

Washington University Law Review

Volume 92 | Issue 1

2014

Social Innovation

Peter Lee

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Recommended Citation

Peter Lee, *Social Innovation*, 92 WASH. U. L. REV. 001 (2014).

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Washington University Law Review

VOLUME 92

NUMBER 1

2014

SOCIAL INNOVATION

PETER LEE*

ABSTRACT

This Article provides the first legal examination of the immensely valuable but underappreciated phenomenon of social innovation. Innovations such as cognitive behavioral therapy, microfinance, and strategies to reduce hospital-based infections greatly enhance social welfare yet operate completely outside of the patent system, the primary legal mechanism for promoting innovation. This Article draws on empirical studies to elucidate this significant kind of innovation and explore its divergence from the classic model of technological innovation championed by the patent system. In so doing, it illustrates how patent law exhibits a rather crabbed, particularistic conception of innovation. Among other characteristics, innovation in the patent context is individualistic, arises from a discrete origin and history, and prioritizes novelty. Much social innovation, however, arises from communities rather than individual inventors, evolves from multiple histories, and entails expanding that which already exists from one context to another. These

* Professor of Law and Chancellor's Fellow, UC Davis School of Law. I would like to thank Camilla Hrdy, Chris Griffin, Richard Gruner, Courtney Joslin, Lydia Loren, Manesh Patel, and Darien Shanske for their comments on earlier versions of this paper. This Article benefitted substantially from presentations at the Intellectual Property Scholars Conference at Cardozo Law School, the East Bay Faculty Workshop, the Works in Progress Intellectual Property colloquium at Santa Clara School of Law, IP in The Trees at Lewis & Clark Law School, PatCon 4 at the University of San Diego School of Law, the Value Pluralism and Intellectual Property Law conference organized by the University of Hong Kong Faculty of Law and the University of Pennsylvania Law School, and BYU Law School. I would like to thank Dean Kevin Johnson and Associate Dean Vik Amar for providing generous institutional support for this project. I would also like to thank Erin Choi and the UC Davis School of Law library staff for exceptional research assistance. Finally, I would like to thank the excellent editors of the *Washington University Law Review*.

attributes, moreover, apply in large part to technological innovation as well, thus revealing how patent law relies upon and reinforces a rather distorted view of the innovative processes it seeks to promote. Moving from the descriptive to the prescriptive, this Article cautions against extending exclusive rights to social innovations and suggests several nonpatent mechanisms for accelerating this valuable activity. Finally, it examines the theoretical implications of social innovation for patent law, thus helping to contribute to a more holistic framework for innovation law and policy.

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INTRODUCTION

Cognitive behavioral therapy (CBT), a set of psychological techniques for combatting depression, anxiety, and other conditions, has lifted millions of people from the depths of mental illness. Microfinance, the practice of making small, unsecured loans to indigent borrowers, has helped move significant numbers of individuals out of poverty. Changes to physician attire—such as not wearing neckties—have substantially reduced the incidence of methicillin-resistant *Staphylococcus aureus* (MRSA) infections in hospitals, saving thousands of lives every year. Although these developments are quite different, they all share two important characteristics. First, they reflect immensely valuable “social innovations” that apply new ideas and practices to address pressing social problems. Second, they all arose completely outside of the patent system, the primary legal mechanism for promoting innovation.

Although the Constitution authorizes a patent system “[t]o promote the Progress of Science and useful Arts,”¹ entire swaths of useful arts fall outside the domain of patent protection. This Article extends beyond patent law’s traditional focus on technological innovation to consider a broader conception of social innovation and how legal mechanisms may (or may not) encourage it. Social innovations are immensely important yet understudied;² innovations as diverse as emissions trading, kindergarten, and nationalized healthcare have literally transformed society.³ This

1. U.S. CONST. art. I, § 8, cl. 8.

2. Geoff Mulgan, *The Process of Social Innovation*, 1 INNOVATIONS, Spring 2006, at 145, 146; Geoff Mulgan et al., *Social Innovation: What It Is, Why It Matters, and How it Can Be Accelerated* 5 (Skoll Ctr. for Soc. Entrepreneurship, Working Paper 2007) (“Surprisingly little is known about social innovation compared to the vast amount of research into innovation in business and science.”); Michael D. Mumford, *Social Innovations: Ten Cases from Benjamin Franklin*, 14 CREATIVITY RES. J. 253, 262 (2002).

3. Mulgan, *supra* note 2, at 145; see also James A. Phills Jr. et al., *Rediscovering Social Innovation*, STAN. SOC. INNOVATION REV., Fall 2008, at 34, 40 (listing charter schools, community-centered planning, emissions trading, fair trade, habitat conservation plans, individual development

Article seeks to explore this significant kind of innovation as well as its divergence from the classic model of technological innovation championed by the patent system. Additionally, it proposes various strategies to accelerate social innovation. Finally, it considers the theoretical implications of social innovation for patent law, thus helping to contribute to a more holistic framework for innovation law and policy.

