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## Information Convergence: At the Boundaries of Access: Introduction, 25 J. Marshall J. Computer & Info. L. 585 (2008)

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# SYMPOSIUM: INFORMATION CONVERGENCE: AT THE BOUNDARIES OF ACCESS

## INTRODUCTION

DORIS ESTELLE LONG\* AND LESLIE ANN REIS\*\*

CONVERGENCE (kən vûr'jəns), *n.* (1) the occurrence of two or more things coming together; (2) the approach of an infinite series to a finite limit [ant: divergency]; (3) a representation of common ground between theo-

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\* Professor and Chair of the Intellectual Property, Information Technology and Privacy Group at The John Marshall Law School in Chicago. JD, Cornell. It isn't often that the organizer of a conference has the opportunity to thank in print the participants who helped create such a vivid atmosphere of debate and scholarship that marked the Information Convergence Conference held at The John Marshall Law School in November 2007. As the articles included in this special issue demonstrate, the level and variety of discourse both among the speakers, and among the audience, was energizing to say the least. I would like to thank all of them for giving so unstintingly of their time and intellect in helping to make the Conference such a success. I would also like to thank the hardworking staff of this Journal, without whose support this special issue would not have been possible. Last, but by no means least, I would like to thank Leslie Reis, Director of the Center for Information Technology and Privacy Law of The John Marshall Law School, who supported the idea of a conference on information convergence even when it was only the germ of an idea, and an indistinct one at that. As always, any errors in this introduction belong solely to the introduction's authors.

\*\* Assistant Professor and Director, Center for Information Technology and Privacy Law, The John Marshall Law School in Chicago. JD, The John Marshall Law School. Since its creation in 1983, the Center for Information Technology and Privacy Law has been a place of convergence – where law and technology combined to provide a unique educational opportunity for students to develop a marketable expertise for today's technology-driven world. The substantive scope of the Center encompasses the expanse of issues that arise from the convergence of technology and law. In short, we examine the influence of technology on all areas of law and practice from both practical and scholarly perspectives. Thus, when Doris Long suggested the idea of a conference on information convergence, we knew it would be a perfect enhancement to the Center's academic mission and a wonderful way to mark the Center's silver anniversary and the publication of the 25th volume of the Center's flagship publication, THE JOHN MARSHALL JOURNAL OF COMPUTER & INFORMATION LAW. I would like to thank Doris Long for her tireless efforts in organizing an amazing conference, the presenters and attendees who fostered wonderful discussions, the Center's

ries or phenomena [syn: overlap]; (4) the act of coming closer so as to form a single product.<sup>1</sup>

Convergence. According to Lawrence Weschler, in *EVERYTHING THAT RISES: A BOOK OF CONVERGENCES*,<sup>2</sup> “convergences” are everywhere. Examining convergence in the primary arena of art and architecture, Weschler sees it as a process of the familiar arising in unexpected situations, what he refers to as “bizarre associations, eerie rhymes, whispered recollections – sometimes in the weirdest places.”<sup>3</sup> Thus, for example, Weschler sees a convergence of representational images in such diverse elements as Man Ray’s *A L’Heure de l’Observatoire: Les Amoureux*, with its brilliant red lips writ large, seemingly lounging across the sky, with Marc Chagall’s *Nu au-Dessus de Vitebsk*, where Man Ray’s lips are replaced<sup>4</sup> by a lounging nude woman, whose naked back and buttocks echo the same shapes and perhaps the same meanings of longing.<sup>5</sup> Similarly, Weschler sees convergences in Rembrandt’s *The Anatomy Lesson of Dr. Nicholas Tulp* with Freddy Alberta’s photo *Che Guevara’s Death* as each contains not only the converging concepts of public interest in a corpse, but the configuration of the pointed finger and its informational and transfiguring role, given perhaps its greatest representation in Michelangelo’s depiction of God’s hand extended toward Adam in the Sistine Chapel.<sup>6</sup>

In the arena of information in the so-called Digital Age, “convergence” includes Weschler’s eerie resonances, particularly in the arena of public policy where convergence has caused previously unrelated areas, such as copyright and privacy, to share their domains, and in consequence, their public policy spaces in new and untested ways.<sup>7</sup> Thus, for

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staff, especially Panatiota Kelali, and of course, THE JOHN MARSHALL JOURNAL OF COMPUTER & INFORMATION LAW’s Editorial Board, in particular, Sarah Knight and Robin Ficke.

