of RAND commitments to a desire "to avoid any competition concerns."[57]

If vague RAND commitments are required for SSOs to remain compliant with antitrust laws and similar competition laws, their anticompetitive effects, perverse as they may be, might be unavoidable. But before Indian competition law authorities go down the RAND-only path and do not allow disclosure and discussion of actual royalty rates and other important licensing terms, it is essential to determine if India's competition laws really require such a potentially anticompetitive result. In that connection, it is useful to look at the American antitrust laws and what the enforcement authorities have said about those laws and their limitation on the disclosure and discussion of specific royalty information.

---

[53]Majoras, *supra* note 38, at 6.

[54]*Id*. at 7.

[55]Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, NBER 142, (2001), *available at* http://www.nber.org/chapters/c10778.pdf.

[56]*Id*. at 128.

[57]DIPP, *supra* note 10, at 8.

3 Do U.S. Antitrust Laws Require Vague Royalty Commitments?

The claimed concern that the antitrust laws might prohibit SSOs from asking participants the royalty rates they would charge if their SEPs were required to practice a proposed standard is curious, to say the least. After all, the very nature of any SSO is for competitors to reach an agreement on which several competing technologies should be used by them in the future. That selection inevitably affects the costs their companies will have to pay to use the standard and the costs that consumers will have to pay for products including it. Antitrust policy not only tolerates these agreements among competitors, but actually encourages them, because of their "procompetitive benefits."[58] It would be a strange result if an agreement requiring certain features in a proposed standard, potentially imposing added costs on consumers, is legal, but considering those costs during the standard-setting process is not.

In addition, some SSOs require participants to agree to license SEPs they own royalty free to anyone using an adopted standard.[59] As stated by the former Chairman of the FTC, "SSOs that require members to license incorporated technology to each other royalty-free have already, in effect, collectively negotiated a royalty arrangement."[60] If actual agreements requiring a uniform royalty rate of zero are lawful, no rational antitrust policy should make it unlawful for SSOs to allow, or even require, patent owners, to state, without prior agreement, the non-zero royalty rates they would demand should their technology be included in the proposed standard.

Finally, the entire objective of RAND commitments is to reduce holdups by placing limits on the royalties that can be charged for patents required by a standard. To the extent those commitments accomplish that objective (which is doubtful),[61] there is no basis for concluding an agreement to require every participant to charge RAND royalties is legal while one allowing or requiring that participants state their specific royalty demands in advance of the standard being selected is not.[62]

These anomalies may not be important if, as some have suggested, the antitrust laws prohibit even the mention of royalty rates during the standard-setting process.[63] What is therefore needed is an examination of those laws in the context of standard setting.

---

[58] *Golden Bridge Technology, Inc. v. Motorola, Inc.*, 547 F.3d 266, 273 (5th Cir. 2008).

[59] Lemley, *supra* note 14, at 1905.

[60] Majoras, *supra* note 38, at 8.

[61] *Supra* note 10–13.

[62] Skitol, *supra* note 11, at 737 ("Specifically, if it is lawful for an SSO to insist on commitments to RAND terms during standard setting, how does it then become unlawful for the same SSO to insist (also during the standard-setting process) on a clear explanation of what RAND will mean as applied to a particular patent being offered for a proposed standard under consideration?").

[63] *Supra* note 16 – 18.

3.1 Relevant Antitrust Principles

SSOs, by their very nature, require agreements among competitors. As a result, "any agreement on the part of SSO members is potentially subject to antitrust scrutiny under Section 1 of the Sherman Act[64] as a contract, combination or conspiracy, in restraint of trade."[65] But not all agreements among competitors are violations of the antitrust laws. If they were, SSOs would themselves be illegal, something that no one any longer contends because of their economic benefits.[66]

Agreements by competitors to fix the price of products or services they sell are illegal per se under Section 1.[67] Because of the danger that even discussions about prices can lead to price fixing, discussions about proposed price terms among competing sellers can also be illegal.[68]

Especially if they are cautious,[69] SSOs that refuse to allow discussion of proposed royalty terms are not primarily concerned about being charged with price fixing as sellers. Instead, "SSOs fear liability for acting, in effect, as a buyers' cartel that artificially suppresses the price that a patentee can command for access to its technology."[70]

Agreements on price by buyers acting collectively to reduce the prices they pay for products or services are *not* illegal per se.[71] Because of their ability to reduce prices to consumers, such agreements among buyers are evaluated under the Rule of Reason, taking into account their purpose and their effect.[72] No U.S. court has held that merely discussing the price to be paid by a group of competitors is illegal under the antitrust laws and any such conclusion would be irrational. If members of a buying group can lawfully decide to buy only from a particular source at a common price (and they can), they obviously must be able to discuss the various prices offered to them by prospective sellers.

To support their fear of allowing any discussion of royalty rates, SSOs often cite to *Sony Electronics, Inc. v. Soundview*,[73] in which an SSO and its members, competing television manufacturers, were accused by the owner of an SEP of agreeing to limit to five percent the royalty paid for rights to the SEP. The trial court refused to dismiss the complaint because "[t]he all-or-nothing price [allegedly] set

---

[64] 15 U.S.C. § 1.

[65] Cotter, *supra* note 29, at 1200.

[66] Lemley, *supra* note 14.

[67] *United State v. Socony-Vacuum Oil Co*., 310 U.S. 150 (1950).

[68] *United States v. Container Corp*., 393 U.S. 333 (1969).

[69] *Supra* note 37 – 38.

[70] Miller, *supra* note 41, at 367.

[71] *Northwest Wholesale Stationers, Inc. v. Pacific Stationery & Printing Co*., 472 U.S. 284 (1985).

[72] *Id.* at 296; *see* Fed. Trade Comm's & U.S. Dep't of Justice, *Antitrust Guidelines for Collaborations Among Competitors*, 14 (2000). ("Competitor collaborations may involve agreements jointly to purchase necessary inputs. Many such agreements do not raise antitrust concerns and indeed may be procompetitive.").

[73] 157 F. Supp. 2d 180 (D. Conn. 2001).

by these colluding purchasers can depress the price below the optimal price that would obtain if usual market forces of supply and demand were at work."[74] Because the court ultimately determined that the standard did not require use of the patent, the antitrust claim became moot and was never resolved.

Whatever the merits of the claim in the *Sony* case, it involved an alleged agreement to fix royalties below their market value *after* the standard had already been determined. The claim did not involve efforts before the determination of the standard to determine the cost of incorporating a particular patented feature into the standard. The difference is critical. Once a standard has been determined, the cost of using it is not relevant to the SSO, which has already made its decision. The cost at that time is relevant only to those individual companies that need the patent to produce and sell products or services including the standard. On the other hand, before the standard is determined, the royalty costs associated with various features are needed by SSO members in order to determine the most cost-effective standard.[75]

The *Sony* case does not support the claim that RAND commitments are required by the antitrust laws and that no discussion of royalty rates ex ante by SSO participants is allowed. There simply is no decision even suggesting that discussion of royalties before a standard has been determined is illegal. Of course, the absence of any decision does not rule out the possibility of illegality, so it is important to look at efforts of lawmakers and enforcement authorities to clarify the law applicable to SSOs.

3.2 The Standards Development Organization Advancement Act

In 2004, the United States enacted the Standards Development Organization Advancement Act of 2004 (henceforth "Standards Act") to clarify the application of U.S. antitrust laws to formal standard-setting organizations.[76] Under the Standards Act, activities of standard-setting organizations having specified procedures to protect their objectivity and openness[77] are judged under the Rule of Reason.[78] In addition, any recovery for a violation is limited to actual damages and not the treble damages otherwise available to those harmed by antitrust violations.[79]

The Standards Act excludes from its protection "[e]xchanging information among competitors relating to cost, sales, profitability, prices, marketing, or distribution of any product, process, or service that is not reasonably required for the purpose of developing or promulgating a voluntary consensus standard, or using

[74] *Id.*, at 185.
[75] *Supra* note 14 – 15.
[76] Pub. L. No. 108-237, 118 Stat. 661 (2004).
[77] 15 U.S.C. §4301(a)(8).
[78] 15 U.S.C. §4302(2).
[79] 15 U.S.C. §4303(a).

such standard in conformity assessment activities."[80] The necessary implication of this exclusion is that discussions of costs and prices that *are* reasonably related to the determination of a standard are protected by the Standards Act and not subject to per se liability or treble damages. It seems beyond dispute that discussion of proposed royalty rates associated with potential SEPs are reasonably required for an appropriate determination of a standard.

More important, the legislative history of the Standards Act indicates that the Act was intended to "encourage disclosure by intellectual property rights owners of relevant intellectual property rights and proposed licensing terms" and "further encourages discussion among intellectual property rights owners and other interested standards participants regarding the terms under which relevant intellectual property rights would be made available for use in conjunction with the standard or proposed standard."[81] Consequently, the Standards Act supports the proposition that ex ante disclosure of royalty terms by members of an SSO are not inconsistent with U.S. antitrust policy.

3.3 Statements of Antitrust Enforcers

Although useful in determining antitrust policy, the Standards Act is not a guarantee that discussions of potential royalty rates in the context of standard setting cannot lead to antitrust challenges. In the first place, the Standards Act protects only the SSOs themselves and expressly does not protect "the parties participating in the standards development organization."[82] In addition, even the threat of having the activity judged under the Rule of Reason without treble damage possibilities may be enough to deter even procompetitive discussions of royalty rates during the standard-setting process.[83] As a result, for more than ten years, U.S. antitrust enforcement authorities have attempted to make clear that participants in a standard-setting process are *not* prohibited from announcing ex ante the specific royalties they will charge should their patent be required to practice the determined standard. Instead, they have noted that such announcements can make the standard-setting process more competitive and less subject to holdups.

For example, on June 3, 2005, R. Hewitt Pate, the Assistant Attorney General in charge of the Antitrust Division, spoke to an EU Competition Conference in Florence, Italy, about antitrust issues in intellectual property licensing. Referring to the holdup problem in the context of standard setting, he said:

---

[80]15 U.S.C. §4301(a)(8).

[81]*Cong. Rec. – House*. (June 2, 2004), 11280.

[82]15 U.S.C. §4301(a)(8).

[83]Kelly & Prywes, *supra* note 30, at 5 ("The mere possibility of an antitrust challenge, even under a rule of reason standard, inhibits many SSOs from allowing most forms of ex ante royalty communication.").

> Increasingly, standards development organizations are requiring "reasonable and non-discriminatory" (RAND) licensing, which is a partial solution. A difficulty of RAND, however, is that parties tend to disagree later about what level of royalty rate is "reasonable." It would be useful to clarify the legal status of ex ante negotiations over price. Some standards development organizations have reported to the Department of Justice that they currently avoid any discussion of actual royalty rates, due in part to fear of antitrust liability. It would be a strange result if antitrust policy is being used to prevent price competition.[84]

Later that year, Deborah Platt Majoras, Chairman of the FTC, gave a speech to a conference discussing antitrust policy governing standard setting. After stating that "RAND rates can be vague and may not fully protect industry participants from risk of hold-up,"[85] she expressly noted that "if [SEP] owners stated their royalty rates up front, the price could become part of the competition among technologies for incorporation into the standard."[86] Noting that "some SSOs and their participants have hesitated to allow unilateral announcements of royalty rates," she pointed out that "patent holder's voluntary and unilateral disclosure of its maximum royalty rate" would not violate Section 1 of the Sherman Act and is "highly unlikely to require antitrust scrutiny."[87] Because collective negotiations on a royalty rate before a standard is determined "can be a sensible way of preventing hold up, which can itself be anticompetitive," and "can increase competition among rival technologies striving for incorporation into the standard at issue," she also announced that such negotiations would be judged under the Rule of Reason.[88]

On October 30, 2006, the Antitrust Division responded to a request for a business review letter[89] from VITA, an international trade association, and VSO, its standards development subcommittee.[90] Under their proposed new policy, all members working to develop a standard would be *required* to disclose all patents or patent applications believed to be essential to a future standard and to specify "the maximum royalty rate (either in terms of dollars or as a percentage of the sales price) as well as the most restrictive non-price licensing terms the VITA member company he or she represents will request for such patent claims that are essential to implement" the eventual standard.[91] The proposed policy would preclude negotiation or discussion of specific licensing terms among group members.

---

[84]Pate, *supra* note 37, at 9.

[85]Majoras, *supra* note 38, at 5.

[86]*Id.* at 6.

[87]*Id.* at 7.

[88]*Id.*

[89]Under the Business Review Procedure of the Antitrust Division, persons interested in conducting certain activities can seek a determination of whether the Division would have the intention of challenging those activities under the antitrust laws. 28 C.F.R. §50.6. Although the statement of intention does not bind the Antitrust Division, "[a]s to a stated present intention not to bring an action, however, the Division has never exercised its right to bring a criminal action where there has been full and true disclosure at the time of presenting the request." 28 C.F.R. §50.6(9).

[90]Letter from Thomas O. Barnett to Robert A. Skitol. (October 30, 2006), *available at* https://www.justice.gov/sites/default/files/atr/legacy/2006/10/31/219380.pdf.

[91]*Id.* at 4.

In its analysis, the Antitrust Division noted that the proposed policy would preserve "the benefits of competition between alternative technologies that exist during the standard-setting process."[92] The analysis continued:

> Disclosure of [the maximum royalty rates] permits the working group members to make more informed decisions when setting a standard. They might decide, for example, that a cheaper, less technologically elegant solution would be best or they might determine that it is worth including the proffered technological elegance even on the most restrictive terms declared by the patent holder. At a minimum, the disclosure of most restrictive licensing terms decreases the chances that the standard-setting efforts of the working group will be jeopardized by unexpectedly high licensing demands from the patent holder.[93]

As a result of these benefits, the Antitrust Division announced that it had no present intention to take antitrust enforcement action against the proposed requirement that SSO participants disclose their license terms during the standard-setting process. The Antitrust Division also noted that even if the policy were to allow collective negotiation or discussion of royalty rates, "the Division would evaluate any antitrust concerns about them under the rule of reason because such actions could be procompetitive."[94]

In April 2007, the Antitrust Division and the FTC issued formal guidelines that incorporated their earlier statements and business review letters.[95] With respect to SSO, the agencies noted the important difference under the antitrust laws for joint actions directed to selling prices and those directed to the prices paid by buyers.[96] Any activities of members of SSOs to establish prices as "buyers" of technology would be judged under the Rule of Reason while their activities to fix prices as "sellers" would be considered illegal per se.[97] Referring to the Antitrust Division's business review letter concerning VITA's requirement that participants in its standard-setting process disclose their most restrictive license terms, the two enforcement agencies said they approved the policy because it "preserved competition between technologies during the standard-setting process."[98]

As a result of these statements, it seems clear that the U.S. antitrust laws, at least as interpreted by those charged with enforcing them, should *not* prohibit SSOs from at least allowing participants in the standard-setting process to disclose their most restrictive licensing terms, including maximum royalty rates, for any patent that could become essential to the standard.[99] It necessarily follows that the antitrust laws should

---

[92] *Id*. at 9.

[93] *Id*., at 9.

[94] *Id*,. at 9.

[95] U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 2.

[96] *Id*., at 54 – 55.

[97] *Id*.

[98] *Id*.

