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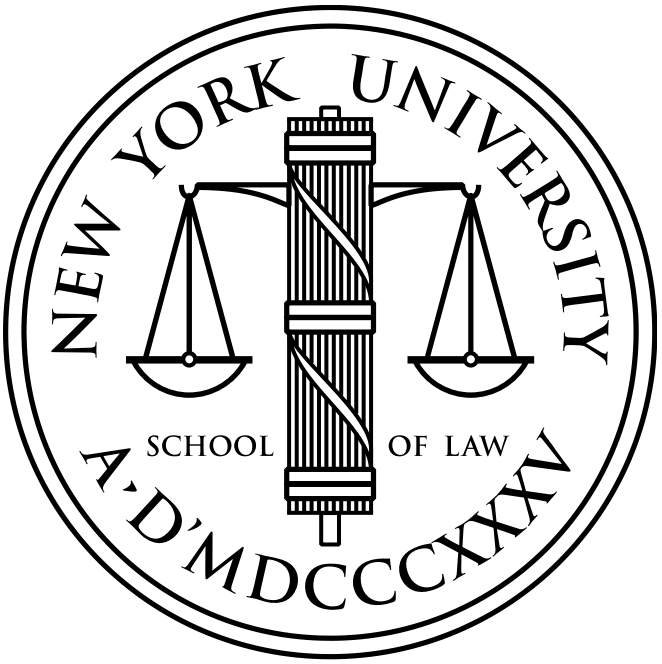

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PREFACE

Our fall issue invites readers to think critically about intellectual property and entertainment policy formulation, implementation, and impact.

First, Professor Jorge Contreras, Rohini Lakshané, and Paxton Lewis provide a comprehensive survey of patent working filings in India's mobile device sector. The survey contributes to the ongoing academic conversation concerning the efficacy of different reporting methods used to encourage patent holders to practice patents within a country's boundaries. In their detailed analysis, the authors examine the factors that have led to the high level of non-compliance with India's patent working requirements that the survey results reveal.

Next, Professor Brian Frye and Christopher Ryan analyze Universities' behavioral responses to changes in patent policy. The authors argue that substantial patent policy changes consistently precipitate increased University patent aggregation. Bolstering their claims with sophisticated statistical analysis, the authors go on to explore the driving forces behind this trend and their implications for the public good.

Moving from policy impact to policy formulation, the third article in this issue evaluates the European Commission's approach to creating policy for the Internet of Things (IoT). Roya Ghafele presents a compelling argument for including young innovative companies in shaping IoT policy through a series of in-depth interviews with key figures at these companies throughout Europe.

Finally, Vincent Honrubia's note completes the issue with a thoughtful discussion of unpaid internships in the entertainment industry. His note addresses the policy concerns unpaid internships provoke and advocates for a legal standard that would preserve the unpaid internship model while safeguarding interns from potential exploitation.

I hope that you find this issue thought provoking and informative. On behalf of the 2017-2018 *JIPEL* editorial board, thank you for reading.

Sincerely,

Caroline Herald
Editor-in-Chief
NYU Journal of Intellectual Property & Entertainment Law

NEW YORK UNIVERSITY

JOURNAL OF INTELLECTUAL PROPERTY AND ENTERTAINMENT LAW

VOLUME 7 FALL 2017 NUMBER 1

PATENT WORKING REQUIREMENTS AND COMPLEX PRODUCTS

JORGE L. CONTRERAS,[*] ROHINI LAKSHANÉ,[**] PAXTON M. LEWIS[***]

Patent working requirements exist throughout the world to ensure that the exclusive rights granted through patents result in an economic benefit to the granting jurisdiction. In India, if a patent is not locally worked within three years of its issuance, any person may request a compulsory license, and if the patent is not adequately worked within two years of the grant of such a compulsory license,

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it may be revoked. The potency of India's patent working requirement was demonstrated by the 2012 issuance of a compulsory license for Bayer's patented drug Nexavar. In order to provide the public with information about patent working, India requires every patentee to file an annual statement on "Form 27" describing the working of each of its issued Indian patents.

We conducted the first comprehensive and systematic study of all Forms 27 filed in India with respect to a key industry sector: mobile devices. We obtained from public online records 4,916 valid Forms 27, corresponding to 3,126 mobile device patents. These represented only 20.1% of all Forms 27 that should have been filed and corresponded to only 72.5% of all mobile device patents for which Forms 27 should have been filed. Forms 27 were missing for almost all patentees, and even among Forms 27 that were obtained, almost none contained useful information regarding the working of the subject patents or fully complying with the informational requirements of the Indian Patent Rules. Patentees adopted drastically different positions regarding the definition of patent working, while several significant patentees claimed that they or their patent portfolios were simply too large to enable the reporting of required information. Many patentees simply omitted required descriptive information from their Forms 27 without explanation.

It is likely that a combination of factors have led to this high degree of non-compliance, namely technical and administrative failures of the Indian Patent Office, and inadvertent or deliberate omissions by patent holders. However, it is also likely that there are more fundamental issues concerning the very notion of working requirements with respect to complex, multi-patent products. In effect, products that embody dozens of technical standards and thousands of patents may not necessarily be amenable to individual-level reporting of working, or even working requirements themselves. We hope that this study will contribute to the ongoing global conversation regarding the most appropriate means for collecting and disseminating information regarding the working of patents.

INTRODUCTION

In 2012, Natco Pharma Ltd. ("Natco") petitioned the Indian Patent Office ("IPO") for a compulsory license to manufacture Bayer's patented cancer drug, Nexavar.[1] Natco cited numerous grounds in support of its petition, including

[1] Natco Pharma Ltd. v. Bayer Corp., (2011) I.P.O. Order No. 1, at 6 (India).

Nexavar's high cost and limited availability in India.[2] But along with these relatively common complaints in the global access to medicines debate,[3] Natco raised a less typical theory; Bayer failed to "work" the patent sufficiently in India.[4] In doing so, Natco invoked a seldom-used provision of Indian patent law that allows any person to seek a compulsory license under an Indian patent that is not actively being commercialized by its owner within three years from the issuance of the patent.[5]

Patent working requirements exist in different forms throughout the world. Broadly speaking, to "work" a patent is to practice, in some manner, the patented invention within the country that issued the patent. While patents are seen as a means to create incentives for inventors to share their ideas, working requirements are intended to mitigate the exclusivity of patent monopolies by requiring the patent holder to disseminate its invention into the local market.[6] The patent holder thereby imparts knowledge and skills to the local community, enhances economic growth, supports local manufacturing, and promotes the introduction of innovative new products into the local market.[7]

While patent working requirements have existed in various jurisdictions for more than a century, working requirements have seldom been the subject of vigorous enforcement.[8] The U.S.-Brazil dispute and the Natco case represent a

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[2] *See id.*

[3] The Natco case is one in a long line of cases in the ongoing "access to medicines" dispute, in which developing countries seek compulsory licenses for local use of lifesaving drugs that are patented by western pharmaceutical firms. *See, e.g.*, SRIVIDHYA RAGAVAN, PATENT AND TRADE DISPARITIES IN DEVELOPING COUNTRIES (2012); Charles R. McManis and Jorge L. Contreras, *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, Rudolph J.R. Peritz & Marco Ricolfi, eds. 2014); Jerome H. Reichman, Comment*: Compulsory Licensing of Patented Pharmaceutical Inventions: Evaluating the Options,* 37 J. L. MED. & ETHICS 247, 250 (2009).

[4] Natco Pharma Ltd. v. Bayer Corp., *supra* note 1, at 6.

[5] *See* Patents Act, No. 39 of 1970, INDIA CODE (1970), ch. XVI, § 84(1).

[6] *See* Rochelle Dreyfuss & Susy Frankel, *From Incentive to Commodity to Asset: How International Law Is Reconceptualizing Intellectual Property*, 36 MICH. J. INT'L L. 557, 576 (2015); *See also* Feroz Ali, *Picket Patents: Non-Working as an IP Abuse*, at *5, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2732521 (last visited Feb. 6, 2017); *see also* Bryan Mercurio & Mitali Tyagi, *Treaty Interpretation in WTO Dispute Settlement: The Outstanding Question of the Legality of Local Working Requirements*, 19 MINN. J. INT'L L. 275, 281 (2010).

[7] Marketa Trimble, *Patent Working Requirements: Historical and Comparative Perspectives*, 6 U.C. IRVINE L. REV. 483, 500-501 (2016).

[8] *Id*. at 495.

revival of interest in patent working requirements. In particular, the *Natco* case has reintroduced questions of whether working requirements are, or should be, allowed under the TRIPS Agreement.

In prior work, Contreras and Lakshané have analyzed the domestic Indian patent landscape pertaining to mobile device technology.[9] The authors now extend that work to examine the working of those patents. This Article presents a detailed case study of the Indian patent working statutes and their procedures, particularly the requirement that all patent holders file an annual form (Form 27) to demonstrate that their patents are being worked in the country. We collected and reviewed all publicly available Forms 27 in the mobile device sector to assess the completeness and accuracy of the information disclosed. We then analyzed the results to assess the robustness of India's patent working requirement and its utility for complex information and communication-based products and technologies.

The remainder of this Article proceeds in four principal parts. Part I.A provides a brief history of patent working requirements. Part I.B describes the development of India's current working requirements and its novel Form 27 filing requirement. Part II describes our empirical study of India's Form 27 filings in the mobile device sector. Part III discusses our findings and analysis. We conclude with recommendations for further study and policy.

I.
PATENT WORKING REQUIREMENTS

A. History of Patent Working Requirements

The origins of patent working requirements have been traced to the 1300s, when early patent privileges were granted in jurisdictions such as feudal England and the Republic of Venice, with an expectation that foreign innovators would teach the invented art to local industry.[10] The underlying incentive for providing

[9] Jorge L. Contreras & Rohini Lakshané, *Patents and Mobile Devices in India: An Empirical Survey*, 50 VAND. TRANSNAT'L L.J. 1 (2017). The data set used in the foregoing study can be found at https://cis-india.org/a2k/blogs/dataset-patent-landscape-of-mobile-device-technologies-in-india.

[10] Trimble, *supra* note 7, at 488. In England, royal patents were granted to foreigners who would teach their art to the local population. *Id.* at 488, 497. Venice provided monopoly rights and tax holidays for foreign inventors to immigrate and improve local industrialization. RAGAVAN, *supra* note 3, at 3.

monopoly rights was thus tied to local industrialization.[11] This incentive to share technology was directed not only to local citizens but, even more so, to foreign inventors.[12] Countries issued patent privileges to encourage foreigners to migrate and develop or protect local industry by teaching their art to the local population.[13] Local industrialization was thus considered a central means to economic development and technological advancement.[14]

Despite these early developments, by the late 19th and early 20th centuries, developed countries' conceptual understanding of a patentee's obligation and its relevance to national development began to shift away from local manufacturing.[15] As a result, in many developed countries disclosure through importation became sufficient to meet the "informational goal" of patents, particularly patents that represented improvements to existing technologies.[16]

The 1883 Paris Convention for the Protection of Industrial Property prohibited the automatic forfeiture of a patent for a failure to work it locally.[17] While both developed and developing countries disputed the proper remedy for the failure to work a patent, there remained a consensus that failure to work a patent was inconsistent with the patent privilege.[18]

A half-century later, the 1925 Hague Conference, which amended the Paris Convention, recognized the failure to work a patent as an abuse that member states could "take necessary legislative measures to prevent."[19] As a remedy for non-working, drafters viewed compulsory licensing of non-worked patents as more

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[11] *See* RAGAVAN, *supra* note 3, at 3; *see also* G.B. Reddy & Harunrashid A. Kadri, *Local Working of Patents – Law and Implementation in India*, 18 J. INTELL. PROP. RIGHTS 15, 15 (2013).

[12] *See* RAGAVAN, *supra* note 3, at 3; *see also* Trimble, *supra* note 7, at 488.

[13] *See* RAGAVAN, *supra* note 3, at 3; *see also* Reddy & Kadri, *supra* note 11, at 16.

[14] *See* Reddy & Kadri, *supra* note 11, at 17; *see also* Ali, *supra* note 6, at *9.

[15] *See generally* Paul Champ & Amir Attaran, *Patent Rights and Local Working Under the WTO TRIPS Agreement: An Analysis of the U.S.-Brazil Patent Dispute*, 27 YALE J. INT'L L. 365, 371 (2002).

[16] Trimble, *supra* note 7, at 498 ("In the United Kingdom in the 18th century 'the requirement of compulsory working dropped into desuetude and its place was taken for all practical purposes, in particular in the practice of the law courts, by [the full disclosure] requirement'") (alterations in original) (internal citations omitted).

[17] Paris Convention for the Protection of Industrial Property, World Intellectual Property Organization, art. 5(A)(1), March 20, 1883.

[18] *See* Reddy & Kadri, *supra* note 11, at 17; *see also* Champ & Attaran, *supra* note 15, at 371; Trimble, *supra* note 7, at 493–94.

[19] Hague Revision to Paris Convention for the Protection of Industrial Property, World Intellectual Property Organization, art. (5)(A)(2), November 6, 1925.

palatable than outright forfeiture.[20] Nevertheless, forfeiture of patent rights was still permitted under the Convention, though an action for forfeiture could not be brought until two years following the issuance of the first compulsory license covering the non-worked patent.[21] In the 1967 Stockholm amendments to the Convention, further limitations on compulsory licensing for non-working patents were introduced, notably prohibiting member states from permitting the grant of a compulsory license for failure to work until three years after the issuance of the allegedly non-worked patent.[22]

Within the flexibilities allowed by the Convention, developing countries continued to adopt strict working requirements and to resist international requirements that favored developed countries.[23] For example, in the late 1970s and early 1980s, developing countries proposed revisions to the Paris Convention that would have provided that mere importation did not satisfy local working requirements and to permit the expansion of sanctions for non-working beyond compulsory licensing.[24]

The desire of developed countries for stronger international rules relating to intellectual property led to the formation of the World Trade Organization ("WTO") in 1994, under which the Trade Related Aspects of Intellectual Property Rights ("TRIPS") Agreement was negotiated.[25] While the TRIPS Agreement does not explicitly address patent working requirements, Article 2.1 incorporates Article 5A of the Paris Convention (i.e. the article related to compulsory licensing and the limitations on granting compulsory licenses discussed above), and Article 2.2

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[20] *See* Champ & Attaran, *supra* note 15, at 372; *see also* Trimble, *supra* note 7, at *490-94 (tracing history of remedies for failure to meet working requirements, including forfeiture).

[21] London Revision to Paris Convention for the Protection of Industrial Property, World Intellectual Property Organization, art. 5(A)(4), June 2, 1934; *See* Trimble, *supra* note 7, at 494.

[22] Stockholm Revision to Paris Convention for the Protection of Industrial Property, World Intellectual Property Organization, art. 5(A)(2), July 14, 1967.

[23] *See* Trimble, *supra* note 7, at 494-95; *see also* Janice M. Mueller, *The Tiger Awakens: The Tumultuous Transformation of India's Patent System and the Rise of Indian Pharmaceutical Innovation*, 68 U. PITT. L. REV. 491, 517-18 (2007)..

[24] *See* Trimble, *supra* note 7, at 494.

[25] *See* RAGAVAN, *supra* note 3, at 65-66. *See generally* TRIPS: Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1c, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994), *reprinted in* WORLD TRADE ORGANIZATION, THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 365 (1995) [hereinafter "TRIPS Agreement"].

reinforces the existing obligations of members of the Paris Union.[26] Additionally, Article 27.1 of the TRIPS Agreement, which establishes requirements for patentable subject matter, prohibits "discrimination as to the place of invention, the field of technology and whether products are imported or locally produced" raising a question as to whether countries with local working requirements must recognize importation as an acceptable manner of satisfying those requirements.[27] However, Article 30 of the TRIPS Agreement permits a member state to allow exceptions to the exclusive rights of a patent holder, and Article 31 allows a state to issue a "compulsory" license under one or more patents without the authorization of the patent holder "in the case of national emergency or other circumstances of extreme urgency or in cases of public non-commercial use."[28] Given these mixed signals, commentators are divided on whether, and how, the TRIPS Agreement may affect local working requirements.[29]

To date, the only WTO dispute challenging the validity of national working requirements has been between the United States and Brazil.[30] In 2000, the Clinton administration, responding to concerns raised by the American pharmaceutical industry, initiated a WTO dispute proceeding to challenge Brazil's local working requirement.[31] The United States argued that Article 68 of Brazil's 1996 Industrial Property Law violated Articles 27(1) and 28(1)[32] of the TRIPS Agreement for discriminating against U.S. owners of Brazilian patents whose products were imported, but not locally produced, in Brazil.[33]

Despite the pending WTO litigation, the Brazilian Ministry of Health adopted an aggressive stance toward reducing the price of antiretroviral medications and threatened to issue compulsory licenses for the local manufacture of two such drugs, both patented by U.S. companies, if they were not discounted

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[26] Additionally, those countries that were not members of the Paris Union but are members of the WTO are therefore obligated to comply with the Paris Convention and its revisions under Article 2.2 of the TRIPS Agreement.

[27] TRIPS Agreement, *supra* note 25, art. 27.1.

[28] TRIPS Agreement, *supra* note 25, art. 30-31; *see also* RAGAVAN, *supra* note 3; McManis and Contreras, *supra* note 3.

[29] *See generally* Trimble, *supra* note 7, at 496; Shamnad Basheer, *Making Patents Work: Of IP Duties and Deficient Disclosures*, 7 QUEEN MARY J. INTELL. PROP. 3, 16-17 (2017).

[30] Request for Consultations by the United States, *Brazil – Measures Affecting Patent Protection*, WTO Doc. WT/DS199/1 (June 8, 2000); *see also* Reddy & Kadri, *supra* note 11, at 17; Trimble, *supra* note 7, at 496-497.

[31] Champ & Attaran, *supra* note 15, at 380.

[32] Article 28(1) of the TRIPS Agreement defines the rights that may be conferred on patent owners.

[33] Champ & Attaran, *supra* note 15, at 381-82.

by 50%.[34] In response to political and public pressures, the United States and Brazil settled the dispute before any definitive opinion was issued by the WTO.[35]

B. The Evolution of India's Patent Working Requirement

1. Background

As a British colony, India's pre-independence patent laws were modeled largely on then-prevailing English law.[36] India gained its independence from Great Britain in 1947 and almost immediately began to consider the adoption of patent laws reflecting emerging national goals of industrialization and economic development.[37] Thus, in early 1948, a committee known as the Tek Chand Committee was appointed to review and reconcile India's patent laws with its national interests.[38] The committee's efforts resulted in the Chand Report, which recommended the use of compulsory patent licenses to stimulate India's industrial economy.[39]

A second major report commissioned by the Indian government and prepared primarily by Shri Justice N. Rajagopala Ayyangar, was issued in 1959.[40] The Ayyangar Report suggested that India should deviate from the "unsuitable patent policies of industrialized nations" because patent regimes operate differently in developing versus developed nations.[41] Recognizing that a significant weakness in developing nations "is that foreign patent owners do not work the invention locally," the Ayyangar Report recommended compulsory licensing as "the remedy to redress the handicap of foreigners not working the invention locally."[42]

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[34] *Id.* at 381. The two patented drugs that the Brazilian Ministry of Health threatened to grant compulsory licenses on were efavirenz and nelfinavir. These drugs are antiretroviral drugs used to treat AIDS. Geoff Dyer, *Brazil Defiant Over Cheap AIDS Drugs*, FIN. TIMES, Feb. 9, 2001, at 10.

[35] Barbara Crossette, *U.S. Drops Case Over AIDS Drugs in Brazil*, N.Y. TIMES (June 26, 2001), http://www.nytimes.com/2001/06/26/world/us-drops-case-over-aids-drugs-in-brazil.html.

[36] KALYAN C. KANKANALA, ARUN K. NARASANI & VINITA RADHAKRISHNAN, INDIAN PATENT LAW & PRACTICE 1 (2010).

[37] *See* Mueller, *supra* note 23, at 509-511; *see also* RAGAVAN, *supra* note 3, at 31.

[38] Shri Justice N. Rajagopala Ayyangar, REPORT ON THE REVISION OF THE PATENTS LAW (September 1959) [hereinafter "Ayyangar Report"]; RAGAVAN, *supra* note 3, at 31-33.

[39] P. NARAYANAN, PATENT LAW 5 (4th ed. 2006).

[40] Ayyangar Report, *supra* note 38.

[41] RAGAVAN, *supra* note 3, at 35.

[42] *Id*. at 39-40.

2. The Patents Act, 1970

The India Patents Act, 1970, was enacted in 1972.[43] Among other things, it sought to address the economic repercussions resulting from foreign dominance of the patent landscape in India, as recommended by the Chand Report and the Ayyangar Report.[44] Accordingly, Section 83 of the 1970 Act provides certain policy-driven justifications for India's working requirements, explaining:

> (a) "that patents are granted to encourage inventions and to secure that the inventions are *worked* in India on a commercial scale and to the fullest extent that is reasonably practicable without undue delay; [and]
>
> (b) that they are not granted merely to enable patentees to enjoy a monopoly for the *importation* of the patented article[.]"[45]

These provisions make clear that working a patent in India is both an important policy goal and consists of something more than importation of the patented article into India. Some additional knowledge transfer must occur so that manufacturing of other steps necessary for commercialization are carried out in India.

Following the Ayyangar Report's recommendations, Section 84(1) of the 1970 Act provided for compulsory licensing of patents as follows:

> "At any time after the expiration of three years from the date of the sealing of a patent, any person interested may make an application to the Controller[46] alleging that the reasonable requirements of the public with respect to the patented invention have not been satisfied or that the patented invention is not available to the public at a reasonable price and praying for the grant of a compulsory licence to work the patented invention."[47]

These requirements, particularly the availability of the patented article to the public at a "reasonable price," seek to address issues raised in the debate over access to

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[43] *See generally* The Patents Act, No. 39 of 1970, INDIA CODE (1970).

[44] *See* RAGAVAN, *supra* note 3, at 42-45 (summarizing changes effected by the 1970 law).

[45] The Patents Act, 1970 § 83 (emphasis added).

[46] The Indian Controller General of Patents, Designs & Trade Marks, who will be referred to herein as the Controller for simplicity.

[47] The Patents Act, 1970, § 84(1) (emphasis added). The three-year time period reflected in the Act is derived from Section 5(A)(4) of the Paris Convention (current numbering). *See supra* note 22.

medicines, and particularly the high pricing maintained by many Western pharmaceutical firms in developing countries.[48]

However, working of patents more generally is incorporated into the compulsory licensing regime through Section 90, which clarifies when the "reasonable requirements of the public" will be deemed not to have been satisfied.[49] In particular, Section 90(c) specifies that, for purposes of compulsory licensing under Section 84, "the reasonable requirements of the public shall be deemed not to have been satisfied … if the patented invention is not being worked in the territory of India on a commercial scale to an adequate extent or is not being so worked to the fullest extent that is reasonably practicable[.]"[50] Thus, local working of patents is tied to the public interest and has become express grounds for requesting a compulsory license in India.

In addition to giving applicants the right to seek a compulsory license under non-worked patents, the 1970 Act also gave the Controller the power to *revoke* a patent on the grounds that the reasonable requirements of the public were not being satisfied or the patented invention was not available to the public at a reasonable price.[51] Under Section 89(1), any interested person could apply to the Controller for such an order of revocation no earlier than two years following the grant of the first compulsory license under the relevant patent.[52]

3. India's Current Working Requirement

India became a member of the World Trade Organization on January 1, 1995, also making India a party to the TRIPS Agreement.[53] In order to reconcile the 1970 Act with the TRIPS Agreement, India amended its Patents Act in 1999,

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[48] The Patents Act, 1970 § 84(1).

[49] *Id.* § 90(c).

[50] *Id.*

[51] *Id.* § 89(3). While the language of Section 89 is couched in terms of the "reasonable requirements of the public," it is interesting to note that the caption of the section reads "Revocation of patents by the Controller for non-working," thus focusing more explicitly on the working requirement.

[52] The Patents Act, 1970 § 89(1). The two-year time period reflected in the Act is derived from Section 5(A)(3) of the Paris Convention (current numbering). *See supra* note 21 and accompanying text.

[53] *See* India and the WTO, WORLD TRADE ORG., http://www.wto.org/english/thewto_e/countries_e/india_e.htm. *See generally* TRIPS Agreement.

2002, and 2005.[54] Most relevant to this Article, the 2002 amendments modified India's compulsory licensing and working requirements.[55]

India's amended Patents Act retains strong working requirements, which permit the Controller to revoke unworked patents.[56] Section 83 of the Act, as amended in 2002, provides several additional justifications for India's patent working requirement not contemplated in earlier versions of the Act. For example, the 2002 amendments recognize that patents are intended to support the "transfer and dissemination of technology . . . in a manner conducive [sic] to social and economic welfare."[57] Several of the new justifications emphasize that patents should support, and not impair, the public interest, particularly "in sectors of vital importance for socio-economic and technological development of India."[58]

Against this backdrop, the amended Act explicitly makes compulsory licenses available for non-worked patents. Section 89 explains that one of the "general purposes" of compulsory licenses is to ensure that "patented inventions are worked on a commercial scale in the territory of India without undue delay and to the fullest extent that is reasonably practicable."[59] The amended Act expanded Section 84(1), which authorizes third parties to seek compulsory licenses, to include as an express basis for seeking a compulsory license "that the patented invention *is not worked* in the territory of India."[60]

Thus, new section 84(1)(c) establishes working of a patent as an independent ground for seeking a compulsory license, in addition to the grounds under sections 84(a) and (b) that the patented technology fails to reasonably meet public needs. This approach contrasts with the original 1970 formulation, discussed above, in which non-working of a patent formed a basis for seeking a compulsory license,

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[54] India amended its 1970 Act in three amendments, corresponding to the transition periods permitted by the TRIPS Agreement. India played a significant role in establishing the TRIPS multi-year transition periods. *See* Mueller, *supra* note 23, at 518. For a discussion of India's political and economic considerations underlying its support of compulsory licensing under TRIPS, *see* Omar Serrano & Mira Burri, *Making Use of TRIPS Flexibilities: Implementation and Diffusion of Compulsory Licensing Regimes in Brazil and India* (World Trade Inst. Working Paper No. 1 2016).

[55] The Patents (Amendment) Act, No. 38 of 2002, INDIA CODE (2002).

[56] *Id.* § 85.

[57] *Id.* § 83(c).

[58] *Id.* § 83(d)-(f).

[59] *Id.* § 89.

[60] *Id.* § 84(1) (emphasis added).

but only as an element of the "reasonable requirements of the public," rather than an independent ground in itself.[61]

Section 84(6) specifies factors that the Controller must take into account when considering an application for a compulsory license, including:

> (i) the nature of the invention, the time which has elapsed since the sealing of the patent and the measures already taken by the patentee or any licensee to make full use of the invention;
>
> (ii) the ability of the applicant to work the invention to the public advantage;
>
> (iii) the capacity of the applicant to undertake the risk in providing capital and working the invention, if the application were granted;
>
> (iv) as to whether the applicant has made efforts to obtain a licence from the patentee on reasonable terms and conditions and such efforts have not been successful within a reasonable period as the Controller may deem fit [i.e., not ordinarily exceeding a period of six months]....[62]

Section 84(6) appears to represent a concession to patent holders, making clear that compulsory licenses will only be granted to applicants that are able to exploit the licensed patent rights in a manner that is likely to remedy the failure of the patent holder to work the patent.

While a formal definition of working is not provided under the statute, the language of section 83 suggests that the patented invention must be manufactured locally to the extent possible and that importation would be acceptable only if local manufacturing is unreasonable.[63] Additionally, the statutory language suggests that if importation is necessary, only the patent holder or its chosen licensees may import the patented invention.[64] The statute also fails to establish any

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[61] *Id.*

[62] *Id.* § 84(6).

[63] *See* Thomas Cottier, Shaheeza Lalani & Michelangelo Temmerman, *Use It or Lose It: Assessing the Compatibility of the Paris Convention and TRIPS Agreement with Respect to Local Working Requirements*, 17 J. INT'L ECON. L. 437, 441 (2014).

[64] *See* The Patents Act, No. 39 of 1970, INDIA CODE (1970), § 90(2) ("No license granted by the Controller shall authorise the licensee to import the patented article or an article or substance made by a patented process from abroad where such importation would, but for such authorisation, constitute an infringement of the rights of the patentee.").

circumstances that may be excused from India's patent working requirement. This omission may have been intentional, perhaps suggesting that any technology that is worth patenting in India should also be capable of being worked in India.

In short, India's patent working requirement is intended to be taken seriously. The penalties for failing to work a patent include the issuance of a compulsory license beginning three years after patent issuance, and if that does not fulfill public requirements for the patented article, possible revocation of the patent. Moreover, there is evidence that Indian courts may be reluctant to grant injunctive relief to patent holders that do not work their patents.[65]

C. The Indian Working Requirement and Natco Pharma Limited v. Bayer Corporation

India's patent working requirement was featured prominently in Natco's recent compulsory license request with respect to Bayer's Indian patent covering sorefanib tosylate, a kidney and liver cancer drug marketed by Bayer as Nexavar™. Bayer obtained an Indian patent covering Nexavar in 2008.[66] Despite Bayer's estimate that more than 8,800 patients in India were eligible to take the drug, its imports were sufficient to supply only 200 patients.[67] Moreover, Bayer priced a monthly dose of the drug at more than 280,000 Rupees (approximately US$5,608), a price unaffordable to the vast majority of Indians.[68] In response, Natco, an Indian generic drug manufacturer, attempted to negotiate a license with Bayer to manufacture and sell Nexavar in India.[69] However, when negotiations were unsuccessful, Natco applied to the Drug Controller General of India for regulatory approval to manufacture a generic version of Nexavar in India.[70] The approval was granted.[71]

Natco then petitioned the Controller of Patents under section 84 of the Patents Act for a compulsory license to manufacture a generic version of Nexavar.[72] Natco offered several justifications in support of its application for a compulsory license, including Nexavar's high cost and limited availability in

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[65] *See* Basheer, *supra* note 29, at 9.

[66] Natco Pharma Ltd. v. Bayer Corp., (2011) I.P.O. Order No. 1, 5 (India).

[67] *Id.* at 22.

[68] *Id*. at 25 (noting that an average Indian government employee would have to work for 3.5 years to afford a single month's dosage).

[69] *Id*. at 6.

[70] *Id*. at 5.

[71] *Id*.

[72] *Id*. at 6.

India.[73] In addition, Natco argued that Bayer had failed to work its patent in India within three years of its issuance, as required under section 84(1)(c) of the Patents Act. Specifically, Natco argued that "[t]he patented product is being imported into India and hence the product is not worked in the territory of India to the fullest extent that is reasonably practicable."[74] Additionally, Natco argued that Bayer faced "no hurdle[s] preventing [it] from working the Patent in India" because Bayer already had "manufacturing facilities in India for several products."[75]

Bayer responded that it actively imported Nexavar into India, which demonstrated sufficient working, and argued that India's working requirement did not require manufacture of the patented product in India.[76] In evaluating Natco's petition, the Controller considered the legislature's intent, the Paris Convention, the TRIPS Agreement, and India's Patents Act.[77] In view of these authorities, the Controller interpreted the term "worked" to mean that the patented invention must be manufactured or licensed within India, reasoning that "[u]nless such an opportunity for technological capacity building domestically is provided to the Indian public, they will be at a loss as they will not be empowered to utilise [sic] the patented invention, after the patent right expires."[78] Under this interpretation, the Controller concluded that Bayer had not worked its patent in India since importation is not sufficient to constitute "working" a patent.[79] Accordingly, in 2012 the Controller issued a compulsory license to Natco under Bayer's patent covering Nexavar.[80]

Bayer unsuccessfully appealed the Controller's decision to the Indian Intellectual Property Appellate Board (IPAB).[81] The IPAB affirmed the Controller's decision, but disagreed with the Controller's interpretation of the term "worked."[82] Instead of ruling that working categorically excludes importation of the patented product into India, the IPAB concluded that determining whether a patented invention is worked must be considered on a case-by-case basis.[83] Thus,

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[73] *Id.*
[74] Id. at 37.
[75] *Id.*
[76] *Id.* at 38.
[77] *Id.* at 40-41.
[78] *Id.* at 43.
[79] *Id.* at 45 ("I am therefore convinced that 'worked in the territory of India' means 'manufactured to a reasonable extent in India.'").
[80] *Id.* at 60.
[81] Natco Pharma Ltd. v. Bayer Corp., (2013) I.P.A.B. Order No. 45 (India).
[82] *Id.*
[83] *Id.*

the term "worked" does not necessarily exclude importation, but it also does not strictly require manufacturing in India.[84]

In affirming the decision of the IPAB, the Bombay High Court opined that "[m]anufacture in all cases may not be necessary to establish working in India[.]"[85] However, the court implied that working a patent *without* local manufacture could be a high hurdle to clear, reasoning that the patent holder must then "establish those reasons which makes it impossible/prohibitive for it to manufacture the patented drug in India."[86] It is only when the patent holder satisfies the authorities that "the patented invention could not be manufactured in India" that it can be considered worked by import.[87]

Apart from the working requirement, the Bombay court focused on whether Bayer had reasonably satisfied the requirements of the public, recognizing that those requirements might differ depending on the type of product covered by the patent.[88] Thus, when assessing whether demand for the patented article was met to an "adequate extent," the considerations pertaining, for example, to a luxury article would vary significantly from those pertaining to a lifesaving medicine. In the case of medicines, the court reasoned, meeting public demand to an adequate extent should be deemed to mean it is available to 100% of the market: "Medicine has to be made available to every patient and this cannot be deprived/sacrificed at the altar of rights of [the] patent holder."[89]

Following Natco's successful application for, and defense of, its compulsory license, other generic drug manufacturers sought compulsory licenses to manufacture patented pharmaceutical products in India. For example, in 2013, BDR Pharmaceuticals, Ltd., an Indian manufacturer, filed an application for a compulsory license to manufacture Bristol Myers Squibb's anti-cancer drug dasatinib (marketed as Sprycel™),[90] and the Indian Ministry of Health

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[84] *Id*. at 43.

[85] Bayer Corp. v. Union of India, Bombay High Ct. at 29 (Jul. 15, 2014).

[86] *Id*.

[87] *Id*.

[88] *Id.* at 24.

[89] *Id*. Bayer subsequently appealed to the Indian Supreme Court, which declined to hear the case. *See* Samanwaya Rautray, *Nexavar License Case: SC Dismisses Bayer's Appeal Against HC Decision*, ECONOMIC TIMES, Dec. 13, 2014,

http://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/nexavar-licence-case-sc-dismisses-bayers-appeal-against-hc-decision/articleshow/45500051.cms

[90] Harsha Rohatgi, *Indian Patent Office Rejects Compulsory Licensing Application: BDR Pharmaceuticals Pvt. Ltd. vs. Bristol Myers Squibb*, KHURANA & KHURANA (last visited Oct. 20,

recommended that the Department of Industrial Policy and Promotion (DIPP) grant local manufacturers compulsory licenses for trastuzumab, a breast cancer drug marketed by Roche (Herclon™) and Genentech (Herceptin™) and ixabepilone (Roche's Ixempra™).[91] To date, each of these petitions has failed for various reasons other than that pertaining to dasatinib, which remains under consideration by DIPP.[92]

D. Form 27 and India's Reporting Requirement

The Indian patent working requirement under Section 84 of the Patents Act, as well as the availability of compulsory licenses for non-worked patents, is not unique to India, and other developing countries have adopted similar legal requirements.[93] India has, however, enacted what appears to be a unique reporting structure associated with its patent working requirement.[94] India adopted a form submission requirement as a means to regulate the patent working requirement under the India Patents Act in 1970.[95] Specifically, section 146(2) of the Patents Act provides that:

> every patentee and every licensee (whether exclusive or otherwise) shall furnish in such manner and form and at such intervals (not being less than six months) as may be prescribed statements as to the extent

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2017), http://www.khuranaandkhurana.com/2013/11/13/indian-patent-office-rejects-compulsory-licensing-application-bdr-pharmaceuticals-pvt-ltd-vs-bristol-myers-squibb/.

[91] Patralekha Chatterjee, *2013: India Battles for Right to Use Compulsory Licenses to Make Medicines Affordable*, INTELLECTUAL PROPERTY WATCH (last visited Oct. 20, 2017), https://www.ip-watch.org/2013/01/22/2013-india-battles-for-right-to-use-compulsory-licences-to-make-medicines-affordable/.

[92] *See* Pankhuri Agarwal, *DIPP Drags the Dasatinib Compulsory License Drama: A Situation of 'Extreme Urgency'?*, SpicyIP blog (Sep. 24, 2016), https://spicyip.com/2016/09/dipp-drags-the-dasatinib-compulsory-license-drama-a-situation-of-extreme-urgency.html. *See, e.g.*, IPO Order No. C.L.A. No.1 of 2015, In the matter of Lee Pharma Ltd v. AstraZeneca AB, dated January 19, 2016 (rejecting application due to lack of evidence presented under all three prongs of Section 84 analysis).

[93] For example, Article 68 of Brazil's 1996 Industrial Property Law subjects a patentee to compulsory licensing if the patentee does not exploit "the object of the patent within the Brazilian territory for failure to manufacture the product or failure to use a patented process." 68 C.P.I., Law No. 9,279 (Brazil, May 14, 1996). For additional examples, *See* Cottier et al., *supra* note 63, at 461-71.

[94] While form submissions to show the working of a patent are unique to India's patent law, a submission requirement to maintain intellectual property rights is similarly used in the United States for trademarks. In the United States, registered trademark owners must submit a declaration of use to avoid cancellation of the registration. *See* 15 U.S.C. § 1058.

[95] The Patents Act, No. 39 of 1970, INDIA CODE (1970), § 146(2).

to which the patented invention has been worked on a commercial scale in India.[96]

In support of this statutory requirement, the patent rules adopted by the Indian Ministry of Commerce and Industry provide that the required statements of working must be submitted in a prescribed format (Form 27).[97] The rules also provide that such statements must be furnished to the Controller of Patents in respect of every calendar year within three months following the end of such year.[98]

Form 27, a template of which is appended to the 2003 version of the Indian patent rules, requires the patent holder to disclose "the extent to which the patented invention has been worked on a commercial scale in India."[99] To that end, Form 27 requires that the patent holder complete the following information:

(i) The patented invention:

{ } Worked { } Not worked [Tick (✓) mark the relevant box]

a. if not worked: reasons for not working and steps being taken for the working of the invention.

b. if worked: quantum and value (in Rupees), of the patented product:

manufactured in India

imported from other countries (give country wise details)

(ii) the licenses and sub-licenses granted during the year;

(iii) state whether the public requirement[100] has been met partly/adequately to the fullest extent at reasonable price.[101]

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[96] *Id.*

[97] The Patent Rules, Rule 131, India (2003).