1. See THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE, (Houghton Mifflin, 4th ed., 2006). See also Wordnet 3.0, Princeton University 2006.

2. LAWRENCE WESCHLER, *EVERYTHING THAT RISES: A BOOK OF CONVERGENCES* (McSweeney’s Books, 2007).

3. *Id.* at 1.

4. Weschler does not suggest, nor do we mean to imply, that Chagall copied Ray’s work or vice versa. Instead, their images contain echoes of earlier nudes, other convergences that are detailed in Weschler’s work. *Id.* at 73-77. It is this representational convergence of images and symbolic meanings that lies at the heart of Weschler’s musing on the theme and form an underlying theory, in some of the convergences discussed in this issue.

5. *Id.* at 73-77.

6. *Id.* at 171-75.

7. We use the terms “Digital Age” and “Digital Era” advisedly. First, we agree with James Burke’s wise recognition that the thematic approach to periods of innovation, dividing historical periods by major inventions and the like, “tend to leave the layman with a linear view of the way change occurs, and this in turn effects the way he sees the future.” JAMES BURKE, *CONNECTIONS: FROM PROLEMY’S ASTROLABE TO THE DISCOVERY OF ELECTRIC-*

example, copyright owners' ability to protect their works from unauthorized reproductions in digital format, represented by the "notice and takedown" provisions of the Digital Millennium Copyright Act (DMCA),<sup>8</sup> has collided with the concerns of the rights of anonymous speech found more usually in the realms of privacy law.<sup>9</sup> But in the arena of *information* convergence, it is not just cross pollination of previously unconnected policy arenas that is occurring; it is a radical change in how we think about information –its public nature, its ownership, even its access boundaries that have been affected.

In the Digital Age "information convergence" usually refers to the convergence of sources of information and the resulting value which information has achieved in the so-called "information centric" business model of the first decade of the 21st Century. Examining the changing role of information in data processing and other "information" centric enterprises, Michael Peterson, in a 2006 conference on Data Management, described the emerging changes in enterprise terms, noting:

Once upon a time, enterprise business operations and I.T. datacenters were independent islands. The enterprise generated and 'owned' the information of the business and its applications and the datacenter processed and 'owned' the data and its supporting infrastructure, generally in ignorance of the requirements of each other. "*We don't communicate*" seemed to be the mantra of the day. Data and information were

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ITY: HOW INVENTIONS ARE LINKED – AND HOW THEY CAUSE CHANGE THROUGH-OUT HISTORY 288 (Simon & Schuster Paperbacks, 2007). Thus, while we use the term "digital" age or era to refer to the period between the advent of digital communication, as a result of the development of the computer, and today, we recognize that many of the convergences with which we are dealing may well have resonances in earlier ages. See e.g., TOM STANDAGE, *THE VICTORIAN INTERNET* (Berkeley Books, 1998) (describing policy issues raised by the advent of the telegraph as precursor to today's Internet).

Second, the term "digital" is not intended to limit our discussion to purely "digitized" or non-analog forms of communication (such as computer software, CDs, DVDs and the like). Instead, it is intended to cover all new technological communication media that is non-physical (non-print) in nature, regardless of whether it is wired, wireless, Web 2.0, Web 3.0, or in whatever the next generation of communication media may be.

8. 17 U.S.C. § 512(c) (2006) (requiring qualifying ISPs to remove works posted by third party users of hosted sites on receipt of the appropriate notice of copyright ownership and violation). See also 17 U.S.C. §512(h) (2006) (establishing a ministerial process for acquiring subpoenas for disclosure of identity for third party posters of infringing materials). See generally Doris E. Long, *Electronic Voting Rights and the DMCA: Another Blast from the Digital Pirates or a Final Wake Up Call for Reform?*, 23 J. MARSHALL J. COMPUTER & INFO. L. 533 (2005).

9. See e.g., *RIAA v. Verizon Internet Services, Inc.*, 351 F.3d 1229 (D.C. Cir. 2003) (holding that the identity of third party users of Internet communication services, as opposed to hosting services, could not be disclosed under the ministerial subpoena provisions of Section 512(h) of the Copyright Act; instead traditional subpoena provisions would apply with its heightened level of judicial scrutiny).

managed and retained by separate and distinct owners, each with unique languages further separating their domains:

*For most companies, the time for this old-world operating model has now passed. It no longer works in the emerging new-world-order in which the drivers of regulatory compliance, legal risk, and security risk (including privacy and confidentiality) have elevated the value of, and requirements for, information.*<sup>10</sup>