[99] Unfortunately, despite all the efforts of U. S. enforcement authorities, some SSOs are apparently still avoiding even a discussion of royalty costs for fear of being accused of "unlawful price fixing." Wright, *supra* note 12, at 10 – 11.

not prohibit members of the SSO from taking those terms into account in determining the cost effectiveness of a particular standard.[100] Indeed, that is the reason for wanting such license terms to be disclosed. If license terms can be considered by SSO participants, it would be foolish to prohibit those participants from discussing those terms during their deliberations to determine the most cost-effective standard features.[101] In fact, the very title of Chairman Majoras' talk was "Recognizing the Procompetitive Potential of Royalty Discussions in Standard Setting."[102]

3.4 Required Disclosure of License Demands

1. *Different Views about Mandatory Disclosure*

After studying standard-setting practices and competition laws in the European Union and the United States, Valerio Torti, a Post-Doctoral Research Fellow at the Centre for Law and Business of the National University of Singapore, published a book outlining his conclusions about an optimal system for avoiding holdups and rationalizing the process.[103] As have many others,[104] he found serious flaws in F/RAND commitments that "undermine the ultimate goal of competition and of any other public policy, which is the enhancement of consumer and societal welfare."[105] He also considered and rejected the idea that SSO members collectively negotiate royalty rates for SEPs, both for practical and legal reasons.[106] Considering all the relevant issues, including those involving antitrust and competition laws, he concluded that ex ante disclosure of the most restrictive licensing terms, including the maximum royalty to be sought, represents the optimal solution of legal and practical problems in standard setting.[107]

Torti did not advocate that SSOs require that members disclose their proposed license terms before the standard determination. Instead, perhaps sensitive to legal

[100]Kelly & Prywes, *supra* note 30, at 8 ("During the development process, the SSO and its members may consult with each other and evaluate the estimated cost and technical advantages of different options…").

[101]The IEEE permits members to receive copies of documents including the royalty rate proposals and to include rate information in presentations comparing relative costs of various standards proposals, but prohibits any discussion of the rates. IEEE Standards Association, *Understanding patent issues during IEEE standards development* (Mar. 2016), *available at* http://standards.ieee.org/faqs/patents.pdf. Because the distribution of the documents containing the royalty rate proposals effectively communicates them to the members of the SSO, the prohibition on discussion seems pointless and counterproductive.

[102]Majoras, *supra* note 38.

[103]Torti, *supra* note 4.

[104]*Supra* note 9 – 17.

[105]Torti, *supra* note 4, at 96. *Id.*

[106]*Id.*, at 96 - 105.

[107]*Id.*, at 198 - 202.

concerns, his proposed procedure "would consist in a voluntary mechanism for [intellectual property owners] to disclose unilaterally the licensing terms in advance."[108] On the other hand, Professor Lim notes that "[t]he most straightforward method is for all SSOs to impose mandatory disclosure of only patents that are truly 'essential' to the standard, as well as any relevant licensing terms and rates."[109]

American antitrust authorities have repeatedly noted the advantages of ex ante disclosure of specific royalty rates as a way of avoiding holdups and making the standard-setting process more able to determine the most cost-effective standards. They have noted the perverse result of claiming that the antitrust laws do not allow such disclosures. But they have been less clear about whether the antitrust laws should be equally tolerant of SSO rules that require disclosures of license terms as they are with rules that merely allow them.[110] Recent experience suggests that antitrust and competition laws should allow SSOs to require such disclosures.

2. *Experience with Voluntary and Mandatory Disclosure Models*

The Antitrust Division approved VITA's policy of requiring the disclosure of maximum royalty rates and the most restrictive non-royalty terms because it believed that policy "should preserve, not restrict, competition among patent holders."[111] Recent evidence confirms the wisdom of that determination.

Professor Contreras studied VITA's experience under its new policy.[112] He concluded that requiring disclosure of proposed license terms during the standard-setting process did not have any of the negative consequences that had been feared, including delaying determination of the standard and affecting the quality of the standard.[113] The majority of those who had participated in VITA standard setting "felt that the information elicited by the organization's [mandatory] ex ante policy improved the overall openness and transparency of the standards-development process."[114]

In addition, based on the available data, Professor Contreras concluded that there was no evidence that "*[e]x ante* policies will depress royalty rates."[115] Because a reduction in royalty rates is the primary, if not only, fear of ex ante disclosure of royalty rates,[116] this finding is particularly important.

---

[108] *Id*., at 198.

[109] Lim, *supra* note 32, at 21. For a variety of reasons, Professor Lim does not recommend adopting his own "straightforward method." *Id*., at 22.

[110] *Compare* U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 2, at 54 (approving, without limitations, "an IP holder's voluntary and unilateral disclosure of its licensing terms") *with* Letter, *supra* note 92 (approving SSO policy requiring disclosure of maximum royalty rates).

[111] Letter, *supra* note 90, at 10.

[112] Contreras, *supra* note 48, at 164.

[113] *Id*., at 205.

[114] *Id*., at 211.

[115] *Id*.

[116] *Supra* note 21 – 22.

In 2006, IEEE and its Standards Association (henceforth "IEEE-SA") sought a business review letter about a proposed change to IEEE's policy regarding licensing commitments during their standard-setting activities.[117] Under their proposed policy, patent holders participating in IEEE-SA standard-setting activities "would have the option to publicly disclose and commit to the most restrictive licensing terms (which may include the maximum royalty rate) they would offer for patent claims that are found to be essential to the standard."[118] The Antitrust Division approved this idea, based on its analysis in connection with VITA.[119]

In 2014, IEEE and IEEE-SA went back to the Antitrust Division, seeking a business review letter for a revised policy.[120] In their letter, IEEE and IEEE-SA noted that "only two of approximately 40 LOAs [letters setting out commitments with respect to SEPs] that parties have submitted since 2007 have disclosed their most restrictive licensing terms."[121] The proposed new policy sought to give additional definition and clarity to the term "Reasonable Rate," but did not mandate "any specific royalty calculation methodology or specific royalty rates."[122]

The IEEE experience appears to demonstrate that merely allowing SSO participants to disclose their maximum royalty rates for SEPs does not result in significant disclosures and therefore does not provide the advantages of such disclosures in preventing holdups and allowing the SSO to determine the most cost-effective standard. As a result, requiring disclosure ex ante of licensing terms appears to have pro-competitive benefits and no demonstrable competitive harms.

In addition, at least one basis for the reluctance of patent owners to disclose their license terms ex ante is that uncertainty over the meaning of RAND can actually work to their advantage by allowing them to charge higher royalties should their patents becomes essential to the standard. Said another way, owners of SEPs may actually prefer holdups if they believe their patents will be selected for the standard. As Professor Lemley and Mr. Myhrvold have stated in an analogous context, "the only people who stand to lose from mandatory disclosure of licenses are those who are taking advantage of the current state of ignorance… by holding up defendants…."[123] As a result, Professor Contreras concludes that "unless *ex ante* disclosures are mandated by an [SSO] policy, patent holders have few incentives to make such disclosures on a voluntary basis."[124]

---

[117]Letter, *supra* note 44.

[118]*Id*., at 4.

[119]*Id*., at 9 – 11.

[120]Letter from Renata B. Hesse to Michael A. Lindsay, (Feb.2, 2015), *available at* https://www.justice.gov/sites/default/files/atr/legacy/2015/02/02/311470.pdf.

[121]*Id*., at 4.

[122]*Id*., at 12.

[123]Mark Lemley & Nathan Myhrvold, *How To Make A Patent Market* 36 Hofstra L. Rev. 259 (2007).

[124]Contreras, *supra* note 48, at 207.

Based simply on that conclusion, antitrust and similar competition laws should not be interpreted to prohibit SSOs from requiring their members to disclose their maximum royalty rates and other license terms ex ante. If, as most people studying the standard-setting process have concluded, RAND requirements do not completely solve the holdup problem and ex ante disclosures of license terms do, it makes little sense to preclude policies that ensure that those procompetitive disclosures actually occur.

The different experiences of VITA and IEEE provide another, perhaps more important, reason for permitting mandatory disclosures of license terms during the standard-setting process. The VITA solution of required disclosures of maximum royalty rates and other key license terms makes no effort at all to control those rates and terms. Each standard-setting participant is allowed to state ex ante whatever royalty rates it wants and to define whatever it chooses as the base to which those rates are to be applied. Requiring standard-setting participants to state their royalty demands in advance of a standard determination is no more anticompetitive than asking participants in an auction to make their bids in writing and not orally. To the contrary, knowing the royalty and license terms promotes competition among competing standards.

On the other hand, to try to eliminate the holdup problem in the face of the failure of voluntary disclosures of royalty rates, IEEE more precisely defined RAND by, for example, mandating the only base that SSO members could later use in their royalty negotiations. As at least one commentator has observed, this agreement on a royalty base, perhaps the largest subject of disagreement in the context of RAND, can be characterized as "price fixing."[125] Compared with an agreement by SSO members on important RAND royalty provisions, an agreement merely to require SSO participants to disclose their proposed license terms is much more in keeping with antitrust principles while more likely to overcome the limitations of RAND commitments.[126]

Because of the procompetitive benefits of ex ante disclosure of royalty rates and the possible anticompetitive motives behind the reluctance of SSO participants to disclose those rates in favor of vague RAND commitments, one author has suggested that the failure of SSOs to at least allow disclosures may itself violate the antitrust laws.[127] Given the benefits of disclosure in preventing holdups and allowing the costs of SEPs to be considered in the standard-setting process, this is not an unreasonable conclusion. However, SSOs and their members may have legitimate reasons not to require ex ante disclosure of license terms, including the

[125] *E.g.*, Sidak, *supra* note 42, at 50.

[126] Skitol, *supra* note 11, at 737 ("How is it acceptable for an SSO to fix future royalties at a RAND level but not acceptable for the SSO even to inquire into actual terms, subjecting participants to one-sided individual license negotiations after the standard is in place and the patent holder has thereby acquired ex post market power?").

[127] *Id.* at 729, 738 ("[T]he standard-setting community's continued resistance to considering license terms during the standard-setting process could in itself create significant antitrust exposure.").

additional costs associated with such disclosures.[128] As a result, it is premature to suggest that all SSOs must allow or require such disclosures. But that fact provides no reason for interpreting antitrust and competition laws to preclude an SSO from adopting policies allowing or requiring such disclosures if it determines such policies will work best for it. Such policies can make the standard-setting process more competitive and should be encouraged even if not required.

4 Recommendations

4.1 Mandatory Disclosures

There is little disagreement that RAND disclosures are insufficient, at least under some circumstances, to prevent holdups and that the standard-setting process would be more effective if there were ex ante disclosures of a patent owner's most restrictive licensing terms, including its maximum royalty rate.[129] Experience to date suggests that only mandatory disclosure requirements will overcome the self-interest of SSO participants to withhold those terms until after the standard is set.[130] There is little, if any, reason why the antitrust laws should prohibit such mandatory disclosures and many reasons to believe they advance the objectives of the antitrust laws.

Based on the experience in the United States, it would therefore be in the interest of more effective standard setting for Indian competition laws to make clear that a requirement that SSO participants disclose their maximum royalty rates and other license terms before the standard is determined is encouraged and not prohibited. It is also important to make clear that discussing the respective licensing proposals during the standard-setting process is an integral and important part of the process and also does not violate competition laws. The experience of VITA suggests that mandatory disclosure policies can work and do not adversely affect the standard-setting process. At least at this time, there is no need for Indian law to require such disclosures.[131] Policies requiring disclosures may not be suitable for all SSOs, but competition laws should not preclude their use by SSOs that want to adopt them.[132]

---

[128]Wellford, H. *Antitrust Issues in Standard Setting*, 2d Annual Seminar on IT Standardization and Intellectual Property (Mar. 29, 2007), *available at* https://www.justice.gov/atr/speech/antitrust-issues-standard-setting.

[129]*Supra* note 33 – 34.

[130]Lemley & Nathan Myhrvold, *supra* note 123, at 259 (advocating public disclosure of terms of patent license agreements).

[131]*See* U.S. Dep't of Justice & Fed. Trade Comm'n, *supra* note 2, at 55 ("The Agencies take no position as to whether SSOs should engage in *ex ante* discussion of licensing terms").

[132]When IEEE went back to the Antitrust Division, it sought additional specificity in the meaning of RAND. Letter, *supra* note 120. As previously noted, it makes no sense to allow more and more specific definitions of RAND while prohibiting discussions of specific royalty demands. Lemley, *supra* note 14.

4.2 Precautions

Just as it is clear that competition laws should not prohibit the requirement of ex ante disclosure of license terms, it needs to be made clear that those laws can be violated if adequate precautions are not taken to make sure the standard-setting process is not corrupted. As a result, it is important that everyone recognize that disclosure of license terms, even if required by an SSO, not be a part of an agreement that otherwise violates the law because of its anticompetitive purpose or effect. First, any agreement among SSO participants on the license terms they will present is likely to be considered illegal price fixing by sellers. Participants therefore must be cautioned not to discuss their proposals with other patent owners before the proposals have become public to all SSO members. It is often thought that "sealed bids," all opened together, can minimize chances for collusion.[133] Whether participants are allowed to change their proposed terms after seeing other proposals is a detail that can be made based on the desires of the SSO and its members.

In addition to concerns about illegal fixing of licensing terms, any time competitors get together, there is a risk that they will engage in discussions about the prices at which they will sell products or services incorporating the standard.[134] Standard precautions to prevent illegal discussions include having lawyers at meetings, maintaining minutes, recording meetings, etc.[135] Those precautions are not specific to SSOs and are known by most sophisticated companies.

5 Conclusion

Based on experience in the United States, RAND commitments in the context of standard setting by SSOs are not sufficient to eliminate the possibility for holdups. Because of the procompetitive benefits of ex ante disclosure of specific royalty demands and the anticompetitive implications of precluding such disclosures, it makes no sense for competition laws to (1) prohibit such disclosures, (2) prohibit making such disclosures mandatory or (3) prohibit discussion of royalty demands after they have been presented to the SSO. At this time, it is not necessary to ban RAND commitments, but it is important to be sure that the competition laws do not stand in the way of more specific royalty disclosures so long as standard precautions are taken to assure that any discussions involving those disclosures do not wander into discussions about the prices of products and services incorporating the standard.

---

[133]Damien Geradin, et al., *The Ex Ante Auction Model for the Control of Market Power in Standard Setting Organizations*, CEMFI Working Paper 0703 (May 2007), *available at* ftp://ftp.cemfi.es/wp/07/0703.pdf.

[134]Majoras, *supra* note 38, at 10 ("Joint ex ante royalty discussions, of course, can offer an opportunity for SSO members to reach side price-fixing agreements that are per se illegal.").

[135]For a useful summary of such precautions, *see* Gray, *supra* note 51.