At a descriptive level, this Article represents the first legal examination of the immensely valuable but underappreciated phenomenon of social innovation. While acknowledging the inherent difficulty of defining social innovation, this Article shows how innovations such as CBT, microfinance, and strategies to reduce MRSA infections are “social” in that they serve public objectives, are intended for wide application, and involve changes to human behavior and relationships. It also compares and contrasts social innovations with other domains of “innovation without IP” that have attracted significant scholarly attention, from academic science to the fashion industry.⁴

In exploring social innovation, this Article highlights and challenges the narrow, particularized conception of innovation embedded in patent law. Among other characteristics, innovation in the patent law context is individualistic, discrete, novel, and objectively reproducible. Much social innovation, however, arises from communities rather than individual inventors, emerges from multiple histories, entails expanding existing practices, and faces significant challenges of reproducibility. This Article further argues that notwithstanding patent law’s particular conception of innovation, these dynamics often apply as well to processes of technological development traditionally protected by the patent system. In applying its narrow and particularistic conception of innovation, patent law thus obscures and rewrites the innovative processes it seeks to promote.

Before proceeding, several terminological and methodological notes are in order. First, this Article uses the term “innovation” rather than “invention” to describe novel creations that serve social needs. Traditional patent parlance distinguishes between “invention,” which refers to creating a new technology, and “innovation,” which entails all of the processes of developing that technology into a commercial product.⁵ However, within

accounts, international labor standards, microfinance, socially responsible investing, and supported employment as examples of social innovations).

4. See *infra* notes 60–67 and accompanying text.

5. See Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1038–39 (1989).

the literature on social innovation, the term “innovation” intrinsically encompasses not just the creation of a new idea but its implementation. The term “invention,” thus has little meaning in the social innovation context, for ideas without practical application have no social value. Second, this Article focuses primarily on social innovations rather than the entrepreneurs who champion them or the enterprises that give them institutional form.⁶ While this Article will certainly address social entrepreneurs and enterprises, its emphasis on the innovations themselves will offer the cleanest comparison to the inventions that fall within the realm of patent protection. Third, although this Article focuses on social innovation, it posits no sharp distinction between this field of creativity and more traditional forms of technological innovation protected by the patent system. Indeed, this Article argues that underlying innovation dynamics are often generalizable across many overlapping contexts. As such, labels signifying “social” and “technological” innovation reflect differences of emphasis and degree rather than fundamental differences of kind.

Turning from the descriptive to the prescriptive, this Article proposes several mechanisms for accelerating social innovations. In so doing, it helps fill a significant gap in the literature, for “[w]hile national strategies abound to support innovation in business and technology, no comparable strategies at the national level exist to understand and support social innovation.”⁷ In so doing, it draws upon a rich body of scholarship comparing the relative merits of exclusive rights, public funding, prizes, and other inducement mechanisms to promote innovation.⁸ Although it argues against extending formal intellectual property rights to social innovations, this Article applies several IP-related insights for promoting such innovation. In particular, it argues that public and private funding, robust social capital markets, and strengthened infrastructure can significantly accelerate social innovation. It further draws from the theory of the firm to suggest organizational strategies for spreading social innovations, and it argues for harnessing the power of user innovation and commons-based peer production to promote this valuable activity. In reciprocal fashion, this Article shows that social innovation has much to

6. Charles Leadbeater, *Social Enterprise and Social Innovation: Strategies for the Next Ten Years* 6 (Office of the Third Sector, Working Paper, 2007) (“Should the focus of policy be on social entrepreneurs (a type of person), social enterprise (a type of organisation), social innovation (an activity or process) or social impact (a goal or outcome)?”).

7. Mulgan, *supra* note 2, at 147.

8. *See infra* Part III.

teach policy makers about accelerating more traditional types of technological innovation. In particular, it argues that technology law and policy should focus more on fostering communities of creativity, providing productivity-enhancing infrastructure, and funding not just invention, but the implementation, replication, and extension of existing technologies.

At a theoretical level, this Article advances two related critiques of the patent system in laying a foundation for a more holistic innovation law and policy framework. First, it argues that patent law reflects—and scholarly discourse has adopted—a rather crabbed, narrow conception of innovation. Patent law’s pervasive focus on discrete inventorship, novelty, and traditional categories of technology neglects other significant expressions of human ingenuity. Although semiconductors and pharmaceuticals are clearly valuable (and other patentable technologies, such as improved toilet seats, may not be), strategies to combat homelessness or reduce childhood malnutrition certainly are as well. And while the former receive significant policy attention and public subsidy both within and outside of the patent system, the latter do not.