This convergence of diverse users and conveyers of information, particularly digitized information, to create “information centric” enterprises is mirrored by a technological convergence which similarly removed traditional barriers in communication media to result in another type of information convergence, one founded in the convergence of information technologies. If information is something that “gently but relentlessly drizzles down on us in an invisible, impalpable electric rain,”<sup>11</sup> the delivery systems for such information in the pre-Digital Age era were often divisible by their media of delivery – print, television, radio, etc. In the 1960s Marshall McLuhan could proudly proclaim that the “Medium is the Message.”<sup>12</sup> In the Digital Era, the medium has become part of the convergence process itself. Often defined as “technological convergence,”<sup>13</sup> this style of “information convergence” is perceived as “the meshing of diverse and competing technologies into a single unified me-

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10. MICHAEL PETERSON, INFORMATION CONVERGENCE, TRANSFORMING THE INFORMATION-CENTRIC ENTERPRISE 1 (Jan. 2006) (emphasis in original) available at [http://www.snia.org/forums/dmf/knowledge/DMF-Information-Convergence\\_20060112.pdf](http://www.snia.org/forums/dmf/knowledge/DMF-Information-Convergence_20060112.pdf).

11. HANS CHRISTIAN VON BAEYER, INFORMATION: THE NEW LANGUAGE OF SCIENCE 3 (Harvard Univ. Press 2004).

12. MARSHALL McLUHAN, UNDERSTANDING MEDIA: THE EXTENSIONS OF MAN 9 (M.I.T. Press 1964) (“In a culture like ours, long accustomed to splitting and dividing all things as a means of control, it is sometimes a bit of a shock to be reminded that, in operational and practical fact, the medium is the message. This is merely to say that the personal and social consequences of any medium - that is, of any extension of ourselves — result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology.”).

13. See, e.g., C. Borés, C. Saurina & R. Torres, *Technological Convergence: A Strategic Perspective*, TECHNOVATION 1 (2003) (defining “technological convergence” as “a process by which the telecommunications, broadcasting, information technologies and entertainment sectors (collectively known as ICT – Information and Communications Technologies) may be converging towards a unified market”) (quoted with approval in Fredrik Hacklin & Anna-Greta Nyström, *Operator Value-Creation Through Technological Convergence: The Case of VoIP 4*, available at [http://userpage.fu-berlin.de/~jmueller/its/conf/porto05/papers/nystroem\\_hacklin.pdf](http://userpage.fu-berlin.de/~jmueller/its/conf/porto05/papers/nystroem_hacklin.pdf)). See also JONAS LIND, CONVERGENCE: HISTORY OF TERM USAGE AND LESSONS FOR FIRM STRATEGISTS 3 (June 2004), available at [http://userpage.fu-berlin.de/~jmueller/its/conf/berlin04/Papers/1\\_LIND.doc](http://userpage.fu-berlin.de/~jmueller/its/conf/berlin04/Papers/1_LIND.doc) (detailing diverse definitions of convergence in the IT arena that entail market and communication convergences between diverse media with the result of a single digital media surviving). “The popular illustration of convergence was four circles representing the IT, telecom, media and consumer electronics industries moving into each other, creating one big “converging industry.” *Id.*

dium (digital transmission).<sup>14</sup> This “technological convergence” has removed traditional concerns over how the gentle rain of information is conveyed, and has refocused attention on what such convergences mean in the production and perceptions of information as a result of such convergences.<sup>15</sup>

There is no question that the traditional “boundaries” between information, ownership, privacy and technology are rapidly disappearing as new methods of creation, protection, commodification, and distribution for works and inventions incorporating such “information” appear. Yesterday’s print medium has become today’s collaborative, dynamic web-based content, while the protection of artistic works under traditional intellectual property doctrines such as copyright directly implicates the privacy rights of authors, “publishers,” and consumers.<sup>16</sup> The protection of “information” in today’s global digital environment – and perhaps more importantly its access and subsequent use – is converging with an ever broadening range of legal regimes and issues as “information” becomes the “coin of the realm” for the new Information Empire.

The potential economic value of “information” or “knowledge” is not a new development despite policy makers’ focus in the latter decade of the 20th and first decade of the 21st Centuries on the role of a knowledge based economy as the new road to economic growth and development.<sup>17</sup> To the contrary, as early as the Renaissance when Da Vinci used mirrored writing to protect his inventions,<sup>18</sup> and when Brunelleschi declined to provide detailed information on the structural engineering design of the Duomo,<sup>19</sup> information was recognized as having potential economic value. Some “value” for certain types of information was cabined in the early formalization of the traditional intellectual property system. The

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14. Stuart Weinstein, *Information-Convergence and the Never Ending Drizzle of Electric Rain*, 8 INT’L J. COMM. L. & POL’Y 5, 9 (Winter 2003-2004).