Chapter 8
FRAND in India

Koren W. Wong-Ervin, Douglas H. Ginsburg, Bruce H. Kobayashi and Joshua D. Wright

1 Introduction

Since becoming fully operational in October of 2009, the CCI has brought two public investigations involving SEPs, both against Ericsson and both based upon allegations that the company violated its FRAND commitments by imposing discriminatory and "excessive" royalty rates and using NDAs.[1] According to the CCI, "forcing a party to execute [an] NDA" and "imposing excessive and unfair royalty rates" is "prima facie" abuse of dominance in violation of Section 4 of the Competition Act, as does "[i]mposing a jurisdiction clause debarring [complainants] from getting disputes adjudicated in the country where both parties were

[1] *In re Micromax Informatics Ltd. v. Telefonaktiebolaget LM Ericsson* ¶ 17 (Nov. 12, 2013), http://cci.gov.in/sites/default/files/502013_0.pdf; *In re Intex Techn. Ltd., v. Telfonaktiebolaget LM Ericsson* ¶ 17 (Jan. 16, 2014), http://cci.gov.in/sites/default/files/762013_0.pdf. The investigations were based respectively upon complaints by Micromax Informatics Ltd. and Intex Technologies (India) Ltd.

K.W. Wong-Ervin (✉)
Global Antitrust Institute, Antonin Scalia Law School, George Mason University, Fairfax, USA
e-mail: kwongerv@gmu.du

D.H. Ginsburg
International Advisory Board of the Global Antitrust Institute, Antonin Scalia Law School, George Mason University, Fairfax, USA

B.H. Kobayashi
George Mason University Law School, Fairfax, USA

J.D. Wright
Global Antitrust Institute, George Mason University, Fairfax, USA

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_8

in business."[2] In both matters, the CCI stated that "prima facie the relevant product market"[3] is "the provision of SEP(s) for 2G, 3G and 4G technologies in GSM standard compliant mobile communication devices," in India, in which "prima facie it is apparent that Ericsson was dominant".[4]

The investigations allege that Ericsson "seem[s] to be acting contrary to the FRAND terms by imposing royalties linked with cost of product of user for its patents."[5] Thus, "[f]or the use of [a] GSM chip in a phone costing Rs. 100, [the] royalty would be Rs. 1.25 but if this GSM chip is used in a phone of Rs. 1000, [the] royalty would be Rs. 12.5."[6] According to the CCI, "[c]harging of two different license fees per unit phone for use of the same technology prima facie is discriminatory and also reflects excessive pricing vis-a-vis high cost phones."[7] Furthermore, contends the CCI, "[t]ransparency is the hallmark of fairness," alleging that, Ericsson's use of NDAs "is contrary to the spirit of applying FRAND terms fairly and uniformly to similarly placed players."[8]

In the second investigation the CCI further alleged that, although Ericsson publicly claims that it offers a broadly uniform rate to all similarly placed potential licensees, its refusal to share commercial terms and royalty payments based upon the NDAs is "strongly suggestive of the fact that different royalty rates/commercial terms were being offered to the potential licensees belonging to the same category."[9]

The CCI has also expressed concern about hold-up and royalty stacking, stating that "FRAND licenses are primarily intended to prevent Patent Hold-up and Royalty Stacking… [F]rom the perspective of the firm making the product, all the different claims for royalties must be added or 'stacked' together to determine the total burden of royalty to be borne by the manufacturer."[10]

In March 2016, the DIPP issued a Discussion Paper on SEPs that, among other things, emphasizes concerns about hold-up by patent holders, while omitting any concerns about hold-up and hold-out by implementers. The chapter also contains a troubling summary of U.S. and EU law, erroneously suggesting that United States and European Union apply a per se rule or presumption against injunctive relief on a FRAND-assured SEP. The chapter poses a number of questions, including: (1) whether Indian patent and antitrust laws are adequate to address issues relating to FRAND-assured SEPs; (2) "what should be the IPR policy of Indian" SDOs and

[2] *In re Intex* ¶ 17; *In re Micromax* ¶ 16.

[3] *In re Micromax* ¶¶ 15–16; *In re Intex* ¶¶ 15–16.

[4] *In re Intex* ¶¶ 15–16 (emphasis omitted); *In re Micromax* ¶¶ 15–16.

[5] *In re Intex* ¶ 17; *In re Micromax* ¶ 17.

[6] *In re Intex* ¶ 17; *In re Micromax* ¶ 17.

[7] *In re Intex* ¶ 17 (emphasis omitted); *In re Micromax* ¶ 17.

[8] *In re Intex* ¶ 17 (internal quotations omitted).

[9] *Id.* ¶¶ 7, 17 (explaining that Ericsson's use of NDAs "fortifies the accusations of the [complainant] regarding alleged discriminatory commercial terms imposed by [Ericsson]").

[10] *Id.* ¶ 13.

whether government guidelines for SDOs are necessary; (3) whether royalty payments for SEPs should be capped and limited to the "smallest salable patent practicing component"; (4) whether the use of NDAs constitutes an abuse of dominance and is contrary to a commitment to license on FRAND terms; (5) how to create transparency in cross-licensing and patent pooling; and (6) what are appropriate ways and remedies for settling SEP-related disputes and whether an independent expert body should be created to determine FRAND terms.

The remainder of this chapter discusses these issues, providing guidance for policy makers and regulators in India.

2 Hold-Up and Hold-Out

Overall, one of the central problems with CCI's prima facie orders and the DIPP Discussion Paper, are their focus upon concerns about hold-up by patent holders while seemingly ignoring concerns about hold-up and hold-out by implementers. Although there is serious and important scholarly work exploring the theoretical conditions under which hold-up by patent holders might occur, this literature merely demonstrates the possibility that an injunction (or the threat of an injunction) against infringement of a patent can in certain circumstances be profitable for the licensor and potentially harmful to consumers. This same theoretical literature has also recognized, with respect both to intellectual and to tangible property, the threat of both hold-up and hold-out by implementers. Hold-up requires lock-in, and standard-implementing companies with asset-specific investments can be locked in to the technologies defining the standard. On the other hand, innovators that are contributing to an SDO can also be locked-in, and hence susceptible to hold-up, if their technologies have a market only within the standard. Thus, incentives to engage in hold-up run in both directions.[11]

There is also the possibility of hold-out by an implementer. While hold-up by implementers refers to the situation in which a licensee uses its leverage to obtain rates and terms below FRAND (fair, reasonable, and nondiscriminatory) levels, hold-out refers to a licensee either refusing to take a FRAND license or delaying its doing so.

It is important to distinguish the various hypotheses in the theoretical literature on patent hold-up from the empirical evidence that would substantiate the theories underlying those hypotheses. Theories of anticompetitive harm predict systematic opportunism by patent holders and price increases across output markets that depend upon patented technology as an input. The anticompetitive theories in that literature also predict, in addition to higher prices, reduced output and less innovation.

[11]Douglas H. Ginsburg et al., *The Troubling Use of Antitrust to Regulate FRAND Licensing,* CPI Antitrust Chron., Oct. 2015, at 2, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2674759.

The evidence required to justify a competition law sanction for seeking or enforcing injunctive relief requires that there be a probability, not a mere possibility, of higher prices, reduced output, and lower rates of innovation. In contrast to the predictions of the theories that such injunctions will have anticompetitive effects, we note that, products that intensively use SEPs have seen robust innovation as well as falling prices and increased output when compared to industries that do not rely upon SEPs.[12]

For example, evidence from the smartphone market, which is both standard and patent intensive, is to the contrary: Output has grown exponentially, while market concentration has fallen, and wireless service prices have dropped relative to the overall consumer price index (henceforth "CPI").[13] More generally, prices in SEP-reliant industries in the US have declined faster than prices in non-SEP intensive industries.[14] A recent study by the Boston Consulting Group found that globally the cost per megabyte of data declined 99% from 2005 to 2013 (reflecting both innovations making data transmission cheaper and the healthy state of competition); the cost per megabyte fell 95% in the transition from 2G to 3G, and 67% in the transition from 3G to 4G; and the global average selling price for smartphones decreased 23% from 2007 through 2014, while prices for the lowest-end phones fell 63% over the same period.[15] All of this indicates a thriving mobile market as opposed to a market in need of fixing and suggests caution prior to disrupting the carefully balanced FRAND ecosystem.

---

[12]*See, e.g.*, J. Gregory Sidak, *The Antitrust Division's Devaluation of Standard-Essential Patents*, 104 Geo. L.J. Online 48, 61 (2015) (collecting studies at n.49) ("By early 2015, more than two dozen economists and lawyers had disapproved or disputed the numerous assumptions and predictions of the patent-holdup and royalty-stacking conjectures."), https://www.criterioneconomics.com/docs/antitrust-divisions-devaluation-of-standard-essential-patents.pdf; Anne Layne-Farrar, Patent Holdup and Royalty Stacking Theory and Evidence: Where Do We Stand After 15 Years of History? (Dec. 2014) (surveying the economic literature and concluding that the empirical studies conducted thus far have not shown that hold-up is a common problem), http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD%282014%2984&doclanguage=en.

[13]According to data from Gartner, worldwide smartphone sales to end-users have increased over 900% between 2007 and 2014, and 320% and 2010 to 2014. Market concentration in smartphones, as measured by HHIs, went from "highly concentrated" in 2007, as defined by the U.S. antitrust agencies' Horizontal Merger Guidelines, to "unconcentrated" by the end of 2012. *See* Keith Mallinson, *Theories of Harm with SEP Licensing Do Not Stack Up*, IP Fin. Blog (May 24, 2013), http://ipfinance.blogspot.com/2013/05/theories-of-harm-with-sep-licensing-do.html. According to the U.S. Bureau of Labor Statistics, the ratio of the CPI for wireless telephone services to the overall CPI has dropped 34% from 2007 to 2014.

[14]Alexander Galetovic et al., *An Empirical Examination of Patent Hold-Up* (Nat'l Bureau of Econ. Research, Working Paper No. 21090, 2015), http://www.nber.org/papers/w21090.pdf.

[15]Julio Bezerra et al., Boston Consulting Grp., The Mobile Revolution: How Mobile Technologies Drive a Trillion Dollar Impact 3, 9 (Jan. 15, 2015), https://www.bcgperspectives.com/content/articles/telecommunications_technology_business_transformation_mobile_revolution/#chapter1.

As evidence of hold-up, some point to a small number of court cases in which the court-determined FRAND royalty was lower than the patent holder's demand. Among the numerous flaws with this argument—even holding aside the reasonable debate over whether the courts correctly determined reasonable royalty damages in those cases—is that the outcome of a handful of litigated cases says nothing about whether hold-up is a widespread problem for competition and consumers.[16] Economists have long understood the shortcomings of making inferences about a population from a sample of litigated cases.[17]

Economic analysis provides the basis upon which to understand the apparent disconnect between hold-up theory and the available evidence. As economic theory would predict, patent holders and those seeking to license and implement patented technologies write their contracts so as to minimize the probability of hold-up. Indeed, the original economic literature upon which the patent hold-up theories are based was focused upon the various ways that market actors use reputation, contracts, and other institutions to mitigate the inefficiencies associated with opportunism in transactions involving tangible property.[18]

Several market mechanisms are available to transactors to mitigate the incidence and likelihood of patent hold-up. Reputational and business costs may deter repeat

[16]It is worth noting that the district courts in the cases relied upon by commentators (e.g., *Microsoft v. Motorola* and *Innovatio*) employed methodologies that presumed the prevalence of both hold-up and royalty stacking without requiring proof that either exists in a particular case. *See Microsoft Corp. v. Motorola, Inc.*, 2013 WL 2111217, at *12, *73–74 (W.D. Wash. Apr. 25, 2013); *In re Innovatio IP Ventures, LLC Patent Litig.*, 2013 WL 5593609, at *8–10 (N.D. Ill. Oct. 3, 2013). This approach was squarely rejected by the Federal Circuit Court of Appeals in *Ericsson v. D-Link Systems*, which held that to be considered as part of a FRAND damages analysis, concerns about hold-up and royalty stacking must be proven rather than presumed. 773 F.3d 1201, 1234 (Fed. Cir. 2014). *See also* Sidak, *supra* note 12, at 65 (explaining that the adjudicated rates in *Microsoft v. Motorola* and *Innovatio* were not necessarily high enough to be FRAND, and that "[t]he methodologies used to determine the final rates in those two decisions contained significant economic flaws"); Anne Layne-Farrar & Koren W. Wong-Ervin, *An Analysis of the Federal Circuit's Decision in* Ericsson v. D-Link, Cpi Antitrust Chron., Mar. 2015, at 2, 5–6. (explaining the Federal Circuit's rejection of the approach taken by some of the district courts), http://www.crai.com/sites/default/files/publications/An-Analysis-of-the-Federal-Circuits-Decision-in-Ericsson-v-D-Link.pdf [hereinafter Layne-Farrar & Wong-Ervin, *Ericsson*].

[17]*See, e.g.,* George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. Legal Studies 1 (1984).

[18]Benjamin Klein, *Why Hold-Ups Occur: The Self-Enforcing Range of Contractual Relationships*, 34 Econ. Inquiry 444, 449–50 (1996); Benjamin Klein et al., *Vertical Integration, Appropriate Rents, and the Competitive Contracting Process*, 21 J.L. & Econ. 297, 303–07 (1978); Oliver E. Williamson, Markets and Hierarchies: Analysis and Antitrust Implications 26–30 (1975); *see also* Joshua D. Wright, Comm'r, Fed. Trade Comm'n, Remarks Before George Mason University School of Law: SSOs, FRAND, and Antitrust: Lessons Learned from the Economics of Incomplete Contracts 2–3 (Sept. 12, 2013) ("[T]he economics of hold-up began not as an effort to explain contract failure, but as an effort to explain real world contract terms, performance, and enforcement decisions starting with the fundamental premise that contracts are necessarily incomplete."), https://www.ftc.gov/sites/default/files/documents/public_statements/ssos-frand-and-antitrust-lessons-economics-incomplete-contracts/130912cpip.pdf.

players from engaging in hold-up and "patent holders that have broad cross-licensing agreements with the SEP-owner may be protected from hold-up."[19] Also, patent holders often enjoy a first-mover advantage if their technology is adopted as the standard. "As a result, patent holders who manufacture products using the standardized technology 'may find it more profitable to offer attractive licensing terms in order to promote the adoption of the product using the standard, increasing demand for its product rather than extracting high royalties'" per unit.[20] This result is not surprising given the incentives of patent holders and implementers to reach efficient solutions that minimize the risk of opportunism.

Some have asserted that the theoretical predictions of hold-up models cannot be tested and thus it is only prudent to assume a systemic hold-up problem. This is incorrect. Were ex post opportunism in licensing SEPs a systemic problem—that is, were market failures preventing firms from efficiently contracting to minimize their risk, one would expect to observe one-sided SDO contracts that do not reflect the risk of opportunism and protect primarily SEP holders rather than potential licensees. However, the empirical evidence shows that SDO contract terms vary both across organizations and over time in response to changes in the perceived risk of patent hold-up and other factors.[21]

Recognizing the theoretical nature of hold-up concerns, the United States Court of Appeals for the Federal Circuit (which has nationwide jurisdiction over patent disputes) has held that a claim of hold-up must be substantiated with "actual evidence," and that the burden is on the accused infringer to show the patent holder used injunctive relief to gain undue leverage and demand supra-FRAND royalties.[22]

---

[19] *See, e.g.*, Prepared Statement of the Federal Trade Commission Before the U.S. Senate Committee on the Judiciary Subcommittee on Antitrust, Competition Policy and Consumer Rights Concerning "Standard Essential Patent Disputes and Antitrust Law" 6 (July 30, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/prepared-statement-federal-trade-commission-concerning-standard-essential-patent-disputes-and/130730standardessentialpatents.pdf.

[20] *Id.* (internal citation omitted).