[98] The Patent Rules, Rule 131, India (2003). There is an apparent discrepancy between section 146(2) of the India Patents Act, 1970 and Rule 131 of the Patent Rules, 2003. While section 146 suggests that patentees should file Forms 27 every six months, Rule 131 of the Patent Rules, 2003 requires the statements to be furnished in respect of every calendar year.

[99] The Patents Act, No. 39 of 1970, INDIA CODE (1970), § 146(2).

[100] The public requirement refers to "the reasonable requirements of the public with respect to the patented invention." The Patents (Amendment) Act, No. 38 of 2002, INDIA CODE (2002), § 84(1)(a). In other words, if the patentee must explain how he has or has not met his duties under section 83 and 84 of the Patents Amendment Act of 2002.

Under Section 122, failing to submit a Form 27 or providing false information on the form may lead to a significant fine, imprisonment, or both.[102]

Though India's working requirement first appeared in the Patents Act in 1970, it appears to have been ignored until around 2007. In 2007, the Controller first mentioned the local working of patented inventions in his annual report.[103] The reports provided by the Controller between 2007 and 2009 indicate that, on average, less than 15 percent of Indian patents were being worked commercially.[104] In 2009, 2013 and 2015, the Controller issued public notices calling on patent owners to comply with their obligations to file statements of working on Form 27.[105]

While the penalties for failing to furnish information via Form 27 are steep, potentially resulting in fines or imprisonment,[106] local critics claim that many patent holders fail to make the required filings and that the Indian government has never taken meaningful action to penalize this non-compliance.[107]

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[101] Patents Rules, Form 27, 2003.

[102] The Patents (Amendment) Act, No. 38 of 2002, INDIA CODE (2002), § 122 provides:

"1) If any person refuses or fails to furnish-… b) to the controller any information or statement which he is required to furnish by or under section 146,

he shall be punishable with [a] fine which may extend to twenty thousand rupees.

2) If any person, being required to furnish any such information as is referred to in sub-section (1), furnishes information or statement which is false, and which he either knows or has reason to believe to be false or does not believe to be true, he shall be punishable with imprisonment which may extend to six months, or with fine, or with both."

[103] Annual Report 2007-08, Office of the Controller General of Patents, Designs, and Trade Marks including GIR and PIS/NIIPM (IPTI), at 12; *see also* Reddy & Kadri, *supra* note 11, at 21.

[104] Annual Report 2008-09, Office of the Controller General of Patents, Designs, Trade Marks and Geographical Indications, at 21; Annual Report 2007-08, Office of the Controller General of Patents, Designs, and TradeMarks including GIR and PIS/NIIPM (IPTI), at 12; *see also* Reddy & Kadri, *supra* note 11, at 21-22.

[105] Controller Gen. of Patents, Designs and Trade Marks, Public Notice No. CG/PG/2009/179, Dec. 24, 2009; Controller Gen. of Patents, Designs and Trade Marks, Public Notice No. CG/Public Notice/2013/77, Feb. 12, 2013; Controller Gen. of Patents, Designs and Trade Marks, Public Notice No. CG/Public Notice/2015/95, 2015.

[106] The Patents Act, No. 39 of 1970, INDIA CODE (1970), § 122. (A patentee may be imprisoned for submitting false information).

[107] Reddy & Kadri, *supra* note 11, at 22; *see also* Shamnad Basheer v. Union of India, Writ Petition, at F (Del. 2015) [hereinafter Basheer Writ Petition (2015)] ("[T]he Respondents authorities have never initiated action against any of the errant patentees.").

On February 12 2013, the Indian Patent Office announced plans to make Form 27 submissions for the year 2012 available to the public via the IPO website.[108] As discussed in Part II.A below, that effort has been met with limited success.

E. Theory and Criticism of Form 27

There is little legislative or administrative history explaining the genesis of India's unique Form 27 requirement. On one hand, a requirement that the details of patent working be disclosed by patent holders supports the goal of making unworked patents available for compulsory licensing in India, both to promote economic development and public access to patented products. A public registry of Forms 27 could also shift enforcement of India's working requirement from the IPO and Controller to private sector entities with the greatest incentive to monitor the working of patents in their respective industries. This shift could relieve India's resource-strapped administrative agencies of a potentially significant policing function, one that it does not appear they were actively enforcing in any event.

However, it is not clear that these goals are well served by the current Form 27 framework, which has been criticized by a number of local commentators.[109] For example, the IPAB ruled in *Natco* that the term worked must be decided on a case-by-case basis. How, then, should patent holders answer the first question posed in Form 27 and its sub-questions? How is a patent holder to know whether importation or licensing in a certain case will qualify as working a patent in India? If the Form is intended to increase transparency and certainty regarding the working of patents in India, it is hindered in so doing by the lack of a formal definition of working. This lack of clarity affects both patent holders, who are less able to order their affairs so as to comply with statutory working requirements, as well as potential compulsory licensees, who lack a clear assurance of when a compulsory license petition will be successful.

Commentators have raised a variety of additional critiques of the Form 27 framework. The U.S.-based Intellectual Property Owners Association, in a formal

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[108] Prashant Reddy, *Patent Office Publishes All 'Statements of Working' – Finally*!, SPICY IP, (June 25, 2013) https://spicyip.com/2013/06/patent-office-publishes-all-statements.html.

[109] *See, e.g.*, Basheer Writ Petition (2015), *supra* note 107 (raising numerous deficiencies with Form 27); Shamnad Basheer & N. Sai Vinod *RTI Applications and 'Working' of Foreign Drugs in India*, SPICY IP, at 5 (Apr., 2011) ("However, Form 27 in its present format leaves much to be desired and we will be drafting a more optimal Form 27 and forwarding this to the government for consideration, so that the form can be a lot more clearer and can call for a greater range of information.").

2014 submission to the U.S. Trade Representative, has referred to the Form 27 process as "highly burdensome" and warns that the information disclosed in publicly-accessible forms could "result in even greater pressure on Indian authorities to compulsory license [patented] products."[110] Moreover, the association argues that Form 27 does not adequately recognize that some patents may be practiced by multiple products, or that multiple patents may be practiced by a single product.[111] Thus, it may be unrealistic for patent holders to attribute a "specific commercial value" to specific patented features of complex technologies.[112]

Additionally, a number of Indian practitioners have raised concerns that the public disclosure of confidential plans for working patents through Form 27 may jeopardize or destroy valuable trade secrets and proprietary information.[113] This threat could cause patent holders to disclose as little specific or valuable information as possible in their Form 27 filings, a result that is suggested by the findings discussed in Part III below.

Based on studies of filed Forms 27, Professor Shamnad Basheer,[114] has concluded that India's local working Form 27 submission requirements are not being taken seriously, particularly by international pharmaceutical companies.[115] As a result, in 2015 Professor Basheer initiated public interest litigation in the High Court of Delhi against the Indian government for failure to comply with India's patent laws.[116] The suit seeks a judicial order compelling the Indian government "to enforce norms relating to the disclosure of 'commercial working' of patents by patentees and licensees" and to take action "against errant patentees and licensees for failure to comply with the mandate."[117] In 2016 an Indian patent attorney, Narendra Reddy Thappeta, filed an application to intervene in Basheer's public interest suit, among other things, in order to raise issues regarding the difficulty of

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[110] Letter from Philip S. Johnson, President, Intellectual Prop. Owners Assn., to Hon. Michael Froman, U.S. Trade Representative (Feb. 7, 2014).

[111] *Id.*

[112] *Id.*

[113] Prathiba Singh & Ashutosh Kumar, *When in Rome, do as the Romans do*, IP PRO LIFE SCIENCES at 16, (Mar. 10, 2013) http://ipprolifesciences.com/ipprolifesciences/IPPro%20Life%20Sciences_issue_04.pdf.

[114] Among other things, Prof. Basheer is the founder of the SpicyIP blog, a leading source of intellectual property news and commentary in India. *See* Part III.A, *infra*, for a discussion of the results of his studies of Form 27 compliance.

[115] Basheer & Vinod, *supra* note 109, at 6-8.

[116] Basheer Writ Petition (2015), *supra* note 107.

[117] *Id.* at 1, 8.

complying with Form 27 requirement for information and communication technology providers.[118]

Despite its perceived problems, Form 27 has proven useful in Indian proceedings. Notably, the information disclosed in Bayer's Form 27 filings played an important role in the *Natco* case by helping to establish the low number of patients having access to the drug.[119] Basheer refers to the working requirement as "a central pillar of the Indian patent regime" and views the disclosure requirements of Form 27 as essential tools to ensure that needed information is made public.[120]

II.
EMPIRICAL STUDY OF INDIAN FORM 27 DISCLOSURES IN THE MOBILE DEVICE INDUSTRY

In order to gain a better understanding of India's patent working requirement, particularly patent holders' compliance with the statutory requirement to declare information about the working of their patents through Form 27, we conducted an empirical study of all available Form 27 submissions for Indian patents in the mobile device sector. In this Part, we describe the objectives, background and methodology of this study.

A. Background: Existing Data and Studies

Every year, the Controller publishes an Annual Report containing statistics relating to patent filings in India. Since 2010, this report has contained data relating to Form 27 filings. This data indicates that a significant number of patent holders fail to file Form 27 as required. Below is a summary of this data as derived from the Controller's Annual Reports from 2010 to 2016:

[118] Shamnad Basheer v. Union of India, Writ Petition No. 5590 (Del. 2015), Application Seeking Permission to Intervene in the Above Public Interest Litigation (2016). Some of the issues raised by Mr. Thappeta are discussed in Part IV below.

[119] Bayer Corp. v. Union of India, Writ Petition No. 1323 of 2013, Judgment at 8–10 (Jul. 15, 2014).

[120] Basheer, *supra* note 29, at 17.

Table 1

Indian Controller of Patents Form 27 Filing Data (2010-2016)

Year[121]	Patents in Force	Form 27 Filed	No Form 27 Filed	% Forms Missing	Reported as Working
2009-10	37,334	24,009	13,325	35.7%	4,189
2010-11	39,594	34,112	5,482	13.8%	6,777
2011-12	39,989	27,825	12,164	30.4%	7,431
2012-13	43,920	27,946	15,974	36.4%	6,201
2013-14	42,632	33,088	9,544	22.4%	8,435
2014-15	43,256	31,990	11,266	26.0%	7,900
2015-16	44,524	39,507	5,017	11.3%	8,589

[121] Indian Patent Office reporting year (Apr. 1 - Mar. 31).

Under the Patents Act, a Form 27 must be filed every year with respect to every issued patent in India. Accordingly, the discrepancy between the number of patents in force for a given year and the number of Forms 27 filed likely indicates non-compliance with the filing requirement. Interestingly, it appears that instances of non-compliance dropped noticeably in years immediately after the Controller issued its public reminders to file Form 27 in December 2013, February 2013 and early 2015.[122] Even so, compliance has not been complete even in these years.

As noted above, Professor Shamnad Basheer has conducted two studies of Form 27 compliance in India. The first study, released in April 2011, focused on the pharmaceutical sector.[123] The researchers selected seven pharmaceutical products directed at either cancer or hepatitis, all of which were subject either to Indian litigation or patent office oppositions and were patented in India between 2006 and 2008. They then collected Form 27 filings relating to each of these patents through a series of Right to Information (RTI) petitions to the Indian Patent Office (IPO).[124] Based on the Forms produced by the IPO in response to these requests, the researchers found significant non-compliance with Form 27 filing requirements: some firms failed to file forms in some years, while some forms that were filed were incomplete.[125]

Professor Basheer's second study had a broader scope, covering a total of 141 patents: 52 patents held by 13 firms in the pharmaceutical sector, 52 patents held by 7 firms in the telecommunications sector, and 37 patents held by 4 institutions which are claimed to have arisen from publicly-financed research.[126] The researchers used series of RTI petitions to collect a total of 263 Forms 27 corresponding to these patents filed between 2009 and 2012.[127]

Based on a total of 141 patents, full compliance with Form 27 filing requirements would have yielded 423 Forms 27 over the three-year period studied. The total of 263 Forms identified indicates a non-compliance ratio of

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[122] *See supra* note 105.

[123] Basheer & Vinod, *supra* note 109.

[124] This study pre-dates the electronic availability of Forms 27.

[125] Basheer & Vinod, *supra* note 109, at 7-8.

[126] Basheer Writ Petition (2015), *supra* note 107, at Annexure P-11, tbl. I. It is not clear how the studied patents were selected. They do not represent the totality of patents in the designated industry sectors. Likewise, it is not clear how "publicly-funded research" is defined nor the amount of such funding behind the selected patents.

[127] It appears that this study covered three "reporting years" at the IPO: 2009-10, 2010-11 and 2011-12. Reporting years run from April 1 to March 31.

approximately 38%,[128] assuming that all filed forms were produced by the IPO. A review of the reported data[129] indicates that some firms, particularly in the pharmaceutical sector, were assiduous in filing Forms 27. For example, Genentech and Janssen Pharmaceuticals, with two patents each, each filed six Forms 27, suggesting full compliance. Other firms, however, fell far short of this measure. Apple, for example, with four patents, filed only one Form.

In addition to raw filing statistics, Prof. Basheer investigates the quality of the disclosures made in individual Forms 27. He finds that significant numbers of filed Forms "were grossly incomplete, incomprehensible or inaccurate."[130] For instance, numerous forms failed to indicate how patents were being worked or the quantity, value or place of manufacture of patented products as required by the Form.[131] In addition, of forty-two Forms that disclosed non-working of a patent, twenty-eight (65%) failed to offer any reason for non-working.[132] Though the raw data underlying these conclusions does not appear to be publicly available, choice excerpts from a few Forms are offered.

While the prior studies cited above suggest that there are substantial non-compliance issues with Form 27 practice in India, additional data is required to develop a more complete understanding of this issue. The Controller's annual report data is provided only at a gross level and lacks any detail regarding compliance. Prof. Basheer's pioneering studies, while first alerting the public to the problems of non-compliance, cover only small, non-random samples of patents and end prior to the general online availability of Forms 27.

B. Methodology

In this study, we sought to assess annual Form 27 submissions across a comprehensive set of patents and a substantial time frame. To do so, we utilized a set of 4,052 Indian patents identified by Contreras and Lakshané as of February 2015 in a prior study of the Indian mobile device patent landscape (Landscape Study).[133] Another 367 patents pertaining to mobile device technology, which were not included in the original Landscape Study, were also identified by an

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[128] This figure is calculated as 1 - 263/421. Prof. Basheer has reported this ratio as approximately 35%. Basheer, *supra* note 29, at 18.

[129] Basheer Writ Petition (2015), *supra* note 107, at Annexure P-11, tbl. I.

[130] *Id*. at 10.

[131] *Id*. at 10-16; Basheer, *supra* note 29, at 19.

[132] Basheer, *supra* note 29, at 12-13.

[133] *See* Contreras & Lakshané, *supra* note 9, at 27-28 (describing electronic search and case harvesting methodology).

independent contracted search firm. In the aggregate, we analyzed 4,419 Indian patents issued as of February 2015 in the mobile device sector, which we believe to represent the large majority of issued Indian patents in this sector as of the date selected.

We identified Form 27 filings with respect to each such patent through searches[134] of two public online databases maintained by the Indian Patent Office: Indian Patent Advanced Search System ("InPASS") and Indian Patent Information Retrieval System ("IPAIRS").[135] We manually eliminated duplicate results obtained from these two databases.

Our initial searches in 2015 yielded Form 27 submissions for only 1,999 out of 4,419 patents. These searches yielded no Forms 27 for some firms known to be significant patent holders in the mobile devices industry. To attempt to locate the missing forms, Lakshané, through the Centre for Internet and Society (CIS), submitted two formal requests to the IPO located in Mumbai under the Indian Right to Information ("RTI") Act of 2005. The first RTI application was submitted on June 10, 2015, requesting Form 27 information for over 800 patents.[136] On June 17, the IPO replied with generic instructions on how to find Form 27 submissions online.[137] A second RTI application was filed on March 11, 2016.[138] The second request sought Form 27 filings pertaining to 61 of the remaining patents.[139] These 61 patents were selected to represent a sample of patents held by the full cross-

[134] Searches were conducted and results were compiled by a contracted Indian service provider selected through a competitive bid process.

[135] While InPASS and IPAIRS retrieve Form 27 submissions from the same URL, we observed that sometimes a submission that was displayed on data base was not displayed on the other. Thus, IPAIRS was used when Form 27 was not found for a queried patent on InPASS. InPASS has two features: Application Status and E-Register. At times, some forms were not available at E-Register that could be found through the Application Status table, and vice versa. Thus, both features were used. A detailed, step-by-step description of the search methodology used can be found at http://cis-india.org/a2k/blogs/methodology-statements-of-working-form-27-of-indian-mobile-device-patents.

[136] Ajoy Kumar, "Request for Information under Section 6 of the Right to Information Act, 2005; regarding Form 27 Submissions for Patents," The Centre for Internet and Society, (June 10, 2015), https://cis-india.org/a2k/blogs/rti-app-2015.pdf/at_download/file.

[137] Boudhik Bhawan, "Supply of information sought under RTI – reg," The Centre for Internet and Society, (June 17, 2015), https://cis-india.org/a2k/blogs/rti-reply-2015.pdf/at_download/file.

[138] Ajoy Kumar, "Request for Information under Section 6 of the Right to Information Act, 2005; regarding Form 27 Submissions for Patents," The Centre for Internet and Society, (Mar. 11, 2016), https://cis-india.org/a2k/blogs/rti-app-2016.pdf/at_download/file.

[139] *Id.*

section of patent holders identified in the Landscape Study. In April 2016, the IPO replied that, due to internal resource constraints, it could only provide CIS with Forms 27 for eleven (11) of the requested patents.[140]

Nevertheless, a few days after IPO's reply, Form 27 submissions pertaining to patents in the Landscape Study started appearing on InPASS and IPAIRS. We repeated the search for Forms 27 corresponding to all 4,419 patents in our dataset in August 2016 and obtained a total of 4,935 Forms 27 corresponding to a total of 3,126 patents (an increase of 1,127 patents over the initial search).

All Forms 27 that we accessed were downloaded as PDF files or original image files and manually entered into a text-searchable spreadsheet maintained at CIS.[141] All information from the Forms 27 was transcribed into the spreadsheet, including all textual descriptions of patent working and licensing. The results were then analyzed as described in Part III.A below.

C. Limitations

The present study was limited by the technical capabilities of the IPO's online Form 27 repository.[142] As described above, we found significant gaps in posted Forms 27 in our initial search, and it took a formal RTI application to spur the IPO to upload additional forms. Yet, we still identified 1,400 fewer Forms 27 than issued patents in the mobile devices category. The degree to which these missing forms arise from abandoned or expired patents, or additional failures of the IPO to upload filed forms, is unclear. Other than the IPO web site, there is no practical way to identify or access Forms 27 filed with the IPO. Technical issues with the InPASS and IPAIRS databases were constant challenges during this study. The databases were frequently unavailable, produced conflicting results, and were subject to numerous runtime errors and failures.

Despite these technical challenges, we believe that we have identified a large segment of filed Forms 27 covering Indian patents held by all major patent holders

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[140] Ujjwala Haldankar, "Supply of information sought under RTI, 2005 – reg," The Centre for Internet and Society, (Apr. 4, 2016), https://cis-india.org/a2k/blogs/rti-reply-2016.pdf/at_download/file.

[141] Rohini Lakshané, Dataset for "Patent Working Requirements and Complex Products: An Empirical Assessment of India's Form 27 Practice and Compliance," The Centre for Internet and Society (Aug. 17, 2017), https://cis-india.org/a2k/blogs/dataset-for-patent-working-requirements-and-complex-products-an-empirical-assessment-of-indias-form-27-practice-and-compliance.

[142] Similar deficiencies with the IPO's online filing facility have been noted by Basheer. *See* Basheer Writ Petition (2015), *supra* note 107, at 17.

in the mobile device sector. We hope that this study will further encourage the IPO to improve the regularity and reliability of its Form 27 database.

III.
FINDINGS

In this Section, we describe the findings of our empirical collection analysis of Forms 27 pertaining to Indian patents in the mobile device sector.

A. Aggregated Data – Forms Found and Missing

As noted above, we used a dataset comprising 4,419 Indian patents in the mobile device sector issued as of February 2015. Of these, at least 107 patents were likely expired prior to the date on which a Form 27 would have been filed,[143] leaving 4,312 patents for which at least one Form 27 could have been filed.

We were able to identify and obtain a total of 4,916 valid Forms 27[144] which corresponded to 3,126 of these patents, leaving 1,186 Indian patents for which a Form 27 could have been filed, but was not found. This total represents 27.5% of the patents for which at least one Form 27 could have been filed: a significant portion of the total number of patents in the field, and within the general range of missing Forms identified by both the Controller and Basheer (2015).

Based on the year of grant of each of the 4,312 patents identified in the mobile device sector as to which a Form 27 could have been filed, we determined that a total of 24,528 Forms 27 should have been filed with respect to these patents.[145] This figure represents the sum of total Forms 27 that could have been

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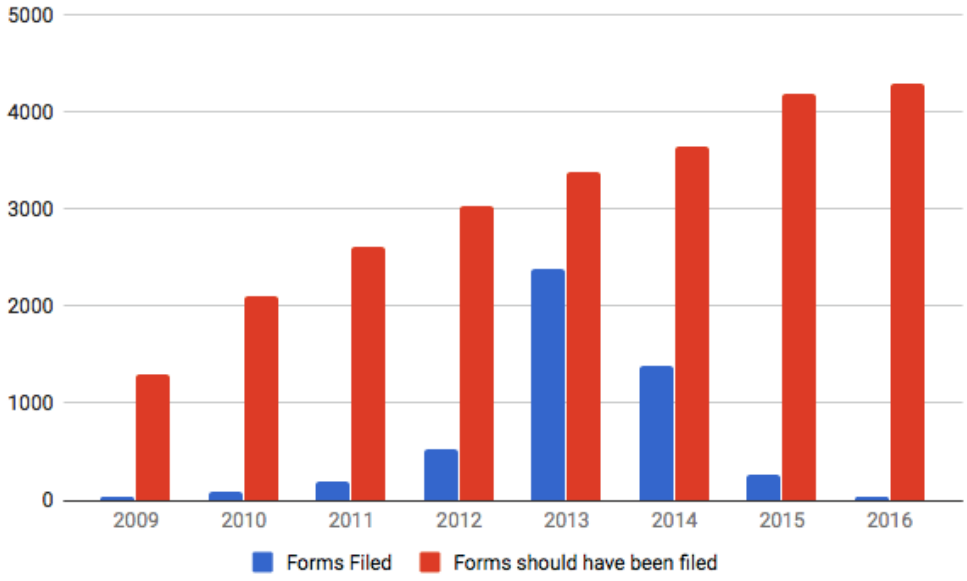
[143] Prior to the 2002 Amendments to the Patents Act, 1970 (effective May 20, 2003), the term of product patents in India was 14 years from the date of issuance. Patents Act (2002 Amendments), Sec. 53. Accordingly, any patent issued in 1995 or earlier would be expired by 2009. Based on the data provided by the Controller and Basheer, it appears that few, if any, Forms 27 were filed prior to 2009. Thus, it is unlikely that any patent that expired prior to 2009 would have a corresponding Form 27. As a result, for purposes of counting Forms 27 that were, and should have been filed, we disregarded 107 patents in our dataset that were issued in 1995 or earlier (the vast majority of which were owned by Siemens).

[144] A total of 4,935 Forms 27 were identified by our search. In 2013, Motorola filed 19 Forms 27 that were backdated to 2004 and 2005. These Forms corresponded to patents issued between 2008 and 2010, and apparently reflected the patentee's incorrect belief that Form 27 must be filed as of the date of the filing of a patent application rather than the issuance of the patent. Because the patentee also filed Forms 27 dated as of 2013 for these patents, we have disregarded these spurious filings.

[145] Based on the data provided by the Controller and Basheer, it appears that few, if any, Forms 27 were filed prior to 2009. Thus, we assumed that Forms 27, if filed, would only have

filed for each such patent, which ranges from a low of one to a high of eight Forms 27 per patent. In our sample, no single patent was associated with more than five Forms 27. As noted above, we obtained a total of 4,935 Forms 27 filed with respect to 3,126 patents, representing only 20.1% of the total Forms 27 that should have been filed and made available with respect to the 4,312 patents studied. Figure 1 below compares the number of Forms 27 filed in each year since 2009 with the number of Forms 27 that should have been filed each year based on the number of mobile device patents in force from year to year.

Figure 1
Actual vs. Required Form 27 Filings, by year
(based on number of mobile device patents in force)



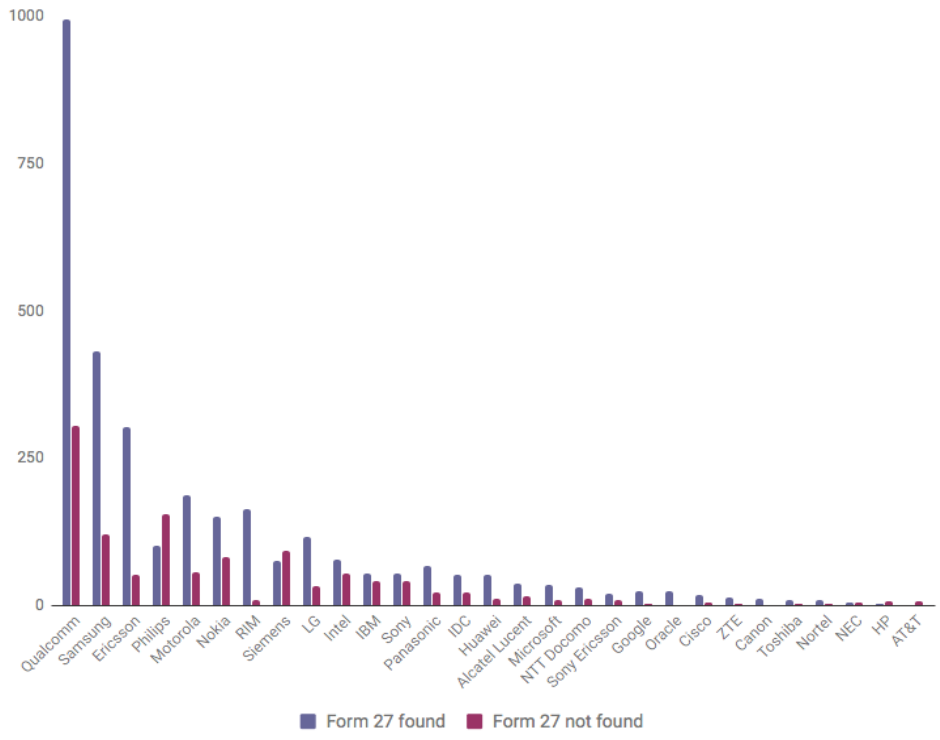
begun to be filed in 2009. As discussed in note 143, *supra*, the first patents that could be expected to have a filed Form 27 were issued in 1996 (i.e., one Form filed in 2009, the year of the patent's expiration). Thus, beginning with patents issued in 1996, we calculated the total number of Forms 27 that could have been filed with respect to such patents beginning in 2009 and ending in 2016 (noting that we ended our study in August 2016). Thus, for patents issued in 1996 and expiring in 2009, one Form 27 could have been filed. For patents issued in 2002 to 2008, and expiring well after 2016, a total of eight Forms 27 could have been filed, in each case beginning in 2009 and ending in 2016. Patents issued in 2015 could have at most one Form 27 filed. Though Form 27 is not required to be filed until the year after a patent has been granted, some patentees have made filings in the year of grant. We counted these filings, but did not count year-of-grant filings in determining the maximum number of filings that could be made for a particular patent.

As shown in Figure 1, Form 27 filings have fallen well below the required number every year. In 2009, the first year in which Forms 27 were filed in any numbers, only 36 Forms were filed, representing only 2.8% of the 1,302 Forms that should have been filed based on the number of mobile device patents in force that year. By 2013, the number of Forms filed rose to 2,389, representing 70.7% of the 3,379 Forms that should have been filed. This ratio declined again in 2014 to 1,392 Forms out of a total of 3,639 (38.3%). Data for 2015 and 2016 are likely incomplete given the February 2015 cutoff for patents in our study. We also expect that many of the 1,186 "missing" Forms 27 were filed more recently and have not yet been uploaded by the IPO in a searchable format.

One possible explanation for the beginning of filings in 2009 and the significant jump in filings in 2013 may be the Controller's public notifications of the need to file Forms 27 in 2009 and 2013.[146]

Figure 2 below illustrates the number of issued *patents* in the mobile device sector for which Forms 27 were found and missing, categorized by patent holder (assignee). Complete data is contained in the Appendix, Table A1.

Figure 2
Forms 27 (Identified and Missing) Per Assignee



[146] *See supra* text accompanying note 105.

As shown in Figure 2, missing Forms 27 were distributed among most holders of Indian patents in the mobile device sector. Of the 40 firms identified as holding issued mobile device patents, Forms were missing for 37 of these (92.5%). In most cases, more Forms 27 were found than missing. In a few cases, however (most notably Philips), more Forms 27 were missing than found. In the case of four large patent holders (Qualcomm, Siemens, Philips and Samsung), more than 100 Forms 27 were missing. Forms 27 were missing for patents with issuance dates ranging from 2004 to 2015.[147]

There are several possible reasons that Forms 27 may not have been identified for all issued Indian patents. One possibility, is non-compliance by the patent holder. This is likely the case with respect to the early years (2009-2010), when filing requirements were not yet normalized. However, in more recent years, the following factors suggest that patent holder non-compliance is *not* a significant cause of missing Forms 27 in the IPO database: (1) Forms 27 were missing for nearly all patent holders across the board, (2) large patent holders filed hundreds of Forms 27 and were clearly aware of their filing requirements, (3) the incremental cost of filing Forms 27 is minimal, and (4) in most cases, large patent holders simply copy text from one form to another (not in itself ideal, see below), requiring little incremental effort to file additional forms. Rather, given our experience with IPO during this study (see Methodology, above), we expect that the missing forms are due largely to the IPO's failure to upload Forms 27 to its web site in a timely and reliable manner, and the dropping of Forms 27 once uploaded.

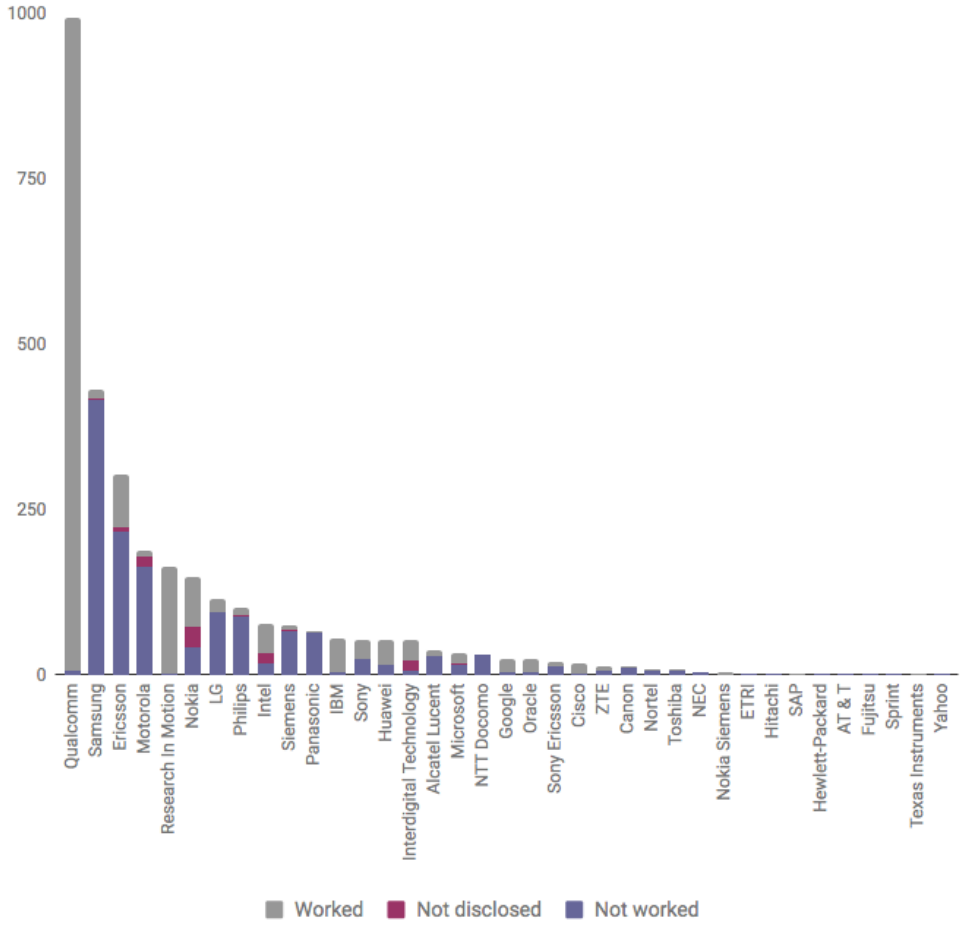
B. Working Status

As noted above, we reviewed 4,935 Forms 27 filed with respect to 3,126 patents in the mobile device sector. Figure 3 below illustrates the number of patents for which Forms 27 were filed and which the assignee designated that the patent was worked versus not worked (or, in a few cases, made no indication of working status).[148]

[147] It is not surprising that no forms were available for patents issued prior to 2007, the first year that the Indian Controller of Patents drew attention to the Form 27 requirement. *See supra* Part I.D.

[148] For patents that had different working designations in Forms 27 filed in different years, we counted a patent to be declared as worked if at least one Form 27 so designated the patent.

Figure 3
Working Status, by Assignee



These results suggest that different patentees have developed significantly different strategies regarding their Form 27 filings. For example, Qualcomm, the largest holder of patents in the mobile device sector (1,298 patents, 993 of which have associated Forms 27), represents that nearly all of its patents (986, 99.3%) are being worked. Samsung, on the other hand, holds the second-highest number of patents (551 patents, 430 of which have associated Forms 27). Yet Samsung claims that it is working only 12 of its patents (2.3%). Clearly, these two patentees are employing different strategies regarding the declaration of working. A glance at Figure 3 suggests that some patentees such as RIM (now renamed Blackberry) follow Qualcomm's approach of declaring most patents to be worked, while others (Ericsson, LG, Motorola, Panasonic, Philips, Siemens) follow Samsung's approach and declare most patents not to be worked.

Of course, one might reason that there may be some difference between the patents themselves, and that the patentees' declarations may simply reflect the fact

that some firms' patents are used more pervasively in India. This conjecture, however, is unlikely. Most of the patentees studied are large multinationals whose patents cover the same products. Many of these patents are declared as essential to the same technical standards. Moreover, given the generally ambiguous evidence proffered by patentees supporting their designated working status (see Part III.C, below), we doubt there are substantial enough differences among the patentees' portfolios to account for the significant divide in declarations of working status.

C. Descriptive Responses

As noted above,[149] Form 27 requires the patentee to disclose whether or not a patent is being worked in India. If so, the patentee must disclose the number and amount of revenue attributable to products covered by the patent that are manufactured in India and are imported from other countries. If the patent is not being worked, the patentee must explain why and describe what steps are being taken to work the invention. In both cases, the patentee must also identify licenses and sublicenses granted and state how it is meeting public demand for products at a reasonable price.

As first observed by Basheer, there is widespread non-compliance with these reporting and disclosure requirements.[150] We largely confirm this result. Below is a summary of our findings with respect to the descriptive responses for the 4,935 Forms 27 that we reviewed.

1. *Working Status Not Disclosed*

For a surprising number of Forms 27 (95 or 3%), the working status of the relevant patent was not designated (i.e., neither the box for "worked" nor "not worked" was checked by the patentee). Table 1 below shows the patentees that filed Forms 27 in this manner.

[149] *See supra* text accompanying note 101 (language of Form 27).
[150] *See* Basheer Writ Petition, *supra* note 107, at 10.

Table 1
Forms 27 Failing to Disclose Working Status

Patentee	Number of Forms
Ericsson	12
Intel	19
Intel + InterDigital	7
InterDigital	18
Microsoft	6
Motorola	28
Nokia	32
Others	7
TOTAL	129

Clearly, these sophisticated multinational firms understood the filing requirements for Form 27 and, in most cases, filed additional Forms 27 that did indicate whether the relevant patent was or was not being worked. Thus, the principal reason for filing a Form 27 without designating its working status appears to be the patentee's uncertainty regarding the patent's working status in India.

Illustrating this point, Motorola declares in several of its Forms of this nature that "[i]t is not possible to determine accurately whether the patented invention has been worked in India or not, due to the nature of the invention."[151] While Motorola fails to explain how "the nature of the invention" makes it impossible to determine whether or not the patent is being worked, it uses this litany in most of its Forms 27 that fail to disclose working status. Ericsson adopts a slightly different approach, stating that while it is actively seeking opportunities to work the patent, there may have been some uses of the patented technology.[152] Thus, again, it is uncertain whether the patent is being worked or not. Presumably, these patentees felt that it was preferable to file an incomplete, rather than incorrect, Form 27.

Interestingly, most patentees never revised their working non-designations over the years. Thus, if a patent was not designated as worked or not worked in the first year a Form 27 was filed, subsequent filings for that patent typically duplicated the language of prior years' filings. One exception appears to be

[151] Motorola, Form 27 for 243220, INPASS (Mar. 31, 2014), http://ipindiaonline.gov.in/frm27/2013/243220_2013/243220_2013.pdf.

[152] Ericsson, Form 27 for 241488, INPASS (Feb. 3, 2012), http://ipindiaonline.gov.in/frm27/2011/241488_2011/241488_2011.pdf ("The patentee is in the look out for appropriate working opportunities in a large scale although there may have been some use of the patented technology in conjunction with other patented technologies.").

Google, which acquired Motorola's patent portfolio in 2012. For Indian Patent No. 243210 issuing in 2010, Motorola filed Forms 27 in 2010 and 2011 without indicating whether or not the patent was worked. However, in 2013, Google/Motorola filed a Form 27 for the same patent indicating that it was *not* worked.

Google has elected to opt for non-working when it is uncertain of the working status of a patent. For example, the following qualified language is used in several Forms in which Google indicates that a patent is not being worked:

> Based on a reasonable investigation, it is Google's belief that the patent has not been worked in India. The uncertainty arises because Google's products and services are covered by numerous patents belonging to Google's very large worldwide patent portfolio, and Google does not routinely keep track of which individual patent is being employed in Google's products and services. The present statement is being filed on the basis of Google's current estimation, but Google requests opportunities to revise the statement, should it transpire at a later date that the patent is being worked contrary to their present belief.[153]

2. Patents Not Worked

We examined a total of 2,380 Forms 27 that indicated the relevant patents were not being worked. If a patent is specified as not being worked, the patentee must disclose the reasons for the failure to work the patent, and describe what steps are being taken to work the invention.