Second and relatedly, this Article advances a distributive critique of an innovation framework that is heavily based on markets.⁹ According to classic patent theory, patents help resolve market failure in the production of technology by providing rights to exclude.¹⁰ Among its other virtues, the patent system is often extolled as a neutral platform in which the market—rather than a government entity—determines the allocation of resources for technological development. But markets are not neutral platforms; they ration access to technology based on ability to pay rather than other potential criteria. As commentators have long observed, a market-based, “efficient” allocation of resources may correlate with a high degree of distributive inequality.¹¹ In addition, markets not only apply

9. Historically, IP scholars have primarily asserted distributive critiques in the context of international intellectual property law. See generally Keith Aoki, *Distributive and Syncretic Motives in Intellectual Property Law (with Special Reference to Coercion, Agency, and Development)*, 40 U.C. DAVIS L. REV. 717 (2007); Anupam Chander & Madhavi Sunder, *The Romance of the Public Domain*, 92 CALIF. L. REV. 1331 (2004); Margaret Chon, *Intellectual Property and the Development Divide*, 27 CARDOZO L. REV. 2821 (2006). However, domestic innovation law and policy is also subject to such critiques. See, e.g., Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 978 (2012); Peter Lee, *Toward a Distributive Commons in Patent Law*, 2009 WIS. L. REV. 917 [hereinafter Lee, *Distributive Commons*].

10. See Lee, *Distributive Commons*, *supra* note 9, at 928.

11. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 5 (1960); Chon, *supra* note 9, at 2832 (“Over-reliance on utility-maximization ignores distributional consequences.”). Of course, in addition to not prioritizing distributive equity, market-based allocations are not necessarily efficient, either. See Kapczynski, *supra* note 9, at 978–79.

value-laden criteria to select who gets existing innovations, they also determine the *kinds* of innovations that society develops in the first place.¹² Quite simply, markets select for innovations that are valued in markets.¹³ Thus, even assuming an effective patent system that provides robust exclusive rights, a market-based framework for driving innovation will not adequately address the needs of the poor and underprivileged.

This Article proceeds in four Parts. Part I explores the underappreciated phenomenon of social innovation. It describes several factors that characterize innovations as “social,” illustrating them through empirical case studies of CBT, microfinance, and strategies to reduce hospital-based MRSA infections. Part II then compares social innovation with patent law’s conception of protectable innovation. Whereas patent law views protectable innovation as individualistic, discrete, and novel, much social and technological innovation is communal, difficult to demarcate with clear boundaries, and is not strictly new. Part III turns to prescriptions and explores mechanisms for enhancing social innovation. It cautions against extending exclusive rights to social innovations and draws on comparative institutional analysis to argue in favor of public and private funding as well as strengthened networks, incubators, and organizational strategies to accelerate such innovation. It also draws upon the literature on user innovation and commons-based peer production to suggest mechanisms for promoting this valuable activity. Part IV builds a foundation for a more holistic innovation law and policy framework. It first shows how efforts to promote technological development would benefit from several insights arising from social innovation, including greater emphasis on communal creativity, infrastructure, and implementing, replicating, and extending existing technologies. Furthermore, it argues for pluralizing the values served by innovation law and policy and addressing distributive needs that are neglected by market-based allocation.

12. See Kapczynski, *supra* note 9, at 978 (“In an IP system, price influences not only who has access to such goods, but also which goods are produced in the first place.”).

13. Leadbeater, *supra* note 6, at 12 (“Markets will often not address the needs of the hardest to reach, poorest consumers, especially those with special needs because there is no profit to be made from serving these consumers.”); see also ORG. FOR ECON. CO-OPERATION AND DEV., FOSTERING INNOVATION TO ADDRESS SOCIAL CHALLENGES 9 (2011) [hereinafter OECD, FOSTERING INNOVATION] (“Market processes and the ‘invisible hand’ are, even more than in other innovation activities, inefficient to co-ordinate these innovation activities that aim directly to address social challenges.”); cf. Brett M. Frischmann, *The Pull of Patents*, 77 *FORDHAM L. REV.* 2143, 2160 (2009) (arguing that patents can influence university research systems to produce outputs that are responsive to markets).