15. See, e.g., Michael Madison, *Convergence at the Boundaries of “Information” and Technology*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (in this issue); John T. Cross, *Dead Ends and Dirty Secrets: Legal Treatment of Negative Information*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008).

16. See *supra* notes 9 and 10.

17. See, e.g., UN Economic and Social Counsel, ECOSOC 2000 Ministerial Declaration: Development And International Cooperation In The Twenty-First Century: The Role Of Information Technology In The Context Of A Knowledge-Based Global Economy, E/2000/L.9 (July 5 – Aug. 1, 2000 Session) (emphasizing the critical role of information technology in assisting developing countries achieve knowledge based economies); DALE NEEF, G. ANTHONY SUSSFELD & JACQUELYN CEFOLA, *THE ECONOMIC IMPACT OF KNOWLEDGE: RESOURCES FOR A KNOWLEDGE BASED ECONOMY* (Butterworth Heineman 1998) (a collection of articles outlining various approaches and challenges to creating a “knowledge based” economy).

18. ROSS KING, *MICHAELANGELO AND THE POPE’S CEILING* (Penguin 2003).

19. ROSS KING, *BRUNELLESCHI’S DOME: HOW A RENAISSANCE GENIUS REINVENTED ARCHITECTURE* (Penguin 2001).

Statute of Anne, the first formal legal recognition of copyright protection, protected certain types of works “to promote knowledge.”<sup>20</sup> Its subsequent U.S. federal analogue<sup>21</sup> was enacted under a Constitutional grant clause that recognized that that basis for copyright and patent protection in the new country was to “promote the progress of science and the useful arts.”<sup>22</sup> “Science” in those days did not simply mean technology. It meant knowledge.<sup>23</sup> That does not mean that all “information” was potentially protectable under intellectual property regimes.<sup>24</sup> To the contrary, only “expressive” information was protectable under copyright;<sup>25</sup>

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20. Statute of Anne, 1710, 8 Ann., c. 19 (Eng.) (providing for the protection of “Books, and other Writings” and labeling itself “An Act for the Encouragement of Learning”).

21. Act of May 31, 1790, Ch. 15, § 1, 1 Stat. 124, 124 (repealed 1802) (protecting “books, maps and charts” and similarly labeled as being enacted for “the encouragement of learning.”). Most of the early colonies had copyright statutes that were modeled on the Statute of Anne. See LYMAN RAY PATTERSON, *COPYRIGHT IN HISTORICAL PERSPECTIVE* (Vanderbilt University Press 1968).

22. U.S. CONST. art. 1, § 8, cl. 8 (granting Congress the power to enact federal copyright and patent laws to “Promote the Progress of Science and the Useful Arts. . .”).

23. See, e.g., Lawrence B. Solum, Eldred v. Ashcroft: *Intellectual Property, Congressional Power, and the Constitution: Congress’s Power To Promote The Progress Of Science*: Eldred V. Ashcroft, 36 LOY. L.A. L. REV. 1, 51 (2002) (arguing that “science” was equated with copyright protection under the first federal copyright statute and that such science referred to systematic knowledge).

The tendency of modern usage is to associate the term “science” with the natural sciences, such as chemistry, physics, and biology. These are understood as the “hard sciences” and as the exemplary or paradigm cases of science. Even a systematic and formal body of knowledge, such as geometry, mathematics, or symbolic logic, might be thought to be science in only a loose or derivative sense. To the extent this is a feature of modern usage, however, it does not conform to the understanding of the term “science” in the founding era. Rather, there is general agreement that science was usually understood in a broader sense, so as to include knowledge, especially systematic or grounded knowledge of enduring value. Thus, the meanings of “learning” and “science” would be closely related.

*Id.* (citations omitted).