[21] *See* Joanna Tsai & Joshua D. Wright, *Standard Setting, Intellectual Property Rights, and the Role of Antitrust in Regulating Incomplete Contracts*, 80 Antitrust L.J. 157 (2015).

[22] *See, e.g.*, *Ericsson, Inc. v. D-Link Sys.*, 773 F.3d 1201, 1234 (Fed. Cir. 2014) ("In deciding whether to instruct the jury on patent hold-up and royalty stacking, again, we emphasize that the district court must consider the evidence on the record before it. The district court need not instruct the jury on hold-up or stacking unless the accused infringer presents actual evidence of hold-up or stacking. Certainly something more than a general argument that these phenomena are possibilities is necessary."); *see also* Layne-Farrar & Wong-Ervin, *Ericsson*, *supra* note 16, at 5–7.

3 U.S. and EU Law on Injunctive Relief for FRAND-Assured SEPs

Contrary to the suggestion in the DIPP Discussion paper, in the United States, there is no per se rule or presumption against injunctive relief on a FRAND-assured SEP. Instead, as the U.S. Court of Appeals for the Federal Circuit explained in *Apple v. Motorola*, there is "no reason to create… a separate rule or analytical framework for addressing injunctions for FRAND-committed patents. The framework laid out by the Supreme Court in *eBay* [*v. MerchExchange*], as interpreted by subsequent decisions of this court, provides ample strength and flexibility for addressing the unique aspects of FRAND-committed patents and industry standards in general."[23] Under *eBay*, for an injunction to issue, a court must find that the patent holder established: "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by [an] injunction."[24] This critical gatekeeping by courts minimizes the risk of harm to competition and consumers. As such, the mere seeking of injunctive relief alone does not monopolize the market because courts independently assess whether an injunction is warranted, taking into consideration whether the public interest would be disserved by an injunction.

In addition, no U.S. court has held that seeking or enforcing injunctive relief on a FRAND-assured SEP constitutes an antitrust violation. Instead, every U.S. court that has addressed the injunction issue has done so under contract, not antitrust, principles.[25]

With respect to the European Union, in *Huawei v. ZTE* (July 2015), the European Court of Justice adopted a safe harbor from antitrust liability.[26] Specifically, an SEP holder that (1) prior to initiating an infringement action, alerts the alleged infringer of the claimed infringement and specifies the way in which the patent has been infringed; and (2) after the alleged infringer has expressed its willingness to conclude a license agreement on FRAND terms, presents to the

[23] *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1331–32 (Fed. Cir. 2014) ("To the extent that the district court applied a *per se* rule that injunctions are unavailable for SEPs, it erred."), *overruled on other grounds by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

[24] *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006).

[25] *See, e.g., Realtek Semiconductor Corp. v. LSI Corp.*, 2013 WL 2181717, at *7 (N.D. Cal. May 20, 2013); Verdict Form at 3, *Microsoft Corp. v. Motorola, Inc.*, Case No. C10-1823JLR (Sept. 4, 2013) (the jury found that Motorola's conduct in seeking injunctive relief violated its duty of good faith and fair dealing with respect to its contractual commitments to the IEEE and the ITU); Apple, Inc. v. Motorola, Inc., 869 F. Supp. 2d 901, 913–14 (N.D. Ill. 2012); *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872, 884–85 (9th Cir. 2012).

[26] Case C-170/13, *Huawei Techs. Co. v. ZTE Corp.* (July 16, 2015), http://curia.europa.eu/juris/document/document.jsf?text=&docid=165911&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=603775.

alleged infringer a specific, written offer for a license, specifying the royalty and calculation methodology, should be free of liability. The Court quite properly put the burden on the alleged infringer to "diligently respond" to the SEP holder's offer, "in accordance with recognised commercial practices in the field and in good faith," by promptly providing a specific written counter-offer that corresponds to FRAND terms, and by providing appropriate security (e.g., a bond or funds in escrow) from the time at which the counter-offer is rejected and prior to using the teachings of the SEP.[27]

In its decision, the Court recognized that SEP holders have "the right to bring an action for a prohibitory injunction or for the recall of products," and made clear that the SEP holder's right can be limited only in particular and exceptional circumstances.[28] The decision recognizes concerns about reverse hold-up, stating that the Court will not tolerate infringers' "delaying tactics."[29] The Court reiterates, in multiple places throughout the decision that its competition analysis relates to a dispute involving two competitors, which suggests the Court's analysis and holding are limited to matters involving competitors. Lastly, the Court analyzed the seeking of injunctive relief as possibly *exclusionary* as opposed to *exploitative* conduct, such as charging excessive or unfairly high royalties.

Imposing an antitrust law sanction for seeking or enforcing injunctive relief would likely reduce incentives to innovate and deter SEP holders from participating in standard setting, thereby depriving consumers of the substantial procompetitive benefits of standardized technologies.[30] Should India decide to adopt such a sanction, however, at the very least it should adopt a safe harbor approach such as that crafted by the European Court of Justice in *Huawei v. ZTE.*

4 The Case Against Special Legislation or Amendments to Regulate FRAND Licensing

Existing intellectual property and antitrust laws are adequate to address the issues relating to FRAND licensing. Indeed, one of the main benefits of relying upon existing antitrust law in particular is that it proceeds primarily by applying, on a case-by-case basis, a uniform methodology grounded in economic analysis and sensitive to the facts of the particular case. This approach has proven over time

[27] *Id.* ¶¶ 65–67.

[28] *Id.* ¶¶ 52, 65–66, 71.

[29] *Id.* ¶ 65.

[30] *See* Douglas H. Ginsburg, Taylor M. Owings, & Joshua D. Wright, *Enjoining Injunctions: The Case Against Antitrust Liability for Standard Essential Patent Holders Who Seek Injunctions*, Antitrust Source 1, 5–6 (Oct. 2014) (explaining, among other things, that the law of contracts is sufficient to provide optimal deterrence) [hereinafter Ginsburg, Owings, & Wright]; *see also* Bruce H. Kobayashi & Joshua D. Wright, *The Limits of Antitrust and Patent Holdup: A Reply to Cary,* et al., 78 Antitrust L.J. 505 (2012).

more likely to maximize consumer welfare than ex ante regulation. Contract law also provides a means to resolve disputes arising from FRAND licensing given that a FRAND commitment is a contractual commitment and contract remedies are sufficient optimally to deter hold-up.[31] Specifically, in analyzing the contractual nature of the FRAND commitment, U.S. courts have held that: (1) a commitment to an SDO to license on FRAND terms constitutes a binding contract between the SEP holder, the SDO, and its members[32]; (2) potential users of the standard are third-party beneficiaries of the agreements with standing to sue[33]; and (3) FRAND licensing "includes an obligation to negotiate in good faith," where obligation is "a two-way street."[34]

Identification of a market imperfection is a necessary, but not a sufficient condition to justify regulation on economic grounds.[35] Even if one were to believe SEP-reliant markets were performing poorly, the burden would still be on regulators to demonstrate that an antitrust remedy or regulation would improve efficiency —not merely that the market is underperforming relative to an unrealistic benchmark such as "perfect competition."[36]

Moreover, as discussed in Sect. 2, above, there is no credible causal evidence to support the existence of a market imperfection in markets that make intensive use of SEPs. As explained there, evidence from the smartphone market certainly does not suggest that market imperfections are hampering market performance. Output has grown exponentially, while market concentration has fallen, and wireless service

[31] *See, e.g.*, *In re Innovatio IP Ventures, LLC Patent Litig.*, 2013 WL 5593609, at *4 (N.D. Ill. Oct. 3, 2013); *Microsoft Corp. v. Motorola, Inc.,* 2013 WL 2111217, at *1 (W.D. Wash. Apr. 25, 2013), *aff'd*, 2015 WL 4568613 (9th Cir. July 30, 2015); *Apple, Inc. v. Motorola Mobility, Inc.*, 886 F. Supp. 2d 1061, 1083–84 (W.D. Wis. 2012); *Microsoft Corp. v. Motorola, Inc.*, 854 F. Supp. 2d 993, 999–1001 (W.D. Wash. 2012), *reaffirmed*, 864 F. Supp. 2d 1023, 1030–33 (W.D. Wash. 2012), *aff'd in relevant part*, 696 F.3d 872, 884 (9th Cir. 2012).

[32] *See, e.g.*, *Innovatio*, 2013 WL 5593609, at *4 (citing In re Innovatio IP Ventures, LLC Patent Litig., 2013 WL 427167, at *17 (N.D. Ill. Feb. 4, 2013)); *Microsoft Corp*., 854 F. Supp. 2d at 999; *Apple, Inc.*, 886 F.Supp.2d at 1083-85.

[33] *See, e.g.*, *Innovatio*, 2013 WL 5593609, at *17; *Microsoft Corp*., 854 F. Supp. 2d at 999; *Apple, Inc*., 886 F.Supp.2d at 1083-84; *Research In Motion Ltd. v. Motorola, Inc.*, 644 F. Supp. 2d 788, 797 (N.D. Tex. 2008); *ESS Tech., Inc. v. PC–Tel, Inc.*, 1999 WL 33520483, at *4 (N.D. Cal. Nov. 4, 1999).

[34] *Ericsson Inc. v. D-Link Systems, Inc.*, 2013 WL 4046225, at *25 (E.D. Tex. Aug. 2013), *aff'd in part, rev'd in part, and vacated in part on other grounds by Ericsson v. D-Link Sys.*, 773 F.3d 1201 (Fed. Cir. 2014).

[35] *See* Joshua D. Wright, Comm'r, Fed. Trade Comm'n, Regulation in High-Tech Markets: Public Choice, Regulatory Capture, and the FTC, Remarks at the Big Ideas about Information Lecture (Apr. 2, 2015), https://www.ftc.gov/system/files/documents/public_statements/634631/150402clemson.pdf. *See also* Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J. L. & Econ. 1 (1969).

[36] Demsetz, *supra* note 35, at 1 (explaining that those who adopt the nirvana viewpoint seek to discover discrepancies between the perfect competition and the real and if discrepancies are found, they deduce that the real is inefficient).

prices have dropped relative to the overall CPI.[37] In other words, the empirical evidence does not suggest that FRAND licensing is somehow broken and in need of fixing. Instead, the thriving nature of the wireless market suggests caution prior to disrupting the carefully balanced FRAND ecosystem. The evidence makes clear the burden is appropriately allocated to the proponents of additional intervention to solve SEP-related opportunism to demonstrate that the particular intervention would improve welfare.

5 The Dangers of Adopting a One-Size-Fits-All Template for SDOs

In our experience, the issues and choices regarding specific SDO Intellectual Property Rights (henceforth "IPRs") policies are best left to individual SDOs and their members to decide. SDOs "vary widely in size, formality, organization and scope,"[38] and therefore individual SDOs may need to adopt different approaches to meet the specific needs of their members. In addition, issuance of guidelines by a government agency may unduly influence private SDOs and their members to adopt policies that might not otherwise gain consensus support within a particular SDO and that may not best meet the needs of that SDO, its members, and the public. This could occur because the SDO believes failing to adopt the specified policy is not permitted or because failing to adopt the policy could subject the SDO and its members to other legal liabilities. Accordingly, the U.S. antitrust agencies have taken the position that they do not advocate "that SSOs [or SDOs] adopt any specific disclosure or licensing policy, and the Agencies do not suggest that any specific disclosure or licensing policy is required."[39]

6 Problems with Regulating Royalty Rates or Prohibiting "Excessive Pricing"

In the United States, firms are free unilaterally to set or privately to negotiate their prices; it follows that a firm that has or acquires monopoly power lawfully is free to charge profit-maximizing prices, which induce the risk-taking and entrepreneurial

[37] *See supra* text accompanying note 12.

[38] U.S. Dep't. Justice & Fed. Trade Comm'n, Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition 33, n.5 (2007), http://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf.

[39] *Id.* at 48.

behavior by firms that lead to innovation and economic growth.[40] Requiring by law that prices be "fair" or "reasonable," or prohibiting a firm from charging "unfairly high" prices risks punishing vigorous competition. In general, competition policy should not prohibit a monopolist from charging whatever price for its products and its IPRs it believes will maximize its profits. It is axiomatic in economics and in antitrust law that the "charging of monopoly prices… is… what attracts 'business acumen' in the first place; it induces risk taking that produces innovation and economic growth."[41] That is especially so in the case of IPRs; the very purpose for which nations create and protect IPRs is to induce investment in risky and costly research and development. To achieve a balance between innovation and the protection of competition, monopoly prices should be unlawful only if they are the result of conduct that is unlawful on other grounds.

Moreover, economics teaches that absent market information it can be especially difficult to identify a "fair" price. Indeed, it is particularly difficult to assess the "fairness" of prices associated with licensing IPRs both because the fixed costs of innovation require prices above marginal cost in order to secure an adequate return to investments in innovation, and because IPRs themselves are highly differentiated products making price comparisons difficult, if not impossible. The risk of placing too strict limitations on IPR prices is that the return to innovative behavior is reduced, and consumers suffer in the form of less innovation. With such limits in place, IPR holders will face significant uncertainty in determining whether their licensing practices violate competition laws.[42]

---

[40]*See, e.g.*, *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004). Likewise, the U.S. antitrust agencies do not regulate price. *See, e.g.*, Bill Baer, Assistant Att'y Gen., Antitrust Div., Prepared Remarks at the 19th Annual International Bar Association Competition Conference: Reflections on the Role of Competition Agencies When Patents Become Essential (Sept. 11, 2015), http://www.justice.gov/opa/speech/assistant-attorney-general-bill-baer-delivers-remarks-19th-annual-international-bar ("We don't use antitrust enforcement to regulate royalties. That notion of price controls interferes with free market competition and blunts incentives to innovate. For this reason, U.S. antitrust law does not bar 'excessive pricing' in and of itself. Rather, lawful monopolists are perfectly free to charge monopoly prices if they choose to do so. This approach promotes innovation from rivals or new entrants drawn by the lure of large rewards. "); Edith Ramirez, Chairwoman, Fed. Trade Comm'n, Prepared Remarks at the 8th Annual Global Antitrust Enforcement Symposium, Georgetown University Law Center: Standard-Essential Patents and Licensing: An Antitrust Enforcement Perspective 8 (Sept. 10, 2014), https://www.ftc.gov/system/files/documents/public_statements/582451/140915georgetownlaw.pdf ("In contrast to the FTC's and EC's approach, media reports indicate that China's antitrust authorities may be willing to impose liability solely on the royalty terms that a patent owner demands for a license to its FRAND-encumbered SEPs, as well as royalty demands for licenses for other patents that may not be subject to a voluntary FRAND commitment.").

[41]*Trinko*, 540 U.S. at 407.

[42]Douglas H. Ginsburg et al., "*Excessive Royalty*" *Prohibitions and the Dangers of Pushing Vigorous Competition and Harming Incentives to Innovate,* CPI Antitrust Chron., Mar. 2016, https://www.competitionpolicyinternational.com/wp-content/uploads/2016/03/Excessive-Royalty-Prohibitions.pdf.