I. SOCIAL INNOVATION

A. Characterizing Social Innovation

Part of the challenge of analyzing social innovation entails defining what that term means. Various definitions abound,¹⁴ and the category of “social innovations” can be so capacious as to encompass developments as diverse as the emergence of mass media, feminism, private property rights, the International Monetary Fund, and the Boy Scouts.¹⁵ This Article does not provide a bright-line definition of social innovation, and it questions whether a crisp definition exists.¹⁶ Rather than offer a categorical definition, this Article contends that the “social” nature of an innovation is a question of degree dependent on several factors. This Article characterizes innovations as “social” based on the degree to which they

14. See OECD, FOSTERING INNOVATION, *supra* note 13, at 13 (“‘Social innovation’ itself is manifold and its definition is hardly consolidated nowadays.”); Eduardo Pol & Simon Ville, *Social Innovation: Buzz Word or Enduring Term?*, 38 J. SOCIO-ECON. 878, 881 (2009) (“Generally speaking, no agreed definition of ‘social innovation’ exists.”); see, e.g., OECD, FOSTERING INNOVATION, *supra* note 13, at 13 (“Social innovation refers to a group of strategies, concepts, ideas and organizational patterns with a view to expand and strengthen the role of civil society in response to the diversity of social needs (education, culture, health).”); S. Barley, *Editor’s Note*, STAN. SOC. INNOVATION REV., Spring 2003, at 1, 1–2 (defining social innovation as “the process of inventing, securing support for, and implementing novel solutions to social needs and problems”); Mulgan, *supra* note 2, at 146 (“Social innovation refers to innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly diffused through organizations whose primary purposes are social.”); Mumford, *supra* note 2, at 253 (“The term social innovation, as used here, refers to the generation and implementation of new ideas about how people should organize interpersonal activities, or social interactions, to meet one or more common goals.”); Phills Jr. et al., *supra* note 3, at 36 (“[W]e redefine social innovation to mean: A novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals.”) (italics removed); Julia Gerometta et al., *Social Innovation and Civil Society in Urban Governance: Strategies for an Inclusive City*, 42 URB. STUD. 2007, 2007 (2005) (defining social innovation with reference to “the satisfaction of human needs . . . ; changes in social relations especially with regard to governance . . . ; and an increase in the socio-political capability and access to resources”); see generally Pol & Ville, *supra* note 14, at 878–80 (describing various conceptions of social innovation related to institutional change, serving social purposes, serving the public good, and addressing market gaps).

15. Mulgan et al., *supra* note 2, at 4 & 50 n.A; Michael D. Mumford & Peter Moertl, *Cases of Social Innovation: Lessons from Two Innovations in the 20th Century*, 15 CREATIVITY RES. J. 261, 261 (2003); H. Peyton Young, *The Dynamics of Social Innovation*, 108 PROC. NAT’L ACAD. SCI. U.S. AM. 21285, 21285 (2011); see Peter F. Drucker, *Social Innovation—Management’s New Dimension*, 20 LONG RANGE PLAN. 29, 31–32 (1987).

16. Cf. *Social Innovation*, CENTRE FOR SOCIAL INNOVATION, <http://social.innovation.ca/about/social-innovation>, archived at <http://perma.cc/SE4D-59QY> (“Definitions of social innovation abound and a casual observer can quickly become entangled in a debate over meaning and nuance. We’re not too hung up about it so we’ve adopted a simple working definition: Social innovation refers to the creation, development, adoption, and integration of new concepts and practices that put the planet first. Social innovations resolve existing social, cultural, economic and environmental challenges.”).

substantively serve the public interest, are widely accessible within a target community, and produce changes in individual or institutional behavior.

First, innovations can be “social” in the sense that they aim to enhance social welfare. This is a complex inquiry, for just about every innovation—such as a streamlined method of texting—enhances social welfare. Social innovations, however, address more substantive human needs than ordinary consumer preferences.¹⁷ Classic subjects of social innovation include health, safety, education, homelessness, crime prevention, environmental protection, racial and gender discrimination, and inequality in economic opportunity.¹⁸ Both impact and motivation are important in characterizing an innovation as social. In general, the primary motivation of a social innovation is to enhance public welfare rather than to maximize financial returns, thus distinguishing these innovations from typical commercial ventures.¹⁹ This is a complicated inquiry, however, because even nonprofits are concerned with cost recovery, and many for-profit entities generate social innovations that support their profit-making objectives.²⁰ As a general matter, however, a social entrepreneur “[i]s encouraged to produce social impact with a selfless, entrepreneurial intelligence and innovative drive.”²¹ Social innovations aim to create social rather than market value.²²

17. Cf. JOHN STUART MILL, UTILITARIANISM 55–58 (Roger Crisp ed., 1998) (proposing a hierarchy of pleasures in contradistinction to hedonistic utilitarianism, which does not rank-order preferences).

18. See, e.g., Phills Jr. et al., *supra* note 3, at 38 (listing “justice, fairness, environmental preservation, improved health, arts and culture, and better education” as objects of social innovation); cf. Leadbeater, *supra* note 6, at 6 (“[Social enterprise deals with] social justice, inequality and inclusion; community integration; environment; trade justice and development.”).