24. We use the term “information” advisedly in order to illustrate that the separate legal regimes of traditional intellectual property, security, technology and privacy are undergoing a rapid convergence of issues and concerns in this era of global technological exchanges. We do not mean to suggest that intellectual property necessarily restricts “information.” To the contrary, the boundaries of the intersection between “intellectual property” and “information” are one of the topics addressed by the articles in this symposium issue. See, e.g., John T. Cross, *Dead Ends and Dirty Secrets: Legal Treatment of Negative Information*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (detailing why “negative information” has value and should be protectable); Doris Estelle Long, *When Worlds Collide: The Uneasy Convergence of Creativity and Innovation*, 25 J. Marshall J. Computer & Info. L. \_\_\_\_ (2008) (explaining that expressive content protected under copyright is not the same as “information” which is excluded from protection) (in this issue). See also *Baker v. Selden*, 101 U.S. 99 (1879) (distinguishing copyright protection for the description of an accounting system, and its actual practice).

25. See, e.g., 17 U.S.C. § 102 (2006) (providing for protection for “original works of authorship fixed in a tangible medium of expression. . .”). See also *Feist Publications Inc. v.*

while only “innovative” information was protectable under patents.<sup>26</sup> Only source and quality designating information for goods and services was protectable under trademarks,<sup>27</sup> and only secret, economically valuable information was protectable under trade secrets.<sup>28</sup> While these boundaries may never have been particularly rigid,<sup>29</sup> the advent of the Digital Era, with the first computer software protection cases, began a convergence between the diverse areas of intellectual property that con-

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Rural Telephone Serv. Co., 499 U.S. 340 (1991) (raising the requirement of “originality” under U.S. copyright law to a Constitutional imperative).

26. See 35 U.S.C. §§ 101-103 (2006) (protecting only inventions which are novel, non-obvious and useful). See also *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (denying patent protection to a process which in essence claimed a method of hedging risk in the field of commodities trading for lack of patentable subject matter because the process in essence was merely an attempt to patent an algorithm).

27. See 15 U.S.C. §1127 (2006) (defining both “trademarks” and “service” marks as “any word, name, symbol or device, or any combination thereof used by a person or which a person has a bona fide intention to use in commerce . . . to identify and distinguish his or her goods [or services] . . . from those . . . [of] others. . .”). We do not mean to suggest that the informational content of trademarks is necessarily limited to source or quality designating topics per se. To the contrary, marks often convey additional information regarding the nature of the goods, including lifestyle choices associated with the branded merchandise or services, its cachet, or even the brand’s personality. See, e.g., JEAN NOEL KAPFERER, *THE STRATEGIC BRAND MANAGEMENT: CREATING AND SUSTAINING BRAND EQUITY LONG TERM*, Kogan Page (2004) (describing brands as having both personality and culture); Mark Lemley, *The Modern Lanham Act and the Death of Common Sense*, 108 YALE L. J. 1687 (1999); Barton Beebe, *The Semiotic Analysis of Trademark Law*, 51 UCLA L. REV. 621 (2004); Doris Estelle Long, *Is Fame All There Is?: Beating Global Monopolists at Their Own Marketing Game*, 40 GEO. WASHINGTON INT’L L. REV. (forthcoming 2009) (copy on file with author). Such informational qualities are, however, distinctly different from those for the information contained in a copyright or patent protectable work. See Sheldon Halpern, *The Supreme Court’s Trademark Jurisprudence: Categorical Divergence in the Interest of Informational Convergence*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (in this issue).

28. See e.g., Uniform Trade Secrets Act § 1(4) (providing protection for “information . . . that derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure and use” so long as such information is “subject of efforts that are reasonable under the circumstances to maintain its secrecy”).

29. See e.g., *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984) (explaining that borrowing patent doctrines of contributory infringement and non-infringing staple articles of commerce defenses into U.S. copyright law). *But see* Trademark Cases, 100 U.S. 82 (1879). The Supreme Court declined to uphold first federal trademark law under the Patents and Copyrights Grant Clause of the U.S. Constitution, U.S. CONST. art. 1, § 8, cl. 8, because trademarks did not promote science or useful arts. *Id.* The court reasoned that, “[t]he ordinary trade-mark has no necessary relations to inventions or discovery. The trade-mark recognized by the common law is generally the growth of a considerable period of use, rather than a sudden invention.” *Id.* It further rejected efforts to equate trademarks with “writings” since marks did not qualify as “fruits of intellectual labor” but “may be, and generally is, the adoption of something already in existence as the distinctive symbol of the party using it.” *Id.*