In addition, in order to determine whether a particular price is excessive, the competition agency would need to calculate a reasonable royalty range as a baseline against which to compare the allegedly excessive price. For the reasons stated above, the antitrust laws in the U.S. generally avoid the administrative determination of prices. In our experience, competition agencies will not possess the information necessary to determine market prices generally, and royalty rates for inventions in particular. This is a task that is best left to the market or, as a last resort, to the courts in those limited cases when the parties cannot reach agreement.[43]

Should an agency insist upon applying an excessive pricing prohibition to IPRs, it could use the hypothetical negotiation framework developed under U.S. patent law to determine the *minimum* reasonable royalty. This, however, is a complex methodology intended for use by the courts upon development of a full record, which usually includes detailed expert reports and opportunities for witnesses to testify and be subjected to cross-examination. In addition, it is essential to keep in mind that a reasonable royalty calculation using the hypothetical negotiation framework sets a *minimum* royalty; the patentee should have the opportunity to prove its lost-profits as part of its damages. In an excessive pricing case, these lost profits equal the profits denied by the "unfairly high" pricing provision.[44] As such, when used in an "unfairly high" pricing investigation, a reasonable royalty calculation should likewise be treated as a minimum starting point to avoid imposing a royalty that undercompensates the patentee—a result that would significantly reduce the patentee's incentives to innovate.

In an action for damages resulting from patent infringement, the goal of a reasonable royalty calculation is to determine the market price the infringer would have paid if it had licensed rather than infringed the patent. Accordingly, that amount should depend upon what a willing licensee and a willing licensor would have agreed to in a hypothetical negotiation. The seminal case in the United States, *Georgia-Pacific Corp. v. United States Plywood Corp.*, describes the proper measure of damages as "[t]he amount that a licensor (such as the patentee) and the licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been… trying in good faith to reach an agreement."[45] The central tenet of this framework is the willing licensor/willing licensee model, under which the amount awarded would have been acceptable to both parties.

---

[43]For a discussion of the difficulties of court-determined rate setting, *see* Anne Layne-Farrar & Koren W. Wong-Ervin, *Methodologies for Calculating FRAND Royalty Rates and Damages: An Analysis of Existing Case Law*, Law360, (Oct. 8–10, 2014), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2668623.

[44]Specifically, U.S. patent law provides that "[u]pon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court." 35 U.S.C. § 284 (2012).

[45]*Georgia-Pacific Corp., v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), *modified and aff'd*, 446 F.2d 295 (2d Cir. 1971).

U.S. district courts have recently adopted modified versions of the *Georgia Pacific* framework in determining prospective royalties in cases involving FRAND-assured SEPs. The U.S. Court of Appeals for the Federal Circuit in *Ericsson, Inc. v. D-Link Systems, Inc.* held that "[t]here is no *Georgia-Pacific*-like list of factors that district courts can parrot for every case involving [F]RAND-encumbered patents."[46] Instead, courts must instruct the jury only on factors that are relevant to the record developed at trial, and must instruct the jury on the actual FRAND commitment at issue. Because each technology and market is different, the evidence considered and the weight placed upon each factor will vary based upon the circumstances.

In constructing the hypothetical negotiation, U.S. courts consider evidence of market factors that the negotiating parties would have considered in determining the royalty rate. Often comparable licenses are the best available evidence of the market value of the patent. Accordingly, the Federal Circuit recently held in *Ericsson v. D-Link* that evidence about comparable licenses based upon the end product should properly be considered by the jury in determining patent damages. The court reasoned that "[m]aking real world, relevant licenses inadmissible… would often make it impossible for a patentee to resort to license-based evidence."[47] Indeed, as a practical matter, most licenses in many high-tech markets, including smartphones, are negotiated on a patent portfolio basis using the end-user device as the royalty base. A number of considerations may dictate private parties' selection of a royalty base in a freely negotiated license agreement. Industry practice and the convenience of the parties is one such consideration; other commercial dealings between the parties is another.

The Federal Circuit also explained that, while prior licenses "are almost never perfectly analogous to the [licenses at issue in a later] infringement action," which "generally goes to the weight of the evidence, not its admissibility."[48] For example, allegedly comparable licenses may cover more patents than are at issue in the current action, or include cross-licensing terms, or cover foreign intellectual property rights, or be calculated as some percentage of the value of a multi-component product. "Testimony relying on [comparable] licenses must account for such distinguishing facts when invoking them to value the patented invention."[49] When considering comparable licenses, it is also important to consider factors such as the circumstances, timing, and relative bargaining position of the parties to those licenses. For example, a license entered when the commercial viability of the technology is still uncertain will, in general, provide for a lower royalty than a license entered into when the commercial viability of the technology has been established or has increased.

[46] 773 F.3d 1201, 1235 (Fed. Cir. 2014).
[47] *Id.* at 1228.
[48] *Id.* at 1227.
[49] *Id.*

With respect to the appropriate royalty base, as the U.S. Court of Appeals for the Federal Circuit recently explained in *Ericsson v. D-Link*, the "smallest salable patent practicing unit" (henceforth "SSPPU") approach was created as an evidentiary rule "to help our jury system reliably implement the substantive statutory requirement of apportionment of royalty damages to the invention's value."[50] The SSPPU approach does not impose limitations upon private arms-length negotiations in the market place. The court went on to explain that:

> Logically, an economist could do this [apportionment] in various ways—by careful selection of the royalty base to reflect the value added by the patented feature, where that differentiation is possible; by adjustment of the royalty rate so as to discount the value of a product's non-patented features; or by a combination thereof. The essential requirement is that the ultimate reasonable royalty award must be based on the incremental value that the patented invention adds to the end product.[51]

Importantly, for some technology, using the smallest component or device as the royalty base may under- or over-value the technology. For example, some technology may technically be implemented by a single component part, yet its value to the device and to consumers may exceed the value of the component itself, so that using an appropriately apportioned end-user product price as the royalty base may provide a more accurate means to value the technology at issue.

Moreover, the value of a portfolio of SEPs to a particular licensee also may vary depending upon the final product in which the licensee incorporates the technology. For example, a given portfolio of SEPs may deliver very different value to a mobile infrastructure manufacturer as compared to a handset maker or a network operator.

There are a number of considerations that may dictate the parties' selection of a royalty base in a freely negotiated license agreement. Industry practice and the convenience of the parties are two such considerations; other commercial dealings between the parties may also affect their negotiation. In order to reduce administrative costs, a royalty base is often selected to allow for easy monitoring or verification of the number of units sold; end product prices are often chosen for these reasons. Indeed, as a practical matter, we have found that most licenses in many high-tech markets, including smartphones, are negotiated on a patent portfolio basis using the end-user device as the royalty base.[52]

We also note that the Antitrust Division of the U.S. Department of Justice (henceforth "DOJ") issued a Business Review Letter on February 2, 2015, in response to a request by the Institute of Electrical and Electronics Engineers (henceforth "IEEE") that addressed the recommended use of the SSPPU approach.[53] Most important for the question at hand, in its letter, the DOJ correctly recognized that its

---

[50] *Id.* at 1226.

[51] *Id.*

[52] *See* Layne-Farrar & Wong-Ervin, *Ericsson*, *supra* note 16.

[53] Ltr. from Renata B. Hesse, Acting Asst. Att'y Gen., U.S. Dep't of Justice, to Michael A. Lindsay, Dorsey & Whitney (Feb. 2, 2015), http://www.justice.gov/sites/default/files/atr/legacy/2015/02/02/311470.pdf.

> task in the business review process is to advise the requesting party of the Department's present antitrust enforcement intentions regarding the proposed conduct. It is not the Department's role to assess whether IEEE's policy choices are right for IEEE as a standards-setting organization (SSO). SSOs develop and adjust patent policies to best meet their particular needs. It is unlikely that there is a one-size-fits-all-approach for all SSOs, and, indeed, variation among SSOs' patent policies could be beneficial to the overall standards-setting process. Other SSOs, therefore, may decide to implement patent policies that differ from [the IEEE's policy].[54]

In other words, the DOJ did not endorse the SSPPU approach as a requirement for all SDOs, and certainly did not suggest that a patent holder's failure to base a royalty on the SSPPU would constitute an antitrust violation; it concluded only that the IEEE's adoption of its preferred approach did not violate U.S. antitrust laws. The DOJ further noted that the IEEE's Policy itself merely recommends the use of the SSPPU approach, but "does not mandate" its use by IEEE members as the only correct royalty base.[55]

Lastly, with respect to concerns about so-called "royalty stacking," the aggregate royalty should be considered, if at all, only when there is evidence that it would have a severely adverse effect upon the product market, or at a minimum substantially restrict output. Some claim that devices such as mobile phones, which implement thousands of patents, are subject to royalty stacking. The evidence, however, is not consistent with these theoretical claims. For example, a recent empirical study shows that, contrary to the predictions of the royalty stacking theory, between 1994 and 2013, the non-quality adjusted average selling price of a mobile device fell 8.1% per year on average; the number of devices sold each year rose 62 times or 20.1% per year on average; the number of device manufactures grew from one in 1994 to 43 in 2003; and since 2001, concentration fell consistently and the average gross margin of SEP holders remained constant.[56]

As the U.S. Court of Appeals for the Federal Circuit explained in *Ericsson v. D-Link*, the burden is on the implementer (or, in an excessive pricing enforcement action, the agency) to provide evidence establishing the actual cumulative royalty, and that royalty must be assessed to determine whether it is excessive.[57] The court of appeals rejected the approach taken by some U.S. first instance courts of considering the aggregate royalties that would apply if one assumed that all SEP holders charged the same or similar rates. The problem with that approach is that not all patents are created equal and FRAND rates should reflect the value of the particular SEPs at issue. In addition, many licensees do not pay cash royalties for

---

[54] *Id.* at 1–2.

[55] *Id.* at 12–13.

[56] Alexander Galetovic & Kirti Gupta, *Royalty Stacking and Standard Essential Patents: Theory and Evidence from the World Mobile Wireless Industry* (Stanford Univ. Hoover Ins. Working Grp. on Intellectual Prop., Innovation, and Prosperity, Working Paper Series No. 15012, 2015), http://hooverip2.org/wp-content/uploads/ip2-wp15012-paper.pdf.

[57] *Ericsson*, 773 F.3d 1201, 1234 (Fed. Cir. 2014).

every SEP. Instead, there may be cross-licenses or other business relationships that allow for royalty-free exploitation of some SEPs.

There are several other important principles to keep in mind. First, it is important to distinguish between, on the one hand, an aggregate royalty that reflects the cumulative value of the various SEPs included in a given standard and, on the other hand, an aggregate royalty burden that includes at least some supra-FRAND rates, i.e., individual hold-up rates. The former is simply the cost of making products that benefit from valuable IP, analogous to any other cost of doing business. For example, automakers face an aggregate input cost covering all of the many components needed to produce a car. There is nothing inherently anticompetitive in needing multiple inputs to produce a particular good, nor in each of those input suppliers charging the market price for its contribution.[58]

Second, proper apportionment can eliminate the risks of both hold-up and royalty stacking. As long as the inputs for multi-component products are priced according to the value of each patent's contribution to the end product, no SEP holder can be faulted for either hold-up or stacking. Proper apportionment is a reasonable means to accomplish this goal.[59]

Third, it is critical to distinguish between the number of SEPs and the number of SEP holders. Given the prevalence of portfolio licensing, it is the number of SEP holders and not the number of SEPs that is relevant. Even if licenses for 1,000 SEPs were required to implement a given standard, if all of those SEPs were held by a single entity that licensed on a portfolio basis, there would be no stack at all.[60]

Fourth, for a variety of reasons, not all SEP holders seek license payments. As the Federal Circuit pointed out in *Ericsson v. D-Link*, "[t]he mere fact that thousands of patents are declared to be essential to a standard does not mean that a standard-compliant company will necessarily have to pay a royalty to each SEP holder."[61]

Fifth, one of the assumptions underlying the 'Cournot complements problem' (the theory upon which the concern with royalty stacking is based) is that each input supplier will price its inputs without regard to the prices charged for other needed inputs.[62] But there is no reason to assume that will necessarily be the case in a standard-setting context. For example, SEP holders will be cooperating with one another (and with all other member of their standard setting organization) in the development of the standard, and are therefore likely to know what patents are

[58]Layne-Farrar & Wong-Ervin, *Ericsson*, *supra* note 16, at 4–5.

[59]*Id.* at 5.

[60]*Id.* at 6.

[61]773 F.3d at 1234.

[62]Augustin Cournot, Researches into the Mathematical Principles of the Theory of Wealth 99–116 (Nathaniel T. Bacon trans., MacMillan Co. 1897) (1838); *see also* Bruce H. Kobayashi, *Does Economics Provide a Reliable Guide to Regulating Commodity Bundling by Firms? A Survey of the Economic Literature,* 1 J. Competition L. & Econ 707, 714 (2005).

expected to be asserted and by whom. As a result, there is no reason to presume that SEP holders will set rates without regard to the full complement of known SEPs.[63]

7 Non-disclosure Agreements and Transparency

To our knowledge, no U.S. court has held that including an NDA in a patent license is an antitrust violation. This is not surprising given the obvious economic benefits of an NDA to the parties entering into a patent license. Because patent licenses often include the confidential business information of both the licensor and the licensee, and procompetitive licensing depends critically upon the ability of the parties to negotiate without fear that sensitive information will be revealed to non-parties, NDAs are an essential safeguard. Accordingly, in *Ericsson v. Intex*, the Delhi High Court concluded that including an NDA is legitimate and a "sine qua non in every licensing deal, particularly in patent licensing negotiations."[64]

Given that the purpose of antitrust law is to protect the competitive process and not individual competitors, it is difficult to see how including NDAs in a license could amount to an abuse of dominance. To the extent the antitrust theory of harm relating to NDAs is that their inclusion in licenses undermines the "non-discriminatory" commitment in the FRAND license, an antitrust remedy is inappropriate and unnecessary. The FRAND commitment is a contract and failure to perform that contract warrants contract remedies. There is no reason to impose an antitrust sanction for the inclusion of one contract term in order to facilitate performance with another. That would be tantamount to imposing an antitrust duty to risk disclosing to rivals one's confidential and sensitive business information.

For the same reasons, we disagree that cross-licensing and patent pooling require transparency for royalty rates to be fair and reasonable. For the vast majority of cases, the parties rely upon the contracting process to obtain information needed to enter into a license agreement. In the event of a dispute over royalties, the parties can use discovery to obtain under a protective order, which balances the interests of transparency and confidentiality, any additional information they may need regarding cross-licenses or patent pooling.

Moreover, the "nondiscriminatory" element of a FRAND commitment does not require licensing terms, including price, to be the same for each licensee. Instead, depending upon the specific SDO's IPR Policy at issue, the "nondiscriminatory" element is typically about access to essential patents, not the specific terms of a

[63]Layne-Farrar & Wong-Ervin, *Ericsson*, *supra* note 16, at 5.

