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## Innovation Policy in Telecommunications: Revisiting the Successes of Guglielmo Marconi

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## BOOK REVIEW

### **Innovation Policy in Telecommunications: Revisiting the Successes of Guglielmo Marconi**

*Signor Marconi's Magic Box: The Most Remarkable Invention of the 19th Century & the Amateur Inventor Whose Genius Sparked a Revolution*, Gavin Weightman, Cambridge, Mass.: Da Capo Press, 2003, 312 pages.

John M. Williamson\*

“For all I know the basic assumption of our patent law may be false, and inventors and their financial backers do not need the incentive of a limited monopoly to stimulate invention.”<sup>1</sup>

These sentiments concerning U.S. patent law were set out in 1943 by Supreme Court Justice Felix Frankfurter in his dissent to the majority's decision invalidating certain Marconi patents during a consequential patent dispute between the Marconi Corporation and the United States. Contrary to Justice Frankfurter's opinion, Gavin Weightman's colorful biography of the charismatic, Nobel Prize winning inventor Guglielmo Marconi and his pioneering turn-of-the-century invention suggests that patent rights provided critical incentives and protections throughout Marconi's work. Indeed, even parts of the Supreme Court's 1943 opinion acknowledge a host of early twentieth century patent opinions, issued from U.S. courts as well as from courts abroad, both establishing Marconi as the inventor of electromagnetic wireless communication and recognizing the importance of Marconi's patents in the field.<sup>2</sup>

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1. *Marconi Wireless Tel. Co. v. United States*, 320 U.S. 1, 63-64 (1943) (Frankfurter, J., dissenting in part).

2. *Id.* at n.1 (Rutledge, J. dissenting in part).

Weightman's book<sup>3</sup> is not primarily concerned with patents, intellectual property, telecommunications law, or innovation policy. It does not track or comment upon the complex contemporary legal and economic developments bearing upon innovation in the telecommunications industry. Rather, it is an important and entertaining historical account, exposing the details and struggles behind the accomplishments of one of the industry's most influential and successful innovators. Although not written for limited professional audiences, telecommunication industry professionals will greatly appreciate this book and the remarkable parallels between the challenges faced by Marconi during the turn of the century, and those faced by today's pioneering telecommunications innovators. Moreover, the book offers industry professionals a significant historical perspective relevant to present day debates over the direction of innovation policy and its application to the telecommunications industry.

Above all else, the biography paints a picture of a perseverant inventor in relentless pursuit of an objective technical goal: the transmission of wireless Morse code signals across greater and greater distances. In propelling his inventions to achieve these greater distances, Marconi endowed society with the technology needed to rescue the Titanic survivors,<sup>4</sup> to investigate and apprehend high profile criminals at sea,<sup>5</sup> to assist military operations during World War I,<sup>6</sup> and most importantly to serve as a foundation upon which an entire industry was to be built. Given his technical achievements and their important commercial applications, Marconi found himself attracting the admiration of society's most elite characters, leading a vast and at times profitable commercial enterprise, and eventually accepting the Nobel Prize for physics in 1909.

Although these victories and successes are celebrated in his biography, the book more carefully documents the preludes to Marconi's success. Marconi's story reminds the reader of the many personal and professional challenges faced by pioneering and revolutionary inventors. In Marconi's case, these challenges included gaining early emotional support from skeptical family and friends while he experimented with unconventional ideas; identifying loyal associates to assist with tedious and dangerous experiments; persuading his scientific peers, and the press, of the viability of his ideas and early prototypes; raising financial backing and support during critical stages of research and product development; persevering through a constant onslaught of regulatory and legal

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3. GAVIN WEIGHTMAN, *SIGNOR MARCONI'S MAGIC BOX* (2003).

4. WEIGHTMAN, *supra* note 3, at 247-52.

5. *Id.* at 230-35.

6. *Id.* at 198-201.

negotiations with governments and competitors; weathering allegations of fraud and deceit; and finally, keeping up with enterprising intellectual and commercial rivals in the field such as Lee de Forest, Reginald Fessenden, Abraham White, Amos Emerson Dolbear, Nikola Tesla, Oliver Lodge, and William Preece.

Marconi's vision and strength of character deserve the majority of the credit for his ability to develop and market his important inventions in the face of such challenges. But the legal climate during the time of Marconi's inventions, specifically the strong U.S. and U.K. patent laws, also played important roles in Marconi's personal success as well as wireless telegraphy's celebrated commercialization. As noted above, although the biography is not a law or policy treatise, Marconi's patents are nevertheless mentioned at every turn. From the London financiers' very first venture capital offers,<sup>7</sup> to countless licensing and acquisition negotiations during the growth of Marconi's companies, to epic courtroom battles between mature multinational corporations, Marconi's patents were the cornerstone of his success. The reward of certain, secure, exclusive patent rights served to inspire Marconi toward innovation in the face of looming economic, political, and regulatory uncertainty.<sup>8</sup> Importantly, the patent rights covering Marconi's inventions also served to comfort Marconi's financial backers and to enable the widespread commercialization of wireless communications.