tinues to roil both domestic and international policy debates.<sup>30</sup>

Yet the convergence that is the subject of this Symposium issue is not limited to potential cross-legal germination of so-called intellectual property protection. While such protection forms a critical linchpin in many of the debates, it is the larger concern over the extent to which *any* type of information can or should be subjected to restricted access for which convergence becomes critical. On what basis should information protection issues be analyzed in this era of technological convergence?<sup>31</sup> What controls, if any, should be placed on a merchant's ability to access personal identifying information in order to sell her goods in today's digitized marketplace?<sup>32</sup> Are there social values which require that the traditionally strong access control rights granted intellectual property holders be reduced or avoided altogether in the face of the digital communication explosion of the Internet?<sup>33</sup> Should protection for personally identifying information give way in the face of economic utility? To what extent should national security concerns in the post-9/11 world override or control information creation and dissemination?<sup>34</sup> Can such concerns even be adequately addressed in the fast information world of the Digital Era where everyone is a potential eyewitness reporter? And if we are to construct a new protection schema for converged information, can our present legal processes deal with the challenge?<sup>35</sup>

As new methods of creation, protection, commodification, and distribution are appearing, information policy, and law, is converging with technology, intellectual property and security to pose new challenges to the scope of protection to be afforded "information." Old boundaries that defined protectable "property" rights in terms of the originality or novelty of one's creative contribution, including the terms of access to such

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30. Doris Estelle Long, *When Worlds Collide: The Uneasy Convergence of Creativity and Innovation*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (in this issue). See also Dennis S. Karjala, *Access to Computer Programs Under the DMCA*, 25 J. Marshall J. Computer & Info. L. \_\_\_\_ (2008) (in this issue).

31. Michael Madison, *Convergence at the Boundaries of "Information" and Technology*, 25 J. Marshall J. Computer & Info. L. \_\_\_\_ (2008) (in this issue).

32. See e.g., Charisse Castagnoli, *Convergence at the Boundaries of Information Analysis and Security Technology*, 25 J. Marshall J. Computer & Info. L. \_\_\_\_ (2008) (in this issue).

33. See Christine Haight Farley, *Convergence and Incongruence: Trademark Law and ICANN's Introduction of New Generic Top-Level Domains*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (in this issue); Sheldon Halpern, *The Supreme Court's Trademark Jurisprudence: Categorical Divergence in the Interest of Informational Convergence*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (in this issue).

34. Kenneth James Ryan, *Informing the Enemy: Feeding the Counter-Intelligence Needs of Our Adversaries*, 25 J. Marshall J. Computer & Info. L. \_\_\_\_ (2008) (in this issue).

35. See Keith G. Chval, *Litigating at the Boundaries*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (in this issue).

property by the general public,<sup>36</sup> seem wholly inappropriate in an era where at least the physical forms of such contributions can be reproduced and distributed without diminishing the original, at least in its physical form. Reproducible, non-destructible and non-rivalrous,<sup>37</sup> intellectual property in the Digital Age<sup>38</sup> collides with the expanded information demands of the digital information highway. Yet digital access to “information” in the age of apparently reduced privacy demands, at least for some forms of digital social communication,<sup>39</sup> in turn raises serious questions about the boundaries of access to be drawn around such information. In the post-9-11 world, boundaries for the scope of protection afforded such information itself converges with a broad array of security concerns. Thus, balancing an individual’s ability to control access to private personal identifying information with the conflicting demands of national security, copyright ownership or digital commerce may result in different flashpoints of access being struck. But the critical principle at the heart of these balances remains not only similar, but increasingly informed by one another. These debates seem to represent the cross-representational convergences at the heart of Weschler’s convergence theory.

By contrast, convergences in other areas, such as in the question of access to medical technologies with the demands of intellectual property rights, have resulted in debates that may well alter the very nature of both systems. Patent rights, which have traditionally enjoyed the attributes of intangible property rights,<sup>40</sup> have come under increasing scrutiny

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36. *See supra* notes 9 and 10.

37. *See* ALAN D. MOORE, *INTELLECTUAL PROPERTY AND INFORMATION CONTROL* (Transaction Publishers 2008).

38. We do not mean to suggest that we necessarily agree with this mantra as relevant to intellectual property matters. To the contrary, one of the authors has insisted in other fora; that the myth of non-rivalrousness ignores the impact of third party access to the economic value of the information at issue. This economic value may very well be harmed through unauthorized distribution. *See, e.g.*, Doris Estelle Long, *Address at Copyright Law for Business People and Lawyers*, Law Seminars International: Fair Use and U.S. Copyright Law: The Changing Definition of “Fair,” (May 23, 2005) (draft on file with author). One glance at the present day music and film industry is enough to demonstrate the accuracy of the assertion that not all unauthorized distribution is non-rivalrous on the economic front.