[64]*Telefonaktiebolaget LM Ericsson v. Intex Techs. (India) Ltd.*, I.A. No. 6735/2014 in CS(OS) No.1045/ 2014 ¶ 138 (Mar. 13, 2015), http://lobis.nic.in/ddir/dhc/MAN/judgement/16-03-2015/MAN13032015S10452014.pdf.

license.[65] Or, as one judge has explained, "[t]he FRAND nondiscrimination requirement prohibits 'unfair discrimination,' but it does not require uniform treatment across licensees, nor does it require the same terms for every manufacturer or competitor."[66]

Whether discriminatory licensing—including FRAND licensing—is anticompetitive should be determined by an effects-based analysis that recognizes: (1) discriminatory licensing can serve legitimate, procompetitive ends and enhance consumer welfare[67]; and (2) price discrimination helps a firm with fixed costs to recover its outlays and is sometimes essential if the firm is to recover those outlays.[68] Indeed, an important aspect to consider in evaluating licensing discrimination as compared to price discrimination for physical goods is the nature of IP development. The innovation process typically involves large upfront investments in research and development yet very low marginal costs for implementation. Economists have observed that price discrimination can be an important mechanism for recovering fixed costs under these circumstances.[69]

[65] *See, e.g.*, Guidelines to the Intellectual Property Rights Policy of the Telecommunications Industry Association 5 (Mar. 2005), http://www.tiaonline.org/sites/default/files/pages/IPRGuidelines_edition1_companion_to_4th_ed_engmanual_0.pdf ("The term 'non-discriminatory' does not mean or imply that licensing terms must be the same for all applicants. Discrimination and difference are not the same. It is understood that the process of license negotiation and the components of consideration between parties can vary substantially yet be fair. The term 'non-discriminatory' implies a standard of even-handedness. An example of conduct that would constitute discrimination is a willingness to license all applicants except for competitors of the licensor."). *See also generally* Anne Layne-Farrar, *Proactive or Reactive? An Empirical Assessment of IPR Policy Revisions in the Wake of Antitrust Actions* (Dec. 22, 2013), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2384724.

[66] Initial Determination, Administrative Law Judge David P. Shaw, *Certain Wireless Devices with 3G Capabilities and Components Thereof*, Investigation No. 337-TA-800 at 432 (Int'l Trade Comm'n June 28, 2013).

[67] *See, e.g.*, Anne Layne-Farrar, *Nondiscriminatory Pricing: Is Standard Setting Different?*, 6 J. Competition L. & Econ. 811, 811, 814–17 (2010) (the existing literature on price discrimination in traditional markets for goods and services and on licensing intellectual property establishes that price discrimination is not necessarily harmful, and in some cases can even increase consumer welfare; most IP licensing is characterized by 'discrimination' in that rates and terms tend to differ across licensees; proof of market power must remain the first step in any inquiry on allegations of anticompetitive IP licensing discrimination; and as of yet, no widely applicable benchmarks or rules for distinguishing harmful from beneficial or non-harmful licensing discrimination have emerged, meaning that a careful, quantitative effects-based analysis remains the best approach.).

[68] *Id.* at 827 (citing William J. Baumol & Daniel G. Swanson, *The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power*, 70 Antitrust L.J. 661 (2003)).

[69] *Id.* at 827 & n.53–54 (collecting cites).

8 Settlement and Remedies for Disputes Involving FRAND-Assured SEPs

Particularly in cases when a patent owner has a large worldwide portfolio of SEPs, international arbitration on a portfolio basis is likely the most efficient and realistic means of resolving FRAND disputes. Otherwise, the patent owner would be required to file lawsuits around the world to adjudicate royalties on a patent-by-patent basis.

The availability of injunctive relief is an essential remedy. First, FRAND-assured SEP holders need the credible threat of an injunction if they are to recoup the value added by their patents and maintain their incentives to innovate. Second, when an injunction is unavailable, an unscrupulous or judgment-proof infringer can force the SEP holder to accept a below-FRAND rate.[70] Specifically, if the worst penalty an SEP infringer faces is not an injunction but merely paying, after an adjudication, the FRAND royalty it should have agreed to pay when first asked, then reverse hold-up and hold-out give implementers a profitable way to defer payment—or if they are judgment proof, to avoid payment altogether—and puts SEP holders at a disadvantage that reduces the rewards to, and therefore can only discourage, both innovation and participation in standard setting. Without injunctive relief, hold-outs may actually reduce the gains from innovation and standardization.

9 Conclusion

Indian policy makers and regulators seem prepared to make a number of radical changes to FRAND licensing in response to perceived problems. The empirical evidence, however, does not suggest that FRAND licensing practices are anti-competitive or otherwise in need of regulatory intervention. Instead, the thriving nature of the wireless market suggests caution prior to disrupting the carefully balanced FRAND ecosystem. The evidence makes clear the burden is appropriately allocated to the proponents of additional intervention to demonstrate that any particular intervention would improve welfare.

[70]Bernhard Ganglmair et al., *Patent Hold Up and Antitrust: How a Well-Intentioned Rule Could Retard Innovation*, 60 J. INDUS. ECON. 249 (2012) (finding that the innovator's and the implementer's hold-up problems are not directly comparable as it is possible for negotiations to occur prior to the implementer's investment in the standard, but negotiations always occur after the innovator had made its investment in research and development).

Chapter 9
CCI's Investigation of Abuse of Dominance: Adjudicatory Traits in Prima Facie Opinion

Indranath Gupta, Vishwas H. Devaiah and Dipesh A. Jain

1 Introduction

This chapter is premised on the recent judgement delivered by the Delhi High Court (henceforth "DHC") in *Ericsson v CCI.*[1] This judgement looked at the jurisdiction of the Competition Commission of India (henceforth "CCI") to investigate alleged abuse of dominance of a holder of standard essential patent (henceforth "SEP"). The jurisdiction of CCI, as suggested by the DHC is independent of any matter pending in a court of law and therefore, the CCI can continue to investigate abuse of dominance complaints.

This chapter is a revised version of Working Paper Series No. 17002, which has greatly benefitted from presentation and discussion at 'The Law and Economics of Patent Systems: A Conference of the Hoover Institution Working Group on Intellectual Property, Innovation, and Prosperity' held on January 12–13, 2017, at the Hoover Institution of Stanford University and comments received from Mr. Richard Sousa, Research Fellow and Member of Hoover IP^2, Working Group Steering Committee, Stanford University.

[1] *Telefonaktiebolaget LM Ericsson (Publ) v. Competition Commission of India*, Case W.P.(C) 464/2014 & CM Nos.911/2014 & 915/2014 and W.P.(C) 1006/2014 & CM Nos.2037/2014 & 2040/2014 dt. 30.03.2016 (hereinafter *Ericsson v CCI*).

I. Gupta (✉) · V.H. Devaiah
Jindal Global Law School, O.P. Jindal Global University, Sonipat, India
e-mail: igupta@jgu.edu.in

V.H. Devaiah
e-mail: vhdevaiah@jgu.edu.in

D.A. Jain
Jindal Initiative on Research in IP and Competition (JIRICO), O.P. Jindal Global University, Sonipat, India

A. Bharadwaj et al. (eds.), *Complications and Quandaries in the ICT Sector*,
https://doi.org/10.1007/978-981-10-6011-3_9

In the backdrop of an investigation concerning alleged abuse of dominance in the ICT sector, this chapter observes the process adopted by CCI to initiate such investigation.[2] The Supreme Court of India and other High Courts, although in non-ICT sectors, have provided some guidelines and interpretation about the nature of investigation undertaken by the CCI at the initial stage. The Courts in India have suggested that the process of initiating an investigation is merely a departmental inquiry and not adjudicatory in nature. Therefore, there is no need for the CCI to notify or hear any of the parties involved. The chapter shows that the practice adopted by CCI is different from what has been suggested by the Courts. Careful scrutiny of orders delivered by CCI in the last three years (2013–16) elaborates the ground realities that although there is no statutory requirement of informing the parties, increasingly parties are notified, and they have been allowed to present their submissions at the stage of deciding the course of an investigation. Relevant facts provided by the parties at the initial stage, including the complainant and the opposite party, are recorded, analyzed and relied upon at the time of deciding whether a particular complaint should be further investigated by the Director General (henceforth "DG") (Section 26(1)) or dismissed altogether (Section 26(2)).

2 *CCI v Ericsson*: The Jurisdiction of CCI Upheld by Delhi High Court

The recent judgement involving *CCI v Ericsson* suggested a possible conflict and tension between the existing Patents and Competition regime in India.[3] In their argument, Ericsson contended that the existing Patents Act in India can handle all existing and future disputes involving an SEP holder and the licensee who is and will be using the patented technology.[4] The Patents Act, which has already the status of a special legislation, would eventually override the provisions (Competition Act) of a general legislation. With these arguments in place, Ericsson

[2]For a detailed discussion on issues relating to jurisdiction and competition authorities, *see* SHUBHA GHOSH & DANIEL SOKOL, *FRAND IN INDIA*, COMPETITION POLICY AND REGULATION IN INDIA: A ECONOMIC APPROACH (Forthcoming).

[3]*Ericsson v CCI*. In about three cases involving Ericsson in India it was suggested that Ericsson failed to offer the use of SEPs on FRAND terms. FRAND commitment for Ericsson arises under clause 6 of the European Telecommunication Standard Institute (ETSI) IPR policy.

[4]Patents Act, 1970, Chapter XVI covers working of patents, compulsory licensing and revocation of patents. § 84(7) of the Patents Act includes grant of a compulsory licence in the case where a patent holder refuses to grant licences on reasonable terms. Ericsson cited cases like (*General Manager Telecom v. M. Krishnan & Anr.*, JT 2009 11 SC 690; *Chairman, Thiruvalluvar Transport Corporation v. Consumer Protection Council*, 1995 2 SCC 479). Ericsson also suggested that § 4 of the Competition Act, 2002 was not applicable with regard to licensing of SEPs. This was because Ericsson was not an 'enterprise' as per § 2(h) of the Act. Further licensing of patents did not amount to the sale of goods and services and as a result would not fall within the ambit of the Competition Act.

filed a writ petition under Article 226 of the Indian Constitution before the DHC. This writ petition challenged the role of CCI in a situation where there is a conflict between an SEP holder and the user of such patented technology. Upon receiving a complaint, the CCI under Section 26(1) of the Competition Act is empowered to initiate a detailed investigation particularly questioning alleged abuse of dominance of the holder of patented technology.

As a response to the writ petition, the CCI took the plea that any order of detailed investigation, against a holder of patented technology, is merely administrative in nature. Owing to its administrative nature, there is no scope of judicial review under Article 226 of the Indian Constitution.[5] In the process of substantiating their argument, CCI referred to the Supreme Court's decision in *Competition Commission of India v. Steel Authority of India Ltd. & Anr*.[6] While judging a similar application of judicial review under Article 226 of the Indian Constitution, the Supreme Court in the *Steel Authority of India* case suggested that an order initiating a detailed investigation by the DG under Section 26(1) of the Competition Act was an administrative order and therefore, would not come within the ambit of an adjudicatory decision.[7] As a response to the plea taken by Ericsson in the DHC case, the CCI suggested that the provisions of both Acts i.e. The Patents and the Competition Act may be applied in a matter involving patent infringement and abuse of dominance without giving rise to any conflicting situation.[8]

The DHC agreed with CCI's line of argument and suggested that investigation undertaken by CCI concerning alleged abuse of dominance of a holder of patented technology may continue. This is despite the fact that a patent infringement matter is pending at the DHC. As a basis to their argument, the DHC suggested that both Acts have different objectives. With the objective of resolving competition issues in India, the Competition Act may continue to work independently of the Patent Acts. In fact, both legislations can act supplementary to each other.[9]

As to the scope of Article 226, although the DHC suggested that the scope is wide, there are limitations as to the extent Courts can be involved in deciding its application.[10] The question of judicial review would arise only if the CCI has reached to the prima facie opinion concerning alleged abuse of dominance in a

---

[5]Following § 60 of the Act with reference to (*Union of India v. Competition Commission of India*, AIR 2012 Del 66; *M/S Fair Air Engineering Pvt. Ltd. v. N K Modi*, 1996 6 SCC 385) the provision of competition law will prevail in case of inconsistency with any other law.

[6]((2010) 10 SCC 744).

[7]*Union of India v. Competition Commission of India*, AIR 2012 Del 66; *M/S Fair Air Engineering Pvt. Ltd. v. N K Modi*, 1996 6 SCC 385.

[8]*Gujarat Urja Vikash Nigam Ltd. v. Essar Power Ltd*., 2008 4 SCC 755.

[9]*Ericsson v CCI*, at 165.

[10]*Telefonaktiebolaget LM Ericsson (Publ) v. Competition Commission of India*, Case W.P.(C) 464/2014 & CM Nos.911/2014 & 915/2014 and W.P.(C) 1006/2014 & CM Nos.2037/2014 & 2040/2014 dt. 30.03.2016; *Id*., at 68; *Dwarka Nath v. Income Tax Officer*, 1965 57 ITR 349 SC [70]; *State of A.P v. P.V Hanumantha Rao*, 2003 10 SCC 121; *Tata Cellular v. Union of India*, AIR 1996 SC 11.

malafide way. However, a party filing a petition would not be denied a remedy under Article 226 only because of the existence of an alternative remedy.[11]

The outcome of this judgement is important for more than one reason. It was the first instance when an Indian court was asked to decide on the role of CCI in a crucial matter relating to the high-priority ICT sector. There could be possible repercussion on the overall growth and development of the ICT sector, however, this chapter is not going to delve into assessing such repercussion. For the purpose of this chapter, we are going to concentrate on the developments surrounding orders of investigation by CCI in cases relating to abuse of dominance. We will investigate the ground realities as to the practice of CCI at the stage of communicating detailed orders of investigation based on complaints received under the Competition Act. Towards that end, relevant investigation orders and the processes followed in cases covering last three years have been considered.[12]

3 Initial Investigation Orders by CCI

The CCI has been set up under Section 7 of the Competition Act. It consists of a Chairperson and six other members.[13] The DG who is appointed under Section 16 steers the process of investigating abuse of dominance inquiry initiated by the CCI. Duties and powers of the CCI have been assigned under Chapter IV of the Competition Act.[14]

3.1 Abuse of Dominance Investigation Under the Competition Act

The complaint under Section 19(1), which precedes the process of investigation by the Commission (Chairperson and six members), may originate from either an informant, the central government, state government, statutory authority or as a

[11]*Telefonaktiebolaget LM Ericsson (Publ) v. Competition Commission of India*, Case W.P.(C) 464/2014 & CM Nos.911/2014 & 915/2014 and W.P.(C) 1006/2014 & CM Nos.2037/2014 & 2040/2014 dt. 30.03.2016 [81].

[12]For the purpose of this chapter, all the relevant orders made available by CCI on its website under the heads 'Section 26(1)' and 'Section 26(2)' passed between (i) 1st April, 2013 to 31st March, 2014; (ii) 1st April, 2014 to 31st March, 2015; and (iii) 1st April, 2015 to 31st March, 2016 were considered. Some of the orders were combined orders dealing with multiple cases. Therefore, in this chapter the number of cases have been mentioned instead of the number of orders.

[13]Competition Act, 2002, § 8.

[14]*Id.*, §18-39.