19. Filipe Santos et al., *The Life Cycle of Social Innovations*, in SOC. INNOVATION, CSR, SUSTAINABILITY, ETHICS & GOVERNANCE, at 183, 185 (Thomas Osburg & René Schmidpeter eds., 2013) (“Social entrepreneurs do not focus on value capture for themselves or their organization, but rather on improving the world and creating value in a particular domain of the society that they feel passionate about improving.”). But see Roger L. Martin & Sally Osberg, *Social Entrepreneurship: The Case for Definition*, STAN. SOC. INNOVATION REV., Spring 2007, at 29, 34 (arguing that commercial entrepreneurs, like social entrepreneurs, are motivated primarily by the psychic reward of exploiting a new opportunity rather than by profits).

20. See, e.g., Drucker, *supra* note 15, at 29–30 (describing General Electric’s pioneering model of team-oriented, multidisciplinary research, which both served profit motives as well as became a widely emulated social innovation); Rosabeth Moss Kanter, *From Spare Change to Real Change: The Social Sector as Beta Site for Business Innovation*, HARV. BUS. REV., May–June 1999, at 122, 124, 126–27 (describing Bell Atlantic’s “beta testing” of a computer network in a New Jersey school system); Rajdeep Sengupta & Craig P. Aubuchon, *The Microfinance Revolution: An Overview*, 90 FED. RES. BANK OF ST. LOUIS REV. 9, 15 (2008) (describing Banco Solidario, a for-profit microfinance entity).

21. OECD, FOSTERING INNOVATION, *supra* note 13, at 13.

22. Phills Jr. et al., *supra* note 3, at 39.

Second, innovations can be “social” in the sense that their outputs are widely available to the public at large or a target community. Such is the case with classic social innovations such as community policing²³ or strategies to reduce homelessness,²⁴ which aim for wide accessibility within a particular community. Some social innovations even attain the status of public goods,²⁵ such as lending libraries, which Benjamin Franklin pioneered in the eighteenth century.²⁶ More recently, some have characterized Wikipedia as a social innovation due in part to its broad accessibility.²⁷ Wide access thus helps distinguish social innovations from other creations that may also enhance social welfare. For example, a cholesterol-reducing drug produced by a for-profit pharmaceutical company enhances public welfare, but if the company sells it at supracompetitive prices, it would be difficult to characterize it as a social innovation. By contrast, the affordable treatments produced by OneWorld Health, which uses underutilized intellectual property to develop treatments for diseases in low-income countries, are more characteristic of social innovations.²⁸

Along similar lines, although social innovations aim for wide availability, they are not necessarily incompatible with the exclusivity inherent in intellectual property. Indeed, some social innovations arise at the intersection of public interest objectives and exclusive rights. For example, the Public Intellectual Property Resource for Agriculture (PIPRA) represents a “consortium of over forty universities and research institutions . . . [which] aggregates and licenses agriculture-related patents for exploitation in the developing world.”²⁹ Furthermore, the Orphan Drug Act provides for exclusive rights to motivate parties to develop treatments

23. See George L. Kelling & James Q. Wilson, *Broken Windows*, ATLANTIC, Mar. 1, 1982, at 29, 29, available at <http://www.theatlantic.com/magazine/archive/1982/03/broken-windows/304465/>.

24. See *Community Voice Mail*, SPRINGWIRE, <http://www.cvm.org/our-work/community-voice-mail/> (last visited Oct. 10, 2014) (describing an innovative program to provide free voice mail to homeless individuals to help obtain jobs, housing, and social services).

25. In economic terms, a public good is nonrival (additional consumption of the resource does not diminish its availability for others) and nonexcludable (absent legal intervention, it is not easy to naturally exclude others from consuming the resource). Although all social innovations aim for wide accessibility within a target population, restrictions on the boundaries of that population may preclude a social innovation from achieving the status of a public good. For instance, a program to provide free voice mail accounts to homeless individuals would not constitute a public good, as it is restricted to individuals meeting the program criteria.

26. Mumford, *supra* note 2, at 257–58.

27. Leadbeater, *supra* note 6, at 9.

28. *Id.* at 10.