In a small number of cases, the patentee offered some plausible explanation for non-working of the patent. The most common of these, claimed by in Ericsson in thirty-six Forms 27, was that the underlying technology was still under development,[154] making working impossible, at least until that development was completed. In a handful of other Forms 27 (6), Ericsson and Nokia have claimed that a patent was not being worked because it covered a technology awaiting approval or endorsement by a standards body.[155] In the vast majority of cases,

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[153] Google, Form 27 for 243210, INPASS (Mar. 27, 2015), http://ipindiaonline.gov.in/frm27/2014/243210_2014/243210_2014.pdf. *See infra* Part III.D for a discussion of patents as to which the patentee has changed the working status over the years.

[154] *See, e.g.*, Ericsson, Form 27 for 209941, INPASS (Mar. 30, 2015), http://ipindiaonline.gov.in/frm27/2014/209941_2014/209941_2014.pdf.

[155] *See, e.g.*, Ericsson, Form 27 for 259809, INPASS (Mar. 19, 2015), http://ipindiaonline.gov.in/frm27/2014/259809_2014/259809_2014.pdf.

however, no explanation is offered as to why a particular patent is not being worked.

With respect to disclosure of the patentees' plans for working a non-worked patent, most simply include stock language stating that they are "actively seeking" or "on the lookout for" commercial working opportunities in the future.[156] Alcatel-Lucent adopted an even more passive and non-specific stance toward its plans to work patents, stating in numerous Forms 27 (applicable to 29 patents) that "as and when there is a specific requirement, the patent will be worked."[157]

3. Varied Interpretations of Working

We reviewed 2,425 Forms 27 that listed the subject patent as being worked. In such cases, the patentee must disclose the number and amount of revenue attributable to products covered by the patent, whether manufactured in India or imported from other countries. A tiny percentage of the Forms 27 that we reviewed provided this information in the form requested. As we discuss in our conclusions, below, it is likely that the format of the required response is simply unsuitable for complex products such as mobile devices. Below we summarize and classify the types of responses that patentees offered regarding the working of their patents.

a. Specific Information – Very few Forms 27 actually provide the specific product volume and value information required by the Form. The only patentee that provided the specific information required by Form 27 was Panasonic, which, with respect to the only two patents that it claimed to work (of a total of 66 Indian patents as to which a Form 27 was found), listed specific product volumes and values.[158]

Other patentees disclosed specifics regarding the technical details of their worked patents, but declined to provide product volume and value information. For

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[156] Ericsson, Form 27 for 227819, INPASS (Mar. 13, 2015), http://ipindiaonline.gov.in/frm27/2014/227819_2014/227819_2014.pdf ("The patentee is in the look out for appropriate working opportunities in a large scale"); Motorola, Form 27 for 236128, INPASS (Mar. 8, 2013), http://ipindiaonline.gov.in/frm27/2012/236128_2012/236128_2012.pdf ("The Patentee is actively looking for licensees and customers to commercialise the invention in the Indian environment.").

[157] Alcatel-Lucent, Form 27 for 258507, INPASS (Mar. 18, 2015), http://ipindiaonline.gov.in/frm27/2014/258507_2014/258507_2014.pdf.

[158] Panasonic, Form 27 for 239668, INPASS (Mar. 21, 2014), http://ipindiaonline.gov.in/frm27/2013/239668_2013/239668_2013.pdf; Panasonic, Form 27 for 208405, INPASS (Mar. 21, 2014), http://ipindiaonline.gov.in/frm27/2013/208405_2013/208405_2013.pdf.

example, Ericsson discloses: "the stated patent covers a specific detail of data transmission to a mobile in a GSM or WCDMA mobile network where said transmission of data is not performed if the mobile has not enough battery capacity left for the transfer."[159] Ericsson goes on, however, to explain that because this patented technology is intended to be used in conjunction with other patented technologies, it is not possible to provide the financial value of the worked patent "in isolation."[160] Oracle also adopts this approach of offering specific product information, while declining to estimate associated sales volume or revenue.[161]

b. Relevance to a Standard – In several cases, a patentee describes its patented invention by reference to an industry standard. For example, Nokia-Siemens utilize the following description for one patent that is allegedly worked: "Invention relevant for IEEE 802.16-2009 and IEEE 802.16-2011 standard."[162] While the patentee offers no additional information regarding the working of the patent, the desired implication, presumably, is that the patent covers an aspect of the standard, and if the standard is implemented in products sold in India (as it likely is), then the patent is thereby worked.

Some patentees offer less specific information regarding the standards that their patents cover. For example, Ericsson states in one Form that "This patent is essential for a 3rd Generation Partnership Project (3GPP) standard and Ericsson is also, subject to reciprocity, committed to make its standard essential patents available through licensing on fair, reasonable and Non-discriminatory (FRAND) terms."[163] In this formulation, the patentee appears both to be implying working of

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[159] Ericsson, Form 27 for 233994, INPASS (Mar. 6, 2013), http://ipindiaonline.gov.in/frm27/2012/233994_2012/233994_2012.pdf.

[160] *Id.*

[161] *See* Oracle, Form 27 for 230190, INPASS (Mar. 24, 2014), http://ipindiaonline.gov.in/frm27/2013/230190_2013/230190_2013.pdf ("The methods/structures of the patent are generally related to "Asynchronous servers". This product has been sold to several businesses in India in the past few years and is believed to be used by them. Additional information will be enquired and provided to the Patent Office upon request.").

[162] Nokia Siemens, Form 27 for 254894, INPASS (Mar. 28, 2014), http://ipindiaonline.gov.in/frm27/2013/254894_2013/254894_2013.pdf.

[163] Ericsson, Form 27 for 249058, INPASS (Mar. 03, 2014), http://ipindiaonline.gov.in/frm27/2013/249058_2013/249058_2013.pdf; In other Forms 27, however, Ericsson

provides significant detail regarding the standards/specifications covered by its patents.

See, e.g., Ericsson, Form 27 for 213723, INPASS (Mar. 16, 2016), http://ipindiaonline.gov.in/frm27/2015/213723_2015/213723_2015.pdf (citing ETSI TS 126 092 V4.0.0 (2001-03), ETSI TS 126 073 V4.1.0 (2001-12) and ETSI TS 126 093 V4.0.0 (2000-12), all of which are pertinent to the UMTS 3G standard).

the patent by virtue of the implicit inclusion of the standard in Indian products, and also to be making known its willingness to enter into licenses in the future on FRAND terms. This future-looking perspective, however, is not responsive to the information called for by Form 27 for patents that are allegedly being worked, and implies that the patent is not, in fact, being worked yet in India.

c. Indian Licensees – Some licensees, Qualcomm in particular, disclose that they have licensed their patents to Indian firms. These licenses are disclosed in Qualcomm's Forms 27 for various patents.[164] However, it is not clear what manufacturing or other activity is carried out by these Indian licensees. Ericsson, which has been engaged in litigation with numerous Indian and Chinese vendors of mobile devices in India, reports that it is receiving royalties from at least two of these entities under court order, though it stops short of stating that these entities are licensed under Ericsson's patents.[165]

d. Worldwide Licensees – In addition to Indian licensees, Qualcomm discloses that, as of 2014, it had granted worldwide CDMA-related patent licenses to more than 225 licensees around the world, and that CDMA-based devices were imported into India from "countries such as Canada, China, Finland, Germany, Italy, Japan, Korea, Switzerland, Taiwan, and the United States."[166] While Qualcomm is not specific regarding the linkage, if any, between its worldwide licensees and mobile devices sold in India, it reports that more than 37.7 million CDMA-based mobile devices were sold in India in 2014 at an average price of USD $161.94.[167] And though not express, the implication of these data is that all CDMA-based mobile devices sold in India somehow utilize Qualcomm's patented technology.

The granting of worldwide licenses raises an interesting question regarding local working of patents. As Ericsson (which claims to have executed more than 100 patent licensing agreements) explains, its global licensees are, by definition, licensed in every country, including India. Because their global license agreements "are operational in India", the licensees are theoretically authorized to work Ericsson's patents in India. But it is not clear that this means that the patents are

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[164] *See, e.g.*, Qualcomm, Form 27 for 251876, INPASS (Mar. 28, 2015), http://ipindiaonline.gov.in/frm27/2014/251876_2014/251876_2014.pdf (disclosing Indian licensee Innominds Software Pvt. Ltd.).

[165] *See* Ericsson, Form 27 for 213723, INPASS (Mar. 16, 2016), http://ipindiaonline.gov.in/frm27/2015/213723_2015/213723_2015.pdf (referencing royalty payments from Micromax and Gionee).

[166] Qualcomm, Form 27 for 251876, INPASS (Mar. 28, 2015), http://ipindiaonline.gov.in/frm27/2014/251876_2014/251876_2014.pdf.

[167] *Id*.

actually being worked in India. Simply granting a worldwide patent license does not mean that the licensed patent is being worked, just as the issuance of a patent in a country does not mean that the patent is being worked in that country.

e. Too Big to Know – Some patentees claim that they or their patent portfolios are simply too vast to determine how particular patents are being worked in India, or the number or value of patented products sold in India. Nokia, for example, uses the following language in 82 separate Form 27 filings: "Nokia's products and services are typically covered by tens or hundreds of the nearly 10,000 patents in Nokia's worldwide portfolio. Nokia does not keep records of which individual patents are being employed in each of Nokia's products or services, and is therefore unable to report the quantum and value of its products or services which employ the patented invention."[168]

In a similar vein, Ericsson notes that its patented technologies are intended to be used in combination with a large number of other technologies patented by Ericsson and others. Accordingly, "it is close to impossible to prove an indication of specific or even close to accurate financial value of the said patent in isolation…"[169] This said, Ericsson goes on to disclose its total product sales in India (3.09 billion SEK in 2013) and also notes that it earns revenue from licensing its patents (without disclosing financial data).[170]

f. On the Lookout – Curiously, some patentees that claim to be working their patents use the same language regarding their search for working opportunities as they and others use with respect to non-worked patents. For example, Ericsson makes this statement regarding some of the patents that it is allegedly working in India: "The patentee is in the lookout for appropriate working opportunities in a large scale although there may have been some use of the patented technology in conjunction with other patented technologies."[171] This language is uncertain and does not seem to support a claim that, to the patentee's knowledge, the patent is actually being worked. At best, it expresses optimism toward the possibility of finding an opportunity to work the patent in the future.

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[168] Nokia, Form 27 for 220072, INPASS (Mar. 20, 2014), http://ipindiaonline.gov.in/frm27/2013/220072_2013/220072_2013.pdf.

[169] Ericsson, Form 27 for 251757, INPASS (Mar 11, 2014), http://ipindiaonline.gov.in/frm27/2013/251757_2013/251757_2013.pdf.

[170] *Id*.

[171] *See, e.g.*, Ericsson, Form 27 for 248764, INPASS (Mar. 23, 2012) http://ipindiaonline.gov.in/patentsearch/GrantedSearch/viewdoc.aspx?id=gPYX0WsErIRQR3is4uM1fw%3d%3d&loc=wDBSZCsAt7zoiVrqcFJsRw%3d%3d.

g. Information Provided Upon Request – Some patentees decline to provide any information about the working of their patents in Forms 27, but offer to provide this information if requested (presumably by a governmental authority).[172] Some patentees further explain their hesitation to provide this information in Form 27 on the basis that the information is confidential, but commit to provide it if requested.[173]

h. Corporate PR – Some patentees, in addition to, or in lieu of, providing information about their patents, offer general corporate information of a kind that would often be found in corporate press releases and annual reports. For example, Research in Motion offers this glowing corporate report in lieu of any information about its allegedly worked patents:

> Patentee is a leading designer, manufacturer and marketer of innovative wireless solutions for the worldwide mobile communications market. Through the development of integrated hardware, software and services that support multiple wireless network standards, the patentee provides platforms and solutions for seamless access to time-sensitive information including email, phone, SMS messaging, internet and intranet-based applications. Patentee's technology also enables a broad array of third party developers and manufacturers to enhance their products and services with wireless connectivity. Patentee's portfolio of award-winning products, services and embedded technologies are used by thousands of organizations around the world (including in India) and include the Blackberry wireless platform, the RIM Wireless Handheld product line, software development tools, radio-modems and software/hardware licensing agreements.[174]

RIM then goes on to explain that it has so many patents that identifying how the instant patent is worked in India is impossible (see "Too Big to Know" above).

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[172] *See, e.g.*, Huawei, Form 27 for 251769, INPASS (Mar. 4, 2014), http://ipindiaonline.gov.in/frm27/2013/251769_2013/251769_2013.pdf ("Information not readily available; efforts will be made to collect and submit further Information, if asked for.").

[173] *See, e.g.*, Hitachi, Form 27 for 226462, INPASS (Mar. 28, 2013), http://ipindiaonline.gov.in/frm27/2013/226462_2013/226462_2013.pdf ("Confidential Information will be provided if asked for.").

[174] Research in Motion, Form 27 for 261068, INPASS (Feb. 10, 2015), http://ipindiaonline.gov.in/frm27/2014/261068_2014/261068_2014.pdf.

Ericsson likewise offers a bit of self-serving corporate history in twenty-eight different Forms 27 in which it states:

> Ericsson's history in India goes back 112 years during which period Ericsson has contributed immensely to the telecommunication field in India. Ericsson provides, maintains and services network for several major government and private operators in India. At present, Ericsson has more than 20,000 employees across 25 offices in India. Further, Ericsson has established manufacturing units, global service organization and R&D facilities in India...[175]

i. Just Don't Know – Some patentees simply assert that they are unable to determine information regarding working of their patents, without any explanation why. Alcatel-Lucent, for example, offers the following unsatisfying disclosure with respect to the eight patents that it claims to be working in India: "The patentee is unable to particularly determine and provide with reasonable accuracy the quantum and value of the patented invention worked in India, including its manufacture and import from other countries during the year 2014."[176]

j. No Description – Some patentees simply omit to provide any information whatsoever regarding the working of their patents, even when patents are allegedly worked.[177]

4. Changes in Status

While some of the "boilerplate" responses provided by patentees in their filed Forms 27 might suggest that patentees give little thought to the content of Form 27 filings, we identified a small but non-trivial number of patents (4.1%) as to which the patentee changed the working status, either from worked to not worked, or vice versa. Overall, we identified 128 instances in which the working

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[175] Ericsson, Form 27 for 254652, INPASS (Mar. 21, 2016), http://ipindiaonline.gov.in/frm27/2015/254652_2015/254652_2015.pdf.

[176] *See, e.g.*, Alcatel-Lucent, Form 27 for 202208, INPASS (Mar. 27, 2014), http://ipindiaonline.gov.in/frm27/2013/202208_2013/202208_2013.pdf.

[177] *See, e.g.*, Ericsson, Form 27 for 235605, INPASS (Feb. 23, 2011), http://ipindiaonline.gov.in/patentsearch/GrantedSearch/viewdoc.aspx?id=ghLLyAj0oCzH9pUf4tY2Kw%3d%3d&loc=wDBSZCsAt7zoiVrqcFJsRw%3d%3d; Ericsson, Form 27 for 235605, INPASS (Feb. 6, 2012), http://ipindiaonline.gov.in/patentsearch/GrantedSearch/viewdoc.aspx?id=ghLLyAj0oCzH9pUf4tY2Kw%3d%3d&loc=wDBSZCsAt7zoiVrqcFJsRw%3d%3d; Huawei, Form 27 for 249244, INPASS (Mar. 11, 2013), http://ipindiaonline.gov.in/patentsearch/GrantedSearch/viewdoc.aspx?id=9BzV82RULJkFoIPZZZeH9A%3d%3d&loc=+mN2fYxnTC4l0fUd8W4CAA%3d%3d.

status of a patent was changed from one year to the next. Of these, 51 went from worked to not worked, and 77 went from not worked to worked. Such changes suggest that patentees give at least some thought to the manner in which they work their patents, and seek to correct inaccurate disclosures, though these observed variances could also be attributed to changes in law firm, changes in interpretation of filing requirements or mere clerical errors and inconsistencies in filings from year to year.

In 17 cases, the status of the same patent changed *twice* over the course of three or more Forms 27. Almost all of these three-stage "flip-flops" moved from worked to not worked to worked, with the aberrant 'not worked' year occurring in 2013. In fact, 2013 seems to have been a popular year for changes in working status, whether because of heightened awareness, and therefore greater scrutiny of Form 27 filings due to the Controller General's public notice of that year, or changes in interpretation of filing requirements occasioned by a widely-attended seminar or article. But whatever the cause, it seems highly unlikely that, over the course of three years, a single patent could go from being worked in India, to not being worked, to being worked again. As a result, we attribute these flip-flop changes primarily to filing errors and inconsistencies rather than genuine attempts to correct inaccurate disclosures.

Corresponding to changes in working status, patentees often changed the textual descriptions of working or non-working contained in their Forms 27. These changes usually involved adding stock language regarding working or non-working to a Form 27 that previously contained no descriptive information. However, in some cases the patentee's descriptive text bears little relation to the purported working status of the patent. For example, as illustrated in Table 2 below, a single patentee's disclosures with respect to two different patents across three filings employ the same textual descriptions but for *different* working status.

Table 2
Comparison of Working Status Descriptions

Filing Year	Working Status IN248764	Working Status IN247934	Description
2011	Worked	Worked	The patentee is in the lookout for appropriate working opportunities in a large scale although there may have been some use of the patented technology in conjunction with other patented technologies. [*Text A*]
2013	Not worked	Worked	This patent appears to be worked along with a bunch of connected patents and we are not having any specific data of exact working at this point of time. [*Text B*]
2014	Worked	Not worked	The patentee is in the lookout for appropriate working opportunities in a large scale although there may have been some use of the patented technology in conjunction with other patented technologies. [*Text A*]

As illustrated by Table 2, the patentee's working description (Text A) is identical in 2011 and 2014 for both patents, though in 2014 one patent is allegedly worked and the other is not. Likewise, in 2013, one patent is worked and the other is not, yet the textual description for both is identical (Text B). Putting aside, for a moment, the fact that neither Text A not Text B is particularly responsive to the information requirements of Form 27, it is puzzling why the patentee would use the same stock language to describe both working and non-working of its patents. The only consistency that emerges from this example is across filing years, suggesting, perhaps, that the textual descriptions used in these forms was more dependent on the person or firm making the filing in a particular year than the alleged working status of the patents in question.

IV.
DISCUSSION AND ANALYSIS

Professor Basheer charges that significant numbers of Forms 27 are "grossly incomplete, incomprehensible or inaccurate," and has sued the Indian Patent Office

to compel it to improve its monitoring and enforcement of Form 27 filings.[178] Our results confirm that there are overall weaknesses in the Indian Form 27 system, several of which reveal deeper problems with the implementation of India's patent working requirement.

A. Process Weaknesses

Though filings in support of India's patent working obligation have been required since 1972, and Form 27 has been on the books since 2003, meaningful filings of Form 27 did not begin until the Controller's first public notice on this topic in 2009. In the following eight years, Form 27 filings have increased, but are still well below required levels (see Part III.A, above). Even at their peak in 2013, we located only 70.7% of required Forms 27 in the mobile device sector, a sector characterized by sophisticated firms that are advised by counsel. Filing ratios were significantly lower in every other year.

There are several possible reasons for these discrepancies. First are possible issues with the IPO's electronic access to records. As noted in Part II, we experienced significant difficulties obtaining Forms 27 through the IPO's web site. It was only after two RTI requests that significant numbers of Forms 27 were made accessible online. It is possible that the IPO has additional Forms 27 in its files that have not been made accessible electronically. For a system the purpose of which is to make information about non-worked patents available to the public, such lapses are inexcusable, particularly given that India's current working requirement is nearing its 50th anniversary. Accordingly, we expect that improvements to the IPO's electronic filing and access systems may improve the profile of Form 27 filing compliance.

B. Non-Enforcement and Non-Compliance

As noted above, we expect that some portion of the apparent non-compliance with India's Form 27 requirement is attributable to the inaccessibility of properly filed Forms 27. However, it is also likely that some portion of the deficit in available Forms 27 is due to actual non-compliance by patentees. Though there are stiff penalties on the books for failing to comply with Form 27 filing requirements, including fines and imprisonment,[179] we are unaware of any

[178] Basheer Writ Petition (2015), *supra* note 107, at 10.

[179] A patentee may be imprisoned for submitting false information. The Patents Act, No. 39 of 1970, INDIA CODE, § 122 (1970).

enforcement action by the IPO or any other Indian governmental authority regarding such non-compliance.[180]

Given that records of all issued Indian patents are available online, and that all filed Forms 27 should also be available online, it would not seem particularly difficult for the IPO to implement an automatic monitoring and alert system warning patentees that they have not filed required Forms 27. Such a system would likely increase compliance substantially. However, we find no evidence that the IPO monitors or otherwise keeps track of Form 27 filings or seeks to contact patentees who fail to meet their filing requirements. As a result, it is not surprising that non-compliance is widespread.

C. Uncertainty Surrounding Working and Complex Products

When Forms 27 are filed, many of them lack any meaningful detail regarding the manner in which patents are worked or the reasons that they are not worked. While the descriptive requirements of Form 27 are quite clear, even the largest and most sophisticated patentees seemingly struggle with determining whether or not a patent is actually worked in India and, if so, how to quantify its working in the manner required by the Form. There are several reasons that this degree of uncertainty exists. First, India has no clear statutory, regulatory or judicial guidelines for interpreting its working requirement. As the court noted in *Natco*, the working determination must be made on a case by case basis, with attention to the specific details of the patent in question.[181] This open-ended standard offers little guidance to firms regarding the degree to which importation or licensing may qualify as working a patent, or even what degree of assembly, packaging or distribution within India will so qualify.

Additionally, some patentees have taken the position in their Forms 27 that merely licensing a patent to an Indian firm qualifies as working the patent in India.[182] Some have even gone so far as to take the position that granting a *worldwide* patent license qualifies as working the licensed patent in India, given that India is part of the world.[183] These conclusions seem stretched, but they have not, to our knowledge, ever been challenged by the IPO or any private party.

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[180] *See* Reddy & Kadri, *supra* note 11, at 22; Basheer Writ Petition (2015), *supra* note 107, at 10 ("authorities have never initiated action against any of the errant patentees.").

[181] See *supra* text accompanying notes 81-84.

[182] See *supra* Part III.C.3.c.

[183] See *supra* Part III.C.3.d.

What's more, several patentees take the position that it is impossible to determine the value attributable to a single patent that covers only one element of a complex standard or product ("too big to know").[184] While these patentees may disclose the size of their large patent portfolios or total Indian product revenues, these figures do not provide the information required by Form 27 relative to the individual patent that is claimed to be worked.

Given the degree of uncertainty surrounding the Indian working requirement and how it is satisfied, it is not surprising that the disclosures contained in most Forms 27 are meaningless boilerplate that convey little or no useful information about the relevant patents or products. Moreover, it is questionable whether it is even *possible* for a willing patentee to provide the product and revenue information currently required by Form 27 for complex, multi-patent products such a mobile devices.[185] It may be time for the IPO to revisit the information requirements of Form 27, which were seemingly developed with products covered by one or a handful of patents in mind, to more suitable address complex electronic and communications products that may be covered by hundreds or thousands of patents each.

D. Strategic Behavior

In an environment of extreme uncertainty and low enforcement, it is not surprising that patentees have developed self-serving strategies to achieve their internal goals while arguably complying with the requirements of Form 27. Evidence of strategic behavior can be seen clearly in the divide between those patentees that claim that they are working most of their patents and those that claim that they are not.[186] We can assume that there are not significant differences in the portfolio make-up among these different patentees, so the large difference between their ratios of worked and non-worked patents must be attributable primarily to decisions made to further corporate interests.

For example, it is possible that those patentees claiming significant working of their patents do so in order to avoid requests for compulsory licenses against

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[184] *See supra* Part III.C.3.e.

[185] For example, as of 2015, more than 61,000 patent disclosures had been made against ETSI's 4G LTE standard, and more than 43,000 against ETSI's 3G UMTS standard, both of which are only one of many standards embodied in a typical mobile device. Justus Baron & Tim Pohlmann, *Mapping Standards to Patents Using Databases of Declared Standard-Essential Patents and Systems of Technological Classification* at 20, Table 5 (Regulation & Econ. Growth, Working Paper, 2015), http://www.law.northwestern.edu/research-faculty/searlecenter/innovationeconomics/documents/Baron_Pohlmann_Mapping_Standards.pdf.

[186] See *supra* Part III.B.

their patents. Such patentees may wish to exploit the Indian market themselves, or license others to do so on terms of their choosing, so may seek to avoid compulsory licensing on terms dictated by the government. Those patentees claiming significant non-working, on the other hand, may actively be *seeking* applications for compulsory licensing. Why? Perhaps because these patentees do not plan to sell products in India and see little prospect of entering into commercial license agreements with Indian producers. Thus, their greatest prospect of any financial return on their patents may be a compulsory license. As unlikely as it sounds, they may be using Form 27 as a legally-sanctioned "To Let" sign for otherwise unprofitable patents.[187]

Whatever the underlying reasons are for patentee strategic decisions in the filing of Forms 27, IPO owes the public greater clarity regarding the formal requirements for working patents in India. It is only when disclosures are made in a consistent and understandable format that the public will acquire the knowledge about patent working that the Act intends for them to receive.

E. Opportunities for Further Study

This is the first comprehensive and systematic study of reporting compliance with India's patent working requirements. It covers only one industry sector: mobile devices. Expanding this study to additional industry sectors, particularly pharmaceuticals and biomedical products, would likely yield additional insights.

It would also be informative to revisit the instant set of patents in a few years time to determine whether increased IPO access to electronic records may alter the somewhat poor compliance landscape revealed by this study. That is, if a significant number of Forms 27 that have been filed are simply unavailable through the IPO's web site, then hopefully continued information technology improvements at the IPO will improve availability in years to come.

CONCLUSION

India's annual Form 27 filing requirement is intended to provide the public with information regarding the working of patents in India so as to enable informed requests to be made for compulsory licenses of non-worked patents. While such a goal is laudable, it is not clear that this system is currently achieving the desired results.

In the first systematic study of all Forms 27 filed with respect to a key industry sector – mobile devices – we found significant under-reporting of patent

[187] We thank Chris Cotropia for this insight.

working, likely due to some combination of systemic deficiencies and non-compliance by patentees. Thus, from 2009 to 2016, we could identify and access only 20.1% of Forms 27 that should have been filed in this sector, corresponding to 72.5% of all mobile device patents for which Forms 27 should have been filed. Forms 27 were missing for almost all patentees, suggesting that defects in the Indian Patent Office's online access system may play a role in the unavailability of some forms.

But even among Forms 27 that were accessible, almost none contained useful information regarding the working of the subject patents or fully complying with the informational requirements of the Form and the Indian Patent Rules. Patentees adopted drastically different positions regarding the definition of patent working, some arguing that importation of products into India or licensing of Indian suppliers constituted working, while others even went so far as to argue that the granting of a worldwide license to a non-Indian firm constituted working in India. Several significant patentees claimed that they or their patent portfolios were simply too large to enable the provision of information relating to individual patents, and instead provided gross revenue and product sale figures, together with historical anecdotes about their long histories in India. And many patentees simply omitted required descriptive information from their Forms without explanation.

The Indian government has made little or no effort to monitor or police compliance with Form 27 filings, likely encouraging non-compliance. Moreover, some of the complaints raised by patentees and industry observers regarding the structure of the Form 27 requirement itself have merit. Namely, patents covering complex, multi-component products that embody dozens of technical standards and thousands of patents are not necessarily amenable to the individual-level data requested by Form 27. We hope that this study will contribute to the ongoing conversation in India regarding the most appropriate means for collecting and disseminating information regarding the working of patents.

APPENDIX

TABLE A1

	Assignee	Total patents (mobile device)	Unexpired Patents as of 2009	Patents for which Form 27 was found	Patents for which Form 27 was not found	Patents Declared as worked	Patents Declared as not worked	Patents with no declared working status	Total Forms 27 found
1.	Qualcomm	1298	1298	993	305	986	7	0	1327
2.	Samsung	551	551	430	121	12	416	2	621
3.	Ericsson	354	354	303	51	79	216	8	619
4.	Motorola	243	243	187	56	7	164	16	402[188]
5.	RIM	172	172	163	9	160	3	0	327
6.	Nokia	232	232	150	82	76	41	32	202
7.	LG	147	147	115	32	21	94	0	173
8.	Philips	256	256	101	155	11	89	1	108
9.	Intel	132	132	78	54	44	18	16	151
10.	Panasonic	88	88	66	22	2	64	0	104
11.	Siemens	268	167[189]	75	92	7	67	1	108
12.	IBM	95	95	54	41	51	4	0	80
13.	InterDigital	75	74	52	22	30	7	15	94
14.	Huawei	63	63	52	11	37	15	0	89
15.	Sony	94	94	53	41	29	24	0	80
16.	Alcatel Lucent	53	53	37	16	8	29	0	39
17.	Microsoft	42	42	34	8	17	15	2	62
18.	NTT Docomo	42	42	31	11	0	31	0	34
19.	Oracle	25	25	24	1	19	5	0	75
20.	Google	26	26	24	2	19	5	0	34
21.	Sony Ericsson	27	27	19	8	5	14	0	58
22.	Canon	12	12	12	0	2	10	0	12
23.	ZTE	15	15	13	2	7	6	0	25
24.	Cisco	23	23	18	5	17	1	0	23
25.	Nortel	11	11	9	2	3	6	0	20
26.	Toshiba	13	12	9	3	2	7	0	12
27.	NEC	9	9	4	5	0	4	0	4
28.	Nokia Siemens	5	5	4	1	4	0	0	7
29.	Hitachi	3	3	3	0	1	2	0	4

[188] 421 Forms 27 were found for Motorola. This total has been reduced by the 19 Forms filed in 2013 and incorrectly backdated to 2004 and 2005.

[189] 101 Siemens patents expired prior to 1996.

30.	Hewlett-Packard	9	9	2	7	1	1	0	5
31.	SAP	5	4	3	1	1	0	2	4
32.	AT&T	7	7	1	6	0	1	0	1
33.	ETRI	6	6	3	3	0	3	0	5
34.	Fujitsu	5	3	1	2	0	1	0	1
35.	Sprint	4	4	1	3	0	1	0	3
36.	Yahoo	1	1	1	0	0	1	0	1
37.	Apple	4	4	0	4	0	0	0	0
38.	Broadcom	1	1	0	1	0	0	0	0
39.	Fujitsu Siemens	1	1	0	1	0	0	0	0
40.	Texas Instruments	2	1	1	0	1	0	0	1
	TOTAL	4419	4312	3126	1186	1659	1372	95	4916

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AN EMPIRICAL STUDY OF UNIVERSITY PATENT ACTIVITY

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Since 1980, a series of legislative acts and judicial decisions have affected the ownership, scope, and duration of patents. These changes have coincided with historic increases in patent activity among academic institutions.

This article presents an empirical study of how changes to patent policy precipitated responses by academic institutions, using spline regression functions to model their patent activity. We find that academic institutions typically reduced patent activity immediately before changes to the patent system, and increased patent activity immediately afterward. This is especially true among research universities. In other words, academic institutions responded to patent incentives in a strategic manner, consistent with firm behavior, by reacting to the preferences of internal coalitions to capture unrealized economic value in intellectual property.

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University patent activity, as a response to patent law changes, carries important economic and normative implications. The patent system uses private economic incentives to promote innovation, but academic institutions are charitable organizations intended to promote the public good. This study demonstrates that patent incentives may have encouraged academic institutions to invest in patentable innovation—in ways that potentially limit access to innovation—in order to internalize private economic value.

INTRODUCTION

Since in the last quarter of the 20th Century, the United States patent system has been in a state of flux, influencing not only patent law but the incentives underlying invention and patent ownership. A series of legislative acts and judicial decisions, beginning in 1980, have affected the ownership, scope, and duration of patents. In 1980, the Bayh-Dole Act enabled academic institutions to patent inventions created from federally-sponsored research.[1] In 1994, Congress extended the maximum duration of a United States patent from 17 to 20 years for certain patents, increasing the monopolistic value of patent protection.[2] And in 2011, the America Invents Act shifted the patent system from a first-to-invent standard to a first-to-file system.[3] These changes have impacted all inventors but especially those at academic institutions, where research is a multi-billion dollar industry; perhaps relatedly, these changes have coincided with historic increases in patent activity among academic institutions.

This patent activity is not necessarily unexpected, inefficient, or objectionable. After all, academic institutions are charitable organizations and intended to promote the public good of innovation, among other things. Many academic institutions, especially research universities, rely on significant federal investment to support research that promotes the dissemination of knowledge, disclosure of new knowledge, and importantly, innovation. In theory, the patent system could do even more to encourage academic institutions to invest far greater resources in innovation.

However, university patent activity has important economic and normative implications. The patent system uses private economic incentives to promote innovation. Accordingly, it creates an incentive for universities to overinvest in patentable innovation and limit access to innovation, in order to internalize private economic value. This is especially troubling because universities may use publicly-funded research to generate patentable innovations for private gain. Thus, concerns about transparency and efficiency arise when considering the extent from which universities may ultimately derive private monetary benefit from public investment, especially given that universities lack the capacity to bring an

[1] Patent and Trademark Law Amendments (Bayh-Dole) Act, Pub. L. No. 96-517, 94 Stat. 3015, 3019 (1980).

[2] *See* Uruguay Round Agreements Act, Pub. L. No. 103–465, 108 Stat. 4809, 4984 (1994) (codified at 35 U.S.C. § 154(a)(2) (1994)).

[3] *See* Leahy–Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284, 285 (2011).

invention to market.[4] That is, as a non-practicing entity, in order to internalize the economic value of their research, universities must acquire patent protection over their inventions. However, because they do not have the capacity to bring their inventions to market, universities can and do use public funds to produce research yielding patents that are worthless or, worse yet, transfer their patents rights to patent assertion entities rather than practicing entities, producing externalities and inefficiency in the patent system.[5]

While the purposes of the patent system are manifold, these sorts of behaviors undercut the argument that patents contribute to innovation. Thus, there is a founded concern that academic institutions have responded to patent incentives in ways that may actually limit access to innovation. Yet, this concern is not the only cause for unease about inefficient responses to patent incentives.[6] For example, most of the patent infringement actions heard in a handful of district courts that have been described as engaging in forum selling—being a friendly forum for cases filed by patent assertion entities that choose the forum based on its

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[4] *See generally* STUART W. LESLIE, THE COLD WAR AND AMERICAN SCIENCE: THE MILITARY-INDUSTRIAL ACADEMIC COMPLEX AT MIT AND STANFORD (1993); CHRISTOPHER P. LOSS, BETWEEN CITIZENS AND THE STATE: THE POLITICS OF AMERICAN HIGHER EDUCATION IN THE 20TH CENTURY 224-25 (2012).

[5] *See generally* DAVID MOWERY, ET AL., IVORY TOWER AND INDUSTRIAL INNOVATION: UNIVERSITY-INDUSTRY TECHNOLOGY TRANSFER BEFORE AND AFTER THE BAYH-DOLE ACT (2015) (noting the trend of universities to transfer patent rights to patent assertion entities in recent years); Donald S. Siegel, David Waldman & Albert Link, *Assessing the Impact of Organizational Practices on the Relative Productivity of University Technology Transfer Offices: An Exploratory Study*, 32 Research Pol'y 27 (2003) (analyzing productivity in university technology transfer offices and finding that many are only successful at litigating infringement, not bringing the technology to market); GARY W. MATKIN, TECHNOLOGY TRANSFER AND THE UNIVERSITY (1990) (exploring university patent transfer after the Bayh-Dole Act).

[6] For instance, the Supreme Court recently limited the scope of patent venue in its unanimous decision in *TC Heartland v. Kraft Foods*, which was motivated by flagrant "forum selling" in the district courts. TC Heartland vs. Kraft Foods Group Brands, 137 S. Ct. 1514 (2017). For the Federal Circuit's decision, which was reversed by the Supreme Court, *see* TC Heartland vs. Kraft Foods Group Brands, 821 F.3d 1338 (Fed. Cir. 2016). Forum selling is an issue many scholars have identified as increasing the costs to innovation. *See, e.g.*, Brian L. Frye & Christopher J. Ryan Jr., *Fixing Forum Selling*, 25 U. MIAMI BUS. L. REV. 1 (2017); Gregory Reilly & D. Klerman, *Forum Selling*, 89 S. CAL L. REV. 241 (2016); Chester S. Chuang, *Offensive Venue: The Curious Use of Declaratory Judgment to Forum Shop in Patent Litigation*, 80 GEO. WASH. L. REV. 1065 (2011); Elizabeth P. Offen-Brown, *Forum Shopping and Venue Transfer in Patent Cases: Marshall's Response to TS Tech and Genentech*, 25 BERKELEY TECH. L.J. 61 (2010); Yan Leychkis, O*f Fire Ants and Claim Construction: An Empirical Study of the Meteoric Rise of the Eastern District of Texas as a Preeminent Forum for Patent Litigation*, 9 YALE J.L. & TECH. 194 (2007).

pro-plaintiff bias.[7] Many observers are concerned that the concentration of patent assertion activity in certain district courts has increased the cost of innovation.[8]

Similarly, there is legitimate concern that universities contribute to cost and inefficiency by: (1) using public funds to support research that results in often useless patents; or (2) providing the instrumentality for non-practicing entities to increase the cost of innovation. That is, universities may participate in driving up the cost of innovation by aggregating patent protection for inventions that are likely to have little market value or that they cannot bring to market and must transfer, even to other non-practicing entities. This article is the first in a series of papers to investigate the relationship between universities and the patent system. In particular, this article addresses whether universities can be said to aggregate patent protection for their inventions systematically or monopolistically, which may indicate their role in increasing the cost of innovation. The discussion and results, below, suggests that academic institutions have responded to patent policy changes not in a manner consistent with firm behavior, by accruing property rights when incentivized by patent policy changes to do so, but also by strategically holding out in order to reap greater monopolistic benefit under anticipated patent regime changes, which may have exacerbated the problem of increasing the cost of innovation.

I
THE PATENT SYSTEM

The purposes of the patent system are several, but the primary purpose is to promote technological innovation, or rather, to "promote the Progress of . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries."[9] While some scholars have questioned the efficiency

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[7] *See, e.g.*, Mark Lemley, *Where to File Your Patent Case* 4-27 (Stanford Public Law, Working Paper No. 1597919, 2010), http://law.stanford.edu/wp-content/uploads/sites/default/files/publication/260028/doc/slspublic/ssrn-id1597919.pdf; Li Zhu, *Taking Off: Recent Changes to Venue Transfer of Patent Litigation in the Rocket Docket*, 11 MINN. J.L. SCI. & TECH. 901 (2010); Alisha Kay Taylor, *What Does Forum Shopping in the Eastern District of Texas Mean for Patent Reform*, 6 J. MARSHALL REV. INTELL. PROP. L. 1 (2006).