Table 1 Source of information/complaint

Years	References received from central/state government/ statutory Section 19(1)(b) authorities		Information received under Section 19(1)(a) by the informant	
	Under 26(1)	Under 26(2)	Under 26(1)	Under 26 (2)
2013–14	0		85	
	0	0	17	68
2014–15	4		80	
	0	4	11	69
2015–16	3		104	
	3	0	9	95
	7		269	

As per the authors' calculation of 26(1) and 26(2) Orders available on CCI's website for the years 2013–14, 2014–15 and 2015–16. All the relevant orders passed by CCI states the source of information/complaint (19(1)(a) and 19(1)(b)), and the same have been relied upon

result of a *suo moto* action taken up by the Commission.[15] Upon receiving a complaint, the Commission would decide on a prima facie case of abuse of dominance.[16] Based on the prima facie reading of the complaint the Commission may order the DG to initiate a detailed investigation (by an order under Section 26(1)) or dismiss the complaint altogether (by an order under Section 26(2)) under the Competition Act.[17]

Table 1 represents all cases which were disposed of by passing orders either under Section 26(1) or Section 26(2). It suggests that majority of the complaints have been received from the informant. While the other source of complaints continue to be less, there is an extraordinary reliance on complaint filed by informants. The number of further orders of detailed investigation to the DG is lot less than the complaints that have been dismissed.

In the last three years the complaints have been mostly filed by individuals and companies of Indian origin. There is however a decrease in such complaints with the number of complaints slowly increasing from governmental agencies.[18] The parties against whom such complaints have been made are mostly persons and companies of Indian origin, however, there is a steady increase of complaints against foreign companies for abuse of dominance as well.[19]

[15]For the purpose of this chapter we have not considered the suo moto actions taken by the commission; *Id*., §19; Competition Commission of India (General) Regulations, 2009, Regs 10-13, 23 & 49; CCI, *How to File Information?*, http://cci.gov.in/sites/default/files/cci_pdf/HowToFileInformation.pdf.

[16]Competition Act, § 3 & 4 (deal with prohibition of anti-competitive agreements and prohibition of abuse of dominant position respectively).

[17]Decision based on § 26(2) is appealable, Competition Act, 2002, § 53B (1) & 53A (1) (a).

[18]Figure 1.

[19]*Id*.

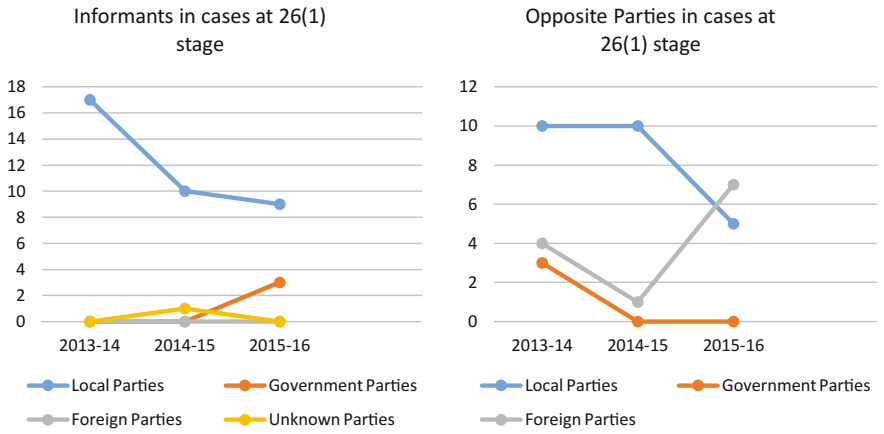

Fig. 1 Trend of the nature of Parties in cases before CCI (The parties have been classified as Local, Foreign, Government and Unknown. Local parties are individuals of Indian nationality and companies registered in India. Companies such as AIR India, GAIL, NOIDA (state run entities) have been categorised as local parties. Parties have been categorized as foreign if one of the parties is a foreign entity. Departments of Indian government have been categorised as Government parties. In few instances government has been made a proforma party, and therefore classification as Government party has been disregarded. Anonymous and XYZ informants have been classified as Unknown parties.)

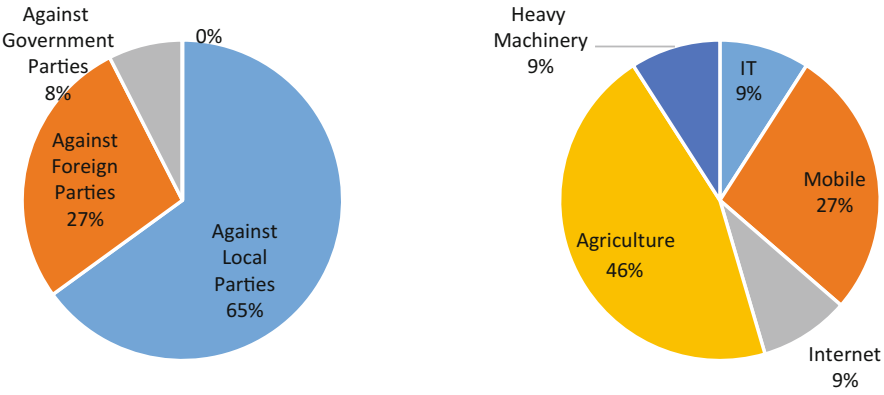

Fig. 2 Investigations against foreign parties and its affected industries

The orders suggesting further investigations against foreign companies have been in the range of 27%, while 65% of the total number of orders of investigation have been against persons and companies of Indian origin.[20] Most investigations against foreign companies have been in the agricultural and the mobile phone industry.[21]

The Competition Act would not formally require the Commission to notify the informant or the opposite party or any other person before passing a formal order of investigation to the DG or at the time of dismissing a complaint.[22] This non-requirement, of course would not stop the Commission to call 'any person' or to call for any material that would help in deciding the prima facie case of abuse of dominance.[23]

3.2 *Prima Facie Order of Investigation: Guidelines from Non-ICT Cases*

The Supreme Court in the *Steel Authority of India* judgement has given us some guidance about the nature of a prima facie order of investigation.[24] Following the existing structure of complaint under the Competition Act (Section 19(1) read along with Section 26(1)), Jindal Steel & Powers Ltd (henceforth "JSPL"/"the informant") filed a complaint against Steel Authority of India (henceforth "SAIL"/"the opposite party").[25] As a follow-up to the complaint received, the Commission asked the informant and the opposite party to furnish additional information.[26] Upon

[20]Figure 2.

[21]Figure 2.

[22]*Competition Commission of India v Steel Authority of India Ltd. and Another*., (2010) 10 SCC 744 [11].

[23]Under regulation 17(2), the Commission has the power to call not only the informant but any party including the affected party, Competition Commission of India (General) Regulations, 2009, Regs. 17 (2) & 44 (1).

[24]*Competition Commission of India v Steel Authority of India Ltd. and Anr*., (2010) 10 SCC 744.

[25]JSPL invoked the provisions of § 19 read with § 26 (1) of the Competition Act, 2002 by providing information to the CCI alleging that SAIL had inter alia entered into an exclusive supply agreement with Indian Railways, for supply of long rails. JSPL alleged that SAIL had abused its dominant position in the market and deprived others of fair competition and therefore, acted contrary to § 3 (4) and 4 (1) of the Competition Act, Case No. 11 of 2009, CCI.

[26]After receiving the complaint, the Commission had a meeting with representatives of JSPL and also fixed a conference with representatives of SAIL. On 19th November, 2009 a notice was issued to SAIL enclosing all information submitted by JSPL directing SAIL to submit its comments by 8th December, 2009 in respect of the information received by the Commission. On 8th December when the matter was heard, SAIL wanted an extension of time by six weeks to file its comments and for conference with the Commission. However, without hearing SAIL, the Commission passed an order under Section 26(1) on 08.12.2009 directing the DG to investigate the case (2010) 10 SCC 744 [8]; Order dated. 20.12.2011, Case No. 11/2009, CCI [3], available at https://indiankanoon.org/doc/64217260/.

much deliberation, which included consideration of relevant records, hearing the representatives of JSPL, the Commission found a prima facie case of abuse against SAIL and extended the matter to the DG for a detailed investigation.[27] Contesting the appeal filed by the opposite party before the Competition Appellate Tribunal (henceforth "COMPAT"), the Commission suggested that the order instructing the DG to conduct an investigation "…was a direction simpliciter to conduct investigation and thus was not an order appealable within the meaning of [s]ection 53A of the [Competition] Act".[28] The COMPAT held that the appeal was maintainable owing to the principles of natural justice.[29]

The Supreme Court of India was entrusted with the task of deciding whether the appeal was maintainable in a case where the DG was asked to investigate abuse of dominance. While delivering the judgement, the Supreme Court reflected upon the prima facie order of investigation.

1. *The nature of order: departmental inquiry and not adjudicatory*

The Supreme Court was of the opinion that the prima facie order of investigation from the Commission to the DG was nothing more than a departmental inquiry and it is inquisitorial in nature.[30] This order would not be more than an administrative action and not adjudicatory in nature.[31] Regardless of nature of the order, the Commission at the time of framing its opinion and forwarding a case to the DG for

[27]*Ericsson v CCI*; (2010) 10 SCC 744 [8], Order dated 20.12.2011, Case No. 11/2009, Competition Commission of India, at 3, https://indiankanoon.org/doc/64217260/.

[28]Order dated 20.12.2011, *Case No. 11/2009*, Competition Commission of India [4], https://indiankanoon.org/doc/64217260/; (As per the Finance Bill, 2017, effectively from 26th May, 2017, the COMPAT has ceased to exist and NCLAT is now the Appellate Authority under the Competition Act, 2002,) Part XIV of Chapter VI of the Finance Act, 2017. Accordingly, § 2(ba) & 53A of the Competition Act; (2010) 10 SCC 744 [9].

[29]Competition Act, 2002, § 53A; SAIL also suggested that, since § 53A suggests that appeal is allowed on any direction issued or decision made or order passed by the Commission. The contention was that use of "or" in the provision would also include the direction of the Commission to the DG under § 26(1). Hence this direction would be appealable, (2010) 10 SCC 744 [29]. This argument was not considered by the Supreme Court. The court suggested that the Statute has clearly laid down under § 53A, the grounds of appeal and there, unlike § 26(2), § 26(1) has been omitted. It stated that the "..right to appeal is a creation of statute and it does require application of rule of plain construction. Such provision should neither be construed too strictly nor too liberally, if given either of these extreme interpretations, it is bound to adversely affect the legislative object as well as hamper the proceedings before the appropriate forum", (2010) 10 SCC 744 [35].

[30]"Investigating power granted to the administrative agencies normally is inquisitorial in nature", *Krishna Swami v Union of India* [1992] 4 SCC 605.

[31](2010) 10 SCC 744 [28].

further investigation should record the reasons.[32] Recording of reasons follow the traits of administrative law and do not depend on the stage of ongoing investigation.

The Supreme Court went on to suggest that the order of initiating a detailed investigation would not bring upon any civil consequences on the opposite party in question. This argument posed by Supreme Court was followed in a decision of the Madras High Court as well.[33] From the perspective of keeping an order of investigation confidential, the Supreme Court relied upon the application of Section 57 of the Competition Act read with regulation 35. The combination provides assurance that strict confidentiality procedures would be followed at the time of investigating any matter before the Commission.[34]

As a result, any order given under Section 26(1) to the DG to conduct detailed investigation is a departmental inquiry. This is unlike 26(2) where an appeal is maintainable as a follow-up action to the complaint dismissed by the Commission.[35]

2. *Notifying parties and application of natural justice*

Going by the interpretation of Section 26(1), the Supreme Court suggested that there was no formal requirement to notify the parties at a time when matters are being investigated upon at the preliminary stage.[36] This was in response to SAIL's claim suggesting that parties should be notified about the developments at the prima facie stage.[37] Unlike Section 26(2), there was no reason to make an assumption about the requirement of a notice. This is primarily because any such requirement would have been explicitly spelled out in the provision itself.[38] There exists a

[32]This is contrary to the situations where the Commission acts in the adjudicatory capacity. Competition Act, 2002, § 19, 20, 26, 27, 31, 33; (2010) 10 SCC 744 [24]; The court went on to say "…Even in a direction… the Commission is expected to [support his action] based on some reasoning … not detailed. [However] when "…decisions and orders, which are not directions simpliciter and determining the rights of the parties should be well reasoned." (2010) 10 SCC 744.

[33]*Chettinad International Coal v. The Competition Commission of India and others,* W.P.No.7233 of 2016, Madras High Court, Order dated 29.03. 2016; In this case a writ petition was filed questioning whether an order made under Section 26(1) can be challenged, [18]. Under Art. 226 of the Indian Constitution a writ remedy is an extra –ordinary power that is vested with the High Court that examine the correctness or orders passed by forums subordinate to it [21].

[34]Competition Act, 2002, § 57; Competition Commission of India (General) Regulations, 2009, Reg. 35.

[35](2010) 10 SCC 744 [28].

[36](2010) 10 SCC 744 [61].

[37](2010) 10 SCC 744 [53].

[38]*Id*. Another example is the requirement of notice under Reg. 14(7)(f) and Reg. 17(2). The secretary of the Commission is empowered to serve the notice of the date of the ordinary meeting of the Commission to consider the information or reference or document to decide if there exists a prima facie case, Competition Commission of India (General) Regulations, 2009, Reg. 14(7)(f); The Commission may invite the information provider and such other person as is necessary for the preliminary conference, Competition Commission of India (General) Regulations, 2009, Reg. 17 (2).

discretionary power with the Commission to notify parties by calling them at the prima facie stage, however that discretionary power does not become an:

> …absolute proposition of law that in all cases, at all stages and in all event the right to notice [a] hearing is a mandatory requirement of principles of natural justice… Different laws have provided for exclusion of principles of natural justice at different stages, particularly, at the initial stage of the proceedings and such laws have been upheld by this court. [Furthermore] such exclusion is founded on larger public interest and is for compelling and valid reasons, the courts have declined to entertain such a challenge.[39]

The non-requirement of notifying the parties connects with the nature of the inquiry at the initial stage. The act of forming prima facie opinion and passing onto the DG for detailed investigation has already been established as an administrative inquiry.[40] In order to handle complaints of abuse of dominance in an expeditious manner, the Supreme Court further suggested that there is no requirement of notice and following such step would not be violating the principle of natural justice.[41] The direction of investigation under 26(1) is merely a 'preparatory [step]' and not a 'decision making process'.[42]

Although the Supreme Court suggested that natural justice requirement need not be fulfilled at the prima facie stage, the Commission on its own accord did inform the opposite party about the complaint filed by the informant. In fact, the opposite party did file their response documents to the Commission. Going by the process followed, the Commission had even asked the informant to file additional information. Further, the Commission had given the informant some additional time to furnish them.[43] While the opposite party was asked to submit comments in response to the complaint filed by the informant, the opposite party's request to extend the time to file its comments was declined.[44]

It is evident that the overarching requirements of natural justice has been followed by the Commission i.e. notification and a chance to the opposite party to present its response—*Audi alteram partem*.[45] Even the Madras High Court referred

[39](2010) 10 SCC 744 [63].

[40]*Krishna Swami v Union of India* [1992] 4 SCC 605.

[41](2010) 10 SCC 744 [27].

[42]*Competition Commission of India v Steel Authority of India Ltd. and Anr*., (2010) 10 SCC 744.

[43](2010) 10 SCC 744 [8].

[44]*Gujarat Urja Vikash Nigam Ltd. v. Essar Power Ltd*., 2008 4 SCC 755.

[45]Audi Alteram partem states that a decision cannot stand unless the person directly affected by it was given a fair opportunity both to state his case and to know and answer the other side's case, *R v Chief Constable of North Wales Police, ex p Evans* (1982) 1 WLR 1155 (HL); An order which infringes a fundamental freedom passed in violation of the audi alteram partem rule is a nullity, *Nowabkhan Abbaskhan v State of Gujarat*, AIR 1974 SC 1471.

to the CCI's practise of hearing both parties at the preliminary stage.[46] Interestingly, the Madras High Court noted that the issue of natural justice was never raised and argued before it.[47] In fact, with the plea of natural justice in place the court could have decided the case in a different way.