The strength of the U.S. patent system and its fundamental role in providing a general incentive for innovation and commercialization must not be taken for granted. Although an inventor's right to a limited monopoly is grounded in the U.S. Constitution,<sup>9</sup> this particular innovation policy has always had skeptics, like Justice Frankfurter, who advocate for a more limited reward system.<sup>10</sup> Recently, a rash of patent law rethinking, in the form of formal studies and recommendations issued by the U.S. Federal Trade Commission ("FTC"),<sup>11</sup> and the National Academy of Sciences,<sup>12</sup> as well as a forthcoming report being prepared by the Antitrust Division of the

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7. *Id.* at 29-30.

8. *Id.*

9. U.S. CONST. art. I, § 8, cl. 8.

10. *Marconi Wireless Tel. Co. v. United States*, 320 U.S. 1, 63-64 (1943) (Frankfurter, J., dissenting in part).

11. FEDERAL TRADE COMMISSION, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (October 2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> (last visited Feb. 28, 2005) [hereinafter PROMOTING INNOVATION].

12. NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES, A PATENT SYSTEM FOR THE 21<sup>ST</sup> CENTURY (Prepublication Copy) (2004), available at <http://www.nap.edu/books/0309089107/html> (last visited Feb. 28, 2005).

Department of Justice (“DOJ”),<sup>13</sup> will inevitably reinvigorate debates over, *inter alia*, the appropriate scope of patent rights for inventors. Some of the proposed changes to patent law and policy might impact the telecommunications industry more profoundly than other industries. Specifically, the FTC report, and presumably the forthcoming DOJ report, suggest special treatment for intellectual property based upon “competition policy.”<sup>14</sup> The FTC report remains ambiguous as to the details of how competition policy should alter patent rights, but the general tenor of the report advocates for the weakening of patent rights in certain types of competitive environments. More importantly, as it stands, the proposal threatens to inject subjective judgments and uncomfortable uncertainty into the patent system.<sup>15</sup> Arguably, no industry is more ensnared in competition policy than the telecommunications industry, and as such no industry stands to be as greatly affected by proposed changes like these to the U.S. patent system.

Given the highly complex legal and regulatory regimes covering the telecommunications industry, innovation within the industry is often driven by artificial legal forces. Indeed, the nature of the telecommunications industry, even dating back to Marconi’s time, requires the regulation of certain technological developments for legitimate reasons such as network integrity, public safety, and consumer privacy. Yet, in addition to such considered regulation, unforeseen legal and regulatory arbitrage opportunities, rather than pursuit of objective technological advancement, have become the driver behind much of the industry’s innovation.<sup>16</sup> The unrelenting pursuit of raw technical results, such as Marconi’s insatiable pursuit of expansive wireless signal propagation, at times seems to yield to

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13. See, e.g., R. Hewitt Pate, Acting Asst. Atty. General, Antitrust Division, U.S. Dept. of Justice, *Antitrust and Intellectual Property*, Remarks at the American Intellectual Property Law Association 2003 Mid-Winter Institute (Jan. 24, 2003), available at <http://www.usdoj.gov/atr/public/speeches/200701.htm> (last visited Feb. 28, 2005).

14. *Id.*

15. See, e.g., PROMOTING INNOVATION, *supra* note 11.

16. For instance, many of the contemporary CLEC companies, and their technologies, were founded solely to take advantage of the ISP bound traffic and the reciprocal compensation regulatory environment. See, e.g., In the Matter of Developing a Unified Intercarrier Compensation Regime, *Notice of Proposed Rulemaking*, 16 F.C.C.R. 9610, para. 12 (Apr. 19, 2001). As another example, advances in VoIP technologies forged ahead with the hope that the technologies fell into the generally unregulated data services categories rather than heavily regulated voice telephony. See e.g., Evan Hansen, *VoIP regulation hangs in balance*, VOIP NEWS, (Oct. 27, 2003), available at <http://www.voip-news.com/9/regulation.html>. As yet another example, peer-to-peer communication and file-sharing technologies continue to evolve and develop in order to avoid certain legal interpretations of vicarious and contributory copyright infringement. See, e.g., JESSICA LITMAN, DIGITAL COPYRIGHT 160, 166-67, 169 (2001).

the strategic, calculated pursuit of technologies designed to occupy niches created by law. This unfortunate and unintended consequence of telecommunication laws and regulations might be further compounded if patent rights in the telecommunications industry are weakened or made less certain.

The progression and development of contemporary innovation policy debates warrant a careful study of the great inventions and inventors of the past, and the relevant policy-based incentives surrounding those inventions. In this spirit, the story of Marconi's invention of wireless communication offers context and history that would serve to benefit every telecommunications professional when considering present-day innovation policy and its implications for the telecommunications industry.