[8] *See, e.g.*, Sara Jeruss, Robin Feldman & Joshua Walker, *The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation*, 11 DUKE L. & TECH. REV. 357 (2012); Tracie L. Bryant, *The America Invents Act: Slaying Trolls, Limiting Joinder*, 25 HARV. J.L. & TECH. 697 (2011).

[9] U.S. Const. art. I, § 8, cl. 8. *See also, A Brief History of Patent Law of the United States*, LADAS & PARRY, http://ladas.com/a-brief-history-of-the-patent-law-of-the-united-states-2/ (May 7, 2014). In this article, the term "patent" is used to refer exclusively to utility patents. While the

of the patent system, and other scholars have suggested that it may only provide efficient incentives in some industries, conventional wisdom assumes that it is generally efficient, providing a net public benefit by encouraging investment in innovation.[10] In any case, while the patent system has always provided essentially identical incentives to inventors in all industries, the demographics of patent applicants and owners have changed over time. Originally, many patent applicants and owners were individual inventors, but for quite some time, the overwhelming majority of patent applicants and owners have been both for-profit and non-profit corporations. An increasing number of those corporate patent applicants and owners are academic institutions.[11]

A. Academic Patents

Academics have always pursued patents on their inventions with varying degrees of success. But academic institutions did not meaningfully enter the patent business until the early 20th century, and even then, they did so only tentatively.[12] In 1925, the University of Wisconsin at Madison created the first university patent office, the Wisconsin Alumni Research Foundation, an independent charitable organization created in order to commercialize inventions created by University of Wisconsin professors. Similarly, in 1937, MIT formed an agreement with Research Corporation, an independent charitable organization, to manage its patents.[13] Many

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United States Patent and Trademark Office also issues design patents and plant patents, and the United States Code provides for protection of vessel hull designs and mask works, both of which resemble design patents, all of these forms of intellectual property are outside the scope of this article.

[10] *See, e.g.*, JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE (2008) (questioning the efficiency of the patent system); William W. Fisher, *The Growth of Intellectual Property: A History of the Ownership of Ideas in the United States*, *in* EIGENTUM IM INTERNATIONALEN VERGLEICH 255-91 (1999) (decrying the antitrust implications of intellectual property protection at the exclusion of innovation); Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155 (2002) (observing that the patent system seems to provide efficient incentives in some industries, but not others); *but see, e.g.*, ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY (2011) (concluding that the patent system is broadly justified).

[11] *See generally* JACOB ROOKSBY, THE BRANDING OF THE AMERICAN MIND (2016).

[12] *See generally* LESLIE, *supra* note 4; LOSS, *supra* note 4.

[13] Research Corporation was formed in 1912 by Professor Frederick Cottrell of the University of California to manage his own inventions, as well as those others submitted by faculty members of other educational institutions. *See* Frederick Cottrell, *The Research Corporation, an Experiment in Public Administration of Patent Rights*, 4 J. INDUST. & ENGINEERING CHEMISTRY 846 (1912).

other schools followed MIT's lead, and Research Corporation soon managed the patent portfolios of most academic institutions.[14]

Before the Second World War, academic institutions engaged in very limited patent activity, collectively receiving less than 100 patents. But during the war, many academic institutions adopted formal patent policies, typically stating that faculty members must assign any patent rights to the institution.[15] Gradually, some academic institutions began creating their own patent or "technology transfer" offices. But by 1980, only 25 academic institutions had created a technology transfer office, and the Patent Office issued only about 300 patents to academic institutions each year.[16]

Since then, patent law has increasingly encouraged patent activity at academic institutions. Until 1968, each federal agency that provided research funding to academic institutions had its own patent policy. Some provided that inventions created in connection with federally funded research belonged to the federal government, others placed them in the public domain, and a few negotiated institutional patent agreements with academic institutions, allowing them to own patents in those inventions. In 1968, the Department of Health, Education, and Welfare's introduced an Institutional Patent Agreement, allowing for non-profit institutions to acquire assignment of patentable inventions resulting from federal research support for which the institution sought a patent. However, this policy was not uniformly applied. As such, in 1980, under pressure to respond to the economic malaise of the 1970s, Congress passed the Bayh-Dole Act, which enabled academic institutions to patent inventions created in connection with federally-funded research.[17] Specifically, the Act provided that, with certain exceptions and limitations, "a small business firm or nonprofit organization" could patent such inventions, if the organization timely notified the government of its intention to patent the invention and gave the government the right to use the

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[14] *See* ROOKSBY, *supra* note 11, at 130-35.

[15] By 1952, 73 universities had adopted a formal patent policy. By 1962, 147 of 359 universities that conducted scientific or technological research had adopted a formal patent policy, but 596 universities reported that they conducted "little or no scientific or technological research" and had no formal patent policy. American Association of University Professors, *American University Patent Policies: A Brief History*, https://www.aaup.org/sites/default/files/files/ShortHistory.pdf (last visited Oct. 23, 2017).

[16] This increase in patent activity at universities between 1968 and 1980 is almost certainly a response to the Institutional Patent Agreement. *See* ROOKSBY, *supra* note 11, at 130-35; American Association of University Professors, *supra* note 15.

[17] Patent and Trademark Law Amendments (Bayh-Dole) Act, Pub. L. 96-517, 94 Stat. 3015, 3019 (1980).

invention.[18] The Act placed certain additional requirements on nonprofit organizations, providing that they could only assign their patents to an organization whose primary function is to manage inventions. Additionally, the nonprofit organizations must share any royalties with the inventor and use the earned royalties only for research or education. The limitation on assignment was intended to encourage academic institutions to assign their patents to charitable organizations, like Research Corporation, but in practice, it led many of them to compete over federal funds only to produce patentable inventions with little value or to assign their patents to patent aggregators or "patent assertion entities."[19]

At about the same time, the scope and duration of patent protection began to expand. First, the Supreme Court explicitly expanded the scope of patentable subject matter to include certain genetically modified organisms and computer software.[20] Then, in 1982, Congress created the United States Court of Appeals for the Federal Circuit, which has exclusive jurisdiction over patent cases and has adopted consistently pro-patent positions.[21] In 1984, Congress expanded the patentability of pharmaceuticals.[22] In 1994, Congress ratified the Uruguay Round of negotiations which created the World Trade Organization and extended the maximum duration of a United States patent from 17 years from the date of issue to 20 years from the filing date, marginally increasing the value of a patent.[23] And in 2011, Congress passed the Leahy-Smith American Invents Act, which amended the Patent Act by, *inter alia*, moving from a first-to-invent to a first-to-file patent system.[24]

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[18] 35 U.S.C. § 202(c)(7) (2011).

[19] *See* Mark A. Lemley, *Are Universities Patent Trolls?*, 18 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 611 (2008). *But see* Jonathan Barnett, *Has the Academy Led Patent Law Astray?* BERKELEY TECH. L.J. (forthcoming 2017), https://ssrn.com/abstract=2897728.

[20] *See* Diamond v. Chakrabarty, 447 U.S. 303 (1980) (holding that patentable subject matter included genetically modified organisms); Diamond v. Diehr, 450 U.S. 175 (1981) (holding that patentable subject matter included certain kinds of computer software); Patent and Trademark Law Amendments Act, Pub. L. No. 96-517, 94 Stat. 3015 (1980) (amending 35 U.S.C. § 301 and allowing universities to take title in the patentable results of funded research).

[21] *See* Federal Courts Improvement Act, Pub. L. No. 97-164, 96 Stat. 25 (1982) (creating an appellate-level court, the U.S. Court of Appeals for the Federal Circuit, with the jurisdiction to hear patent cases).

[22] *See* Drug Price Competition and Patent Term Restoration Act, Pub. L. No. 98-417, 98 Stat. 1585 (1984) (enabling generic pharmaceutical companies to develop bioequivalents to patented innovator drugs).

[23] *See* Uruguay Round Agreements Act, Pub. L. No. 103–465, 108 Stat. 4809, 4984 (1994) (codified at 35 U.S.C. § 154(a)(2)).

[24] *See* Leahy–Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284, 285 (2011).

All of these changes in patent protection caused an increase in overall patent activity, across all types of inventors.

TABLE 1: Patent Activity over Time

Year	Applications	Granted Patents
1980	104,329	61,819[25]
1990	164,558	90,365[26]
2000	295,926	157,494[27]
2010	490,226	219,614[28]
2015	589,410	298,407[29]

That said, academic institutions played a role in the growth of nationwide patent activity directly related to the dramatic increases in patent applications and grants between 1980 and 2010. In response to these policy changes, many universities adopted a research model under which federal grants and other public funds were directed at the development of patentable inventions and discoveries, enabling the universities to obtain patents and claim a private benefit. By 1990, more than 200 academic institutions had created technology-transfer offices, and the Patent Office was issuing more than 1,200 patents to academic institutions each year.[30] In 1995, universities received over $15 billion in research grants from the federal government, a figure that would more than double—$35.5 billion—by 2013.[31]

Ironically, while some of the patents granted to academic institutions proved extremely valuable, the overwhelming majority of them are worthless. Most of the technology-transfer offices created by academic institutions produce little revenue when compared with expenditures, and many actually lose money.[32] In 2013, the median value among universities reporting revenues from their technology transfer offices was a mere $1.57 million; moreover, less than 1 percent of all patent

[25] *See* UNITED STATES PATENT AND TRADEMARK OFFICE PATENT TECHNOLOGY MONITORING TEAM, U.S. PATENT STATISTICS CHART, CALENDAR YEARS 1963 – 2015 (2016), https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm.

[26] *Id.*

[27] *Id.*

[28] *Id.*

[29] *Id.*

[30] *See* ROOKSBY, supra note 11, at 130-35.

[31] ASSOCIATION OF UNIVERSITY TECHNOLOGY MANAGERS (AUTM) STATT DATABASE, www.autm.net/resources-surveys/research-reports-databases/statt-database-%281%29/.

[32] *See* ROOKSBY, supra note 11, at 139-50. *See also* Joseph Friedman & Jonathan Silberman, *University Technology Transfer: Do Incentives, Management, and Location Matter?*, 28 J. TECH. TRANSFER 17 (2003); MOWERY, ET. AL., supra note 5, at 24-40.

licenses for patents held by universities and their technology transfer companies generate revenues reaching or exceeding $1 million.[33]

B. An Economic View of Patents

The prevailing theory of patents is the economic theory, which holds that patents are justified because they solve market failures in innovation caused by free riding. In the absence of patents, inventions are "pure public goods," because they are perfectly non-rivalrous and nonexcludable.[34] Neo-classical economics predicts market failures in public goods, because free riding will prevent marginal inventors from recovering the fixed and opportunity costs of invention.[35] Under the economic theory, patents solve market failures in innovation by granting inventors certain exclusive rights in their inventions for a limited period of time, which provide salient incentives to invest in innovation.[36]

Patents may also cause market failures by granting inefficient rights to inventors and imposing transaction costs on future inventions.[37] In theory, patent law can increase net economic welfare by granting patent rights that are salient to marginal inventors and encourage future inventions. In practice, however, patent law may grant rights that are not salient to marginal inventors and discourage future inventions. For example, patent law may cause market failures by discouraging marginal inventors from investing in innovation.

The American patent regime has precipitated "arms race" and "marketplace" paradigms, both of which elicit firm behavior.[38] In the first instance, the benefits of patent protection incentivize innovators to aggregate under the auspices of the firm model, thereby reducing the marginal cost to each innovator of producing patentable technology. The marketplace paradigm encourages innovation, or at

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[33] *See* AUTM STATT Database, *supra* note 31; *see also* ROOKSBY, *supra* note 11, at 139.

[34] *See* Francis M. Bator, *The Anatomy of Market Failure*, 72 Q. J. ECON. 351, 377 (1958).

[35] *See, e.g.*, Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention,* in READINGS IN INDUSTRIAL ECONOMICS, 219-36 (1972); Francis M. Bator, *The Anatomy of Market Failure*, 72 Q. J. ECON. 351 (1958); Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POLITICAL ECON. 416 (1956).

[36] *See* RICHARD POSNER, ECONOMIC ANALYSIS OF LAW § 3.3, at 48-50 (8th ed. 2011).

[37] Because the benefits of patent protection disincentivize the inventor form further innovating the patented invention, patent law can be said to discourage innovation. This is because—from the time the invention is granted a patent—the inventor's costs are sunk, meaning that the inventor must incur new development costs and secure a new patent in order to innovate under the patent law regime. *See id.* at 38-39.

[38] *See generally* Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L. J. 297 (2010).

least innovation likely to result in patent protection. Both paradigms, however, are subject to the results of the perverse incentives that the patent regime provides, specifically that of patent stockpiling and the rent-seeking behaviors of non-practicing and patent assertion entities.[39]

The right to exclude is perhaps the most important stick in the bundle of patent protection rights and may have the effect of stifling rather than promoting innovation.[40] As the ubiquity of non-practicing and patent assertion entities in the patent market become commonplace, patent holdup, patent litigation, and patent thickets are common features of the modern patent marketplace.[41]

C. University Responses to Patent Policy Incentives

From the perspective of the theoretical literature, innovation depends upon innovators receiving the benefits of their innovation; the regime that allocates these benefits to the innovator and thereby incentivizes innovation is the most efficient.[42] For universities, a majority of which relied on federal funding to support research and development of patentable innovation during the 20th Century, the patent

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[39] *Id. See also* Thomas L. Ewing, *Indirect Exploitation of Intellectual Property Rights by Corporations and Investors*, 4 HASTINGS SCI. & TECH. L. J. 1 (2011); *but see* David L. Schwartz & Jay P. Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 CORNELL L. REV. 425 (2014) (arguing that the debate over non-practicing entities should be reframed to focus on the merits of the lawsuits they generate, including patent system changes focusing on reducing transaction costs in patent litigation, instead of focusing solely on whether the patent holder is a non-practicing entity); Holly Forsberg, *Diminishing the Attractiveness of Trolling: The Impacts of Recent Judicial Activity on Non-Practicing Entities*, 12 PITT. J. TECH. L. & POL'Y 1 (2011) (centering on the difficulties faced by legislators in attempting to solve the patent troll problem and turns to the recent judicial activity related to patent law allowing for individually-focused, closely tailored analysis is examined with an evaluation of four recent court decisions and resulting changes to the patent system).

[40] *See* Daniel A. Crane, *Intellectual Liability*, 88 TEX. L. REV. 253 (2009). *See also* James Boyle, *Open Source Innovation, Patent Injunctions and the Public Interest*, 11 DUKE L. & TECH. REV. 30 (2012) (noting that open source innovation is unusually vulnerable to patent injunctions); John R. Allison, Mark A. Lemley & Joshua Walker, *Extreme Value or Trolls on Top? The Characteristics of the Most-Litigated Patents*, 158 U. PENN. L. REV. 1 (2009); John R. Allison, Mark A. Lemley & Joshua Walker, *Patent Quality Settlement Among Repeat Patent Litigants*, 99 GEORGETOWN L. J. 677 (2011); Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1 (2012).

[41] *See* Chien & Lemley, *supra* note 40 (noting the unintended consequence of the Supreme Court's ruling in eBay v. MercExchange, 547 U.S. 388 (2006), namely, the driving patent forces entities to a different forum, the International Trade Commission (ITC), to secure injunctive relief not available in the federal courts); Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 98 J. CORP. L. 1151 (2009).

[42] *See* Ronald Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1 (1960).

regime did not substantially encourage universities' entry into the patent market until the passage of the Bayh-Dole Act in 1980.[43] Descriptive research in this area suggests that the Bayh-Dole Act—which allowed universities to patent inventions developed in connection with federally-funded research—increased the number of university participants in the patent market.[44] Some scholars have also attributed university technology transfer and patent title aggregation as being rooted in the Bayh-Dole Act.[45]

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[43] *See* Brownwyn H. Hall, *Exploring the Patent Explosion*, 30 J. TECH. TRANSFER 35 (2005); U.S. PATENT AND TECHNOLOGY OFFICE, U.S. COLLEGE AND UNIVERSITY UTILITY PATENT GRANTS – CALENDAR YEARS 1969 - 2012, https://www.uspto.gov/web/offices/ac/ido/oeip/taf/univ/univ_toc.htm (last visited Oct. 23, 2017) (examining the sources of patent growth in the United States since 1985, and confirming that growth has taken place in all technologies); Rosa Grimaldi, Martin Kenney, Donald S. Siegel & Mike Wright, *30 Years after Bayh-Dole Act: Reassessing Academic Entrepreneurship*, 40 RES. POL'Y 1045 (2011) (discussing and appraising the effects of the legislative reform relating to academic entrepreneurship); Elizabeth Popp Berman, *Why Did Universities Start Patenting? Institution-Building and the Road to the Bayh-Dole Act*, 38 SOC. STUDIES OF SCI. 835 (2008); LESLIE, *supra* note 4; LOSS, *supra* note 4, at 224-25. *But see* Elizabeth Popp Berman, *Why Did Universities Start Patenting? Institution-Building and the Road to the Bayh-Dole Act*, 38 SOC. STUDIES OF SCI. 835 (2008) (noting that while observers have traditionally attributed university patenting to the to the Bayh-Dole Act of 1980, university patenting was increasing throughout the 1970s, and explaining the rise of university patenting as a process of institution-building, beginning in the 1960s).

[44] David C. Mowery, Richard R. Nelson, Bhaven N. Sampat & Arvids A. Ziedonis, *The Growth of Patenting and Licensing by US Universities: An Assessment of the Effects of the Bayh-Dole Act of 1980*, 30 RESEARCH POL'Y 99 (2001) (examining the effect of the Bayh-Dole Act on patenting and licensing at three universities—Columbia, Stanford, and California-Berkeley—and suggesting that the Bayh-Dole Act was only one of several important factors behind the rise of university patenting and licensing activity); *see also* Harold W. Bremer, The First Two Decades of the Bayh-Dole Act, Presentation to the National Association of State Universities and Land Grant Colleges (Nov. 11, 2001) (attributing the proliferation of technology transfer to the Bayh-Dole Act).

[45] *See, e.g.*, Jennifer Carter-Johnson, *Unveiling the Distinction between the University and Its Academic Researchers: Lessons for Patent Infringement and University Technology Transfer*, 12 VANDERBILT J. ENTERTAINMENT & TECH. L. 473 (2010) (exploring the idea that a faculty member acting in the role of an academic researcher in the scientific disciplines should be viewed in the context of patent law as an autonomous entity within the university rather than as an agent of the university, and arguing that acknowledging a distinction between the university and its academic researchers would revive the application of the experimental use exception as a defense to patent infringement for the scientists who drive the innovation economy and encourage academic researchers to participate in transferring new inventions to the private sector); Martin Kenney & Donald Patton, *Reconsidering the Bayh-Dole Act and the Current University Invention Ownership Model*, 38 RES. POL'Y 1407 (2009) (citing the problems with the

However, these developments point to the fact that universities may be responding to policy interventions—such as the extension of the duration of patents in 1995 and anticipation of the America Invents Act—and, in turn, affecting the patent landscape.[46] Examples of these responses include shifting investment in research and development toward innovation sectors that are more likely to receive patent protection, particularly those with high renewal rates, and because the US Patent and Trademark Office (PTO) derives more revenue from these sectors, it has the incentive to grant applications from high renewal rate sectors.[47] Additionally, researchers have noted that the patent regime does not privilege economic development through technological transfer, and may account for both the increase in patent litigation from non-practicing entities, such as universities, as well as rise in rent-seeking behaviors in patent licensing.[48]

Bayh-Dole Act's assignment of intellectual property interests, and suggesting two alternative invention commercialization models: (1) vesting ownership with the inventor, who could choose the commercialization path for the invention, and provide the university an ownership stake in any returns to the invention; and (2) making all inventions immediately publicly available through a public domain strategy or, through a requirement that all inventions be licensed non-exclusively); Liza Vertinsky, *Universities as Guardians of Their Inventions*, 4 UTAH L. REV. 1949 (2012) (submitting that universities need more "discretion, responsibility, and accountability over the post-discovery development paths for their inventions," in order to allow the public benefit of the invention to reach society, and arguing that, because universities guard their inventions, the law should be designed to encourage their responsible involvement in shaping the post-discovery future of their inventions).

[46] 35 U.S.C. §154 (1994); 125 Stat. §§ 284-341 (2011).

[47] *See* Kira R. Fabrizio, Opening the Dam or Building Channels: University Patenting and the Use of Public Science in Industrial Innovation (Jan. 30 2006) (working paper) (on file with the Goizueta School of Business at Emory University) (investigating the relationship between the change in university patenting and changes in firm citation of public science, as well as changes in the pace of knowledge exploitation by firms, measured using changes in the distribution of backward citation lags in industrial patents); Hall, *supra* note 43 (confirming that growth since 1984 has taken place in all technologies, but not in all industries, being concentrated in the electrical, electronics, computing, and scientific instruments industries); Michael D. Frakes & Melissa F. Wasserman, *Does Agency Funding Affect Decisionmaking?: An Empirical Assessment of the PTO's Granting Patterns*, 66 VANDERBILT L. REV. 67 (2013) (finding that the PTO is preferentially granting patents on technologies with high renewal rates and patents filed by large entities, as the PTO stands to earn the most revenue by granting additional patents of these types); Tom Coupé, *Science Is Golden: Academic R&D and University Patents*, 28 J. TECH. TRANS. 31 (2003) (finds that more money spent on academic research leads to more university patents, with elasticities that are similar to those found for commercial firms).

[48] *See* Clovia Hamilton, *University Technology Transfer and Economic Development: Proposed Cooperative Economic Development Agreements Under the Bayh-Dole Act*, 36 J. MARSHALL L. REV. 397 (2003) (proposing that Congress amend the Bayh-Dole Act to provide guidance on how universities can enter into Cooperative Economic Development Agreements

University technology transfer forces academic institutions to make uncomfortable decisions about licensing and litigation.[49] Many academic institutions have responded to this ethical dilemma by assigning their patents to patent assertion entities in order to obscure their relationship to those patents and avoid the obligation to enforce them.[50] Despite universities' status as charitable organizations, as patent owners they have a financial incentive to support their research and development enterprises by competing for federal grants, even if it results in patentable inventions for which there is little economic value and limit the use of the knowledge they generate by securing patent rights regardless of whether these inventions have economic value. Either of these scenarios exacerbates the cost of innovation.[51]

D. The University as a Firm

In response to the changes in the patent law system between 1980 and 2011, especially the Bayh-Dole Act, academic institutions increasingly adopted a research funding model under which federal research grants and other public funds were focused on the development of patentable inventions.[52] As previously observed, the total number of patents granted by the Patent Office steadily

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patterned after the Stevenson-Wydler Act's Cooperative Research and Development Agreements); Lita Nelsen, *The Rise of Intellectual Property Protection in the American University*, 279 SCIENCE 1460, 1460-1461 (1998) (describing the inputs and outcomes of university assertion of intellectual property rights); Nicola Baldini, *Negative Effects of University Patenting: Myths and Grounded Evidence*, 75 SCIENTOMETRICS 289 (2008) (discussing how the university patenting threatens scientific progress due to increasing disclosure restrictions, changes in the nature of the research (declining patents' and publications' quality, skewing research agendas toward commercial priorities, and crowding-out between patents and publications), and diversion of energies from teaching activity and reducing its quality); Lemley, *supra* note 7 (illustrating that universities are non-practicing entities, sharing some characteristics with trolls but somewhat distinct from trolls, and making the normative argument that the focus should be on the bad acts of all non-practicing entities and the laws that make these acts possible); Jacob H. Rooksby, *University Initiation of Patent Infringement Litigation*, 10 JOHN MARSHALL REV. INTELL. PROP. L. 623 (2011) (revealing similarities between the litigation behavior of universities and for-profit actors, as well as complex and varied relationships between universities, their licensees, and research foundations closely affiliated with universities).

[49] *See* ROOKSBY, *supra* note 11, at 150-67. *See also* MOWERY ET AL., *supra* note 5, at 24-40.

[50] *See* ROOKSBY, *supra* note 11, at 150-67.

[51] *See generally* MOWERY, ET AL., *supra* note 5; Christopher A. Cotropia, Jay P. Kesan & David L. Schwartz, *Unpacking Patent Assertion Entities (PAEs)*, 99 MINN. L. REV. 649 (2014); Sara Jeruss, Robin Feldman & Joshua Walker, *The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation*, 11 DUKE L. & TECH. REV. 357 (2013).

[52] *See, e.g.*, Baldini, *supra* note 48; Berman, *supra* note 43.

increased, and so did the percentage of those patents granted to academic institutions.[53] Soon, participants in the patent law system began expressing concerns about entities that decreased the efficiency of the patent system by merely owning and asserting patents, rather than practicing them. Of course, academic institutions that own patents are non-practicing entities almost by definition, as they exist to create and disseminate knowledge, not produce commercial products.[54] Even more troubling, many academic institutions assign most or all of their patents to patent assertion entities, the paradigmatic patent trolls. As a result, the way that academic institutions use patents presents a risk of creating "patent thickets that entangle rather than encourage inventors," which is in tension with the charitable purpose of those institutions.[55]

But how did these patent thickets sprout from the soil of the university? The behavioral theory of the firm may help explain why academic institutions responded to incentives created by changes in this way. Unlike neoclassical economics, which uses individual actors as the primary unit of analysis, the behavioral theory of the firm uses the firm itself as the primary unit of analysis. As a consequence, the behavioral theory of the firm provides better predictions of firm behavior with regard to output and resource allocation decisions.

The field of organizational economics emerged in 1937, when Ronald Coase observed that firms emerge when the external transaction costs associated with markets exceed the internal transaction costs of the firm.[56] Coase's theory of the firm was revolutionized in 1963, when Richard Cyert and James March provided a behavioral theory of the firm, observing that firms consist of competing coalitions with different priorities responding to different incentives.[57]

In the context of funded research, university patent activity can be read as the result of strategic firm decision-making regarding patent output and resource allocation decisions. In fact, the way that patent policy has bent toward rewarding university patent activity through conferral of rights is a direct result of lobbying and decision-making efforts by these universities with lawmakers—evidence of the

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[53] *See* Hall, *supra* note 43.

[54] *See* Lemley, *supra* note 19.

[55] *See* POSNER, *supra* note 36, at 50. *See also* Peter Lee, *Patents and the University*, 63 DUKE L. J. 1 (2013).

[56] *See* Ronald Coase, *The Nature of the Firm*, 4 ECONOMICA 386 (1937).

[57] *See* RICHARD M. CYERT & JAMES G. MARCH, A BEHAVIORAL THEORY OF THE FIRM (Herbert A. Simon ed., Prentice-Hall Inc. 1963).

bidirectional interaction between universities and external influences.[58] The behavioral theory of the firm suggests that academic institutions have responded to incentives created by patent law in a manner consistent with firm behavior.[59] Though heterogeneity of university patent activity does exist, at most intensive research universities, where decisions are made two ways—with executive administrators setting strategic goals for research which are then implemented at lower management levels—intense competition exists between intensive research universities to vie for patent rights and thus profit maximization.

Increasingly, these universities have centralized and ceded title in patents to their foundations and technology transfer offices.[60] As non-practicing entities, universities bear the transaction costs of developing patented inventions, but they transfer the transaction costs of bringing the invention to market to intermediaries—and get paid for doing so.[61] As a consequence, the goal of a university is to satisfice rather than maximize results; firms typically focus on producing good enough outcomes, rather than the best possible outcomes, as a function of compromise among internal coalitions with different priorities.

Thus, one could view increased activity immediately after the implementation of a policy conferring greater patent rights not as a random but as a very rational, profit-maximizing response. However, this activity presents issues when the firm actor is a university. Because academic institutions are necessarily non-practicing entities with strong incentives to assign their patents to patent assertion entities in order to extract their economic value—yet the research from which a patentable invention derives is funded largely by public, federal investment—the gray area which universities occupy through their patent activity makes clear that, while they might not be "patent trolls" as Mark Lemley argues, they certainly feed the patent trolls.[62]

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[58] *See* LISA R. LATTUCA & JOAN S. STARK, SHAPING THE COLLEGE CURRICULUM: ACADEMIC PLANS IN CONTEXT 24 (2d ed. 2009) (modeling visually the interaction between universities and external influences such as governments).

[59] *See* Berman, *supra* note 43.

[60] *See* Bremer, *supra* note 44.

[61] JENNIFER A. HENDERSON & JOHN J. SMITH, *ACADEMIA, INDUSTRY, AND THE BAYH-DOLE ACT: AN IMPLIED DUTY TO COMMERCIALIZE* (2002), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.453.1958&rep=rep1&type=pdf (noting that such a duty transforms the academia-industry relationship from the traditional view of disparate entities into a Congressionally-mandated partnership, intended to advance technology and benefit the public).

[62] *See* Lemley, *supra* note 19.

This article aims to provide evidence of that very point. As scholars, like Jacob Rooksby, have observed: "[t]he accumulation, use, and enforcement of intellectual property by colleges and universities reflects choices to engage in a system that . . . takes knowledge and information that is otherwise subject to . . . public use and restricts it, by attaching private claims to it."[63] The result of these restrictions produced by universities' firm behavior through their patent activity and transfer carries real consequences for innovation. While the effects of these consequences are uncertain, the inputs are fairly clear: the prospect of wealth-maximizing motivates activity in university technology transfer.[64] Yet, the relationship between universities' wealth-maximizing foray into patent acquisition and its connection with patent policy changes, as well as the explanatory theoretical framework of the behavioral theory of the firm for this very sort of activity, have not been established heretofore. In the sections that follow, this article makes this connection with supporting empirical analysis.

II
EMPIRICAL ANALYSIS

A. Research Questions

While academic institutions have responded to patent incentives in a manner consistent with firm behavior, the optimal firm response does not necessarily produce the optimal social outcome. Organizational economics predicts that firms will respond to external incentives by satisficing results consistent with the consensus of internal coalitions. As a consequence, firms may or may not respond to patent incentives in a manner consistent with the patent system's goal of maximizing innovation. It follows that if academic institutions exhibit firm behavior in relation to patent incentives, they may satisfice internal coalitions at the expense of social welfare. In the context of university patent activity, this behavior could take the form of the pursuit of patent acquisition not because it is a wealth-maximizing or an economically efficient activity but simply because the regulatory conditions are preferable to pursue patent acquisition.

This study asks whether and how changes in patent law have affected the patent activities of academic institutions. Specifically, it asks two questions:

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[63] ROOKSBY, *supra* note 11, at 16.

[64] *See* Valerie L. McDevitt et al., *More than Money: The Exponential Impact of Academic Technology Transfer*, 16 TECHNOLOGY & INNOVATION 75 (2014).

(1) To what extent do universities change their patent acquisition strategy in response to changes in patent law?
(2) To what extent do different kinds of universities respond differently to changes in patent law?

To answer these questions, this study analyzes data on the population of academic institutions that were granted one or more patents between 1969 and 2012 in order to determine the impact of policy changes on university patent activity over this time.[65] Notably, while future papers in this series may engage with such questions, this article does not determine whether academic institutions have responded to changes in patent law in a way that increases or decreases net social welfare. But it can help explain how academic institutions have responded to patent incentives and whether their responses are consistent with firm behavior, laying the foundation for future exploration of whether and how universities may play a role of increasing costs to innovation.

B. Data

This study relies primarily on a valuable, albeit limited, dataset compiled by the PTO, which records the total number of patents granted per year to each educational institution in the United States between 1969 and 2012.[66] Because of limitations with this data—for example, the data contain only one measured variable, the total number of patents granted to an institution in a calendar year—this dataset had to be merged with other datasets to include more explanatory variables for each institution observation over the same length of time. Specifically, this study relied on the available data from the Classifications for Institutions of Higher Education, a Carnegie Foundation Technical Report, which was produced in 1973, 1976, 1987, 1994, 2000, 2005, and 2010.[67] Because the first three published Carnegie Classification reports—1973, 1976, and 1987—have not been digitized, the use of this data required the authors to hand-code the classification for each observation utilized in the analytical sample.

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[65] *See* U.S. PATENT AND TECHNOLOGY OFFICE, *supra* note 43.

[66] *Id.*

[67] This study employs data from the Carnegie Classification of Institutions of Higher Education, U.S. COLLEGE AND UNIVERSITY UTILITY PATENT GRANTS – CALENDAR YEARS 1973, 1987, 1994, 2000, 2005, 2010, with years 1994, 2000, 2005, and 2010, http://carnegieclassifications.iu.edu/downloads.php (last accessed Oct. 23, 2017). However, because the Carnegie Commission on Higher Education changed its classification standards in 2010, the "basic" classification standard was used to impute these values for each classification observation from 2010 to 2012.

From the merged dataset, consisting of the full population of higher-education-affiliated institutions that had been granted a patent between 1969 and 2012, an analytical sample had to be drawn from this population to focus on the main university participants in the patent market: research universities; doctoral-granting universities; medical, health, and engineering specialized institutions; and to a lesser extent, comprehensive universities; liberal arts colleges; and other specialized institutions, including schools of art, music, and design, as well as graduate centers, maritime academies, and military institutes.[68] Due to the paucity of observations in the following subgroups, 31 observations from two-year colleges, corporate entities, and spin-off research institutes were dropped from analysis, preserving 591 university observations. Additionally, given that the University of California system does not differentiate patent activity by institution, choosing instead to have reported patent activity in the aggregate in the PTO dataset, it was removed from the analytical sample.

Because the Carnegie Classifications attribute most administrative units to the parent institution, this study took the same approach, collapsing administrative units, foundations, other organizational entities, and former institutions on the current parent institution. However, each observation that received a separate classification from its parent institution in the Carnegie Classifications was preserved as a separate observation from the parent institution.[69] The process of

[68] The "basic" Carnegie Classifications split Doctoral-Granting institutions into four subgroups: Research Universities I and II, and Doctoral-Granting Universities I and II. Research universities originally were considered the leading universities in terms of federal financial support of academic research, provided they awarded a minimum threshold of Ph.D.'s and/or M.D.'s. Doctoral-granting universities were originally conceived of as smaller operations, in terms of federal funding and doctoral production, but comparable in scope to the research universities. Next, the Comprehensive Universities I and II met minimum enrollment thresholds, offered diverse baccalaureate programs and master's programs, but lacked substantial doctoral study and federal support for academic research. The Liberal Arts Colleges I and II were selected somewhat subjectively in the first several iterations of the Carnegie Classifications; this is particularly the case for Liberal Arts Colleges II, which did not meet criteria for inclusion in the first liberal arts college category but were not selected for Comprehensive University II, either. The Liberal Arts Colleges I included colleges with the most selective baccalaureate focused liberal arts programs. As for the specialized institutions, which are divided into nine categories, the medical, health and engineering schools tended to be stand-alone institutions or institutions affiliated with a parent higher education institution but maintaining a separate campus. Last, the "other specialized institutions" included in the analytical sample are drawn from schools of art, music, and design, as well as graduate centers, maritime academies, and military institutes. *Id*.

[69] As an illustrative example of collapsing an administrative unit on the parent institution, Washington University School of Medicine was collapsed on Washington University. This also applied to foundations and boards of regents, which were collapsed on the flagship institution,

collapsing on parent institution reduced the total number of institutions observed from 590 to 366 school observations, each with 44 year observations.

C. Limitations

It should be noted that the data are limited by two important factors: (1) a lack of explanatory covariates; and (2) a small sample of higher education institutions relative to the overall population of higher education institutions. In the first instance, because the year observations for each institution comprise a 44-year span, it is impractical to match each institution-year observation with rich, explanatory covariates over that time. Not even the Integrated Postsecondary Education Data System (IPEDS) collected comprehensive data on universities before 1993. As such, the Carnegie Classifications serve as a proxy for more detailed information about each institution during a span of years for which data is virtually impossible to find. Given that the Carnegie Classifications categorizes schools on the basis of its federal funding for academic research, production of doctorates, institutional selectivity, enrollment, and degree programs, the Carnegie Classification for each school makes an ideal proxy for a more complete set of explanatory covariates.

As for the size of the analytical sample relative to the population of institutions of higher education receiving a Carnegie Classification since 1973, this population consisted of 1,387 universities—not counting theological seminaries, bible colleges and two-year colleges—while the analytical sample used in this study comprises 366 universities—26.39 percent of the population. However, because this study analyzes university patent activity relative to patent policy change, the analytical sample size is necessarily limited to only those universities that have been granted a patent. As such, the analytical sample used in this study can be viewed as representing a nearly complete picture of the population of academic institutions that have successfully engaged in patent activity between 1969 and 2012.

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given that the vast majority of observations in this dataset are standalone or flagship institutions; for example, the University of Colorado Board of Regents and the University of Colorado Foundation are collapsed on the University of Colorado, given that no other institution from the University of Colorado system appears in the PTO dataset. Finally, independent institutions within the same university system were treated as different observations: the University of Texas Southwestern Medical Center is distinctly observed from the University of Texas at Austin or even the University of Texas at Dallas, the city in which the University of Texas Southwestern Medical Center is located.

D. Descriptive Results

Research universities and doctoral-granting universities dominate patenting activity and receive an overwhelming majority of patents granted to academic institutions.

TABLE 2: Analytical Sample by Carnegie Classification

Carnegie Classification	Freq.	Percent	Avg. Patent Total
Research I & II Universities	100	27.70	870.42
Doctoral-Granting I & II Universities	77	21.32	193.23
Comprehensive I & II Universities	118	32.68	26.10
Liberal Arts I & II Colleges	34	9.41	27.29
Specialized Institutions: Medical, Health, and Engineering	35	9.69	57.80
Other Specialized Institutions	2	0.55	2.50
Observations	361	100.00	178.52

However, just under half of the analytical sample is comprised of research universities and doctoral-granting universities, which the Carnegie Classifications consider separate but component parts of its doctoral-granting institution category. The average patent totals for research universities dominate all other classification of institution and are over four times as large as the average patent total for doctoral-granting universities. While comprehensive universities account for the largest proportionate classification in the sample, the average patent total for comprehensive universities is among the smallest in the analytical sample. In fact, it is followed only by the smallest classification in proportion and average patent total—other specialized institutions. Medical, health, and engineering schools, while small in number, maintain considerable average patent totals, nearly doubling the patent totals of liberal arts colleges which account for about the same proportion of institutions analyzed in the analytical sample. Across all categories, universities that entered the patent market before the passage of the Bayh-Dole Act buoy patent totals. As such, given their high level of patent activity, the spline regression model results below will especially highlight early entrants as well as research universities, doctoral-granting universities, and medical, health, and engineering schools.