39. The advent of social networking sites, such as MySpace.com or Facebook.com, appear to demonstrate that ideas of personal privacy have altered in the face of the lure of instant intimacy with unknown “friends” on the Internet. The meaning of these changes undoubtedly will have a strong impact on future convergences between information privacy and social norming paradigms. *See generally* NICHOLAS CARR, *THE BIG SWITCH*, (W.W. Norton & Co. 2008).

40. Patent lawyers and scholars have traditionally eschewed property rights analyses for patents, insisting instead, on an analysis that focuses on the exclusionary nature of the patent grant. *See* 35 U.S.C. § 154 (2006) (granting a patent holder “the right to exclude others from making, using, offering for sale, or selling the invention through-out the

as the need for a more equitable distribution system for critical medicines becomes ever more pressing in today's globalized economy.<sup>41</sup> As information access demands converge with social justice demands, not only has the exclusive property nature of patent protection come under challenge,<sup>42</sup> claims for ownership rights in other types of medical "information" in the form of traditional knowledge have arisen.<sup>43</sup> These convergences between intellectual property and traditional knowledge have resulted in a much more complex arena in which to establish access principles for medicines. When these convergences are combined with the convergences between rights policy and social justice, the resulting policy debates not only diverge from what we have seen before, they have the potential for establishing new principles to be applied in future debates over access and medical information.

Even the definition of what qualifies as "information" has become more complex as national security, commerce and innovation encouragement demands combine to reconfigure its very definition and its public access boundaries. Such convergences do not admit of simple solution. As the proponents of a Draft Treaty on Access to Information ("A2K")<sup>44</sup> soon discovered, while the professed goal "to protect and enhance [expand] access to knowledge"<sup>45</sup> may be one about which most individuals might agree, the devil (so to speak) is in the details.<sup>46</sup> One person's pub-

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United States or importing the invention into the United States. . ."). See also TRIPS Art. 28 (granting patent holders "the exclusive right[ ] to prevent third parties not having the owner's consent from the acts of: making, using offering for sale, or importing" a patented product"). We believe, however, that such "negative" rights actually grant property style values, and agree with more recent scholarly analysis emphasizing the property based nature of the patent grant. See e.g., Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent 'Privilege' in Historical Context*, 92 CORNELL L. REV. 903 (2007).

41. See World Health Organization, Essential Medicines, [http://www.who.int/topics/essential\\_medicines/en](http://www.who.int/topics/essential_medicines/en) (last visited Feb. 6, 2009); Kenya, *Possible Elements of a Paragraph 6 Solution* (2002), <http://www.cptech.org/ip/wto/p6/wto11102002.html>; Decision of the General Council of 30 August 2003 (Sept. 1, 2003), available at [http://www.wto.org/english/tratop\\_e/trips\\_e/implement\\_para6\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/implement_para6_e.htm) (regarding proposed Article 31bis for TRIPS which provides additional flexibilities for compulsory licenses for essential medicine patents).

42. See generally Commission on Intellectual Property Rights, Innovation and Public Health, Report on Public Health, Innovation and Intellectual Property Rights (2006). See also *supra* note 42.

43. See generally World Intellectual Property Organization, *Intellectual Property and Traditional Knowledge* Pub No. 920E (WIPO), available at [http://www.wipo.int/freepublications/en/tk/920/wipo\\_pub\\_920.pdf](http://www.wipo.int/freepublications/en/tk/920/wipo_pub_920.pdf).

44. See Treaty on Access to Knowledge (Draft) (2005), <http://www.cptech.org/a2k/consolidatedtext-may9.pdf> (last visited Feb. 6, 2009).

45. *Id.* at Art.1.

46. See, e.g., Doris Estelle Long, *Traditional Knowledge and the Fight for the Public Domain*, 5 J. MARSHALL REV. INTELL. PROP. L. 617 (2006) (challenging the failure of the

lic domain knowledge is another's form of cultural imperialism.<sup>47</sup> One person's social justice for expanded access to patented medicines is another's potential threat to future medical research.<sup>48</sup> Even the language of the debate has expanded as terms such as "creativity" and "innovation" become intertwined, not necessarily in ways that clarify the issues.<sup>49</sup>

The Articles contained in this special issue examine a wide range of issues and problems posted by present day information convergences. The subject matter of these articles is as diverse as the subject itself.

Charise Castignoli examines the problems posed to information security as a result of the unintended changes in either technology or the ways in which we interact with new access platforms. From data security to cyberbullying, to the threats posed by the increasing number of medical devices controlled by remote access, she outlines a rapidly changing world where the convergences between information and technology pose serious threats to information security and access.