29. Richard C. Atkinson et al., *Intellectual Property Rights: Public Sector Collaboration for Agricultural IP Management*, 301 SCIENCE 174, 175 (2003); Lee, *Distributive Commons*, *supra* note 9, at 984.

for rare diseases.³⁰ On a somewhat related note, the United States Patent & Trademark Office (USPTO) has created the Patents for Humanity program, which utilizes various rewards to “incentivize the distribution of patented technologies to address humanitarian needs.”³¹

Third, innovations can be “social” in the sense that they change interpersonal interactions and social relations. One commentator has defined social innovation as “the generation and implementation of new ideas about how people should organize interpersonal activities, or social interactions, to meet one or more common goals.”³² The classic social innovation is usually not a discrete device, such as a toothbrush, even though it may significantly enhance social welfare. Rather, a novel program for demonstrating proper brushing techniques and dental health care in at-risk communities would satisfy this aspect of shaping social relations. Accordingly, social innovations tend to be processes, services, and programs rather than physical products.³³ For example, San Francisco’s First Offenders of Prostitution Program (FOPP) provides education and counseling to first-time solicitors of prostitution, thus diverting them from the court system. FOPP explicitly seeks behavioral change on the part of its participants, who exhibit a very low recidivism rate.³⁴ Another example of a social innovation that changes interpersonal interactions is the “Living Room Restaurant” program in the Netherlands, which encourages elderly people to host strangers for communal dinners in their homes.³⁵ This innovation helps combat social isolation and facilitates intergenerational interaction. Extrapolating beyond local programs, some social innovations transform behavioral patterns on a

30. Orphan Drug Act, Pub. L. No. 97-414, 96 Stat. 2049 (1983); Verification of Orphan Drug Status, 21 C.F.R. § 316.2 (2004) (offering exclusive rights on treatments for diseases that affect less than 200,000 U.S. citizens).

31. Humanitarian Awards Pilot Program, 77 Fed. Reg. 6544, 6544 (Feb. 8, 2012) (describing the initiative that was later renamed the Patents for Humanity program).

32. Mumford, *supra* note 2, at 253.

33. There are, of course, exceptions, particularly where a certain product deeply impacts social relations and economic prospects. For example, KickStart is an African venture that manufactures the MoneyMaker foot-operated irrigation pump, which is a low-cost solution that has helped generate 41,000 profitable new businesses since 1993. Clayton M. Christensen et al., *Disruptive Innovation for Social Change*, HARV. BUS. REV., Dec. 2006, at 94, 100.

34. See Ellyn Bell & Mollie King, *The First Offender Prostitution Program 4* (The SAGE Project, White Paper, 2013), available at http://sagesf.org/sites/default/files/FOPP_White_Paper_revised.pdf.

35. See *Living Room Restaurant*, EMUDE CREATIVE COMMUNITIES (Apr. 3, 2013), <http://www.sustainable-everyday-project.net/emude/2013/04/03/living-room-restaurant/>, archived at <http://perma.cc/BR24-V5GZ>.

massive scale, as seen in the introduction of charter schools,³⁶ fair trade,³⁷ and local police and fire services.³⁸

Related to their “social” nature, many social innovations have an explicitly distributive character. As a preliminary matter, social innovations can also promote efficiency by mitigating classic market failure.³⁹ The inability of parties to adequately internalize positive externalities can depress incentives to invent, thus creating market failure in the production of anything from semiconductors to strategies to reduce MRSA infections.⁴⁰ While intellectual property rights are one mechanism to address such market failure, the altruistic motivations and public funding that drive social innovations are another. Beyond efficiency considerations, however, social innovations often play a distributive role in shifting resources to underserved communities. Social innovations address underserved markets, such as when microfinance entities provide loans to populations who do not qualify for traditional financing. Going further, social innovations sometimes provide essential goods and services to entirely neglected populations on a charitable basis.⁴¹ For example, Springwire is a Seattle-based nonprofit that offers Community Voice Mail, which provides homeless individuals with private, local phone numbers and associated voice mail accounts that they can check anytime for free.⁴² The ability to distribute contact information and receive voice mail is instrumental in helping participants find jobs, housing, and social services. Springwire’s work thus reflects the distributive nature of social innovations that shift resources to an underserved community.

In addition to addressing deficiencies in the market, social innovations also help address deficiencies in political decision making.⁴³ It is almost

36. Phills Jr. et al., *supra* note 3, at 40.

37. *Id.*

38. Mumford, *supra* note 2, at 257–58.

39. ORG. FOR ECON. COOPERATION AND DEV., SMES, ENTREPRENEURSHIP AND INNOVATION 214 (2010), <http://www.oecd.org/menu/investment/44936057.pdf> [hereinafter OECD, ENTREPRENEURSHIP].

40. See Phills Jr. et al., *supra* note 3, at 39 (“It is only when markets fail—in the case of public goods—that social innovation becomes important as a way to meet needs that would not otherwise be met and to create value that would not otherwise be created.”).

41. See, e.g., Gerometta et al., *supra* note 14, at 2012 (“Social innovation is key to countering trends of social exclusion and to fostering social inclusion processes.”).

42. *Community Voice Mail*, *supra* note 24.