E. Research Method and Model

This study employs a spline regression approach to identify how universities reacted to changes in patent policy at key points in time between 1969 and 2012. This method is very similar to using a difference-in-differences approach to compare the activity differences between two series of years separated by a point,

or knot, in time, where the intercept and slope vary before and after the knot.[70] Spline regression modeling necessitates that the location of the knots be set *a priori* in order to produce estimates of the non-linear relationship between the predictor and response variables. Doing this requires defining an indicator variable, using it as a predictor, but also allowing an interaction between this predictor and the response variable.[71] The analytical model employed in this study is as follows:

$$E(PAT_i \mid yr_t) = \beta_0 + \beta_1 CC_{it} + \beta_2 EE_i + \beta_3 S_i + \beta_4 yr_t + \beta_5 (k_c \geq yr_t > k_{c-1}) + \beta_6 yr_t (k_c \geq yr_t > k_{c-1}) + \varepsilon_{it}$$

Thus, the expectation of the total number of patents granted to school *i* (PAT_i) in year *t* (yr_t) is a function of: (1) a vector of the factors attendant to school *i* in year *t* as proxied by its Carnegie Classification (CC_{it}); (2) a dummy variable for whether or not the school engaged in patent activity before 1980 (EE_i); (3) a school fixed effect (S_i); (4) the year indicator variable (yr_t); (5) a dummy variable for the location of the indicator year between the critical spline knots (k_c, k_{c-1}); (6) the interaction of the indicator year and the dummy variable for its location between the critical spline knots; and (7) the random error term (e_{it}).

Spline knots were set at 1981 (k_1), 1996 (k_2), and 2010 (k_3) to account for: (1) the passage of the Bayh-Dole Act in 1980, which incentivized universities to engage in patent activity by giving them title to inventions produced from federally-funded research; (2) the expansion of the patent protection duration from seventeen to twenty years in 1995; and (3) the introduction of the America Invents Act, which would pass into law in 2011 and change the right to the grant of a

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[70] *Stata FAQ: How Can I Run a Piecewise Regression in Stata?*, UNIV. OF CALIF. LOS ANGELES INST. FOR DIGITAL RESEARCH AND EDUC. (2016), https://stats.idre.ucla.edu/stata/faq/how-can-i-run-a-piecewise-regression-in-stata/. Effectively, calculating the slope and intercept shifts by hand using spline regression rescales the variable "year" by centering it on the location of the spline knot. For example, the first spline knot (k_1) is centered on 1981, with all years before it counting up to zero and all years after—but before the next spline knot—counting up from zero. Including the centered "year" variable in the regression equation also requires adding an indicator variable of the intercept before and after the spline knot. Because the model has an implied constant—the intercepts before and after the spline knot should add up to 1—the overall test of the model will be appropriately calculated by hand. To finish estimating the slope and intercept differences by hand, this regression approach requires the use of the "hascons" option, because of the implied intercept constant. Alternatively, the "mkspline" package in Stata 13 can be used to conduct this estimation. Both approaches were used and yielded substantially similar results. The estimates from using the "mkspline" command are reported below for ease of interpretation.

[71] James H. Steiger, *An Introduction to Splines*, STATPOWER (2013), http://www.statpower.net/Content/313/Lecture%20Notes/Splines.pdf.

patent from a first-to-invent standard to a first-inventor-to-file standard.[72] The final spline knot was not set at 2012 for two reasons. First, because 2012 was the final year of observation in the data set, the spline regression model would not tolerate a post-2012 slope prediction without post-2012 data. Additionally, setting the knot at 2012 would not account for the possibility that universities may have begun reacting to the policy before the effective date of the policy change, as this particular policy change was in the offing for several years before its eventual passage.

From a theoretical perspective, the decision to specify the analytical model with year-after-the-intervention spline knots is defensible on the grounds that it allows an additional calendar year for universities to react to the policy intervention. However, to test the sensitivity of the model and the decision to set the spline knots one year after the policy intervention, the model was specified in multiple formats to include spline knots on the year of the policy intervention, one year before the policy intervention, and two years before the policy intervention. This sensitivity test was undertaken to ensure that the differences in slopes and intercepts throughout year observations were not evidencing a secular exponential curve. Although the year-of-the-intervention slopes and intercepts bore marginal similarities to the results discussed below, which are modeled on year-after-the-intervention spline knots, there were significant differences between the year-after-the-intervention slopes and intercepts reported below and those for year-prior- and two-years-prior-to-the-intervention. Thus, the year-after-the-intervention spline knot specification used in this study is preferable to other specifications, because it rules out the potential threat of secular trends.

F. Empirical Results

To analyze the effect of the patent policy changes on university patent activity, the regression model provided in the section above was used to calculate both the intercept before and after the policy intervention as well as the slope before and after the policy intervention. Given that the model employed a fixed effect by institution, the regression results reported below can be interpreted as providing an estimate of the intercepts (I) and effects, or slopes (E) pre-intervention, as well as the marginal intercept shift and slope change after the intervention for universities in the analytical sample. In the first regression table,

[72] 35 U.S.C. § 301 (2006) (permitting universities to take title in inventions and discoveries produced through federally-funded research); 35 U.S.C. § 154(a)(2) (2006) (extending the duration of patent protection from seventeen to twenty years); 35 U.S.C. § 100(i) (2006) (changing the right to the grant of patent from first-to-invent to first-inventor-to-file).

Table 2, the results compare early entrants to non-early entrants, demonstrating stark differences between the two groups.

TABLE 3: Knot Differentials (Intercept and Slope) Regular vs. Early Entrants

	Regular Entrants	Regular Entrants	Regular Entrants	Early Entrants	Early Entrants	Early Entrants
(I) Pre-1981	0			2.674***		
	(0.00)			(0.813)		
(I) Post-1981	-0.338			1.416**		
	(0.268)			(0.571)		
(E) Pre-1981	0			0.137		
	(0.00)			(0.115)		
(E) Post-1981	0.192***			0.760***		
	(0.0146)			(0.0311)		
(I) Pre-1995		1.565***			9.523***	
		(0.273)			(0.581)	
(I) Post-1995		1.180**			4.763***	
		(0.460)			(0.979)	
(E) Pre-1995		0.0800***			0.395***	
		(0.0180)			(0.0384)	
(E) Post-1995		0.157***			0.546***	
		(0.0361)			(0.0769)	
(I) Pre-2011			4.215***			20.11***
			(0.224)			(0.477)
(I) Post-2011			1.555			2.924*
			(1.138)			(1.542)
(E) Pre-2011			0.130***			0.559***
			(0.00964)			(0.0205)
(E) Post-2011			0.211			1.581*
			(0.516)			(0.819)
Observations	2,816	2,816	2,816	5,412	5,412	5,412
R-squared	0.097	0.095	0.094	0.172	0.170	0.167

Standard errors clustered by institution in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Notably, the early entrants engaged in patent activity at a modest but steady rate, adding minimally to yearly patent totals and averaging 2.67 patents granted annually by 1980. In 1981, the intercept at this spline knot jumped by an average of nearly one and a half patents in a single year, with an accelerated slope adding to the average growth by three-quarters of a patent every year thereafter to 1994. By 1995, the intercept spiked again, this time by an additional 4.76 patents granted annually for early entrants, with even further accelerated slope gains to 2010. Finally, in 2011, thought they came close, the estimates lacked statistical significance at the $p<0.05$ level but indicated an added intercept bump and positive explosion in slope. The non-early entrant estimates, though mostly consistent with

the statistical significance of the early entrant estimates for the same periods, pale by comparison. The direction and statistical significance of the results for all early entrants are fairly consistent with estimates for the effect of policy changes at the 1981, 1995, and 2011 spline knots among early entrants in the research and doctoral-granting universities classifications.

The results provided in Tables 3 and 4 describe patent activity among early entrant research and doctoral universities, respectively. As Table 3 indicates, research universities achieve the greatest orders of magnitude of increased patent grants at the regression spline knots. Slope changes among this group are statistically significant (or very closely approaching significance in the case of the 1995 spline), illustrating the differential response within group to the various policies while mitigating the influence of secular trends.

TABLE 4: Early Entrant Research Universities

Variables	Intercept	Int. Delta	Slope	Slope Delta
1969-1980 (Beginning of Data) [11 Years]	105.1	--	-0.0523	--
1981 Spline & 1981-1994 [14 Years]	104.5247	-0.5753	1.1277***	+1.180
1995 Spline & 1995-2010 [16 Years]	120.3125	+15.7878	0.8497*	-0.278
2011 Spline and 2011-2012 [2 Years]	133.9077	+13.5952	7.5517***	+6.702
2012 (End of Data)	149.0111	+15.1034	--	--
Observations	Total: 3,696	Years: 44	Schools: 84	
R-squared	0.243			

Standard errors clustered by institution
*** p<0.01, ** p<0.05, * p<0.1

Doctoral-granting institutions maintained relatively flat—until 2011, when the slope dramatically and significantly changed—but exhibit consistent growth in patent activity around the spline knots.

TABLE 5: Early Entrant Doctoral Universities

Variables	Intercept	Int. Delta	Slope	Slope Delta
1969-1980 (Beginning of Data) [11 Years]	0.000	--	0.0178	--
1981 Spline & 1981-1994 [14 Years]	0.1958	+0.1958	0.1768***	+0.159
1995 Spline & 1995-2010 [16 Years]	2.671	+2.4752	0.1484	-0.0284
2011 Spline and 2011-2012 [2 Years]	5.0454	+2.3744	1.9604**	+1.812
2012 (End of Data)	8.9662	+3.9208	--	--
Observations	Total: 2,420	Years: 44	Schools: 55	
R-squared	0.129			

Standard errors clustered by institution
*** p<0.01, ** p<0.05, * p<0.1

Table 5 compares the activity among these two early entrant groups in terms of patents granted. Before the passage of the Bayh-Dole Act in 1980, research universities engaged in steady, relatively flat rates of patent activity, averaging about four patent grants per year. In 1981, the intercept for research universities increased by an average of about two patent grants, significantly adding an average of more than one patent grant per year thereafter. In 1995, the research university intercept jumped over seven units but had a relatively stable slope before and after this time. While the limited data after 2011 do not tolerate statistical significance, research universities and doctoral-granting universities may have undergone another upward intercept shift, but more importantly, may have also undertaken a momentous slope shift, relative to all other slope shifts observed by category, in the years since 2011.

TABLE 6: Knot Differentials for Early Entrant Research & Doctoral-Granting Universities

	Research Universities	Research Universities	Research Universities	Doc. Granting Universities	Doc. Granting Universities	Doc. Granting Universities
(I) Pre-1981	3.860***			0.999**		
	(1.195)			(0.485)		
(I) Post-1981	1.977**			0.531		
	(0.839)			(0.341)		
(E) Pre-1981	0.185			0.0725		
	(0.169)			(0.0686)		
(E) Post-1981	1.117***			0.241***		
	(0.0458)			(0.0186)		
(I) Pre-1995		13.78***			3.450***	
		(0.855)			(0.347)	
(I) Post-1995		7.302***			0.299	
		(1.439)			(0.585)	
(E) Pre-1995		0.569***			0.149***	
		(0.0564)			(0.0229)	
(E) Post-1995		0.787***			0.252***	
		(0.113)			(0.0459)	
(I) Pre-2011			29.54***			6.237***
			(0.702)			(0.283)
(I) Post-2011			3.832			2.115
			(3.568)			(1.439)
(E) Pre-2011			0.822***			0.171***
			(0.0302)			(0.0122)
(E) Post-2011			2.291			0.458
			(1.620)			(0.653)
Observations	3,256	3,256	3,256	1,584	1,584	1,584
R-squared	0.255	0.253	0.248	0.170	0.168	0.174

Standard errors clustered by institution in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Among early entrant comprehensive universities, only one spline knot approaches statistical significance—the knot at 1995—but even it represents a modest increase from preceding patent activity.

TABLE 6: Early Entrant Comprehensive Universities

Variables	Intercept	Int. Delta	Slope	Slope Delta
1969-1980 (Beginning of Data) [11 Years]	0.000	--	0.0170	--
1981 Spline & 1981-1994 [14 Years]	0.187	+0.187	0.0170	+4.77e-05
1995 Spline & 1995-2010 [16 Years]	0.4251	+0.2381	0.0484*	+0.0314
2011 Spline and 2011-2012 [2 Years]	1.1995	+0.7745	0.0390	+0.342
2012 (End of Data)	1.9804	+0.7808	--	--
Observations	Total: 1,628	Years: 44	Schools: 37	
R-squared	0.072			

Standard errors clustered by institution
*** p<0.01, ** p<0.05, * p<0.1

Likewise, the statistical significance of the specialty institutions'—including primarily medical, health, and engineering schools—spline knot estimates is only present around the 1981 spline knot. Yet, the results clearly indicate a considerable bump at the 2011 spline knot, despite the lack of statistical significance at that spline or the 1995 spline.

TABLE 7: Early Entrant Specialty Institutions

Variables	Intercept	Int. Delta	Slope	Slope Delta
1969-1980 (Beginning of Data) [11 Years]	8.594	--	-0.00429	--
1981 Spline & 1981-1994 [14 Years]	8.5468	-0.0472	0.1447**	+0.149
1995 Spline & 1995-2010 [16 Years]	10.5723	+2.0259	0.0626	-0.0821
2011 Spline and 2011-2012 [2 Years]	11.5745	+1.0018	1.3376	+1.275
2012 (End of Data)	14.2497	+2.6752	--	--
Observations	Total: 1,056	Years: 44	Schools: 24	
R-squared	0.091			

Standard errors clustered by institution
*** p<0.01, ** p<0.05, * p<0.1

It is likely that these two groups of institutions—comprehensive universities and specialty institutions—demonstrate relatively little change with the passage of new patent policy for a couple of reasons. First, their numbers are few, especially when compared with research and doctoral-granting universities. Second, and perhaps more important, their missions are very different from research

universities.[73] Thus, these universities may not respond to the same incentives in the same way as research and doctoral universities simply because research resulting in a patent may not be an institutional priority for many of the schools in the comprehensive and specialty institution categories.

Notwithstanding these results for the comprehensive universities and specialized institutions, the statistically significant slope and intercept differentials, while controlling for explanatory covariates, indicate the strong presence of university patent activity responses among research and doctoral universities to patent regime changes at the years represented by the spline knots. There is considerable evidence that, among these two categories of universities, the passage of the Bayh-Dole Act in 1980 provided considerable incentive, and elicited considerable effect, on the engagement of major universities in patent acquisition. The shrinking but still significant effect at the 1995 policy intervention, which extended patent duration to 20 years in some but not all patents, may be direct evidence that, because this policy change was not as major a shift in the conferral of rights to universities, it did not elicit the same magnitude of response. However, the anticipation of the passage of the America Invents Act triggered a massive shift in university patent acquisition, perhaps because universities were concerned that their inventions could be scooped under the new first-inventor-to-file standard.

This behavioral pattern suggests a rational, profit-maximizing response—the result of strategic firm decisions regarding patent output and resource allocation decisions—to increase patent activity immediately after the implementation of a policy conferring greater patent rights. However, because universities do not bring these patents to market themselves, and so many of these patents are sold to patent assertion entities, the increase in university patent activity has the effect of contributing substantially to the patent thicket.

CONCLUSION

This study asks whether universities exhibit patent activity consistent with firm behavior. The results of the spline regression models suggest that research universities and doctorate-granting universities increase their patent activity in direct response to incentives created by changes in patent law but may also strategically hold on to pursue patentable inventions until after the policy provides them more robust patent rights or protection. Most notably, across all university types, the Bayh-Dole Act accelerated patent activity once universities could take title in inventions produced from federally-funded research. As illustrated in the

[73] KRISTINA M. CRAGG & PATRICK J. SCHLOSS, ORGANIZATION AND ADMINISTRATION IN HIGHER EDUCATION 3-25 (2017).

regression models and Figure 1 in the Appendix, this Act may have even incentivized research universities to disengage in patent activity prior to, and scale up patent activity just after, the passage of the act, in anticipation of the benefit that would be conferred upon them once the act had passed into law. As the patent protection duration expanded in the mid-1990s, the growth of patent activity at most universities in the analytical sample increased marginally, indicating another firm response to the patent law regime changes. Finally, preliminary results and the figures in the Appendix indicate that the anticipation of the America Invents Act may have had the largest impact in the rate of patent activity to date, evidence of a university patent activity response to protect current research against a more liberalized granting process.

These responses, evincing a move toward patent aggregation by universities, may have lasting impact not only on the patent marketplace but also on innovation. Yet, patent aggregation, in and of itself, is not necessarily problematic. However, the symptoms of patent aggregation, such as patent hold-up and rent-seeking licensing behaviors, are detrimental to the promotion of innovation. Moreover, competition for federal funds that leads to the production of patentable technology of little economic value could evince another market inefficiency to which universities may substantially contribute.

This study—the first in a series investigating how universities make decisions about their intellectual property, and whether these decisions redound to the public good—demonstrates that research universities, doctoral granting institutions, and specialized institutions respond strategically to patent policy changes in ways that carry profound consequences for innovation and the public good. It is clear that changes to patent policy are necessary to incentivize universities to reap the benefits of research and development of patentable technologies while promoting innovation.

* * *

APPENDIX

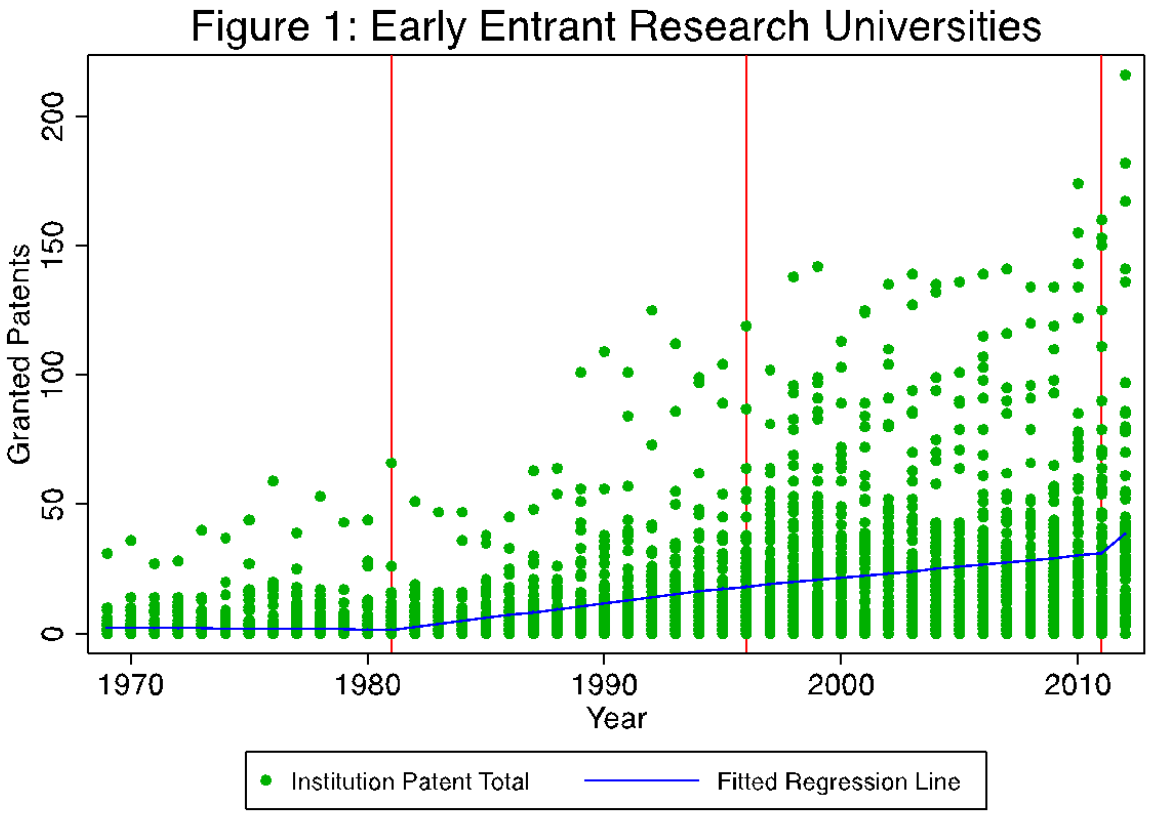
Figure 1: Early Entrant Research Universities
Granted Patents
0
50
100
150
200
1970
1980
1990
2000
2010
Year
Institution Patent Total
Fitted Regression Line

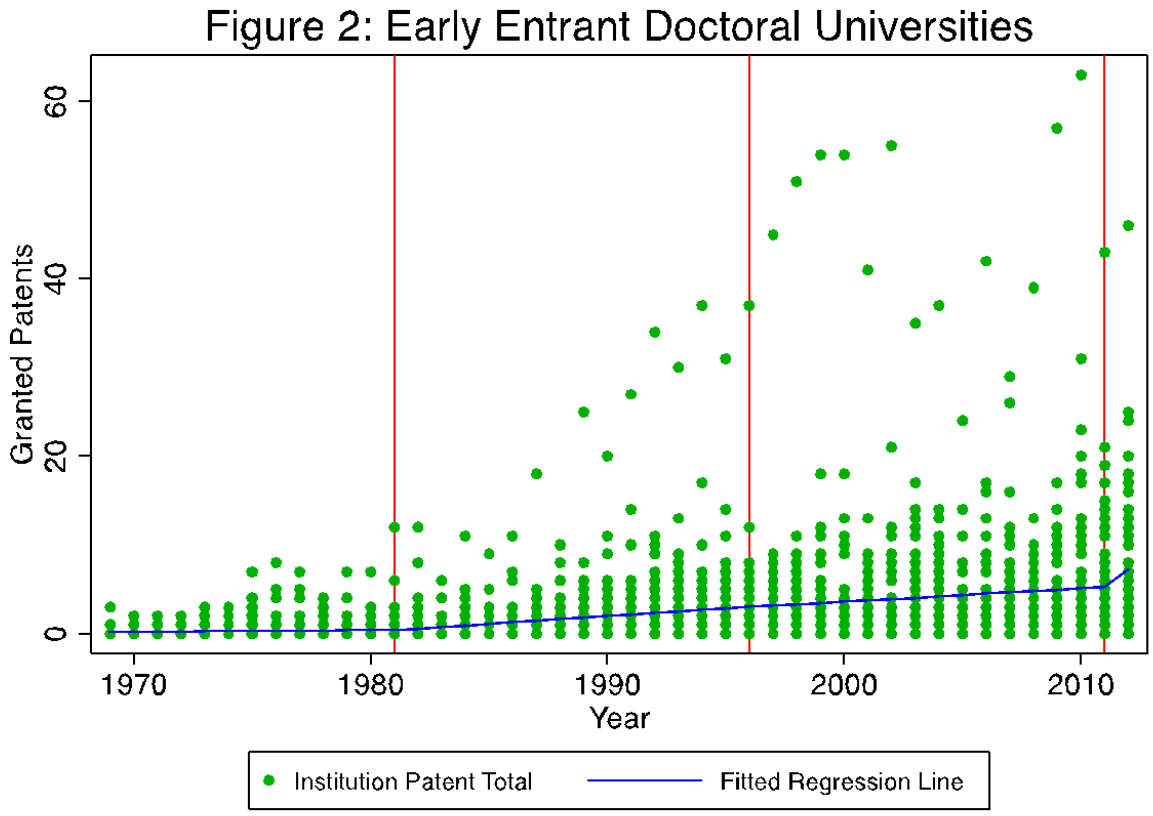
Figure 2: Early Entrant Doctoral Universities
Granted Patents
0
20
40
60
1970
1980
1990
2000
2010
Year
Institution Patent Total
Fitted Regression Line

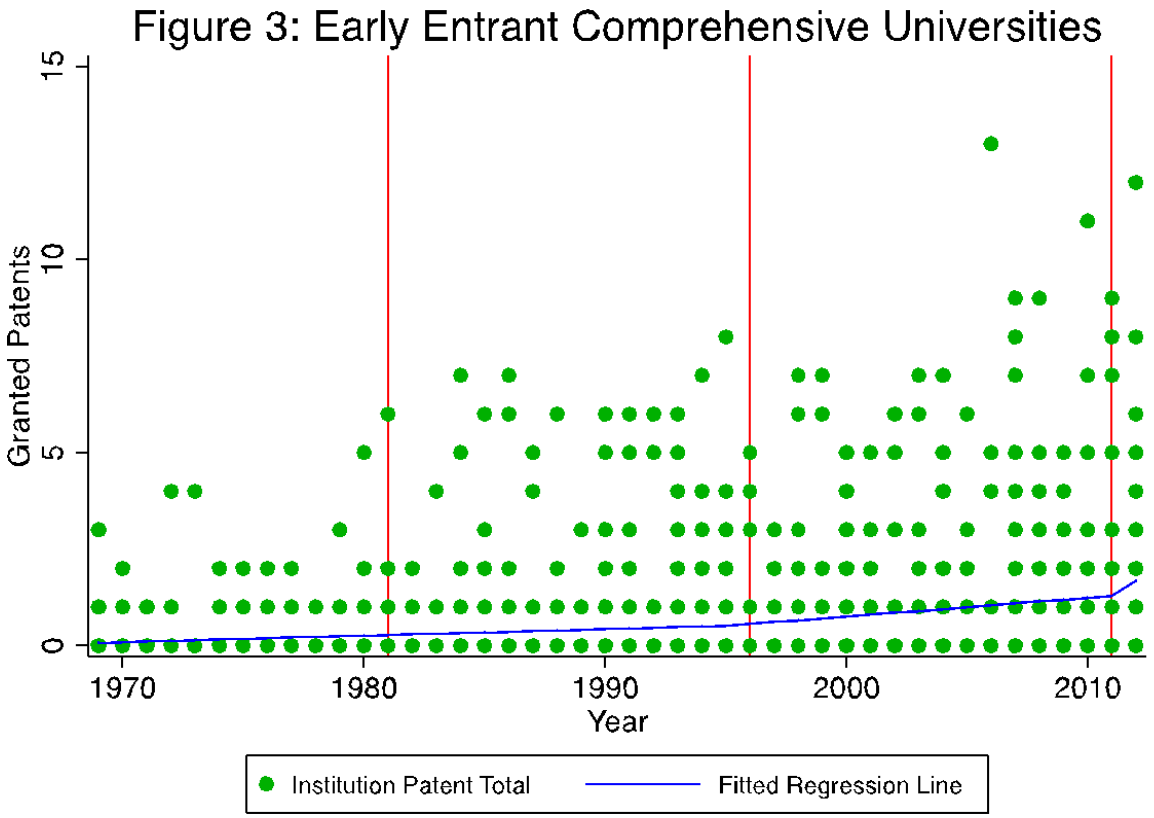
Figure 3: Early Entrant Comprehensive Universities
Granted Patents
0
5
10
15
1970
1980
1990
2000
2010
Year
Institution Patent Total
Fitted Regression Line

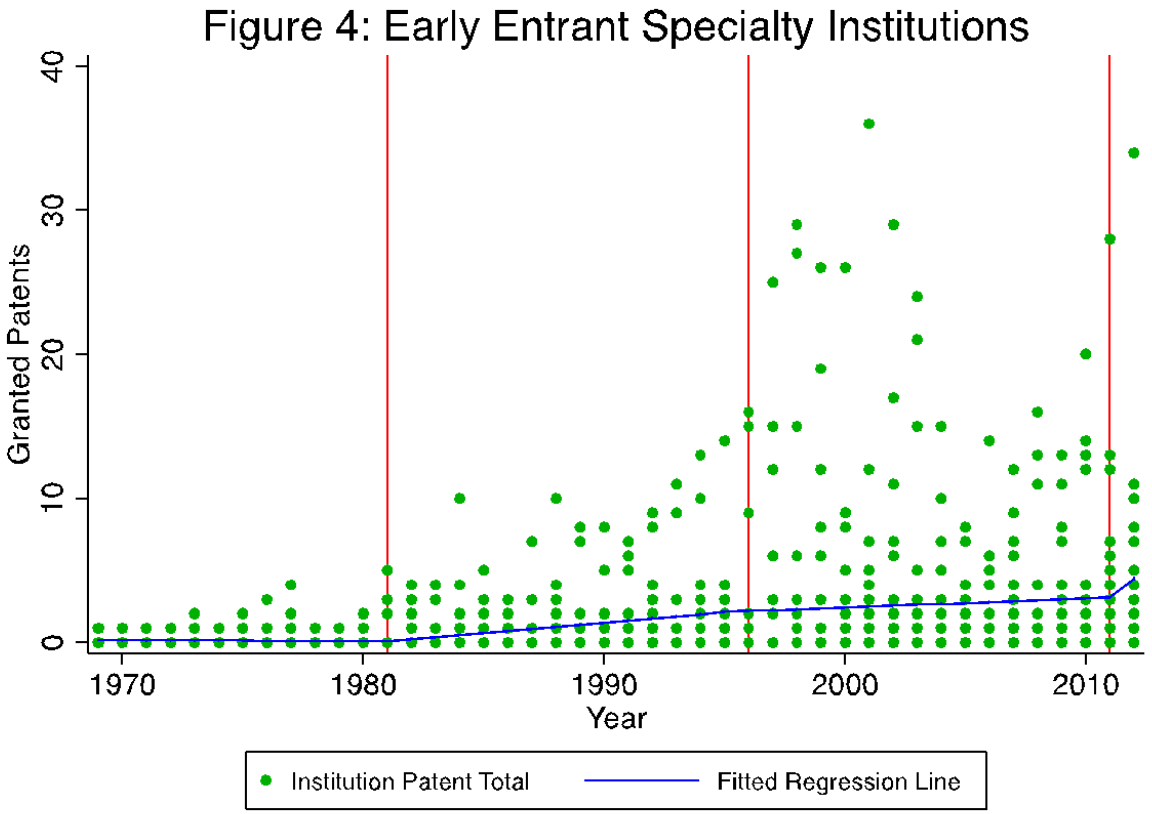
Figure 4: Early Entrant Specialty Institutions
Granted Patents
0
10
20
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40
1970
1980
1990
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WHAT YOUNG INNOVATIVE COMPANIES WANT: FORMULATING BOTTOM-UP PATENT POLICY FOR THE INTERNET OF THINGS

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The potential anticompetitive consequences of standard essential patents have been identified by the European Commission as a key area of policy formulation for the Internet of Things. Throughout the process of policy formulation, the input of young innovative companies may require additional consideration as illustrated by the series of thirty-one in-depth interviews undertaken with key figures in young innovative companies (YICs) across Europe. The information gathered shows that that the way the E.C. conceptualized the policy issues at stake is not wrong, but may be incomplete. While it is important to promote a better understanding of what the FRAND promise entails, young innovative companies showed a remarkable disconnect to the patent system as a whole. They not only lacked intellectual property awareness, but many also thought that the Internet of Things could be helped by open source software, rather than a standard essential patents regime. Against this background, this study strongly encouraged the European Commission to better integrate young innovative companies in the process of patent policy formulation. The fair, reasonable and non-discriminatory (FRAND) guideline the Commission issued at the end of November 2017,

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reflected the findings of this study by recognizing the need to raise FRAND awareness among YICs and SMEs (Small and Medium Sized Companies).

I
THE NEW PARADIGMS OF THE INTERNET OF THINGS

The next wave of internet usage will disrupt a host of different industries, while at the same time opening up so far unknown opportunities to those ready to seize them. Devices and components with an internet address will be joined to each other allowing for large-scale communication embedded in gigantic sensing systems.[1] In this sense, the Internet of Things (IoT) can be understood as a means to connect objects, machines and humans in large-scale communication networks.[2] The IoT merges physical and virtual worlds by interconnecting people and objects through communication networks, sending status updates, and reporting on the surrounding environment. Applications will become more sophisticated, allowing for the emergence of services and product offerings that are beyond our imagination: IoT based toys will accompany children from early age until adulthood, IoT driven medical devices will save the lives of those suffering from a sudden stroke, and clothing with IoT technology built in will allow everything from our shirts to our shoes to

[1] *See, e.g.*, Ian Hargreaves, *Digital Opportunity: A Review of Intellectual Property and Growth*, at 14-15 (2011) (U.K.), https://www.gov.uk/government/publications/digital-opportunity-review-of-intellectual-property-and-growth.

[2] *See The Internet of Things*, EUR. COMM'N (last visited Sept. 4, 2017) https://ec.europa.eu/digital-single-market/en/policies/internet-things.

customize according to daily fashion trends. Smart homes, smart cities, and even smart countries will become the norm; reducing energy wastage to a minimum. The commercial opportunities associated with the IoT will be substantial. Markets will expand into areas we have not even conceived of, thereby creating new jobs and fostering further competition between the various regions of the world.

Against this background, the European Union has recognized the need to identify a governance framework that will enable it to take advantage of the promising opportunities associated with the IoT, while mitigating risks and adverse effects to the best extent possible. An important aspect of a European IoT strategy consists of adequately addressing the interplay between competition and intellectual property law. Consequently, the European Commission itself considers it necessary to formulate policy guidelines on fair, reasonable, and non-discriminatory (FRAND) licensing. In order to accomplish this, the European Commission (E.C.) launched a series of stakeholder consultations, workshops and published two in-depth reports addressing the potentially anticompetitive effects that standard essential patents could have for the Internet of Things.[3] With the goal of offering further clarity on the licensing conditions for patents that read on standards, the E.C. issued guidelines on FRAND licensing[4] on the 29th of November 2017.[5] While these guidelines are non-binding, the E.C. will nonetheless take advantage of soft law mechanisms

[3] *See* Communication from the Commission – Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, 2011 O. J. (C 11) 55; Chryssoula Pentheroudakis & Justus A. Baron, *Licensing Terms of Standard Essential Patents: A Comprehensive Analysis of Cases*, JRC SCIENCE FOR POLICY REP. (Nikolaus Thumm ed., 2017); Tim Pohlmann & Knut Blind, *Landscaping study on Standard Essential Patents*, IPLYTICS (2016), http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8981;

Pierre Régibeau, Raphaël De Coninck & Hans Zenger, *Transparency, Predictability, and Efficiency of SSO-based Standardization and SEP Licensing: A*

Report for the European Commission (2016) http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=9028&lang=en;

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, *Public Consultation on Patents and Standards - A Modern Framework for*

Standardisation Involving Intellectual Property Rights (2015), http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=7833;

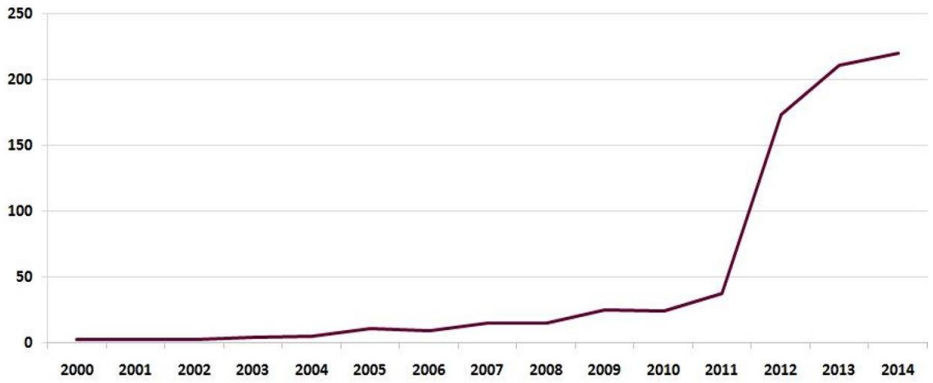
European Competitiveness and Sustainable Industrial Policy Consortium, *Patents and Standards: A Modern Framework for IPR-Based Standardization* (2014), http://ec.europa.eu/DocsRoom/documents/4843/attachments/1/translations.

[4] *Setting Out the EU Approach to Standard Essential Patents*, EUROPEAN COMM'N, https://ec.europa.eu/docsroom/documents/26583.

[5] Directorate-General for Internal Mkt., Indus., Entrepreneurship and SMEs, *Communication from the Commission on Standard Essential Patents for a European Digitalised Economy*, Ares(2017)1906931 (2017), https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-1906931_en.

so to offer a transparent framework for FRAND licensing. This appears justified given the major patent wars[6] that the licensing of standard essential patents triggered in the telecommunications sector. For a quantitative analysis of the imminent rise in patent litigation in the area of speech recognition, an area closely related to IoT, see for example the below analysis by iRunway; showing a sharp increase in patent litigation since 2011.[7]

Figure 1: Patent Litigation Trend in Speech Recognition Domain



(Source: iRunway analysis based on patent data from USPTO and litigation data from RPX)

While it is laudable that the E.C. is taking ownership of a key policy area that will make or break the success of the IoT, it is regrettable that the process preceding policy formulation has been primarily driven by interaction with large corporations and industry associations having significant experience with FRAND licensing. The views, experiences and opinions of European young innovative companies, YICs, are largely missing from the policy development process. Given that young innovative companies are seeking to advance the IoT, the European Commission is hence likely to have missed out on input from those companies, who are doing their best to move the IoT forward. To fill this gap, this study undertook a series of thirty in-depth interviews with young innovative companies active in the European IoT space. In doing so, it hopes to counter policy formulation that lacks grass roots linkages and takes insufficient consideration of the needs of YICs. In doing so, this study is pleased to report

[6] *See, e.g.*, Lea Shaver, *Illuminating Innovation: From Patent Racing to Patent War*, 69 WASH. & LEE L. REV. 1891, 1933 (2012); Thomas H. Chia, *Fighting the Smartphone Patent War with RAND-Encumbered Patents*, 27 BERKELEY TECH. L. J. 209, 210, 239-238 (2012); Jeff Hecht, *Winning the laser-patent war*, 12 LASER FOCUS WORLD 49, 49 (1994); Sonia Karakashian, *A Software Patent War: The Effects of Patent Trolls on Startup Companies, Innovation, and Entrepreneurship*, 11 HASTINGS BUS. L.J. 119, 122 (2015); Tim Bradshaw, *Smartphone patent wars set to continue*, FINANCIAL TIMES, May 28, 2013, *available at* https://www.ft.com/content/3eda6296-b711-11e2-a249-00144feabdc0.

[7] Aditi Das, Ashish Gupta, & Bhargav Ram, *Speech Recognition Technology & Patent Landscape*, IRUNWAY, (2015), at 26, *available at* http://www.i-runway.com/images/pdf/iRunway-Speech-Recognition-Patent-Landscape.pdf.

that the suggestions made hereby were reflected in the E.C. Guidelines on FRAND.[8]

The study is structured in two main parts. The first part is dedicated to discussing key features of the IoT from an IP and competition policy perspective. The second part presents the findings from the field study undertaken in the summer of 2016. It concludes by urging policy makers to include young innovative companies in the policy process as it finds that there is quite a significant gap between the theoretical conceptualisation of the topic and the practical experiences of YICs.