Keith Chval details some of the real world challenges facing the legal processes in the United States as information storage and retrieval technology outstrips legal procedures for dealing with these processes. Describing a "perfect storm" of litigation needs, technology and information concerns, he describes the continuing stumbling blocks in dealing effectively with an information world which is becoming increasingly digital, on more consumer devices that may make the protection and discovery of such information increasingly problematic.

Christine Haight Farley demonstrates how problematic the convergences between Internet technology, the demands of a burgeoning e-market, and trademark laws have created a myriad of issues in international governance of domain names. While the Internet Corporation for Assigned Names and Numbers ("ICANN") has been tasked with resolving some of the most problematic information ownership issues in e-com-

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Draft A2K Treaty to recognize the rights of indigenous peoples to their traditional knowledge).

47. See Doris Estelle Long, Professor, John Marshall Law School, Address at the Faculty Works in Progress Workshop: Curtailing the Imperialism of the Public Domain or Changing the Rules of the Great Game for the Intellectual Property Empire (Nov. 9, 2005).

48. See Dr. B. Ekbal, *Intellectual Property Rights: Challenges to Academic Research* (2008), available at [http://kshec.kerala.gov.in/seminar/IPR\\_Iqbl.pdf](http://kshec.kerala.gov.in/seminar/IPR_Iqbl.pdf) (contending that social justice demands greater access to information and less intellectual property protection including the field of medical research); Neal Masia, *The Cost of Developing a New Drug* (Apr. 23, 2008), available at <http://www.america.gov/st/econ-english/2008/April/20080429230904myleen0.5233981.html> (outlining the high cost of medical research and the need for strong patent protection to support such efforts).

49. See Doris Estelle Long, *When Worlds Collide: The Uneasy Convergence of Creativity and Innovation*, 25 J. MARSHALL J. COMPUTER & INFO. L. \_\_\_\_ (2008) (in this issue).

merce, she demonstrates that current changes in domain name registries ignore the real world problems posed by these convergences.

Sheldon Halpern shows that convergence has placed trademark law in the center of some of the hard-fought battles over information ownership in intellectual property. From fights over moral rights, to collisions with patents, trademarks in the new technological age have raised questions that he suggests might be better analyzed if the *associative* nature of trademarks were recognized and applied.

Dennis Karjala explores the convergences between technology and information in the critical area of computer programs and the DMCA. Examining recent attempts to raise protected access control measures under the DMCA to non-communication related content, he demonstrates that not all fears of unlimited expansion of copyright are justified. To the contrary, courts are showing a remarkable sensitivity to the problem.

Doris Long contends that in the area of computer software protection convergence has resulted in confusion in the goals of copyright and patent laws to the detriment of both. By confusing “innovation” with “creativity,” she contends that copyright protection has been strained by its efforts to fit the demands of functional code within its expressive protection goals. She concludes by suggesting that we go “back to the future” to resurrect an international *sui generis* system for software and allow both copyright and patent to go back to their original, and distinctly different, policy goals.

Michael Madison goes back to the first principles of information governance and discusses what impact the means and methods that we chose to control information has on the nature of information itself. Focusing on the Google Book Project, he suggests an analytical method for considering information access and control issues that avoids privileging any particular player and instead focuses on information governance as a dynamic process.

Kenneth Ryan demonstrates how the convergences of technology, national security and an ever expanding media pose critical problems for the protection, dissemination and employment of information for national security purposes. Focusing on the methods and harms posed by the inadvertent and intentional disclosure of operational information, he proposes a three-part remedy that balances transparency with national security concerns and underscores the critical role that *any* information may hold in these days of heightened security.

Convergence. The occurrence of two or more things coming together. This symposium issue of THE JOURNAL OF COMPUTER & INFORMATION LAW is a truly a convergence of ideas – of information, technology and the legal doctrines that protect the subjects, creators and users of infor-

mation products. Yet, with the wide range of perspectives presented here, myriad questions remain such as whether our long-held concepts of information considered to be part of the “public record” should be modified in light of the increased access to such information through technology. Whether our notions of “injury,” especially to privacy interests, must evolve as increased access to information creates greater vulnerability for its misuse and previously unimagined harms. And, whether adequate legal remedies are available to compensate those who may suffer such harms. We will explore these questions and many more in future conferences and in future issues of the JOURNAL. For now, we hope you enjoy what we believe is only the beginning of an ongoing debate at the convergence of technology, law, and policy.