43. See Leadbeater, *supra* note 6, at 3 (“The way social enterprises operate is often, at least implicitly, a critique of the limitations of public service provision.”); Guillermo Casanovas & Albert V. Bruno, *Scaling Social Ventures: An Exploratory Study of Social Incubators and Accelerators*, 2 J. MGMT. GLOBAL SUSTAINABILITY 173, 174 (2013).

tautological that the preferences of poor people are underrepresented in the market. Though not as intuitive, the same is also true for the political process. A rich literature has demonstrated that legislatures tend to respond to well-organized, well-funded political interests,⁴⁴ which do not commonly represent the concerns of poor people. After all, well-heeled lobbies do not typically champion strategies to combat homelessness. Social innovations thus address political failure, when governments ignore social problems due to the marginal political status of underprivileged communities.⁴⁵

Of course, to say that social innovations address deficiencies in market and governmental allocation is not to say that they proceed outside of the market or government. The market is a robust source of social innovation.⁴⁶ “Social enterprises” meld business operations and strategies with public ends,⁴⁷ and socially responsible business has been a fount of innovation.⁴⁸ Furthermore, certain businesses that provide lower cost services to underserved market segments bear some of the characteristics of social innovations.⁴⁹ For example, Freelancers Union is aggregating contractors, consultants, part-time workers, temps, and others in the New York area to provide low-cost health insurance.⁵⁰ Similarly, the HealthStore Foundation in Kenya trains residents in rural areas to provide basic health care services.⁵¹ Such social innovations “are in the market and yet against it at the same time.”⁵² Additionally, government is also a source of social innovation.⁵³ For example, In Control is a joint venture between the UK Department of Health and Mencap that allocates

44. See, e.g., MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 141–48 (1965) (describing the influence of business lobbies in government).

45. See Santos et al., *supra* note 19, at 186 (“In this case, markets tend to fail due to the externalities while governments tend to ignore these needs due to the little voice that disadvantaged populations have.”).

46. Pol & Ville, *supra* note 14, at 880 (disputing any bright line distinguishing social from business innovations).

47. Sarah H. Alvord et al., *Social Entrepreneurship and Societal Transformation*, 40 J. APPLIED BEHAV. SCI. 260, 262 (2004).

48. See Leadbeater, *supra* note 6, at 12 (listing examples of socially responsible businesses).

49. See generally Christensen et al., *supra* note 33, at 96.

50. *Id.* at 97–98.

51. *Id.* at 99–100.

52. Leadbeater, *supra* note 6, at 2.

53. See generally Zachary Tumin & Archon Fung, *From Government 2.0 to Society 2.0: Pathways to Engagement, Collaboration and Transformation*, BELFER CENTER (2011), <http://www.innovations.harvard.edu/cache/documents/19773/1977353.pdf> (describing numerous innovations in government); see INNOVATESF (2013), <http://innovatesf.com/> (describing innovation initiatives within San Francisco government).

individual health budgets and intensive support to patients.⁵⁴ This represents an innovative twist on the provision of public services by empowering patients to decide how to spend their money.⁵⁵ More generally, outside parties routinely recognize government innovation with high-profile awards.⁵⁶

Although there are many axes upon which to order social innovations, two are particularly useful for the current analysis. The first is the degree of abstraction at which the social innovation is described. Social innovations run the gamut from large, abstract “movements,” such as the environmental movement, to concrete programs that affect a local community, such as Jamie Oliver’s UK program for training underprivileged youths in catering.⁵⁷ The second is the degree to which a social innovation is oriented toward market activities.⁵⁸ As mentioned, many social innovations take place within the market and explicitly fill gaps in the economy. For example, Project Impact, a social enterprise in San Francisco, distributes digital hearing aids at significantly lower costs in the developing world.⁵⁹ At the other end of the spectrum are social innovations that do not directly address commercial interests (although they may have long-term economic effects), such as CBT or techniques to reduce hospital-based infections.

54. Leadbeater, *supra* note 6, at 11.

55. *Id.*

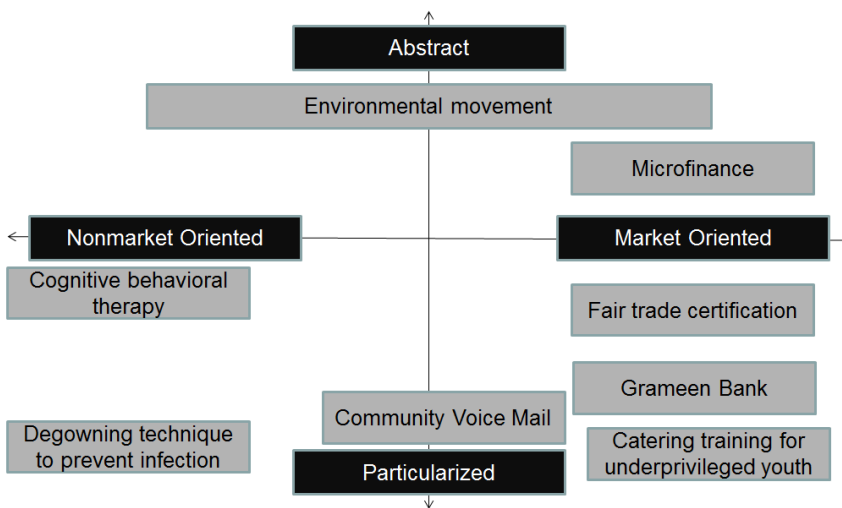
56. See *Innovations in American Government Awards*, ASH CTR. FOR DEMOCRATIC GOVERNANCE AND INNOVATION (2014), <http://www.ash.harvard.edu/Home/Programs/Innovations-in-Government/Awards>.