A. Defining the Internet of Things

Identifying a working definition for the Internet of Things is complicated by the fact that the IoT is an umbrella term encapsulating a variety of different technologies. The IoT has been described as "a concept that interconnects uniquely identifiable embedded computing devices, expected to offer Human-to-Machine (H2M) communication replacing the existing model of Machine-to-Machine communication."[9] It has also been labelled as "[I]nternet-enabled applications based on physical objects and the environment seamlessly integrating into the information network."[10] More narrowly, the OECD defined the IoT as "Machine to Machine communication (M2M)"[11] and the European Commission describes the IoT simply as something that "merges physical and virtual worlds… where objects and people are interconnected through communication networks and report about their status and/or the surrounding environment."[12] All of these definitions are fairly vague and it is probably for that reason that they encapsulate the gist of the IoT so well. The IoT constitutes a high growth business opportunity as its application is vast and it bears the potential to transform virtually every sector of the economy. In current IoT markets, it is not yet clear what type of business models will succeed and who will emerge as a market leader. As such, the IoT space has been described as

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[8] *Setting Out the EU Approach to Standard Essential Patents*, *supra* note 4.

[9] LexInnova, *The Internet of Things: Patent Landscape Analysis*, (Nov. 2014), *available at* http://www.lex-innova.com/resources-reports/?id=33.

[10] William H. Dutton, *The Internet of Things*, (June 20, 2013), https://dx.doi.org/10.2139/ssrn.2324902 (quoting William H. Dutton et al., *A Roadmap for Interdisciplinary Research on the Internet of Things: Social Sciences', addendum to Internet of Things Special Interest Group, A Roadmap for Interdisciplinary Research on the Internet of Things*. London: Technology Strategy Board (January 5, 2013), https://dx.doi.org/10.2139/ssrn.2234664.

[11] Organisation for Economic Co-operation and Development [OECD], *Machine-to-Machine Communications: Connecting Billions of Devices* at 7, *OECD Digital Economy Papers*, No. 192 (Jan. 30, 2012), http://dx.doi.org/10.1787/5k9gsh2gp043-en.

[12] *The Internet of Things*, EUR. COMM'N, https://ec.europa.eu/digital-single-market/en/policies/internet-things.

being quite dispersed and driven to a large extent by small early stage companies.[13]

II
THE INTERNET OF THINGS IS EXPOSED TO NETWORK EFFECTS …

The IoT is a network-based technology, which thrives on multilateral exchange. Similar to telecommunications networks, it constitutes an interconnected eco-system. Such systems can be associated with "network effects." Network effects are "defined as a change in the benefit, or surplus, that an agent derives from a good when the number of other agents consuming the same kind of good changes."[14] The more the peculiar software solution of one firm becomes adopted, the more it will benefit this specific firm, making it more difficult for new entrants to see their technological solutions adopted in the market; even if they are of higher technological quality. Network effects enable large-scale access to an interoperable software solution, whose value thrives with additional adoption.[15] The more the IoT solution is in use, the more it becomes known and even more additional users will be attracted to it. At the same time, existing users are less and less inclined to switch to another service provider.[16] Some scholars consequently associate networks with "increasing returns" to "path dependence."[17] The initial success of one specific IoT solution is often owed to small, random events; yet once it establishes a strong position in the market, it will remain in use, even if better technological solutions are identified. This is because users cannot afford to switch, as they would have to give up the interconnectivity provided by the existing network. Thus the overall

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[13] *See* Raph Crouan, *Why are SMEs the single most important element in our Alliance for IoT today?*, EUR. COMM'N (Nov. 20, 2015), https://ec.europa.eu/digital-single-market/en/blog/why-are-smes-single-most-important-element-our-alliance-iot-innovation-today; *'Internet of Things' has huge potential for SMEs*, KNOWLEDGE TRANSFER IRELAND, http://www.knowledgetransferireland.com/News/'Internet-of-Things'-has-huge-potential-for-SMEs.html; *The Business Drivers and Challenges of IOT for SMEs*, IOTUK, https://iotuk.org.uk/the-business-drivers-and-challenges-of-iot-for-smes/; The business drivers and challenges of IoT for SMEs. https://iotuk.org.uk/the-business-drivers-and-challenges-of-iot-for-smes/.

[14] S.J. Liebowitz & Stephen E. Margolis, *Network Externalities (Effects)*, https://www.utdallas.edu/~liebowit/palgrave/network.html.

[15] *See* Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8.2 J. ECON. PERSP. 93 (1994).

[16] *See* Joseph Farrell & Paul Klemperer, *Coordination and Lock In: Competition with Switching Costs and Network Effects*, in 3 HANDBOOK OF INDUS. ORG. 1967 (Mark Armstrong & Robert H. Porter eds., 2007).

[17] Pierson Paul, *Increasing Returns, Path Dependence, and the Study of Politics*, 94(2) AM. POL. SCI. REV. 251, 251-67 (2000); *see also* Kenneth J. Arrow, *Increasing Returns: Historiographic Issues and Path Dependence*, 7(2) EUR. J. OF THE ECON. THOUGHT 171, 171-80 (2000).

effect is to discourage technological innovations as incumbents entrench themselves through network size and technological compatibility rather than technological sophistication.[18]

Once critical mass is reached, usage of the service will grow quasi-automatically and this comes often to the detriment of other service offerings.[19] Furthermore, critical mass allows incumbents to gain significant cost advantages over new entrants who undoubtedly will face significant upfront costs because IoT solutions are complex to design, costly to deliver to the market, and accessibility to the needed know-how is often protected through patents or trade secrets. In addition, incumbents will be in a position to offer complementary services, extensions, add-ons and customer support to further strengthen their dominance in the market, making it more difficult for new entrants. Hence, network effects can reasonably be understood as the "*tendency for that which is ahead to get further ahead, for that which loses advantage to lose further advantage*."[20] Consequently, network effects can distort competition and adversely affect consumers.

III
WHICH CAN TRIGGER ANTICOMPETITIVE LICENSING BEHAVIOUR

Adverse implications of network effects can be even more pronounced if interoperability is achieved through standardization and market participants leverage patents to protect their inventions. Standards are dynamic, in the sense that their main function is to ensure a collaborative technology development. Standards do evolve over time. However, the status quo of a technological solution does exist for a given period of time, at least until a new standard is adopted by the market that addresses the same technological challenge.

Patent protections on theses standards, particularly if held by a wide range of market participants, can incite anticompetitive behaviour. To mitigate the kind anticompetitive licensing behaviour that standard essential patents can trigger, the FRAND agreement was introduced. The "FRAND promise is construed according to its core function as an irrevocable waiver of extraordinary remedies" and hence seeks to counterbalance the exclusionary

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[18] *See* Vernon W. Ruttan, *Induced Innovation, Evolutionary Theory and Path Dependence: Source of Technical Change*, 107(444) THE ECON. J. 1520, 1520-29 (1997); Robert W. Rycroft & Don E. Kash, *Path Dependence in the Innovation of Complex Technologies*, 14(1) TECH. ANALYSIS & STRATEGIC MGMT. 21, 21-35 (2002); ARTHUR W. BRIAN, INCREASING RETURNS AND PATH DEPENDENCE IN THE ECONOMY, 46 (1994).

[19] *See* Venkatesh Shankar & Barry L. Bayus, *Network Effects and Competition: An Empirical Analysis of the Home Video Game Industry*, 24(4) STRATEGIC MGMT. J. 375, 375-84 (2003).

[20] William B. Arthur, *Increasing Returns and the Two Worlds of Business*, 74(4) HARV. BUS. REV. 100, 100-09 (1996) (emphasis added).

aspects of patent law.[21] Because of the FRAND or RAND (in the U.S.A.) commitment, companies are obliged to license patents on a standard on fair (Europe only), reasonable and non-discriminatory terms, following the IP policies of the relevant standard setting organizations. Hence, the FRAND concept seeks to offer a governance framework for the licensing of standard essential patents. Because these patents can accrue market power to their owner and hence potentially provoke anticompetitive licensing behaviour, it is believed that standard essential patents are warranted different licensing pathway than other patents – namely, they must be licensed in a way that comports with the FRAND framework. Exactly how such a FRAND framework should be applied, and whether the scope of the application should be narrow or broad, is currently subject to international IP policy formulation. If the FRAND agreement offers adequate means to mitigate against risks associated with widely dispersed patent ownership, that will also deserve further policy attention.

A new entrant may need to hack through a host of patents held by many different IP owners, which can lead to an undesired anti-commons effect, whereby existing patents stifle rather than promote innovation and the very purpose of the patent system is undermined.[22] While it is important to note that the IoT does not yet dispose of any prominent standards, nor depend on any particular technology protected through patents, it is quite unlikely that this will remain that way. If the IoT is to evolve from its current state of infancy to a more mature technology field, it will be necessary to establish widely used standards. At this point, contributors to those standards will undoubtedly want to leverage their IP for licensing, sales purposes or blocking third party entry. Although these may be legitimate usages of IP, the licensing of standard essential patents has also been associated with an undesired behaviour known as "holdup."

The impact of holdup can be particularly pronounced where firms benefit from first mover advantage or where firms have the necessary innovation capacity to capture the patent landscape. It is, however, incorrect to assume that patent holdup would only be an issue concerning "important" patent owners. In fact, each and every standard essential patent owner (SEP owner) could theoretically engage in holdup because its position as a gatekeeper to the standard allows him or her to do so. It is alleged that these patent holders –

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[21] Joseph S. Miller, *Standard Setting, Patents, and Access Lock-In: Rand Licensing and the Theory of the Firm*, 40 IND. L. REV. 351, 378 (2007).

[22] *See* Dan Hunter, *Cyberspace as Place and the Tragedy of the Digital Anticommons*, 91 CALIF. L. REV. 439, 439-519 (2003); Sven Vanneste et al., *From "Tragedy" to "Disaster": Welfare Effects of Commons and Anticommons Dilemmas*, 26 INT'L REV. OF L. AND ECON. 104, 104-22 (2006); Clarisa Long, *Patents and Cumulative Innovation*, 2 WASH. U. J.L. & POL'Y 229, 229-46 (2000).

having claimed an important position in the patent landscape – can charge abnormally high licensing rates to standard essential patent licensees.[23]

By charging these high licencing rates, the patent holders are engaging in the practice of what is commonly called patent holdup. For instance, it has been stated that the holdup problem is particularly severe with mobile telecoms standards because the standards that are adopted are used for a long time and the costs that are associated with switching to an alternative standard are high.[24] Further it has been argued that standards holdup is both a private problem facing industry participants and a public policy problem. Privately, those who will implement the standard (notably manufacturers of standard-compliant equipment) do not want to be overcharged by patent holders. But standards hold-up is also a public policy concern because downstream consumers are harmed when excessive royalties are passed on to them.[25] Given that the IoT can be associated with network effects, it is likely that such adverse effects could occur within the context of the IoT as well.

Adverse licensing behaviour could also occur if licensees stall payment, refuse a licensing agreement all together, or take a license below the fair rate. Such holdout constitutes an equally problematic market practice as it leads to free riding problems associated with technology used. Licensees may also simply engage in a series of offers and counteroffers to further stall negotiations. Such strategic behaviour can erode the incentive to invest in R&D. Both patent holdup[26] and holdout[27] are possible in the IoT context and both can constitute undesired strategic behaviour.[28]

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[23] *See, e.g.*, U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION (2007) (addressing 'hold up' in the context of standard setting).

[24] Philippe Chappatte, *FRAND Commitments - The Case for Antitrust Intervention*, 5 EUR. COMPETITION J. 319, 326 (2009).

[25] Joseph Farrell, John Hayes, Carl Shapiro & Theresa Sullivan, *Standard Setting Patents and Hold-Up*, 74 ANTITRUST L. J. 603, 608 (2007).

[26] *See, e.g.*, U.S. DEP'T OF JUSTICE & U.S. FED. TRADE COMM'N, *supra* note 21 (addressing hold up in the context of standard setting); Mark A. Lemley & Carl Shapiro, *Patent Hold-up and Royalty Stacking*, 85 TEXAS L. REV. 1991 (2007); Carl Shapiro, *Injunctions, Hold-Up, and Patent Royalties*, 12 AM. L. & ECON. REV. 280 (2010). For a critique of Lemley & Shapiro, *see* Einer Elhauge, *Do Patent Holdup and Royalty Stacking Lead to Systematically Excessive Royalties?*, 4 J. COMPETITION L. & ECON 535 (2008); John M. Golden, *"Patent Trolls" and Patent Remedies*, 85 TEXAS L. REV 2111 (2007); Vicenzo Denicolò, Damien Geradin, Anne Layne-Farrar, & A. Jorge Padilla, *Revisiting Injunctive Relief: Interpreting Bay In High-Tech Industries With Non-Practicing Patent Holders*, 4 J. COMPETITION L. & ECON 571 (2008); Peter Camesasca, Gregor Langus, Damien Neven, & Pat Treacy, *Injunctions for Standard-Essential Patents: Justice Is Not Blind*, 9 J. COMPETITION L. & ECON 285 (2013); James Ratliff & Daniel L. Rubinfeld, *The Use and Threat of Injunctions in the RAND Context*, 9 J. COMPETITION L. & ECON 1 (2013).

IV
. . . THAT CAN PARTICULARLY AFFECT YOUNG INNOVATIVE COMPANIES

Young innovative companies (YICs) can be particularly vulnerable to adverse licensing behaviour. YICs, which have come to be understood as small, young and highly engaged in innovation, aim "to exploit a newly found concept, stimulating in that way technological change, which is an important determinant of long run productivity."[29] While it would appear that the very process that drives YICs would quite naturally be associated with patent protection, it has been observed that micro enterprises and SME lack IP awareness.[30]

YICs' fear above all are the costs associated with patent protection and patent enforcement. From the perspective of YICs, IP is primarily a cost factor that diverts time and attention away from doing business. Studies undertaken by the UKIPO,[31] the IPR Helpdesk of the European Commission,[32] as well as WIPO[33] show that such firms associate IP protection with a tedious, laborious and time-consuming endeavour that offers only moderate support to business because costs associated with enforcement are often unaffordable. For the same reasons, these firms tend to be reluctant to enforce their own patents against infringers, leaving this group of firms with questionable patent proposition. This has led several observers to the conclusion that "deterred by high costs and complicated procedures, YICs tends to lack the necessary skills to take any

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[27] Gregor Langus, Vilen Lipatov & Damien Neven, *Standard-Essential Patents: Who Is Really Holding Up (and When)?*, 9 J. COMPETITION L. & ECON., 253 (2013); Damien Geradin, *Reverse Hold-Ups: The (Often Ignored) Risks Faced by Innovators in Standardized Area The Pros and Cons of Standard Setting*, (Nov. 12, 2010) (paper prepared for the Swedish Competition Authority on the Pros and Cons of Standard-Setting).

[28] Michael J. Meurer, *Controlling Opportunistic and Anti-Competitive Intellectual Property Litigation*, 44 B.C. L. REV. 509 (2003).

[29] Dirk Czarnitzki & Julie Delanote, *Young Innovative Companies: The New High-Growth Firms?*, 1 (Ctr. for Eur. Econ. Research, Discussion Paper No. 12-030) (2012).

[30] Robert H. Pitkethly, *Intellectual Property Awareness*, 59 INT'L J. TECH. MGMT. 163 (2012).

[31] Robert Pitkethly, *UK Intellectual Property Awareness Survey 2006*, CHRONICLES OF INTELLECTUAL PROP., http://breese.blogs.com/pi/files/ipsurvey.pdf; Preliminary Report, *Intellectual Property Awareness Survey 2015* (Feb. 11, 2016), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/500211/IP_awareness_survey_2015.pdf.

[32] *See* IPeuropeAware, Promoting the Benefits of greater knowledge and effective management of European SMEs & Intermediaries, https://www.dpma.de/docs/dpma/conclusion_paper_ipeuropaware.pdf; EUROPEAN IPR HELPDESK, https://www.iprhelpdesk.eu/ambassadors (last visited Dec. 1, 2017).

[33] *See* WORLD INTELLECTUAL PROPERTY ORGANIZATION, http://www.wipo.int/ip-outreach/en/tools/ (last visited Dec. 1, 2017).

particular advantage of the patent system."[34] The UK Government's Hargreaves Review "IP and Growth," further highlighted that strategic advice would be needed to help fill this gap stating that "many SMEs have only limited knowledge of IP and the impact it may have on their businesses; they lack strategic, commercially based IP advice; have difficulties identifying the right source of advice and IP management is made impossible due to too high costs."[35] Hence, cost and time constraints tend to discourage YICs from taking ownership of the patent system. With respect to the particular challenges associated with standard essential patents, it is very likely that the overarching lack of IP competence will overshadow any potential experiences there may be with standard essential patents. Arguably, the lack of IP skills will make YICs more prone to unreasonable licensing requests, while at the same time making them more likely to inadequately respond to licensing requests themselves. Hence, lack of knowledge will risk exposing YICs to anticompetitive IP requests, while at the same time making them more likely to stall licensing engagement payments.

V
METHODOLOGY

Is there a gap between the way European policy makers and YICs are conceptualising the role of IP in the IoT? To gain further insight into that question, a series of thirty-one in-depth interviews were undertaken with YICs during the course of 2016. In addition, four contextual interviews were carried out. Interviewees were asked to reply to a set of open ended questions, allowing them to discuss their experiences with patents and standards, present their licensing practices and the extent to which they were (if at all) exposed to licensing requests. They were also asked if they feared patent wars similar to those in telecom could occur in the IoT space and what they would expect the European policy maker to do to counter potentially anticompetitive usage of IP, while helping them to take advantage of standards and patents. The issue of software patents was deliberately excluded from the conversations as this was subject to historical policy formulation and not that of current policy thinking. Given the stance taken on software patents in the E.U., the market participants

[34] Intellectual Property Office, From Ideas to Growth: Helping SMEs get value from their intellectual property (Apr. 3, 2012), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/316116/ip4b-sme.pdf; Competitiveness and Innovation Framework Programme, IP Awareness and Enforcement Modular Based Actions for SMEs, http://www.obi.gr/obi/portals/0/imagesandfiles/files/abstract_en.pdf.

[35] Ian Hargreaves, Digital Opportunity: A Review of Intellectual Property and Growth (May 18, 2011), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32563/ipreview-finalreport.pdf.

interviewed here would simply not have been in a position to comment on their experience with software patents in the E.U.[36]

The technique applied is known in social sciences as a "semi structured interviewing" process.[37] The techniques give the interviewees space to express their own perspectives and mitigates against biased research results. This approach is somewhat comparable to a study based on focus groups. Such a qualitative research method was considered suitable as it allows us to theorize about what public policy formulation could look like in an emerging field of technology, where policy guidelines are yet to be identified. In addition, this specific research approach offers the necessary insights for a bottom-up approach to public policy formulation.

The target group was identified via LinkedIn. The firms interviewed usually had no specialized lawyer dedicated to IP issues, so the most senior person in the company was interviewed. This was usually the Chief Executive Office, Chief Technology Officer, Chief Operating Office or sometimes one of the investors in the firm. The vast majority of the firms interviewed were early stage firms or start-ups. Only Italian firm 'S.' has been acquired by a major technology company. In addition to interviewing a core group of young innovative companies, we also undertook contextual interviews with a financial analyst, a few management consultants specialized in the IoT space, as well as a patent analyst with whom we discussed patent landscapes. Of the 350 people we reached out to, we obtained thirty-five interviews – yielding a response rate of 10%. A sample of thirty-one in-depth interviews with Young Innovative Companies and four contextual interviews is usually considered sufficient to provide meaningful insights.[38] It is recognized, however, that such a qualitative research method, cannot offer "hard facts," but only views, opinions and impressions.[39] Yet, it is precisely this web of views and opinions that is key in

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[36] *Patents for software? European law and practice*, EUR. PAT. OFF., https://www.epo.org/news-issues/issues/software.html ("Under the EPC, a computer program claimed "as such" is not a patentable invention (Article 52(2)(c) and (3) EPC). Patents are not granted merely for program listings. Program listings as such are protected by copyright. For a patent to be granted for a computer-implemented invention, a technical problem has to be solved in a novel and non-obvious manner.").

[37] *See generally* Margaret C. Harrell & Melissa A. Bradley, *Data Collection Methods: Semi Structured Interviews and Focus Groups*, RAND NAT'L DEF. RES. INST., at 27 (2009); Siw. E. Hove & Bente Anda, *Experiences from conducting semi-structured interviews in empirical software engineering*, SOFTWARE METRICS, 2005, at 3.

[38] *See, e.g.*, Mark Manson, *Sample Size and Saturation in PhD Studies Using Qualitative Interviews*, Forum: Qualitative Soc. Res., Sept. 2010, at 3, 9 (citing several major works recommending between 20-50 interviews and finding an average of 31 among studies included in analysis).

[39] *See* Florian Kohlbacher, *The Use of Qualitative Content Analysis in Case Study Research*, Forum: Qualitative Soc. Res., Jan. 2006, at 13.

politics. Language is a constitutive element of politics, shedding light on the language of those otherwise marginalized in the political process, which is conducive towards the democratic process. The FRAND debate forms no exception to that.

Table 1 offers an anonymized overview of the interview process. In order to shield the interviewees from potential exposure to patent assertion entities, it was decided not to disclose their identities publicly. The detailed transcripts of the interviews are available only in my private archive.[40]

VI
FINDINGS

A. Trends in Internet of Things Markets

Of the 31 firms we interviewed, no two firms had the same business proposition or sought to apply the IoT in the same manner. The firms interviewed seek to apply the IoT in areas as vast as fashion, toys, lighting, smart cities, health care, automotive and even social housing. In regards to technology, cloud services, big data, and platforms appear key to many of these early stage businesses. Social Innovation and lean management were other concepts, which were often combined with the usage of the IoT. It was surprising to hear that the majority of the firms interviewed had fairly little start-up capital. In many instances, EU grants were considered too complicated to obtain and if obtained at all, then regional funds were used. Some sought funding in the U.S., as they thought there was more capital available there.

Interviewees confirmed that the IoT was a mesmerizing and also somewhat confusing term: "The IoT is a buzz word just like big data, the market is still very early stage, but I have a feeling that we may be not far away from a break-through in the market." (K.) This makes it quite difficult to describe the state of the market or capture industry trends. "The IoT market is still in search for adequate applications . . . many solutions are quite simple and they could just as well function without the IoT." (J.) Overall, interviewees agreed that the market is still very early stage, with many firms still looking for an adequate business model. "The main problem is how to establish the business model around the technology . . . the market is still in a trial and error stage." (M.) Yet, in spite of the various uncertainties surrounding the IoT, it is seen as a "mega trend" with substantial growth opportunities: "The Iot? I think it is going to happen . . . in up to five years we will be able to talk about billions." (I.)

[40] On an anonymized basis and subject to prior approval the transcripts of the interviews are available upon request.

Overall, interviewees were sceptical about the prospects for European markets. According to them, the markets for IoT will take off in the U.S. and Europe will eventually follow. “I think we are behind the US with its Silicon Valley and its big tech firms that lead the tech industry.” (A.) “The IoT market in Europe is imagined.” (L.) “The IoT market is something we believe in, but it is not yet established in Europe.” (G.) This should be a wake-up call for policy makers in the EU and set them thinking about what can be done to promote the IoT in Europe.

B. Standardization, Patents and Standard Essential Patents Experiences

The YICs interviewed were not able to formulate particularly nuanced views on SEPs, standards, patents or licensing markets. With respect to standard essential patents they were entirely ignorant on the topic and were also not involved in the regulation processes of any of the standardisation organizations. Their experience with patents mainly pertained to difficulties associated with obtaining patents, facing high filing costs, feeling overwhelmed by legal costs and finding information on prior art. “Our patent attorney is ripping us off . . . and we don’t even know if it is really worth it.” (S.)

Alarmingly, many YICs we talked to even doubted that the patent system mattered at all for them. “The technology in this area is moving so fast that by the time you have the patent the technology is outdated. I am not sure patents are really helpful, it is only expensive for a small firm . . .” (S.) It was lead-time advantage and open source software that mattered, rather than proprietary innovation. “When you are in the Savanna and you don’t know if you are the antelope or the lion, what do you do? You run! With IP it is the same. We care about first mover advantage. The IP is so hard to enforce and so costly that we feel we are better off without it.” (F.) Equally, defensive mechanisms associated with IP were entirely ignored. The reason given was that a defence would be too expensive. There was heavy doubt that the patents had a business proposition at all. Also, there was a sense that the value proposition of the firm was to deliver customer solutions or products and there, so many agreed, IP had not really any particular meaning for them. It was products they offered that were valuable, not IP protection. “We have filed a few patents in the US and through the PCT, but we have no business usage for them.” (M.) These findings are commensurate with what has been reported in the literature and underline the need to combine overall IP measures geared towards YICs with the overarching SEPs debate.

Some of the firms we interviewed went as far as to state their discontent with the patent system openly. “In general we don’t like patents . . . we think they are very bad . . . the original idea of the patent was to protect an invention, but in the software space patents have been abused for a long time . . . just look

at the patent trolls." (W.) Patents were also mentioned as a means to slow down businesses and as leaving YICs exposed to threats of litigation. "I don't like the IP part . . . patents slow things down . . . I would prefer never to file patents. I believe in building a lot of brand capital." (H.) Even those firms who considered developing a patent strategy, found that costs associated with patent ownership prevented them from taking advantage of the patent system. For example, a Partner at V. presented plans for a patent strategy, but was not able to execute it because of cost constraints. "Patents are expensive and there is no point in patenting if you don't have the money to defend your patents . . . [s]o, we are waiting." (H.)

C. Licensing Experiences in the Internet of Things Space

The YIC's knowledge of European patent ameliorating efforts was no better. When asked about FRAND licensing, they were also completely uninformed and key terms had to be explained first. Following that, firms generally did not feel competent enough to comment. Similarly, the consequences they could be facing in case of patent infringement were unknown to them.

The YICs talked to were not involved in patent licensing and they generally denied having been exposed to patent licensing. If, at all, it was copyright licensing they used. This was however called by all the interviewees "software licensing," maybe because they were not very IP savvy. This was seen as a fairly straightforward process and nobody found there was a need to discuss this at length. "Software licensing is our business strategy, not patent licensing… our business is to sell the usage of the platform." (S.) However, interviewees were not exactly sure what the question meant. Only two firms had experience with patent licensing. N. told us that he had been exposed to licensing in another firm he worked for and there they used the out-licensing of patents as a means to manage competition. "Licensing no, not in this firm no, but in another firm, we used patent law suits to slow down our competitors." (B.) Furthermore, the IoT sector was not considered an industry where patent licenses were needed. "In our industry nobody would want to take a license." (T.)

The role of patents was however seen in a different light by more established firms. Here, costs mattered less and measures such as licensing did play a role. Both inbound and outbound licensing was critically reflected upon. Such firms were also often part of industry associations such as the IP Europe Alliance[41] or the Fair Standards Alliance.[42] These firms are, however, not

[41] IP Europe Alliance, *About Us*, IP EUROPE, https://www.iptalks.eu/ (last visited Nov. 9, 2017).

directly engaged in the IoT space and hence their input is probably less of relevance here.

Some firms, like the Spanish University spin-off we talked to, had moved their business from producing parts of an Antenna to pursuing an active IP licensing program. They found this strategy more lucrative. (I.) Similarly, the CEO of a Danish software firm confirmed that his company is "now slowly moving from a mere defensive approach to IP to a more aggressive way of managing its IP." In particular, this firm is interested in establishing a systematic licensing program targeting potential infringers.

However, even those who have an active licensing program in place do not find it an easy business. For example, one Danish inventor explained that it took him nearly ten years to obtain a patent family and that he also attracted significant investments so to obtain licensing revenues from firms that infringed on his patents, but he overall found it to be a very long, complicated and so far not particularly lucrative process. He concluded that "the patent system was a bit ridiculous . . . and that the return on investments in patents is not very good . . . you always have to use a lawyer, but these guys [the firms he was trying to get a license from], they shut down their business and then they open up a new one and you get to start all over again with suing them . . ." (J.) The CTO of the spin-out from the Spanish University was the only one we talked to who felt that the patents the firm had were truly beneficial to their business. His only concern was that licensees can deploy delay tactics and that can become difficult. Otherwise he considered patents an important instrument of monetization.

Additionally, the senior representatives of three SMEs were interviewed. These firms had been approached for taking a license but all of them found the process unhelpful. One firm, for example, criticised that licensing requests were not supported by adequate documentation. Many licensors do not even send claim charts or send them only very late, in an effort to pass on costs from licensor to the licensee. Also, they complained it was very common to receive unrealistically short deadlines for a legally binding reply. This situation is made even more complicated as it is a lengthy and costly procedure to determine whether some patents claimed to be standard essential, really are standard essential*:* "what is a standard essential patent and what not is essentially gut feeling." (L.) According to them, it is also very costly and time consuming to negotiate licensing rates. Many times they are forced to accept a license rate simply because costs to counter the argument would be too high. They argued that it is also difficult to determine what an adequate royalty rate is in the

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[42] Fair Standards Alliance, *Our Vision*, FAIR STANDARDS ALLIANCE, http://www.fair-standards.org/ (last visited Nov. 9, 2017).

absence of an adequately defined framework for licensing standard essential patents.

D. The Threat of Patent Wars and Lack of Defence Mechanisms

There was a general sense among interviewees that patent wars as seen in the telecom space could repeat themselves in the IoT space. "Definitely, definitely . . . I think the IoT space is a classic example . . . I would not be surprised if in 2019/2020 we would see these things." (R.) The only reason, in their view, why this had not happened yet, was because the IoT sector was still too immature. Still, the potential emergence of patent wars is seen in a negative light. Once more, interviewees underlined that the patent system is not equally accessible to small and big players: "it is a downward spinning circle. The more cases you have, the more people will shy away from the IoT because patent litigation is really expensive . . . and then the IoT will only be for the super big ones." (B.) Nobody expected such patent confrontations to occur any time soon, though: "Maybe in the future, when the markets are more mature, but I don't think we will see much trolling in the next five years." (M.)

If patent confrontations were to occur in the IoT space, it is my impression that it would leave most interviewees unprepared. Some even thought that they could not face any patent litigation because they had no patents themselves. "Probably it will happen. But I don't think about it, but now that you say it . . . yes . . . but since we don't have an IP for end customers or big scale use, we will not be attacked by trolls." (A.) Some did not even know what the patent war was or thought that it would not concern them: "What is that? I have never heard of that." (M.) YICs also felt quite powerless and that they had little to defend themselves with against potential litigation. "They are so big and if they want to break you, they can do that. As a small firm you have no chance to defend yourself." (N.) The only firm in our sample that was not concerned with patent wars was the Spanish firm that had an active licensing program.

E. What Role for European Policy?

Many of the firms interviewed felt that the patent system would require a radical reform. Under a particularly critical light were the activities of patent assertion entities. "Patents do not help SMEs, the best would be to get rid of them . . . if that is not possible, then we would need a complete reform of the patent systems . . ." (S.) For interviewees making the patent system accessible to YICs meant also making patent enforcement accessible to them. Helping young firms obtain patents, but leaving them without the necessary financial means to protect themselves from litigation, was, according to the interviews, not of great help. "The EC should support smaller firms in enforcement and in a way that they have the right to have a patent and also a right to enforce it." (J.)

Small firms should somehow have a chance to defend themselves and the Government should provide some means to do that. “Any policy reform that helps assure that the patent system is actually used in a way to promote genuine innovation and not in a predatory way . . . that one guy invents something great and a patent troll just buys the patent to sue other people . . . the government should do something to prevent that.” (H.) In that respect, the E.C. was called upon to identify policies that would counter the inequalities between parties, something that would enable small players to level the playing field with large firms. “It would be good to make legislation that would help avoid situations where big companies use patents as a means to shield competition from small firms.” (K.) On a more practical level, there could be more information made available on the role of IP and standards in the context of the IoT.

Interviewees expressed that educational material, websites, really anything that would help to get more acquainted with the issues at stake would be very welcomed and the E.C. should do more in that respect. “What would help is to allow small firms to learn about patents . . . Are there educational materials, websites . . . we could get to learn more about IP?” (T.)

There was also a general sense in the community that open source software should be promoted and that the standard essential patents regime was not particularly fit for the IoT space. Their policy suggestion was to promote awareness about open source software and the role it can play in an IoT driven business. “Patenting software is dead and that is good . . . I would suggest that they spend more time explaining Open Source Software to common people and to business . . . they should find the European version of Open Source Software licensing, make it more common, teach about it and sponsor work to formulate Open Source Software licenses.” (B.)

In that respect it was proposed that the E.C. could identify stimulation funds, however these should be made available with as little administrative burden as possible. “Promote Open Source Software . . . maybe also subsidies for stimulation funds, but in the end it is mainly the established firms that get that and the true innovation comes from the small ones and they don’t access these funds because it is too bureaucratic to get these funds.” (A.) Equally, more training on Open Source could be an alternative to the traditional standard essential patent regime. “Anything the Government can do to assure firms win by conquering markets and not by paying expensive lawyers . . . I would suggest spending more resources in explaining Open Source Software and focus much more on training firms in Open Source Software.” (B.)

CONCLUSIONS

The E.C. is eager to approach the role of SEPs in the IoT through the lens of the FRAND agreement. Through this process the E.C.'s goals is provide further clarity of what the FRAND commitment entails. While very important, this aspect is not entirely reflective of the issues raised by the interviewees of this survey. Hence, an additional section was added to the FRAND Guidelines that address the need to raise awareness among SMEs (small and medium sized enterprises) on standard essential patents and the role of the FRAND commitment. This is entirely commensurate with the findings of this study.

Like the findings of Pikethly, Talvela and Nikzad,[43] the survey showed that young innovative firms lack IP awareness and do not understand the role that IP management could play for their firm. A good illustration of this issue is that respondents showed two apparent contradictory views on the IP system. On the one hand side they lacked awareness on IP, on the other hand, they felt that the patent system should be urgently reformed. This suggests that the senior managers in YICs have, at best, a layperson's understanding of the IP system and it underlines the need for further IP awareness-building campaigns.

The interviewees also had a minimal understanding of standard essential patents and the accompanying FRAND debate, especially the early stage firms. This leaves them exposed to unexpected licensing requests, while depriving them of the opportunity to pursue their own licensing programs. Certainly, standard essential patent owners focus their licensing programs on companies with significant revenues, which is usually not the case of YICs. However, once YICs obtain critical mass, they could be hampered in their growth due to licensing requests they did not expect. If they do reach such a level, these licensing issues will require further policy attention and there will be a need to raise awareness among YICs about FRAND.

Against this backdrop, the FRAND guidelines will very likely be accompanied by tailored awareness-raising measures that allow YICs to adequately familiarize themselves with the peculiar challenges associated with

[43] Robert Pitkethly, *Intellectual Property Awareness*, 59 INT'L J. OF TECH. MGMT. 163 (2010); Juhani Talvela, *How to Improve the Awareness and Capabilities of Finnish Technology Oriented SMEs in Patent Related Matters*, RESEARCHGATE, June 2016, *available at* *https://www.researchgate.net/profile/Juhani_Talvela/publication/316735577_How_to_Improve_the_Awareness_and_Capabilities_of_Finnish_Technology_Oriented_SMEs_in_Patent_Related_Matters/links/590f8bbea6fdccad7b126a31/How-to-Improve-the-Awareness-and-C*; Rashid Nikzad, *Small and medium-sized enterprises, intellectual property, and public policy*, 42 SCI. & PUB. POL'Y 176, 178-179, 183 (2014); Robert Pitkethly, *UK Intellectual Property Awareness Survey 2010*, INTELL. PROP. OFFICE (2010), *available at* http://www.ipo.gov.uk/ipsurvey2010.pdf.

standard essential patents. The nature of the FRAND agreement deserves further policy attention, but so does its practical applicability. This aspect was given adequate consideration in the FRAND guidelines.[44] If young innovative companies have not even heard of FRAND or standards essential patents before, it is highly unlikely that they will be prepared to formulate smart strategies as licensees or licensors. Nowhere are these concerns included in the current policy debate. The European Commission and even National Patent Offices are actively working towards raising IP awareness and enhancing the understanding of IP among young innovative companies. However, so far this has not been approached from a FRAND perspective. Adaptations are sorely needed in light of the risk of patent wars[45] spreading to the IoT.

Lastly, there is a dire need to assume governance responsibilities and identify a mediating structure between the inherent tensions prevailing between the exclusionary features of patent law and the open, collaborative nature of the Internet of Things. The interviews showed that the patent system cannot be viewed in isolation and the benefits of other innovation strategies, such as the promotion of open source software, need to be weighed against the further advancement of the patent system. Many of the firms we talked to found an open source strategy more effective than a patent strategy. They also thought that the open architecture enabled by open source was more befitting of the nature of the IoT.

Certainly, such statements need to be read with care, but at present too much policy formulation is occurring in isolation. What the IoT needs is a cross-functional, horizontal policy formulation, rather than policies developed in vertical silos. This can only be achieved by bringing all actors in the IoT space into the debate. Therefore, I urge policy makers to study further how IP can be promoted as a tool to promote openness rather than as a means of segregation.

[44] *Setting Out the EU Approach to Standard Essential Patents*, *supra* note 4.
[45] Chia, *supra* note 5; Karakashian, *supra* note 5.