The Supreme Court and other courts have clearly established that the order of detailed investigation can be passed onto to the DG without notifying the parties. It will be however interesting to observe the process followed by the Commission while handling prima facie orders of investigation.[48]

4 The Practice Followed by CCI in Prima Facie Orders and the ICT Sector

It is important to understand the extent of reliance on the information received from the informant as a part of the complaint. Of course, keeping just within the confines of a departmental inquiry and not hearing either the complainant or the opposite party would not be helpful to decide whether to proceed or dismiss the complaint altogether.

While the Supreme Court and the Madras High Court have talked about the statutory non-requirement of notice, the practice of the Commission has been generally different. In fact, there is enough evidence to suggest that at the prima facie stage the Commission in the last three years have informed at least one of the parties. There is a steady decrease in cases where none of the parties have been called at a stage of deciding the course of investigation. Starting with the trend of inviting only the complainant, there is an emerging trend of inviting the opposite party as well.[49] This trend is also true when complaints have been dismissed under Section 26(2). In the case of dismissed complaints, primarily the informant has been heard with a growing trend of both parties having been called in recent times.

So far, the three matters considered by the Commission in the ICT sector reflects a similar trend.[50] Regardless of not having a statutory requirement, the Commission

[46]*Chettinad International Coal v. The Competition Commission of India and others*, W.P.No.7233 of 2016, Madras High Court, Order dated. 29.03.2016.

[47]*Krishna Swami v Union of India* [1992] 4 SCC 605.

[48]The COMPAT which has now been dissolved in a recent matter in the same context suggested that "…the Commission cannot make detailed examination of the allegations contained in the information or reference, evaluate/analyse the evidence produced with the reference or information in the form of documents and record its findings on the merits of the issue relating to violation of Section 3 and/or 4 of the Act because that exercise can be done only after receiving the investigation report [from the DG]", *Gujarat Industries Power Company Limited v. CCI and GAIL*, Appeal No. 3 of 2016, COMPAT, Order dated 28.11.2016.

[49]Figure 3.

[50]Case No. 50/2013 pursuant to information filed by *Micromax Informatics Limited*, Case No. 76/2013 pursuant to information filed by *Intex Technologies (India) Limited*, Case No. 04 of

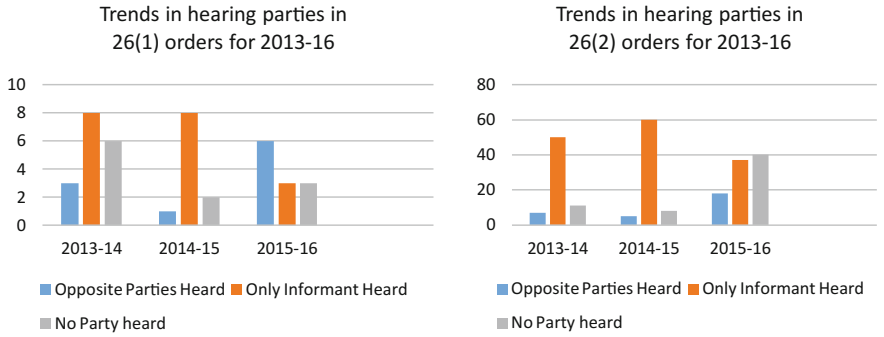

Fig. 3 Trends in hearing the parties by CCI at the stage of Sections 26(1) and 26(2) (For the purpose of this study, a party is considered to be heard if the respective order states the same or if in the title clause, the respective party is said to be present in person or represented by a legal representative. If an order refers to written statements then it has been presumed that the opposite party has been heard. Informant are considered of been heard if apart from the initial information the commission considers the additional information, facts or data placed on record by the informant)

subsequent to receiving complaints have accepted submissions from either the informant or from both parties.[51] The process adopted by the Commission provides a substantive route of inquiry, which goes beyond just deciding the course of an investigation based on a complaint.[52] By allowing submission of additional information and hearing advocates at the prima facie stage, the nature of departmental inquiry has changed considerably.[53] Even in the form, which is used for filing a complaint, there is a column for including name and address of the counsel or other authorized person.[54] Inclusion of these details is indicative of further opportunity provided to the parties who are involved in the complaint. Further, this form is not a result of a schedule and therefore, gives enough freedom to the Commission to engage with the parties at the prima facie stage.[55] Going by the indications, the process adopted by the Commission at the time of deciding the course of

(Footnote 50 continued)

2015 pursuant to information filed by *M/s Best IT World (India) Private Limited (iBall)*, all against *Telefonaktiebolaget LM Ericsson (Publ)*, Competition Commission of India.

[51]*Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013 [10]; *Case No. 76/2013*, Competition Commission of India, Order dated 16.01.2014 [10]; *Case No. 04 of 2015*, Competition Commission of India, Order dated. 12.05.2015, at 7.

[52]CCI, *How To File Information?*, http://cci.gov.in/sites/default/files/cci_pdf/HowToFileInformation.pdf.

[53]Infra 4.3 & Annexures; Competition Commission of India (General) Regulations, 2009, Reg. 17 (2) & 44 (1).

[54]CCI, *supra* note 55.

[55]Competition Commission of India (Procedure in regard to the Transaction of Business, etc.) Regulations, 2011, Form I in Schedule II.

investigation has somewhat become quasi-adjudicatory. This situation is different from the position adopted by the Supreme Court and the Madras High Court.

5 Information Considered at the Prima Facie Stage in ICT Sector

One of the earlier cases in this sector involved Micromax and Ericsson. Micromax filed a complaint against Ericsson alleging abuse of dominance under Section 19(1)(a).[56] Contrary to the requirement of licensing the patented technology, which has also become a standard, as per FRAND (fair, reasonable and non-discriminatory) terms, the complainant suggested that the royalty demanded by Ericsson was unfair, discriminatory, exorbitant and excessive.[57] Further, Micromax alleged that Ericsson divulged details of the infringed patents and terms of FRAND license only after Micromax had signed a non-disclosure agreement (henceforth "NDA").[58] According to Micromax, signing of an NDA also substantiated their claim that Ericsson was charging different rates of royalty and there was no uniformity in this regard.[59]

It was alleged that the method adopted by Ericsson to decide the rate of royalty was incorrect. Micromax suggested that this rate should be based on the chipset or the technology instead of the final value of a phone that uses such technology.

Through written submission Ericsson suggested that Micromax has been inconsistent in the whole process.[60] While they had agreed to pay royalty before the DHC, Micromax alleged unfair and exorbitant royalty rate before the CCI.[61] On an overall note Ericsson challenged the jurisdiction of the CCI and specifically suggested that fixing of royalty rates should not come under the realms of CCI. Further,

[56] *Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013.

[57] *See* SHUBHA GHOSH & DANIEL SOKOL, *FRAND IN INDIA*, COMPETITION POLICY AND REGULATION IN INDIA: A ECONOMIC APPROACH (Forthcoming); *Ericsson v CCI*; *Gujarat Urja Vikash Nigam Ltd. v. Essar Power Ltd*., 2008 4 SCC 755.

[58] *Ericsson v CCI*; Micromax made a request for details of the FRAND license in the month of July, 2011. A Non-Disclosure Agreement was executed on 16.01.2012. The terms of the FRAND licences were disclosed to the Micromax on 05.11.2012, *Id*., [4]; Ericsson thereafter on 4th March, 2013, filed a patent infringement suit, *Telefonaktiebolaget LM Ericsson (Publ) v Mercury Electronics & Another,* CS (OS) No. 442/2013, Delhi High Court. An ex parte interim order against Micromax was passed, *Telefonaktiebolaget LM Ericsson (Publ) v Mercury Electronics & Another,* CS (OS) No. 442 of 2013, Order dated. 06.12.2013. As per an interim arrangement Micromax had deposited 29.45 crores towards payment of royalty as on 31.05.2013, *Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013, at 7.

[59] *Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013, at 8.

[60] *Id.*

[61] *Telefonaktiebolaget LM Ericsson (Publ) v Mercury Electronics & Anr,* CS (OS) No. 442 of 2013, Order dated 19.03.2013; *Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013.

they noted that seeking an injunction due to infringement of a patent, which has also become an essential patent for a standard, is not a sign of abuse of dominance.[62]

As a part of the order, the Commission held that by virtue of the technology owned by Ericsson they would be in a dominant position as compared to present and prospective licensees.[63] The Commission in its order suggested that Ericsson had violated the agreed FRAND norms. This is because they did not contest the allegation that they were indulging in different rates of royalty. So far as the royalty base is concerned, the Commission selected patented technology over the final product (mobile phone).[64] The argument in the order suggested that "charging of two different license fees per unit phone for use of the same technology prima facie is discriminatory and also reflects excessive pricing vis-à-vis high cost phones".[65] Following these observations, the CCI ordered the DG to carry out detailed investigation.[66]

Similar to the Ericsson-Micromax, there was another order of investigation against Ericsson.[67] This time it involved Intex Technologies. The informant following similar arguments as in the Micromax order suggested that Ericsson used unfair licensing terms in their Global Patent Licensing Agreement (henceforth "GPLA").[68] They cited that the jurisdiction clause in GLPA was limited to the laws of Sweden.[69] Upon receiving the complaint Ericsson modified the jurisdiction clause to the laws of Singapore.[70] There was similar complaint about signing of an NDA agreement connected to the non-release of commercial terms, details of infringement and other licensing conditions.[71] Intex alleged issues of royalty stacking and patent hold-up in their complaint with a further claim of excessive and discriminatory pricing on Ericsson's part.[72] Ericsson suggested that they had broadly offered uniform royalty rate to all prospective licensees.[73] Strangely, the argument of an unwilling licensee posed by Ericsson against Lava, which was

[62]*Telefonaktiebolaget LM Ericsson (Publ) v Competition Commission of India & Another* W.P.(C) No. 464/2014.

[63]*Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013; Competition Act, § 3 & 4.

[64]CCI favored a royalty base based on smallest saleable patent practicing unit (SSPPU) as opposed to entire market value rule (EMVR).

[65]*Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013, at 17.

[66]*Id*., at 19 & 20.

[67]*Case No. 76/2013*, Competition Commission of India, Order dated 16.01.2014.

[68]*Id*., at 6.

[69]*Id*.

[70]*Telefonaktiebolaget LM Ericsson (Publ) v. Competition Commission of India*, Case W.P.(C) 464/2014 & CM Nos.911/2014 & 915/2014 and W.P.(C) 1006/2014 & CM Nos.2037/2014 & 2040/2014 dt. 30.03.2016 [13.2].

[71]*Case No. 76/2013*, Competition Commission of India, Order dated 16.01.2014, at 7.

[72]*Id*., at 8.

[73]*Id*., at 7.

accepted by the DHC, was not used before the CCI at the time of responding to the complaints made by either Micromax or Intex.[74]

The CCI took serious exception and suggested that "NDA thrust upon the consumers by the [opposite party] strengthens this doubt after NDA, each of the user of SEPs is unable to know the terms of royalty of other users."[75] This approach is against the "…spirit of… FRAND terms…".[76] The CCI also under similar grounds found a prima facie case of abuse of dominance against Ericsson in the *iBall* matter.[77]

There is no limitation on the kind of information that an informant can share with CCI as a part of the complaint. The standard form used for filing complaints includes: "Introduction/brief of the facts giving rise to filing of the information"; "Jurisdiction of CCI"; "Details of alleged contravention of the provisions of the Competition Act, 2002" and "Detailed facts of the case".[78] There are considerable debates surrounding the arguments adopted by the CCI at the time of initializing the investigation.[79] It is beyond the scope of this chapter to look at those debates.

The matters so far investigated upon by the CCI in the ICT sector are few in number. Further to the process adopted by CCI at the stage of deciding the course of investigation, there is a strong possibility that they may want to consider all relevant facts as a part of submission by an opposite party. As in other cases and following the trend, it is likely that in case of future complaints in the ICT sector, the Commission would listen to both the complainant and the opposite party at the prima facie stage. With increasing representations from the SEP holders, CCI would

---

[74]*Telefonktiebolaget LM Ericsson (Publ) v Lava International Ltd*, I.A. Nos.5768/2015 & 16011/2015 in CS(OS) No.764/2015, Judgment dated 10.06.2016; *Case No. 50/2013*, Competition Commission of India, Order dated 12.11.2013.; *Case No. 76/2013*, Competition Commission of India, Order dated 16.01.2014.

[75]*Case No. 76/2013*, Competition Commission of India, Order dated 16.01.2014, at 17.

[76]*Id.*

[77]*Case No. 04/2015*, Competition Commission of India, Order dated 12.05.2015.

[78]CCI, *supra* note 55.

[79]Gregory Sidak, *The Meaning of FRAND, Part I: Royalties*, 9(4) J. COMP'N. L & ECON. 931–1055 (2013); Mark Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 Texas L. REV. 1992 (2007); Kirti Gupta, *Technology Standards and Competition in the Mobile Wireless Industry*, 22 GEO. MASON L. REV. 865 (2014-2015); Kristian Henningsson, *Injunctions for Standard-Essential Patents Under FRAND Commitment: A Balanced, Royalty-Oriented Approach*, 47 INT'L. REV. INTELLECTUAL PROPERTY & COMP'N. L. 438 (2016); Anne Layne-Farrar, et al., *Preventing Patent Hold Up: An Economic Assessment of Ex Ante Licensing Negotiations in Standard Setting*, 37 AIPLA Q. J. 445 (2009); Gregory Sidak, *Injunctive Relief and the FRAND Commitment in the United States, in* CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW, VOL. 1: ANTITRUST AND PATENTS, (Jorge L. Contreras, (ed.), forthcoming 2017), https://www.criterioneconomics.com/docs/injunctive-relief-and-the-frand-commitment.pdf; Gregory Sidak *FRAND in India*, *in* CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW, VOL. 1: ANTITRUST AND PATENTS, (Jorge L. Contreras, (ed), forthcoming 2017), https://www.criterioneconomics.com/docs/frand-in-india.pdf.

have a range of information before issuing the detailed order of investigation. Looking beyond the shores of India we have certain guidelines emanating from *Huawei v ZTE*.[80] It essentially looks at the pre-licensing behaviour of both the licensor and licensee. To some extent these pre-licensing behaviour have been considered by the CCI at the prima facie stage and may be in future, provide additional guidance in assessing prima facie case of abuse of dominance.

6 Conclusion

It is difficult to estimate the outcome of an investigation initiated by CCI at a given instance when all relevant information have been provided. This is beyond the scope of this chapter. From what has been observed, CCI is willing to go into details of the submissions made even at the prima facie stage and appropriately giving, although to a lesser extent to the SEP holder, the parties a chance to represent themselves.

Disclosure: *Opinions expressed in the chapter are independent of any research grants received from governmental, intergovernmental and private organisations. The authors' opinions are personal and are based upon their research findings and do not reflect the opinions of their institutional affiliations.*

[80] *Case C-170/13*, *Huawei Techs. Co. v. ZTE Corp.* (July 16, 2015), http://curia.europa.eu/juris/document/document.jsf?text=&docid=165911&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=603775.