ANNEX: TABLE 1 - OVERVIEW OF INTERVIEWEES

Position in Company	Firm has patents	Date interviewed	Time Interviewed	Type of Firms	Location	Firm Size
Vice President - Strategic Partnerships	yes	27-07-16	2:00 PM	Telecommunications	UK	11-50
Vice President, Licensing	yes	28-07-16	11:00 AM	Wireless	Spain	11-50
CEO	Yes	28-07-16	3:00 PM	Computer Software	Ireland	11-50
Founder	Yes	28-07-16	Via email	Computer Software	Denmark	11-50
CEO	Yes	02-08-16	3:00 PM	Medical Devices	Italy	1-10
CEO	Yes	03-08-16	11:15 AM	Info Technology	Denmark	1-10
Partner / Head of development	Yes	03-08-16	3:00 PM	Electronic Manufacturing	Denmark	11-50
CEO, co-founder	Yes	03-08-16	4:00 PM	Info Technology	Sweden	11-50
Business Development	Yes	04-08-16	2:00 PM	Consumer Electronics	Denmark	11-50
CEO	No - prefers not to file patent	04-08-16	3:00 PM	Automotive	Sweden	11-50
CEO and Founder	IP but not patent	05-08-16	12:00 PM	Info Technology	Netherlands	11-50
Co-Founder and Partner	Yes	08-08-16	4:00 PM	Consumer Electronics	Denmark	1-10
Technology Evangelist	Yes	08-08-16	5:00 PM	Info Technology	Italy	11-50
CEO	Yes	08-08-16	5:30 PM	Info Technology	Denmark	200-500
Founder	Yes	09-08-16	11:00 AM	Business Supplies and Equipment	Spain	1-10
CEO and Co-Founder	No	09-08-16	1:00 PM	Computer Software	Norway	11-50
Sales & BD Director	IP is in the sister company	09-08-16	2:00 PM	Computer Software	Denmark	50-200
Manager of Operations	Yes	09-08-16	2:50 PM	Internet		1-10
Patent Strategy	Yes	09-08-16	3:00 PM	Network Security	Germany	50-200
CEO	Yes	09-08-16	4:00 PM	Info Technology	Sweden	11-50
CEO	Yes	10-08-16	Via Email	Info Technology	Netherlands	11-50
CTO	Yes	10-08-16	Via Email	Info Technology	Sweden	1-10
CEO	Yes	25-08-16	10:00 AM	Info Technology	Germany	11-50
CEO	Yes	25-08-16	4:00 PM	Info Technology	Sweden	1-10
CEO	Yes	26-08-16	12:00 PM	Consumer Electronics	Germany	1-10
CEO	Yes	26-08-16	2:00 PM	Electronic Manufacturing	Denmark	1-10

Position in Company	Firm has patents	Date interviewed	Time Interviewed	Type of Firms	Location	Firm Size
COO	Yes	30-08-16	9:15 AM	Consumer Electronics	Germany	11-50
CEO	Yes	30-08-16	10:00 AM	Consumer Electronics	Sweden	11-50
Director and co-founder	No	30-08-16	12:00 PM	Computer Software	Finland	50-200
General Counsel	Yes	03-08-16	2:00 PM	Cellular Communication Technologie	Italy	500-1000
General Counsel	Yes	02-08-16	4:00 PM	Wireless semiconductors	Switzerland	500-1000
CONTEXTUAL INTERVIEWS						
Sr. Analyst and Director of Content	No (IoT Analyst)	08-08-16	3:00 PM	Financial Analyst for the IoT	USA	1-10
Managing Director	No (consulting firm)	05-08-16	2:00 PM	Lighting Innovation	Germany	1-10
Sr Analyst, Partner, Chief Tech Officer	No	02-08-16	7:00 PM	IP and Financial Analyst for the IoT	USA	1-10
General Counsel	Yes	03-08-16	2:00 PM	Premium WiFi	Turkey	50-200

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FROM MAILROOM TO COURTROOM: THE LEGALITY OF UNPAID INTERNSHIPS IN ENTERTAINMENT AFTER GLATT V. FOX SEARCHLIGHT INC.

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In Glatt v. Fox Searchlight Pictures Inc., the Second Circuit established a new test – the "primary beneficiary" test – for determining when unpaid internships may be provided by employers. In doing so, the Second Circuit rejected a strict "all-or-nothing" six-factor test from the Department of Labor, and held that unpaid internships do not offend the Fair Labor Standards Act so long as the intern, and not the employer, is the "primary beneficiary" of the employment relationship. This Note primarily argues that the "primary beneficiary" test is superior to the rigid test proposed by the Department of Labor. This is because the "primary beneficiary" test provides a practical, flexible, and well-guided approach in analyzing the totality of the employee-intern relationship, thereby allowing employers to continue to provide meaningful unpaid opportunities while providing adequate safeguards from exploitation. In making this conclusion, this Note analyzes the problem through the lens of the entertainment industry, where unpaid internships are often a necessary prerequisite to finding fulltime employment.

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INTRODUCTION

The entertainment industry has engendered an almost-mythical culture surrounding unpaid internships. Though highly romanticized, the journey from unpaid intern to Hollywood executive is well known and has spawned some of Hollywood's most famous players.[1] Michael Ovitz,[2] David Geffen,[3] Rich Ross,[4] and countless others – the list of Hollywood moguls who began their careers as unpaid interns in the infamous "mailroom" is striking.[5] Perhaps these were the career paths

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[1] *See generally*, DAVID RENSIN, THE MAILROOM (2003).

[2] Michael Ovitz co-founded Creative Artists Agency and later served as President of the Walt Disney Company.

[3] David Geffen is the founder of Asylum Records, Geffen Records, and the namesake of the UCLA David Geffen School of Medicine.

[4] Rich Ross is the Group President of Discovery Channel, Animal Planet, and Science Channel. He is the former president of entertainment of Disney Channel, and chairman of Walt Disney studios.

[5] Ramona Rosales, *The Secrets of Hollywood Agency Mailrooms*, THE HOLLYWOOD REPORTER, http://www.hollywoodreporter.com/news/hollywood-mailroom-secrets-caa-icm-uta-wme-257222 (Nov. 11, 2011).

envisioned by plaintiffs Eric Glatt, Alexander Footman, and Eden Antalik when they agreed to work as unpaid interns for Fox Searchlight's blockbuster film, *Black Swan*, before filing a class action lawsuit demanding wages and challenging their status as unpaid interns.

Indeed, the controversy surrounding the legality of unpaid internships has only grown louder in recent years, and for good reason.[6] In an increasingly competitive job market, internships have become a crucial aspect of the modern employment process in the United States as a way for students to obtain valuable experience and training in the field of their choosing.[7] For employers, internships provide access to a deep hiring pool of students who demonstrate talent. Because internships play such a key role in education, most universities now offer academic credit for participation in them.[8] In 2015, a survey of college graduates revealed that nearly sixty percent of college students have participated in an internship program and that students who participate in internships are far more likely to receive job offers after graduating from their undergraduate institutions.[9]

However, not all internships are created equal. While most internship programs are now paid, nearly forty percent of internships are unpaid.[10] In fact, somewhere between 500,000 and 1 million people intern for free each year.[11] In industries like entertainment, where demand for available jobs far outweighs the supply, unpaid internships are hardly uncommon.[12] Unsurprisingly, there are many critics who view the practice of unpaid internships as illegal, claiming that interns should be considered "employees" who are owed at least minimum wage under the Fair Labor Standard Act ("FLSA"). As the discussion has progressed, so have the number of lawsuits filed by unpaid interns asserting that they were unlawfully denied

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[6] *See* Amanda Becker, *Unpaid Intern Lawsuit 'Trend' Is Likely To Expand, Legal Experts Say*, THE HUFFINGTON POST, http://www.huffingtonpost.com/2013/06/14/unpaid-intern-lawsuit_n_3443430.html (Aug. 14, 2013).

[7] *See infra* notes 8-9.

[8] *See generally* Kathrin Neyzberg, *Unpaid Internships in Entertainment: Unethical Pages Behind a Glossy Cover*, BERKELEY MEDIA REVIEW (Nov. 22, 2015).

[9] NAT'L ASS'N OF COLLS. AND EMP'RS, THE CLASS OF 2015 EXECUTIVE SUMMARY 5 (2015), https://www.naceweb.org/uploadedFiles/Content/static-assets/downloads/executive-summary/2015-student-survey-executive-summary.pdf

[10] *Id.*

[11] Blair Hickman, *What We Learned Investigating Unpaid Internships*, PRO PUBLICA (July 23, 2014).

[12] ROSS PERLIN, INTERN NATION: HOW TO EARN NOTHING AND LEARN LITTLE IN THE BRAVE NEW ECONOMY 170 (2011).

wages, especially in the entertainment industry.[13] In the midst of a circuit split[14] about how to interpret the question of whether interns must be paid, the Department of Labor ("DOL") has informally promulgated *Fact Sheet #71: Internship Programs Under the Fair Labor Standards Act* ("*Fact Sheet #71*"): an "all-or-nothing" six factor test to help with the inquiry.[15]

In *Glatt v. Fox Searchlight Pictures*,[16] overturning the district court's decision, the Second Circuit neglected to adopt the FLSA test regarding when it is lawful to classify employees as "unpaid interns." Instead, the Second Circuit adopted a flexible, individualized test allowing for an employer to maintain an unpaid internship program so long as the potential intern is the "primary beneficiary" of the test.[17] The touchstone of this test, as instructed by the Second Circuit, is to consider the totality of the circumstances regarding the "economic realities" of the intern-employer relationship.[18]

This Note will argue that the "primary beneficiary" test adopted by the Second Circuit is well-suited for the entertainment industry because the individualized assessment of the employer-intern relationship helps to preserve the cultural role of unpaid internships in the entertainment industry while simultaneously providing a flexible and contemporary framework that helps to ensure the integrity of the modern internship. Analysis proceeds in three parts.

Part I provides context to the argument with a brief history and overview of internships in the entertainment industry. Although unpaid internships are common in other industries, they hold special significance in the entertainment business due to the high demand and low supply of entrance level opportunities. A brief discussion on the background and cultural significance of these internships will help to frame the proceeding legal analysis.

Part II discusses both the judicial and administrative legal frameworks that precipitated the Second Circuit's decision in *Glatt*. This will necessarily include a

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[13] Eriq Gardner, *How All Those Intern Lawsuits Are Changing Hollywood,* THE HOLLYWOOD REPORTER (Nov. 6, 2014).

[14] *See infra* Part II.

[15] U.S. DEP'T OF LABOR WAGE AND HOUR DIV., FACT SHEET #71: INTERNSHIP PROGRAMS UNDER THE FAIR LABOR STANDARDS ACT (2010), *available at* https://www.dol.gov/whd/regs/compliance/whdfs71.htm [hereinafter FACT SHEET #71].

[16] 811 F.3d 528 (2d. Cir. 2015).

[17] *Id.* at 536.

[18] *Id.*

discussion on the FLSA, *Fact Sheet #71*, and *Walling v. Portland Terminal*.[19] Only by thoroughly analyzing what preceded the *Glatt* decision can its significance be fully understood.

Lastly, through the lens of the entertainment industry, Part III defends the *Glatt* decision as a crucial step forward in unpaid internship jurisprudence because its flexibility provides the best framework for balancing the diverse set of interests involved in each unique internship. This section necessitates a close analysis of the unworkability of *Fact Sheet #71*, a comparison between the circumstances that inspired *Portland Terminal* and those of the modern entertainment internship, and an examination of the practical effects since the Second Circuit's decision. This paper will conclude that the Second Circuit's "primary beneficiary" test in *Glatt* provides a practical amount of flexibility in assessing unpaid internships without sacrificing its ability to protect the integrity of the modern employment relationship in the entertainment industry.

I
UNPAID INTERNSHIPS IN ENTERTAINMENT

"The best advice anyone ever gave to me is, 'Take the job. Get in the door and you'll meet somebody who'll get you in the next door.'" [20]

This quote from Kristieanne Groelinger, a director of production for Jerry Bruckheimer Films, reflects the very real quandary those hoping to gain access to the entertainment industry face: everybody almost always starts at the bottom, and even entry-level positions are difficult to come by. It is within this context of a high demand for jobs and a low supply of opportunities that the problem of the unpaid intern arises.[21]

Unpaid internships, and internships in general, are not a unique concept to the entertainment industry. No other industry, however, depends so intensely on free labor.[22] Because "getting your foot in the door" is the key to finding long-term employment in the industry, internships are among the only viable options for those without connections to bypass the metaphoric myrmidon guarding the industry

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[19] 330 U.S. 148 (1947).

[20] FREDERICK LEVY, HOLLYWOOD 101: HOW TO SUCCEED IN HOLLYWOOD WITHOUT CONNECTIONS 31 (2000).

[21] *See id*.

[22] *Id.* at 38.

doors.[23] Unpaid internships are so pervasive in entertainment that in the late 1990s nearly 100% of internships in the entertainment industry were unpaid.[24]

Including industries other than entertainment, it is apparent that internships have become an integral part of the modern-day educational and recruiting experience.[25] In fact, internships have become even more pervasive and important than ever before. As increasing numbers of college graduates and young professionals flood the hiring pools, interning to gain the requisite experience necessary for one's dream job has become nearly mandatory. Employers have come to expect new hires to have internship experience as a prerequisite for getting hired, and human resource professionals have recently ranked internship experience as the single most important factor in hiring a candidate.[26] As the significance of obtaining an internship grows, companies are now utilizing internship programs as recruiting tools to attract the best students.[27] In other words, across all industries, internships have become a necessary part of any job seeker's resume.[28]

This growth and dependency on internships has reached a fever pitch over the last decade.[29] The Great Recession of 2008 caused hiring levels to plummet, and thus, internships became essential for most students and recent graduates.[30] Although

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[23] *Id.*

[24] Dawn Gilbertson, *Glamour Internships With a Catch: There's No Pay*, N.Y. TIMES , Oct. 19, 1997, at BU16, *available at* http://www.nytimes.com/1997/10/19/business/earning-it-glamorous-internships-with-a-catch-there-s-no-pay.html.

[25] *See generally* PHIL GARDNER, ET AL., RECRUITING TRENDS 2012-2013 33 (42d ed. 2012), *available at* http://www.ceri.msu.edu/wp-content/uploads/2012/11/FRecruiting-Trends-2012-2013.pdf.

[26] *See* Joanna Venator & Richard Reeves, *Unpaid Internships: Support Beams for the Glass Floor*, BROOKINGS INSTITUTE (July 7, 2015 2:18 PM). https://www.brookings.edu/blog/social-mobility-memos/2015/07/07/unpaid-internships-support-beams-for-the-glass-floor/.

[27] *See* Andrew Soergel, *Paid Interns More Likely to Get Hired*, U.S. NEWS (May 5, 2015, 5:30 PM), https://www.usnews.com/news/articles/2015/05/05/study-suggests-college-graduates-benefit-more-from-paid-internships.

[28] Andrew Mark Bennett, *Unpaid Internships & The Department of Labor: The Impact of Underenforcement of the Fair Labor Standards Act on Equal Opportunity*, 11 U. MD. L.J. RACE, RELIGION, GENDER & CLASS 293, 296 (2011).

[29] *See generally* Gardner, *supra* note 25, at 33.

[30] *See* Kathryn Anne Edwards & Alexander Hertel-Fernandez, *Not-So-Equal Protection – Reforming the Regulation of Student Internships*, ECON. POL'Y INS T. (Apr. 9, 2010), http://www.epi.org/publication/pm160/ ("The increasingly competitive labor market for college graduates, combined with the effects of the recession, has intensified the trend of replacing full-time workers with unpaid interns." (citations omitted)).

the hiring market has steadily improved since 2008, it has still not returned to pre-recession hiring levels.[31] As jobs were reduced, the unemployment pool grew with experienced workers who were now also seeking entry-level positions.[32] To the detriment of students and recent graduates, employers often choose to hire workers with more experience.[33] Thus, internships became even more pervasive as the only means for a student or recent graduate to gain the necessary experience employers demand.

In the entertainment industry in particular, internships such as unpaid "mailroom" jobs, have become deeply embedded in the industry's culture as an irreplaceable rite of passage.[34] Indeed, "uncompensated minions are as central to the movie business as private jets, splashy premieres and $200 lunches."[35] Competition for unpaid internships in the entertainment sector is particularly intense, as entry-level positions in the industry indicate a potential for upward mobility.[36] Entry-level mailroom interns become assistants, who then become agents, managers, and executives. One prominent entertainment industry publication even issues an annual list of "10 Assistants to Watch," to spotlight those assistants likely to be promoted in the near future.[37] Historically, unpaid internships have been the first step toward becoming a mogul and have become essentially prerequisites for assistant positions.[38]

Thus, the relationship is ideally mutually beneficial. For students in higher education seeking jobs in the entertainment, media, and arts industries, internships are a necessary stepping-stone to full-time employment.[39] Internships provide

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[31] *See* Bureau of Labor Statistics, Household Data Annual Averages: Employment Status of the Civilian Noninstitutional Population, 1943 to Date 2, *available at* http://www.bls.gov/cps/cpsaat01.pdf.

[32] *See, e.g.*, Cliff Collins, *Slowly but Surely: Lawyer Hiring is Returning-Tentatively-After the Downturn*, OR. ST. B. BULL. (Apr. 2012), http://www.osbar.org/publications/bulletin/12apr/slowly.html.

[33] *Id*.

[34] *See* RENSIN, *supra* note 1, at xii.

[35] Daniel Miller & John Horn, *Lawsuit challenges a Hollywood pillar: Unpaid internships*, L.A. TIMES (Apr. 6, 2014), http://articles.latimes.com/2014/apr/06/business/la-fi-ct-hollywood-interns-unpaid-internships.

[36] *See* RENSIN, *supra* note 1, at xii.

[37] *See* Ramona Rosales, *Hollywood's New Leaders: 10 Assistants to Watch*, VARIETY (Oct. 23, 2013, 8:30 AM), http://variety.com/2013/biz/news/hollywoods-new-leaders-10-assistants-to-watch-1200752599/.

[38] *See generally* RENSIN, *supra* note 1, at xiii.

[39] *Id.* at xvii-xviii.

students with an experiential learning opportunity that introduces them to the industry, enables them to develop workplace skills, and fosters professional networking that could lead to full-time employment. Alternatively, an employer benefits from the internship by having access to motivated students, and the ability to evaluate their performance as potential employees in a non-binding environment with a reduced, or non-existent, financial commitment. Research indicates that the majority of students interning in the entertainment sector are not paid for their work.[40]

Accordingly, it is no surprise that the first unpaid internship case to reach a U.S. court of appeals involved the entertainment industry.[41] The notoriety of unpaid internships in entertainment might be blamed for the current debate surrounding unpaid internships across all industry sectors – and with good cause.[42] Internships, whether paid or unpaid, are typically offered as a one-time work or service experience related to the student's major or career goals.[43] An internship program generally involves students working in professional settings under the supervision of practicing professionals.[44] In many cases where the internship is unpaid, students are often offered academic credit for their services.[45] Essentially, in an ideal world, internships offer students opportunities to learn practical skills in a professional environment in industries of their choosing while improving their resume and gaining valuable industry connections.[46] It is the former category where entertainment internships flounder and the latter that they flourish.

While Hollywood internships have certainly spawned some of the industry's biggest players, it has also spawned some of its more infamous stories.[47] There are a plethora of films, television shows, and literature documenting and highlighting the

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[40] Daniel, R. & Daniel, L., *Enhancing the transition from study to work: Reflections on the value and impact of internships in the creative and performing arts*, Arts & Humanities in Higher Educ. (2013), http://journals.sagepub.com/doi/pdf/10.1177/1474022212473525.

[41] Raquel Nieves, Still A Hot Topic: Unpaid Internships In The Entertainment Industry, DLR Reporter (Aug. 26, 2014), http://archive.is/quTNY.

[42] Eriq Gardner, *How All Those Intern Lawsuits Are Changing Hollywood*, THE HOLLYWOOD REPORTER (Nov. 6, 2014).

[43] *What is an Internship?* INTERNSHIPS.COM, http://www.internships.com/student/resources/basics/what-is-an-internship (last visited 1/29/2017).

[44] *Id*.

[45] *See* PERLIN, *supra* note 12, at 8.

[46] *See What is an Internship?*, *supra* note 43.

[47] *See generally* PERLIN, *supra* note 12, at 1.

life of interns in entertainment.[48] Take for example a famous excerpt from Ross Perlin's book, *Intern Nation: How to Earn Nothing and Learn Little in the Brave New Economy*:

> The curtain rises on Disney World, interns are everywhere. The bellboy carrying luggage up to your room, the monorail "pilot" steering a Mark VI train at forty miles per hour, the smiling young woman scanning tickets at the gate. Others corral visitors into the endless line for Space Mountain, dust sugar over funnel cake, sell mouse ears, sweep up candy wrappers in the wake of bewitched four-year olds. Even Mickey, Donald, Pluto and the gang - they may well be interns, boiling in their furry costumes in the Florida heat.
>
> Visiting the Magic Kingdom recently, I tried to count them, scanning for the names of colleges on the blue and white name tags that all "cast members" wear . . . They came from public schools and private ones, little-known community colleges and world-famous research universities, from both coasts and everywhere in between. International interns, hailing from at least nineteen different countries, were also out in force. A sophomore from Shanghai, still bright-eyed a week into her internship, greeted customers at the Emporium on Main Street, U.S.A. She was one of hundreds of Chinese interns, she told me, and she was looking forward to "earning her ears."
>
> . . .
>
> Disney runs one of the world's largest internship programs. Each year, between 7,000 and 8,000 college students and recent graduates work full-time, minimum-wage, menial internships at Disney World.[49]

Certainly, the mentioned sophomore from Shanghai was not learning practical skills that she could use to further her perceived career in entertainment. Yet the concept of "earning her ears" – getting a foot in the door in one of the most prestigious companies in the business – is why internship experiences at Disney and other entertainment titans are not just tolerated, but celebrated.[50] It is also why, however, these internships are often

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[48] *Id.*
[49] *Id.* at 1-2.
[50] *Id.*

criticized as sham programs driven by the company's manpower needs.[51] Even the academic credit that is offered, Perlin argues, results in a financial windfall for the schools – schools are paid for the credit, by the students, and provide almost nothing to enhance the experience.[52]

However, not all internship programs are as bleak as Disney's colloquially, and infamously, coined "Mousecatraz,"[53] at least on the surface. In this Note's principal case, Eric Glatt, the named plaintiff, worked in the production phase of *Black Swan*, performing menial tasks but actually gaining an understanding of how a production office works.[54] In fact, Glatt's first stint as an unpaid intern led him to receive a second job in the post-production phase of the film. In an industry where companies would seemingly offer unpaid internship opportunities or no internship opportunities at all,[55] those opportunities may never have been made available to Eric Glatt and the hundreds of other interns working to find their niche in an ultra-competitive industry.

II
THE LEGAL FRAMEWORK GOVERNING UNPAID INTERNSHIPS

When the Fair Labor Standards Act (FLSA) was adopted in the early 20th century, Congress presumably did not contemplate unpaid internships. Because the increase in pervasiveness and criticism of unpaid internships is fairly recent, federal employment regulations do not directly address internships. Before analyzing the *Glatt* case, it is important to understand the underlying legal framework that *Glatt* sought to clarify, beginning with the Fair Labor Standards Act of 1938.

A. The Fair Labor Standards Act

Congress enacted the FLSA in 1938 in response to the exploitation of employees during the Great Depression.[56] Initially controversial, the FLSA's goals were to establish better working conditions and provide more protections to the

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[51] *Id.* at 2.

[52] *Id.* at 8.

[53] *See generally* WESLEY JONES, MOUSECATRAZ (2006).

[54] *See* Glatt v. Fox Searchlight Pictures Inc., 293 F.R.D. 516, 531 (S.D.N.Y. 2013).

[55] *See generally*, Dana Schuster & Kirsten Fleming, *Condé Nast Intern: 'I Cried Myself To Sleep,'* N.Y. Pos t (Nov. 21, 2013, 6:36 AM), http://nypost.com/2013/11/21/conde-nast-interns-speak-out-on-program-shutdown.

[56] Fair Labor Standards Act of 1938, Pub. L. No. 75-718, § 2(a)-(b), 52 Stat. 1060, 1060 (discussing the policy behind adopting the Act as providing greater protections for the average worker) [hereinafter "FLSA"].

American worker.[57] The law, authored by charismatic Alabama senator and eventual Supreme Court Justice Hugo Black, stated its aim – the "elimination of labor conditions detrimental to the maintenance of the minimum standards of living necessary for health, efficiency, and well being (*sic)* of workers."[58] When President Franklin Roosevelt signed the FLSA into law, he proudly called the FLSA "the most far reaching, far-sighted program for the benefit of workers ever adopted in this or any other country."[59]

The effects of the FLSA have, indeed, been far reaching. For example, the FLSA outlaws most forms of child labor,[60] establishes maximum working hours,[61] guarantees extra pay for overtime work, and finally establishes a minimum wage.[62] Specifically regarding wage protections, the FLSA purports "to insure that every person whose employment contemplated compensation should not be compelled to sell his services for less than the prescribed minimum wage."[63] As Ross Perlin eloquently puts it, "[i]t was a dizzying triumph for unions and progressives – the culmination of a half-century's struggle to protect America's new legions of industrial laborers."[64]

For the last 79 years, the FLSA has been remarkably resilient in maintaining its status as a far-reaching law. With little conflict, its underlying architecture has become a bedrock consensus, as "few people would openly advocate the return of young children to factories."[65] The law's stated aim – the elimination "of labor conditions detrimental to the maintenance of the minimum standards of living necessary for health, efficiency, and well-being of workers"[66] – still sounds heroic, but the FLSA's vague definitions have led to major problems with consistently

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[57] *See* PERLIN, *supra* note 12, at 65.

[58] *Id.*

[59] *Id.* at 64-65.

[60] 29 U.S.C. § 212 (2016).

[61] 29 U.S.C. § 207 (2016).

[62] 29 U.S.C. § 206 (2016).

[63] Walling v. Portland Terminal Co., 330 U.S. 148, 152 (1947); *see also* Brooklyn Sav. Bank v. O'Neil, 324 U.S. 697, 707 n.18 (1945) (stating that Congress enacted the FLSA "to aid the unprotected, unorganized and lowest paid of the nation's working population; that is, those employees who lacked sufficient bargaining power to secure for themselves a minimum subsistence wage").

[64] PERLIN, *supra* note 12, at 64.

[65] *Id.* at 65.

[66] § 2, 52 Stat. at 1060.

achieving its purpose.[67] Historically, however, judges have interpreted the FLSA very broadly.[68]

Congress has expressly delegated executive authority over the FLSA to the Secretary of Labor.[69] The FLSA grants the Secretary broad power to "define and delimit the scope of [wage requirements] for executive, administrative, and professional employees."[70] Included within this broad authority, the Secretary has oversight over internal investigations of violating employers.[71] Investigators from the "Wage and Hour Division" (WHD), present in every jurisdiction across the United States, are specifically responsible for enforcing the act.[72] However, some argue that the Department of Labor fails to "use its full authority to enforce the FLSA with respect to unpaid internships."[73] As a result, Courts have recognized a private right of action in employee lawsuits, which can be quite costly to employers if a plaintiff is successful due to awards of liquidated damages and back pay.[74] Accordingly, the utmost clarity on which employees are covered by the FLSA is owed to employers, as misclassifying an employee can have expensive consequences.

Under the FLSA, the term "[e]mploy" is defined as "to suffer or permit to work."[75] An "employee" is broadly defined as "any individual employed by an employer."[76] Hence, unless a person is an "employee" under the FLSA, he or she will not receive the plethora of protections guaranteed by the FLSA.[77] The broad definitions of "employee" and "employ" provide courts with little guidance to

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[67] PERLIN, *supra* note 45, at 64.

[68] *See, e.g.*, Falk v. Brennan, 414 U.S. 190, 205 n.3 (1973); Tenn. Coal, Iron & R.R. Co. v. Muscoda Local No. 123, 321 U.S. 590, 597-98 (1944); Bureerong v. Uvawas, 922 F. Supp. 1450, 1466 (C.D. Cal. 1996).

[69] *See* 29 U.S.C. § 202 (2012).

[70] Auer v. Robbins, 519 U.S. 452, 456 (1997).

[71] *Fair Labor Standards Act Advisor: Enforcement Under the Fair Labor Standards Act*, U.S. Dep't of Lab., http://webapps.dol.gov/elaws/whd/flsa/screen74.asp (last visited Apr. 15, 2016).

[72] *Id.*

[73] Rachel P. Willer, *Waging the War Against Unpaid Labor: A Call to Revoke Fact Sheet #71 in Light of Recent Unpaid Internship Litigation*, 50 U. RICH. L. REV. 1361 (2016) (quoting Andrew M. Bennett, *Unpaid Internships & The Department of Labor: The Impact of Underenforcement of the Fair Labor Standards Act on Equal Opportunity*, 11 U. MD. L.J. RACE RELIG. GENDER & CLASS 293 (2011)).

[74] *See* 29 U.S.C. § 216(b) (2012).

[75] 29 U.S.C. § 203(g) (2012).

[76] § 203(e)(1).

[77] *See, e.g.*, Walling v. Portland Terminal Co., 330 U.S. 148 (1947).

determine whether student interns are entitled minimum wage and overtime benefits when agreeing to participate in an unpaid internship program with an employer.[78] The lack of clarity on this point has led to a variety of issues in classifying student workers under the FLSA.

Where the act may be vague in some areas, in others it is clearer. Congress has amended the FLSA to exempt individuals who volunteer their time at a government agency, for example.[79] According to this 1985 amendment, those who volunteer to work at a public state agency, an interstate governmental agency, or a subdivision of the state may do so without being classified as "employees" for purposes of the FLSA.[80] Thus, the term "employee" specifically excludes *some* workers by classifying them as volunteers. Additionally, the FLSA implicitly exempts some nonprofits and food banks, because these workers can also be classified as volunteers.[81] Lastly, an employee cannot waive his right to minimum wage or overtime pay because doing so would "nullify the purposes of the [FLSA] and thwart the legislative policies it was designed to effectuate."[82]

The FLSA does not specifically exempt, or even define, interns. Rather, as stated above, the Act's protections apply to *employees*. Thus, the threshold question in considering the legality of unpaid internships is whether or not interns should be classified as an "employee" for purposes of the FLSA.[83] The circular definition provided by the FLSA – "any individual employed by an employer" – cannot answer the question, as it is clear that while interns and employees share many commonalities, interns also differ from employees in many respects.[84] While the Supreme Court has never *directly* addressed the question, the Department of Labor and the lower courts have wrestled with it.[85] Unfortunately, all three sources of interpretation have only served to muddy the doctrine.

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[78] *Id*.

[79] Fair Labor Standards Amendments of 1985, Pub. L. No. 99-150, § 4(a), 99 Stat. 787, 790 (1985) (amending the Act to exclude public service volunteers).

[80] *See* 29 U.S.C. § 203(e)(4)(A).

[81] *See* 20 U.S.C. § 203(e)(5).

[82] Barrentine v. Arkansas-Best Freight Sys., Inc., 450 U.S. 728, 740 (1981) (quoting Brooklyn Sav. Bank v. O'Neil, 324 U.S. 697, 707 (1945)).

[83] *See, e.g.*, *Portland Terminal*, 330 U.S. 148.

[84] *See* Glatt v. Fox Searchlight Pictures Inc., 811 F.3d 528, 534 (2d Cir. 2016).

[85] *See infra* Part II, Section B.

B. Pre-FLSA "Employee" Determinations by the Supreme Court

Before delving into the Court's analysis of the term "employees" as it applies to the FLSA, it is important to discuss the early Supreme Court cases that help to frame the proceeding analysis. Although the FLSA was enacted in 1937, debate surrounding the scope of the term "employee" was hardly considered until 1947.[86] A few cases, which predated the FLSA, help to frame the scope of the definitional analysis of "employee" within the context of federal labor statutes such as the National Labor Relations Act and the Social Security Act.

In *NLRB v. Hearst Publications*,[87] the Supreme Court considered the term "employees" under the National Labor Relations Act as it applied to newspaper boys. In this case, the Court held that the scope of the term "employee" was "to be determined not exclusively by reference to common-law standards, local law, or legal classifications made for other purposes, but with regard also to the history, context and purposes of the Act and to the economic facts of the particular relationship."[88] The Court considered a number of factors in determining that the newspaper boys were employees, including the fact that wages earned served as the newspaper boy's primary income, the hours of supervised work, the sales equipment provided to the newspaper boys for the principal's (Hearst's) benefit, and the regularity of the individual's work.[89] No factor was dispositive in itself.[90]

Likewise, in *United States v. Silk*,[91] the Supreme Court examined the term "employees" under the Social Security Act. In this case, the Court considered whether a particular group of coal workers should be classified as employees.[92] In determining that the coal workers were employees under the act, the Court focused on the skill required to perform the job, the permanency of the employment relationship, as well as the degree of control the employer exercised over the coal workers.[93] Both this case and *NLRB v. Hearst Publications* are important because similar factors were considered when the Court finally considered the term "employee" in the context of the FLSA.

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[86] *See Portland Terminal*, 330 U.S. at 148.
[87] 322 U.S. 111 (1944).
[88] *Id.* at 111-12.
[89] *Id.* at 131.
[90] *See id*.
[91] 331 U.S. 704 (1947).
[92] *Id*.
[93] *Id.* at 716.

C. Walling v. Portland Terminal Co.

Initially, the FLSA declared only well-paid, white-collar workers to be exempt from the law's provisions: the familiar distinction between exempt and nonexempt employees.[94] Although the Supreme Court has yet to directly consider the issue of whether unpaid interns should be considered employees under the FLSA, it provided some guidance in an unpaid *trainee* case.[95] In *Portland Terminal*, a 1947 case, the Department of Labor's WHD brought an action against Portland Terminal Company, a railroad company, on behalf of a group of unpaid brakeman trainees for not providing them with minimum wage or overtime compensation while participating in a practical training program to become yard brakemen.[96] The training program, which was required for potential railroad brakemen, typically lasted a week or more without any compensation other than the training.[97] This training required applicants to shadow the yard crew before qualifying for the position due to the dangerous nature of the position.[98] Applicants who participated in this program did so with the express purpose of qualifying for employment as railroad brakemen.[99] After the training, trainees were not automatically hired but put on a list and subsequently hired as became necessary for the company.[100] Although immediate employment was not guaranteed, only individuals placed on the aforementioned list were considered for employment.[101]

The Supreme Court's question was whether these railroad trainees should be considered "employees" for purposes of the FLSA.[102] Accordingly, if the individuals were deemed employees, the railroad company would be compelled to pay minimum wages for the time spent in the training program.[103] As noted above, the FLSA provides little clarity in this area, providing only a broad definition of "employee" as "any individual employed by an employer."[104] The vague definition of "employ," "to suffer or to permit to work," only serves to obstruct congressional intent further.[105] Working with the limited guidance provided by the statute, the Court, in

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[94] *See* PERLIN, *supra* note 12, at 65.
[95] *See* Walling v. Portland Terminal Co., 330 U.S. 148 (1947).
[96] *Id.* at 151.
[97] *Id.* at 149.
[98] *Id.*
[99] *Id.* at 150.
[100] *Id.*
[101] *Id.*
[102] *Id.* at 149.
[103] *Id.* at 150.
[104] 29 U.S.C. § 203(e)(1) (2012).
[105] § 203(g).

an opinion written by the FLSA's own author in Hugo Black, ruled that "the definition of 'suffer or permit to work' was obviously not intended to stamp all persons as employees who, without express or implied compensation agreement, might work for their own advantage on the premises of another."[106]

Thus, the Supreme Court in *Portland Terminal* created what is now known as the "trainee exception." The Court stated that:

> The [FLSA] cannot be interpreted so as to make a person whose work serves only his own interest an employee of another person who gives him aid and instruction . . . . [Because the FLSA] was not intended to penalize [employers] for providing, free of charge, the same kind of instruction [as a vocational school] at a place and in a manner which most greatly benefit the trainees.[107]

Essentially, the Court noted that what the training program provided was similar to what one might pay for in a vocational school course. The fact that the training program did not lead to guaranteed employment, and instead only created a labor pool, was not necessarily dispositive, especially in light of the hands-on, practical learning experience provided to the trainees. The most important factor the Court recognized was that Portland Terminal Co., the defendant-railroad company, did not receive an "immediate advantage" from these trainees. The Court noted that because the trainees required regular employee supervision, the training program actually impeded the regular employees' daily work.[108] The Court also considered the fact that the trainees did not displace any of the regular employees.[109] It is important to highlight that, in reaching their decision, none of the aforementioned factors were dispositive, and the Court instead looked to the totality of the circumstances of the training program to determine that the railroad brakemen trainees were not employees for purposes of the FLSA.[110]

D. Fact Sheet #71

As noted above, the FLSA does not exempt, or even define, interns. Since *Portland Terminal*, it has been difficult for courts to determine the appropriate test to apply to interns under the FLSA. Before creating a test for unpaid internships, the Department of Labor first issued informal guidelines to provide a framework for

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[106] *Portland Terminal*, 330 U.S. at 152.
[107] *Id.* at 152-53.
[108] *Id.* at 150.
[109] *Id.* at 149-50
[110] *Id.*

analyzing whether certain employees fall into the trainee exception.[111] In 1967, the Department of Labor issued informal guidance on trainees as part of its Field Operations Handbook.[112] The handbook enumerated six criteria, which must all be met in order for a trainee to not be considered an employee. [113]

The tests within the informal guidelines merely restate the factors noted in *Portland Terminal*, and apply them to trainees via administrative guidance.[114] Because of the similarities between internships and trainee programs, the Department of Labor applied the same test to analyze both employment relationships.[115] However, to avoid ambiguity, and likely in response to the political climate, the Department of Labor finally issued an informal opinion letter in 2010, which essentially applied the same trainee analysis to more specifically deal with internships.[116] The informal opinion letter is known as "Fact Sheet #71."[117]

In cases concerning unpaid internships, courts sometimes look to Fact Sheet #71.[118] Published in 2010, Fact Sheet #71 was the major precursor to the recent boom in unpaid intern litigation.[119] The Fact Sheet's guidelines merely attempt to codify the holding in *Portland Terminal* and apply it to determinations of whether interns are owed pay.[120] Although Fact Sheet #71 merely restates the law that has been in

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[111] *See* FACT SHEET #71, *supra* note 15.

[112] S*ee* U.S. DEP'T OF LABOR, WAGE & HOUR DIV., FIELD OPERATIONS HANDBOOK, Ch. 10, ¶ 10b11 (1993), http://www.dol.gov/whd/FOH/FOH_Ch10.pdf.

[113] *Id*.

[114] Gregory S. Bergman, *Unpaid Internships: A Tale of Legal Dissonance*, 11 RUTGERS J.L. & PUB. POL'Y 551, 569 (2014).

[115] *See* U.S. Dep't of Labor, Wage & Hour Div., Opinion Letter on FLSA Status of Student Interns (May 17, 2004), http://www.dol.gov/whd/opinion/FLSANA/2004/2004_05_17_05FLSA_NA_internship.htm (applying the six-factor trainee framework to analyze a student internship inquiry and noting that the Department of Labor "has consistently applied this test in response to questions about the employment status of student interns").

[116] *See* FACT SHEET #71, *supra* note 15.

[117] *Id*.

[118] *See, e.g.*, Glatt v. Fox Searchlight Pictures Inc., 293 F.R.D. 516, 531 (S.D.N.Y. 2013), *vacated*, 791 F.3d 376 (2d Cir. 2015), *vacated*, 811 F.3d 528 (2d Cir. 2016); Xuedan Wang v. Hearst Corp., 293 F.R.D. 489, 493 (S.D.N.Y. 2013), *aff'd in part, vacated in part, remanded*, 617 F. App'x 35 (2d Cir. 2015).

[119] *See* Stephen Suen & Kara Brandeisky, *Tracking Intern Lawsuits*, PROPUBLICA, http://projects.propublica.org/graphics/intern-suits#corrections (last updated July 2 , 2014).

[120] *See* Reich v. Parker Fire Prot. Dist., 992 F.2d 1023, 1026 (10th Cir. 1993) ("The six criteria in the Secretary's test were derived almost directly from Portland Terminal and have appeared in Wage and Hour Administrator opinions since at least 1967.").

effect since 1947 *Portland Terminal*, and rigidly applies the trainee test to interns, the issuance of Fact Sheet #71 was widely seen as the Department of Labor cracking down on unpaid internships.[121]

Within Fact Sheet #71, the Department of Labor has published an "all-or-nothing" six-factor test to determine whether or not an intern should be classified as an employee.[122] If *any one factor* is not met, the Department of Labor will consider the intern to be an employee. Thus, in order for the trainee exception to apply under the Department of Labor's six-factor test, each of the following factors must be met:

1. The internship, even though it includes actual operation of the facilities of the employer, is similar to training which would be given in an educational environment;
2. The internship experience is for the benefit of the intern;
3. The intern does not displace regular employees, but works under close supervision of existing staff;
4. The employer that provides the training derives no immediate advantage from the activities of the intern; and on occasion its operations may actually be impeded;
5. The intern is not necessarily entitled to a job at the conclusion of the internship; and
6. The employer and the intern understand that the intern is not entitled to wages for the time spent in the internship.[123]

Although it is well settled that some administrative actions are granted judicial deference, Fact Sheet #71 is not owed any deference. The term "*Chevron* deference" applies to administrative actions that are intended to carry the force of law.[124] Fact Sheet #71 specifically states that it is not intended to carry such force: "This publication is for general information and is not to be considered in the same light

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[121] Steven Greenhouse, *The Unpaid Intern, Legal or Not*, N.Y. TIMES (Apr. 2, 2010), http://www.nytimes.com/2010/04/03/business/03intern.html.

[122] *See* FACT SHEET #71, *supra* note 15.

[123] *Id.*

[124] *See* Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837, 843-44 (1984) (giving "substantial weight to an agency's interpretation of a statutory scheme" when Congress "leaves a gap" for the agency to fill).

as official statements of position contained in the regulations."[125] Accordingly, courts generally agree that Fact Sheet #71 is not entitled to *Chevron* deference.[126]

Even if some agency decisions are not entitled to *Chevron* deference, the decision may be entitled to a lower level of deference under *Skidmore v. Swift.*[127] Under *Skidmore*, agency interpretations should be given deference when they are persuasive, meaning they had "all those factors which give [the agency interpretation] power to persuade, if lacking power to control."[128] According to the Court, the factors giving an agency's interpretation "power to persuade" include the (1) consistency in the agency's interpretation over time, (2) the thoroughness of the agency's consideration, and (3) the soundness of the agency's reasoning.[129] In other words, the more thoroughly considered and reasoned an agency's interpretation is, the more a court should defer to that interpretation. As will be discussed below, the reasoning behind Fact Sheet #71 has been subject to much scrutiny and criticism.[130]

E. Examining the Circuit Split

Because Fact Sheet #71 is not a formal agency regulation, courts disagree about whether to adopt the test at all and to what level its analysis is owed deference.[131] This confusion has led to a circuit split and therefore a lack of uniformity in the analysis of exempted employees. Before examining the Second Circuit's *Glatt* decision more closely, it is important to consider how the decision compares to those of its sister circuits. The circuit courts generally take one of two approaches. While some circuits have instituted a "totality of the circumstances"

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[125] FACT SHEET #71, *supra* note 15, at 2.

[126] *See, e.g.*, Owsley v. San Antonio Indep. Sch. Dist., 187 F.3d 521, 525 (5th Cir. 1999) (citing Kilgore v. Outback Steakhouse of Fla., Inc., 160 F.3d 294, 302 (6th Cir. 1998)); Reich v. Parker Fire Prot. Dist., 992 F.2d 1023, 1026 (10th Cir. 1993) (finding Fact Sheet #71's test was not entitled to *Chevron* deference); *but see* Atkins v. Gen. Motors Corp., 701 F.2d 1124, 1128 (5th Cir. 1983) (stating that the DOL's interpretation in Fact Sheet #71's predecessor was entitled to substantial deference).

[127] 323 U.S. 134 (1944).

[128] *Id.* at 140.

[129] *Id.*

[130] *See infra* Part III.

[131] *Compare* Atkins v. Gen. Motors Corp., 701 F.2d 1124, 1128 (5th Cir. 1983) (holding that the Department of Labor guidelines are entitled to "substantial deference"), *with* Solis v. Laurelbrook Sanitarium & Sch., Inc., 642 F.3d 518, 525 (6th Cir. 2011) (holding that the Department of Labor guidelines were not entitled to deference because they were a "poor method for determining employee status in a training or educational setting").

test, as opposed to the all-or-nothing test from Fact Sheet #71, others have adopted their own versions of the "primary beneficiary" test in place of Fact Sheet #71.

1. Totality of the Circumstances Approach

Some circuit courts utilize the "totality of the circumstances" approach in determining employee status under the trainee exception. Under this approach, courts will balance the factors proposed by the WHD of the Department of Labor considering the totality of the circumstances.

In an illustrative case, *Reich v. Parker Fire Protection Dist.*,[132] the Tenth Circuit analyzed an opinion letter from the WHD identical to Fact Sheet #71, except as applied to trainees. The Tenth Circuit rejected the argument that the Court was bound to the all-or-nothing standard advocated by the Secretary of Labor in determining when certain trainees could be classified as "employees."[133] In *Reich*, potential fire fighters underwent a ten-week training program with no pay.[134] This training program involved classroom learning, as well as practical training with the fire department's equipment. [135]Although a job was not guaranteed upon completion of the program, the training was a necessary prerequisite for employment.[136]

After performing a *Chevron* analysis to determine that the WHD's opinion letter was not entitled to deference, the Tenth Circuit elected to utilize a totality of the circumstances approach and assessed the proposed factors for employee-trainee distinctions.[137] Noting that "determinations of employee status under FLSA in other contexts are not subject to rigid tests but rather to consideration of a number of criteria in their totality," the court rejected the WHD's all-or-nothing approach and instead examined the proposed six-factors in totality.[138] In doing so, the Tenth Circuit ruled that the trainees were not employees. The Fifth Circuit, in *Donovan v. American Airlines, Inc.*, has taken a similar approach.[139]

2. Pre-Glatt Primary Beneficiary Test

Although some circuits have adopted the WHD's approach in a totality of the circumstances form, many circuits have rejected the proposed approach, inventing

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[132] Reich v. Parker Fire Prot. Dist., 992 F.2d 1023 (10th Cir. 1993).
[133] *Id.* at 1026-27.
[134] *Id.* at 1025.
[135] *Id.*
[136] *Id.*
[137] *Id*. at 1026-27.
[138] *Id.*
[139] *See* Donovan v. Am. Airlines, Inc., 686 F.2d 267, 272 (5th Cir. 1982).

their own balancing analysis to determine who is the "primary beneficiary" of the employment relationship. Under this approach, an intern will only be considered an "employee" for purposes of the FLSA when the employer, and not the intern, is the primary beneficiary of the employment relationship. Conversely, if the intern is the primary beneficiary of the relationship, then they are not considered to be employees under the FLSA and thus can continue on an unpaid basis.

The Sixth Circuit's approach in *Solis v. Laurelbrook Sanitarium & School, Inc.*[140] provides a representative example. In *Solis*, the Department of Labor was investigating child labor law violations at a boarding school.[141] The issue addressed was whether or not the children, who received "practical training" in many real world skills, could be classified as employees for purposes of the FLSA.[142] Again, the "trainee exception" was examined.[143] Instead of deferring to the WHD's proposed factored approach to the inquiry, the Sixth Circuit relied on its own assessment of the totality of the circumstances, noting the WHD's test to be inconsistent with *Portland Terminal*.[144]

The Sixth Circuit in *Solis* adopted a "primary beneficiary" analysis to review the employment relationship. The court's analysis circled around the "benefits flowing to each party."[145] Considering factors such as whether the relationship displaces employees, whether there is educational value derived from the relationship, and the amount of supervision imposed on the supposed trainees, the Court ultimately held that the students were the primary beneficiary of the relationship and therefore not employees for purposes of the FLSA.[146]

The Sixth Circuit thought this approach, where the focus of the analysis is centered on the benefits the intern receives, was more consistent with *Portland Terminal*:

> Courts have read *Portland Terminal* as focusing principally on the relative benefits of the work performed by the purported employees. *See, e.g.*, *Isaacson v. Penn Cmty. Servs., Inc.*, 450 F.2d 1306, 1309 (4th Cir.1971) ("The rationale of *Portland Terminal* would seem to be that

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[140] Solis v. Laurelbrook Sanitarium & Sch., Inc., 642 F.3d 518 (6th Cir. 2011).

[141] *Id.* at 519.

[142] *Id.* at 521 (noting that, in order to teach real world skills, the school provided practical training for four hours a day in jobs such as working in a cafeteria).

[143] *Id.* at 524.

[144] *Id.* at 525.

[145] *Id.* at 529.

[146] *Id.* at 530-32.

> the railroad received no 'immediate advantage' from the trainees' services. To state it otherwise, the principal purpose of the seemingly employment relationship was to benefit the person in the employee status."). [147]

The court also mentioned that the primary beneficiary test "provides a helpful framework for discerning employee status in learning or training situations."[148] It is precisely under this line of logic that the Second Circuit in *Glatt* outlined their analysis.

F. Glatt v. Fox Searchlight Pictures, Inc.

Prior to *Glatt*, the Second Circuit had not addressed the "trainee" exception to the FLSA as it applied to interns.[149] In *Glatt*, the Second Circuit overturned the district court's summary judgment determination that the plaintiffs had been illegally classified as interns by Fox Searchlight Pictures.[150] At the district court level, the court used a totality of the circumstances approach to analyze the factors under Fact Sheet #71 and ruled that the plaintiffs should have been classified as employees.[151] Finding that the interns satisfied four of the conditions, but failed two, the district court found that the test in Fact Sheet #71 could not be met.[152] In overturning the district court's decision, the Second Circuit remanded their claims back to the district court for further proceedings under the newly formulated "primary beneficiary" test.[153] The court noted that it agreed with defendants "that the proper question is whether the intern or the employer is the primary beneficiary of the relationship." [154]

In analyzing the district court's decision, the Court first noted the ambiguity in this area of the law, recognizing that the Supreme Court has yet to definitively address the issue of internships in regards to the FLSA.[155] The bulk of the Second Circuit's analysis, however, was related to the district court's incorrect reliance on Fact Sheet #71 in making its decision.[156] The Second Circuit declined to adopt the

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[147] *Id.* at 526.
[148] *Id.* at 528.
[149] Glatt v. Fox Searchlight Pictures, Inc., 293 F.R.D. 516, 531 (S.D.N.Y. 2013), *vacated*, 791 F.3d 376 (2d Cir. 2015), *vacated*, 811 F.3d 528 (2d Cir. 2016).
[150] 811 F.3d 528, 536 (2d Cir. 2016).
[151] *Glatt*, 293 F.R.D. at 531-32.
[152] *Id.* at 539.
[153] *Glatt*, 811 F.3d at 538.
[154] *Id.* at 536.
[155] *Id.* at 534.
[156] *Id.*

test advocated by the plaintiffs, the district court, and the Department of Labor because Fact Sheet #71's rigid all-or-nothing approach is inconsistent with *Portland Terminal*, as it "attempts to fit *Portland Terminal's* particular facts to all workplaces."[157]

Instead of adopting the rigid approach, the Second Circuit implemented a flexible test that better encompasses the nature and circumstances of the "modern internship."[158] Accordingly, the Second Circuit adopted the flexible "primary beneficiary" because of "three salient features."[159] First, the court liked that the primary beneficiary test focuses on what the intern receives in exchange for his work.[160] This factor recognizes that interns may receive intangible benefits for their work. Next, the Second Circuit highlighted the flexibility of the test, arguing that employment is a "flexible concept to be determined on a case-by-case basis by review of the totality of the circumstances." [161] This flexible review allows courts to better examine the "economic reality as it exists between the intern and employer."[162] In fact, the "economic reality" of the employment relationship is the "touchstone of the analysis."[163] Lastly, because unpaid internships require an understanding between employer and intern that the intern will not be paid, the Second Circuit argues that the primary beneficiary test better "acknowledges that the intern-employer relationship should not be analyzed in the same manner as the standard employer-employee relationship because the intern enters into the relationship with the expectation of receiving educational or vocational benefits that are not necessarily expected with all forms of employment[.]"[164] This factor recognizes that the issue of paying interns is fundamentally different from whether or not an employee is protected by the FLSA because, as internships have become a more important part of the employment process, individuals now enter unpaid internships with the expectation of experience rather than payment. Together, these three factors illustrate the flexibility and individualized approach the Second Circuit embraces in the primary beneficiary test.

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[157] *Id.* at 536.

[158] *Id.* at 537 ("This approach we adopt also reflects a central feature of the modern internship--the relationship between the internship and the intern's formal education[.]").

[159] *Id.* at 536.

[160] *Id.*

[161] *Id.* (citing Barfield v. NYC Health & Hosps. Corp., 537 F.3d 132, 141-42 (2d. Cir. 2008)).

[162] *Id.*

[163] *Id.* at 537.

[164] *Id.* at 536.

The Second Circuit, however, did not leave their flexible test unalloyed.[165] The court articulated a non-exhaustive set of considerations to consider when discerning the primary beneficiary of the employment relationship. Considering these factors requires balancing and weighing of all the circumstances. The list of factors includes:

1. The extent to which the intern and the employer clearly understand that there is no expectation of compensation. Any promise of compensation, express or implied, suggests that the intern is an employee—and vice versa.

2. The extent to which the internship provides training that would be similar to that which would be given in an educational environment, including the clinical and other hands-on training provided by educational institutions.

3. The extent to which the internship is tied to the intern's formal education program by integrated coursework or the receipt of academic credit.

4. The extent to which the internship accommodates the intern's academic commitments by corresponding to the academic calendar.

5. The extent to which the internship's duration is limited to the period in which the internship provides the intern with beneficial learning.

6. The extent to which the intern's work complements, rather than displaces, the work of paid employees while providing significant educational benefits to the intern.

7. The extent to which the intern and the employer understand that the internship is conducted without entitlement to a paid job at the conclusion of the internship.[166]

The Court noted that no one factor was dispositive, and, in stark contrast to Fact Sheet #71, "every factor need not point in the same direction for the court to conclude that the intern is not an employee entitled to the minimum wage."[167]

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[165] *Id.*
[166] *Id.* at 537.
[167] *Id.*

Additionally, in certain cases, the Second Circuit allows for consideration of the internship program as a whole rather than the experience of a specific intern.[168]

Finally, the Second Circuit restricts this test to analyzing unpaid internships, noting its factors do not apply to training programs in other contexts.[169] In doing so, the Court therefore acknowledges the growing difference between modern internships and trainee programs of the past.[170] In fact, the Second Circuit specifically distinguishes the situation in *Portland Terminal* from internships of today.[171] Although the circuit court declined to rule on the specific situation of the plaintiffs in *Glatt*, it is because of the flexibility of the primary beneficiary test that internships in entertainment, like those of the *Glatt* plaintiffs, have better chances to survive FLSA challenges moving forward.

III
IMPROVING WITH GLATT

The Second Circuit's primary beneficiary test stands as an important step forward in internship jurisprudence. By adopting the primary beneficiary test to analyze unpaid internships, the Second Circuit introduced a workable standard that is clear, flexible, and practical enough to equitably analyze internships. Critics of the test argue that it is "overly subjective" and that "application of the primary beneficiary test in the unpaid internship context will prove an unpredictable undertaking."[172] What these critics fail to consider, however, is that the subjective nature of the test empowers courts to consider a wider array of internships. Internships across industries, and even within the same industry, vary wildly. Similarly, students may have varying goals and reasons in agreeing to an unpaid

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[168] *Id.*

[169] *Id.*

[170] *See id.* at 537-538 ("The approach we adopt also reflects a central feature of the modern internship—the relationship between the internship and the intern's formal education—and is confined to internships and does not apply to training programs in other contexts. The purpose of a bona-fide internship is to integrate classroom learning with practical skill development in a real-world setting, and, unlike the brakemen at issue in *Portland Terminal*, all of the plaintiffs were enrolled in or had recently completed a formal course of post-secondary education. By focusing on the educational aspects of the internship, our approach better reflects the role of internships in today's economy than the DOL factors, which were derived from a 68–year old Supreme Court decision that dealt with a single training course offered to prospective railroad brakemen.").

[171] *Id.*

[172] Michael A. Hacker, Comment, *Permitted to Suffer for Experience: Second Circuit Uses "Primary Beneficiary" Test to Determine Whether Unpaid Interns Are Employees Under the FLSA in Glatt v. Fox Searchlight Pictures, Inc.*, 57 B.C. L. REV. E. SUPP. 67, 83 (2016).

internship. Thus, a flexible standard like the primary beneficiary test allows the courts to better consider all the relevant facts and circumstances surrounding an internship.

In a competitive industry like entertainment, where unpaid internships are major means of access to full-time employment, the Second Circuit's decision helps to preserve unpaid internships within the industry without sacrificing its ability to police exploitative programs. This is even more apparent when comparing it to Fact Sheet #71.

A. Fact Sheet #71: Impractical, Inconsistent, and Illogical

Before being overturned by the Second Circuit, the district court had used Fact Sheet #71 to rule that the plaintiffs were improperly classified as interns.[173] As the Second Circuit revealed, Fact Sheet #71's six-factor test is not consistent with *Portland Terminal* nor practical in application. This becomes even more apparent when applied to the entertainment industry.

1. Impractical: Fact Sheet #71 is Too Rigid

Because interns must be paid unless every factor is met, the Department of Labor's six-factor test becomes an insurmountable obstacle for most companies who would want to provide unpaid internship opportunities.[174] In fact, in regards to Fact Sheet #71, Department of Labor Deputy WHD Administrator Nancy Leppink admitted, "[t]here aren't going to be many instances where you can have an internship for a for-profit employer and not be paid and still be in compliance with the law."[175] Indeed, it is difficult to envision any internship in the entertainment industry that would survive such rigid scrutiny.

Consider the fourth factor, for example, that "the employer . . . derives no immediate advantage from the activities of the intern; and on occasion its operations may actually be impede."[176] This factor is overinclusive and senseless, especially when considered in the context of Fact Sheet #71's rigid test. For example, assume an unpaid production intern assists with an editing project for his major television

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[173] *See Glatt*, 811 F.3d at 528-29.

[174] *See* Brief for American Council on Education, et al. as Amicus Curiae Supporting Neither Party, Glatt v. Fox Searchlight Pictures Inc., 811 F.3d 528 (2d Cir. Apr. 3, 2014) (No. 13-4478).

[175] John R. Carrigan Jr., *Overworked, Underpaid, Illegal? Hollywood Interns Fight Back*, HOLLYWOOD REP., (Oct. 24, 2012, 2:00 PM), http://www.hollywoodreporter.com/thr-esq/hollywood-interns-overworked-underpaid-illegal-382190.

[176] FACT SHEET #71, *supra* note 15.

studio employer. It is undoubtedly valuable experience unobtainable outside a production office, yet this experience would almost certainly fail the fourth factor and the unpaid internship would be ruled illegal. By applying this factor, an internship devolves into a job shadowing experience.[177] While job shadowing certainly provides benefits to an intern, it certainly is not as beneficial as an internship.[178] Revisiting the hypothetical production office intern, it is far better for him or her to actively participate in the editing process under the supervision of professionals than to simply observe it from afar.

Accordingly, it is apparent that the primary beneficiary test is better suited for analyzing internships in the entertainment industry. By considering all the benefits an intern may receive, and balancing them against the benefits an employer receives, the primary beneficiary test demands a more flexible, yet still applicable, inquiry into the unpaid internship program. Additionally, instead of focusing on benefits toward the employer, the Second Circuit's test centers the inquiry on the benefits the *intern* receives. Thus, if the hypothetical production intern had learned how to use complex video editing software, made valuable industry connections, and gained hands-on experience through participating on an editing project, it could easily be said that the intern benefitted more from the employment relationship than the employer. The problem with Fact Sheet #71 is that it would rule this invaluable internship experience illegal because no amount of benefit to the hypothetical production intern could save the internship program if any single factor were lacking. Such a narrow view of internships severely undercuts their effectiveness, as hands-on experience is among the most valuable aspects of an internship.[179]

2. Inconsistent: Fact Sheet #71 Is Inconsistent with the FLSA, Portland Terminal, and Itself

Fact Sheet #71 is riddled with inconsistencies that undermine its effectiveness. Fact Sheet #71 is inconsistent with the FLSA, *Portland Terminal*, and itself. For example, Fact Sheet #71's fifth factor, that the "intern is not necessarily entitled to a job at the conclusion of the internship," runs contrary to one of the FLSA's primary purposes – increasing opportunities for gainful employment.[180] Indeed, this requirement as applied in Fact Sheet #71 undermines this purpose in favor of

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[177] Joseph E. Aoun, *Protect Unpaid Internships*, INSIDE HIGHER EDUC. (July 13, 2010), http://www.insidehighered.com/views/2010/07/13/aoun #ixzz2fUhBdQm7.

[178] *Id.*

[179] Sarah Braun, *The Obama "Crackdown": Another Failed Attempt to Regulate the Exploitation of Unpaid Internships*, 41 SW. L. REV. 281, 294 (2012).

[180] *See* Fair Labor Standards Act of 1938, 29 U.S.C. § 202 (2015).

ensuring a minimum wage – in contravention of the Supreme Court's guidance in *Portland Terminal*. As the Supreme Court explained in *Portland Terminal*:

> Many persons . . . have so little experience in particular vocations that they are unable to get and hold jobs at standard wages. Consequently, to impose a minimum wage as to them might deprive them of all opportunity to secure work, thereby defeating one of the Act's purposes, which was to increase opportunities for gainful employment.[181]

Thus, in the principal case from which Fact Sheet #71 is derived, the Supreme Court expressly made superior the FLSA's goal of increasing opportunities for gainful employment as opposed to wage regulations. Furthermore, although Fact Sheet #71 replicates the factors *Portland Terminal* and applies them to interns, courts criticize it for being inconsistent with *Portland Terminal* because *Portland Terminal* calls for a totality of the circumstances approach, whereas Fact Sheet #71 demands an all-or-nothing standard.[182] This inconsistency raises major issues for interns.

Indeed, across all industries, students participate in internship programs to improve their chances at long-term employment.[183] In fact, internships are often seen as an extensive interview process.[184] Furthermore, if employers are discouraged from hiring interns at the conclusion of their internship, then employers may not be incentivized to spend the time and resources on training and educating potential new hires through internship programs at all. In the entertainment industry, where internships are seen as a prerequisite to employment, this requirement would have undesirable effects on an industry already considered difficult to access.[185] The Second Circuit's test also includes a similar factor, but, unlike Fact Sheet #71, no one factor is dispositive.[186] As seen from this example, Fact Sheet #71 runs contrary to both of its sources of authority: the FLSA and *Portland Terminal*. It is, however, also internally inconsistent.

For example, it is difficult to reconcile Fact Sheet #71's fourth factor, that "the employer . . . derives no immediate advantage from the activities of the intern" (discussed above), with its second factor, that "[t]he internship is for the benefit of

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[181] Walling v. Portland Terminal Co., 330 U.S. 148, 151 (1947).
[182] *See id.*
[183] Braun, *supra* note 179, at 296.
[184] *Id.* at 284.
[185] *See supra* Part I.
[186] *See* Glatt v. Fox Searchlight, Inc., 811 F.3d 528, 537 (2d Cir. 2014).

the intern."[187] These two requirements make it illegal for an intern to participate meaningfully in the employer's business and therefore eliminate perhaps the most important benefit of internships: practical, hands-on experience.[188] Through this inconsistency, one can see that the test in Fact Sheet #71 does not adequately embrace the realities of the modern internship. Internships are intended to introduce students to industries and to give them an opportunity to study a career.[189] Disallowing a student from participating in any activity that benefits the employer, while demanding that the internship benefit the intern, is a counterintuitive combination that does little to serve the goals and interests of the modern intern.

3. Illogical: Fact Sheet #71 Illogically Extends a Test Regarding Trainees to Interns

The problems with Fact Sheet #71 extend further than its own rigidity inconsistencies. However, even if these inconsistencies were cured, the test still should not be used to analyze internship programs. Even if one applies a totality of the circumstances approach to the factors present in Fact Sheet #71, as the district court did in *Glatt*,[190] the test would still fail to adequately account for internships with substantial intangible benefits – such as those in the entertainment industry. Indeed, one of the most significant problems with Fact Sheet #71 is its overreliance, however incorrect, on the holding of *Portland Terminal*.

Portland Terminal dealt with trainees, not interns, and the word "intern" is never used in the opinion. Nevertheless, it is well settled that *Portland Terminal* is the seminal case on the legality of unpaid internships. Fact Sheet #71 simply replicated the factors considered by the Court in *Portland Terminal*, replacing the word "trainee" with "intern."[191] The differences between railroad trainees in 1947 and a modern-day internship at a major entertainment corporation could not be starker. Where internships had not yet even gained traction in 1947,[192] they are an integral part of today's education system.[193] Altogether, applying the trainee test to

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[187] FACT SHEET #71, *supra* note 15.

[188] Braun, *supra* note 179, at 294.

[189] *See supra* Part I.

[190] *Glatt*, 811 F.3d at 535.

[191] *See* Walling v. Portland Terminal, 330 U.S. 148, 148 (1947) (applying the term "trainee" to persons training for a railroad job); FACT SHEET #71, *supra* note 15.

[192] *See* Meaghan Haire & Kristi Oloffson, *Brief History: Interns*, TIME (July 30, 2009), http://content.time.com/time/nation/article/0,8599,1913474,00.html.

[193] PHIL GARDNER, ET AL., RECRUITING TRENDS 2012-2013 33 (42d ed. 2012), *available at* http://www.ceri.msu.edu/wp-content/uploads/2012/11/FRecruiting-Trends-2012-2013.pdf.

interns, especially in the entertainment industry, is like trying to fit a square peg in a round hole.

For example, internships today are often inextricably tied into one's college education.[194] Indeed, one of the plaintiff-interns in *Glatt* entered the internship as part of her degree program through her university.[195] This is not uncommon, as academic credit is often offered for internships through a student's university.[196] Despite the significant connection between an intern's academic progress and her internship, the issue is not even remotely considered in *Portland Terminal*. This only accentuates the problem with basing a test for modern-day internships on a 1947 Supreme Court opinion about railroad brakemen. The primary beneficiary test, as applied by the Second Circuit, focuses on the educational aspects of internships because this "approach better reflects the role of internships in today's economy than the Department of Labor Factors, which were derived from a 68-year old Supreme Court decision that dealt with a single training course offered to prospective railroad brakemen."[197] By including factors that force employers to "accommodate[] the intern's academic commitments by corresponding to the academic calendar"[198] and provide "significant educational benefits to the intern,"[199] the primary beneficiary test provides sufficient protection against exploitive employment relationships, while viewing the internship relationship through a modern lens.

Partly because of the educational aspects of internships, the goals of trainee programs like the one in *Portland Terminal* are totally different than those of modern-day students seeking internships. For instance, the trainees in *Portland Terminal* underwent the training program for the purpose of obtaining a specific job within the Portland Terminal Railroad Company.[200] Trainee program benefits were thus narrow in scope. Today many interns enter their programs for the purpose of learning about entire industries.[201] Internships provide a broad array of invaluable intangible benefits to students without any real work experience by providing them

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[194] *See generally* Kathrin Neyzberg, *Unpaid Internships in Entertainment: Unethical Pages Behind a Glossy Cover*, BERKELEY MEDIA REV. (Nov. 22, 2015).

[195] *Glatt*, 811 F.3d at 532.

[196] *See supra* Part I.

[197] *Glatt*, 811 F.3d at 537.

[198] *Id.*

[199] *Id.*

[200] *See* Walling v. Portland Terminal, 330 U.S. 148, 150 (1947).

[201] *See* Heather Huhman, *Why You Should Get A Summer Internship*, U.S. NEWS AND WORLD REPORT (Apr. 29, 2011), http://money.usnews.com/money/blogs/outside-voices-careers/2011/04/29/why-you-should-get-a-summer-internship.

with experiential opportunities in a professional environment, basic work skills, and a foray into the industry they may wish to eventually find full-time employment. Compared to internships, the trainee program in *Portland Terminal* was extremely narrow in its benefit to participants. The Department of Labor, because of its overreliance on *Portland Terminal*, simply fails to account for many of the benefits interns may receive through an unpaid internship.

The primary beneficiary test, on the other hand, serves the entertainment industry well by encapsulating these intangible benefits. Its flexibility and ability to consider a wide array of factors allows entertainment companies to continue to offer unpaid internship opportunities. For example, in the entertainment industry, one of the most important benefits of an unpaid internship is that it gets the intern's proverbial foot in the door.[202] Relevant experience in the industry, whether paid or unpaid, is invaluable for those looking for full time employment.[203] Adopting the test advanced by Fact Sheet #71, as the district court did in *Glatt*, would eliminate several unpaid internship programs and thus eliminate a student's ability to find employment in the entertainment industry at all. In fact, after the district court used Fact Sheet #71 to rule against Fox Searchlight in *Glatt*, Condé Nast, a major mass media company with brands such as *GQ* and *Vogue*, abruptly shut down its internship program.[204] However, in adopting the primary beneficiary test, the Second Circuit has made it easier for entertainment companies to maintain their unpaid internship programs, so long as they are implemented in a way that benefits the intern.

B. Post-Glatt Landscape

The Second Circuit's decision in *Glatt* changed the legal landscape for analyzing unpaid internships, and indeed, its effects are already being felt. Following the *Glatt* decision, two cases out of the Southern District of New York illustrate the effect the primary beneficiary test is having in entertainment and media companies. The first, *Wang v. Hearst Corp.*,[205] involves the Hearst Corporation – the magazine empire that includes *Esquire*, *Marie Claire*, *Seventeen*, and *Good Housekeeping*. The second, *Mark v. Gawker Media LLC*,[206] involves Gawker Media Company, the

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[202] *See* Daniel Miller & John Horn, *Showbiz Interns in Legal Spotlight*, L.A. TIMES, Apr. 6, 2014, at A16.

[203] *See id.*

[204] Dana Schuster & Kirsten Fleming, *Condé Nast Intern: 'I Cried Myself To Sleep'*, N.Y. POST (Nov. 21, 2013, 6:36 AM), http://nypost.com/2013/11/21/conde-nast-interns-speak-out-on-program-shutdown.

[205] Xuedan Wang v. Hearst Corp., 203 F. Supp. 3d 344 (S.D.N.Y. 2016).

[206] No. 13-CV-4347(AJN), 2016 WL 1271064 (S.D.N.Y. Mar. 29, 2016).

parent company for several popular blogs such as *Deadspin, Gizmodo, Kotaku,* and *Jezebel*. Through a brief overview of both cases, one can see the effects of *Glatt* in action.

The facts in *Wang* are very similar to those of *Glatt*. The plaintiffs, unpaid interns for various Hearst Corporation magazines, brought suit against their former employer claiming they were improperly classified as interns during their time there.[207] Across a variety of departments, interns performed various jobs, from menial administrative tasks, errands, and cataloging, to holding casting calls, interacting with clients, and writing blurbs and blog posts for the publication.[208] After conducting the primary beneficiary analysis, the district court concluded that the interns were the primary beneficiaries of the relationship because the interns had learned practical skills and gained the benefit of job references, hands-on training, and exposure to the inner workings of industries in which they had expressed an interest."[209]

In conducting the primary beneficiary balancing act, the court noted that the internships "involved varying amounts of rote work" and that the internship "could have been more ideally structured," but decided that each Plaintiff benefitted in tangible and intangible ways.[210] Additionally, the Court was sure to emphasize the educational focus of the internships, as most of the interns provided proof that they were receiving academic credit to the employers.[211] The court made this determination after a very in-depth look at all the facts and circumstances surrounding the intern's experiences, as the primary beneficiary test demands. This decision likely saved Hearst's internship program, which had utilized more than 3,000 interns over the past six years.[212]

Under Fact Sheet #71, this internship program likely would have been ruled illegal. The fact that interns were benefitting Hearst at all would have been sufficient, as any benefits the interns may have obtained are irrelevant so long as the employer received a benefit. Not only did the Hearst interns gain the tangible and intangible benefits above, the court also made note of the lasting benefits some interns received

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[207] *Wang*, 203 F. Supp. 3d at 346-49.
[208] *Id.*
[209] *Id.* at 355.
[210] *Id.*
[211] *Id.* at 352.
[212] Xuedan Wang v. Hearst Corp., 293 F.R.D. 489, 491 (S.D.N.Y. 2013).

as a result of being able to list Hearst on their resume as they continued to seek jobs in fashion and publishing.[213]

In a similar case, *Mark v. Gawker Media LLC*,[214] former unpaid interns for Gawker Media brought suit alleging that they were improperly classified as interns during their time at Gawker. Again, the primary beneficiary test was applied. In its analysis, the district court primarily focused on "what the intern receives in exchange for his work."[215] The court noted several benefits received by the interns. For example, the court noted that the journalism student interns were supervised by mentors who helped them produce a full reported piece for their portfolio that was published on Gawker's websites.[216] Even though the interns indeed benefitted the company, as one of the intern's reporting "garnered thousands of page views with attendant advertising revenue," the Court recognizes that this exposure "benefitted Mark as a journalism student at least as much."[217] Unsurprisingly, the court ruled that Gawker's internship program was legal, as the interns were indeed the primary beneficiaries of the relationship. Just as with *Glatt* and *Wang*, if this internship program had been examined under Fact Sheet #71 it would have assuredly been condemned as an illegal labor practice.

Together, these cases illustrate the substantial effect the *Glatt* decision is having in unpaid internship jurisprudence. Both cases highlight the courts' newfound flexibility in analyzing unpaid internship programs. Although, in both cases, the employers benefitted from the intern's work, the court reasoned that the organizations were not taking advantage of their interns simply by that fact. The primary beneficiary test instead directed the court's attention to the benefits the interns were receiving for their work as well as the extent to which the internship complemented the intern's education program. Although interns in both cases did some rote work for their employer, they also obtained invaluable hands-on experience and significantly bolstered their resume. In allowing the court to consider both these tangible and intangible benefits, the primary beneficiary test allows courts to protect internship programs and interns alike by only legitimizing those programs that truly benefit the intern. In the entertainment industry, this means the likely

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[213] 203 F. Supp. 3d. at 355.

[214] Mark v. Gawker Media LLC, No. 13-CV-4347(AJN), 2016 WL 1271064 (S.D.N.Y. Mar. 29, 2016).

[215] *Id.* at *8.

[216] *Id.* at *13.

[217] *Id.*

preservation of a key institution, as the intangible benefits of unpaid internships are often substantial.[218]

CONCLUSION

The debate over the legality of unpaid internships has surely intensified over the past few years.[219] As internships in general are beginning to play a larger role in today's economy and education, there are questions as to how interns are to be compensated. While most internships are paid, many remain unpaid. This is especially true in the entertainment industry, where unpaid internships are pervasive, but create thousands of opportunities per year for students pursuing an entertainment-related career. In the entertainment industry, unpaid internships serve a valuable purpose to students looking for full-time employment. Not only do they provide the relevant experience largely seen as a prerequisite to finding employment, but they also provide knowledge of the inner-workings of the industry, valuable industry connections, and a wide variety of skills specific to their prospective careers.[220]

Fact Sheet #71, created by the Department of Labor, provided an unworkable framework for examining internship programs for the entertainment industry. Opportunities to access the industry would have dwindled as internship programs would have been found illegal under the strict standards of Fact Sheet #71. Prior to the Second Circuit's decision in *Glatt v. Fox Searchlight Pictures*, the future of these unpaid internship programs was in jeopardy.[221]

Indeed, after the district court used Fact Sheet #71 to rule Fox Searchlight's internship program illegal, many companies such as Condé Nast shut down their internship programs for fear of liability.[222] This consequently led to fewer opportunities for students hoping to find employment in entertainment.[223] However, the Second Circuit overturned the district court's decision, and created a new test to analyze unpaid internships: the primary beneficiary test. In doing so, the Second Circuit adopted a flexible, individualized test allowing an employer to maintain an

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[218] *See supra* Part I.

[219] *See supra* Part I.

[220] *See supra* Part I.

[221] *See* Dana Schuster & Kirsten Fleming, *Condé Nast Intern: 'I Cried Myself To Sleep,'* N.Y. Post (Nov. 21, 2013, 6:36 AM), http://nypost.com/2013/11/21/conde-nast-interns-speak-out-on-program-shutdown (describing Condé Nast's plan to shut down its internship program).

[222] *Id.*

[223] *Id.* (interviewing students affected by the elimination of the Condé Nast internship program).

unpaid internship program so long as the potential intern is the "primary beneficiary" of the relationship.[224] This flexible test empowers courts to take an in-depth analysis of unpaid internship programs to ensure the intern is receiving benefits for his or her work, even though he or she may not be paid.[225]

Unlike Fact Sheet #71, the primary beneficiary test keenly recognizes that those who agree to unpaid internships are not volunteers, "trainees," or employees.[226] Instead, it creates its own modern test to analyze internships in today's economy.[227] In doing so, the Second Circuit respects the varied goals and interests students may have in agreeing to an internship.[228] By considering all of the benefits an unpaid internship provided an intern, and balancing this against the benefit to the employer, the court ensures interns are receiving value for their work while protecting them against the potential for an exploitative employment relationship. In the entertainment industry, this analysis helps preserve opportunities for potential interns moving forward, while preserving the integrity of the intern-employer relationship.

The effects of *Glatt* are already becoming apparent. A few cases have utilized the primary beneficiary test, and the results have been favorable for interns and employers alike.[229] Interns are able to benefit from invaluable experience, training, and knowledge, while employers are able to maintain their unpaid internship programs. Indeed, the law should strive for such mutually beneficial solutions. For the entertainment industry, the primary beneficiary test allows for the preservation of a tradition that has created countless opportunities for thousands of students.

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[224] Glatt v. Fox Searchlight Pictures Inc., 811 F.3d 528, 536 (2d Cir. 2016).

[225] *See id.*

[226] *Id.*

[227] *Id.* at 537-38.

[228] *Id.*

[229] *See, e.g.*, Mark v. Gawker Media LLC, No. 13-CV-4347(AJN), 2016 WL 1271064 (S.D.N.Y. Mar. 29, 2016); Xuedan Wang v. Hearst Corp., 203 F. Supp. 3d 344 (S.D.N.Y. 2016).