57. Leadbeater, *supra* note 6, at 2.

58. See *infra* Figure 1.

59. Leadbeater, *supra* note 6, at 12.

FIGURE 1: EXAMPLE OF MAPPING SOCIAL INNOVATIONS



In exploring social innovation, it is useful to compare it to other forms of creativity that proceed on the margins of formal intellectual property law.⁶⁰ For instance, patent scholars have examined academic sharing norms that facilitate wide access to research findings, thus promoting scientific productivity.⁶¹ In the copyright realm, Christopher Sprigman and his colleagues have examined highly creative processes in the fashion and stand-up comedy industries that unfold largely outside of formal exclusive rights.⁶² Similar studies of cuisine,⁶³ magic,⁶⁴ roller derby,⁶⁵ tattoos,⁶⁶ and

60. See Rochelle Cooper Dreyfuss, *Does IP Need IP? Accommodating Intellectual Production Outside the Intellectual Property Paradigm*, 31 CARDOZO L. REV. 1437, 1437–38 (2010) [hereinafter Dreyfuss, *Does IP Need IP?*].

61. See, e.g., Eisenberg, *supra* note 5, at 1017–18; Robert Merges, *Property Rights Theory and the Commons: The Case of Scientific Research*, 13 SOC. PHIL. & POL'Y 145, 164–65 (1996); Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 NW. U. L. REV. 77, 79–80 (1999).

62. See Dotan Oliar & Christopher Sprigman, *There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-up Comedy*, 94 VA. L. REV. 1787, 1789–91 (2008); Kal Raustiala & Christopher Sprigman, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, 92 VA. L. REV. 1687, 1689–92 (2006).

63. Christopher J. Buccafusco, *On the Legal Consequences of Sauces: Should Thomas Keller's Recipes Be Per Se Copyrightable?*, 24 CARDOZO ARTS & ENT. L.J. 1121, 1122–24 (2007).

64. Jacob Loshin, *Secrets Revealed: Protecting Magicians' Intellectual Property Without Law*, in *LAW AND MAGIC: A COLLECTION OF ESSAYS* 123 (Christine A. Corcos ed., 2010).

65. David Fagundes, *Talk Derby to Me: Intellectual Property Norms Governing Roller Derby Pseudonyms*, 90 TEX. L. REV. 1093, 1097–99 (2012).

66. Aaron Perzanowski, *Tattoos & IP Norms*, 98 MINN. L. REV. 511, 512–14 (2013).

the adult entertainment industry⁶⁷ demonstrate that even in the absence of formal or effective intellectual property rights, creators still engage in a significant degree of innovation.

Social innovation is both similar to and different from these other forms of “innovation without IP.” In many of these domains, creators seek informal proprietary claims even in the absence of formal exclusive rights. For example, in the stand-up comedy and roller derby realms, reputational costs provide powerful incentives against misappropriating other people’s jokes and trade names.⁶⁸ Social innovations are different in that many (though perhaps not all) social entrepreneurs welcome wide adoption of their innovations.⁶⁹ In this sense, the motivations of social entrepreneurs are more akin to scientists who freely publish their findings in order to promote communal progress.⁷⁰ Here again, however, there are differences. The scientific commons achieves its objectives by providing a repository of knowledge from which all can draw. As we will see, however, parties can seldom transfer social innovations merely by passively making information public.⁷¹ The highly relational and contextual nature of social innovations demands a significant degree of “personal touch” to spread such innovations.

Perhaps the best way to elucidate social innovations is by discussing specific examples.⁷² Case studies of CBT, microfinance, and strategies to reduce MRSA infections illustrate the “social” nature of such innovations in terms of objectives, outputs, and modifying human behavior. Furthermore, they also provide an empirical basis for comparing social innovation with patent law’s conception of protectable innovation, which this Article will explore in the following Part.

67. Kate Darling, *What Drives IP Without IP? A Study of the Online Adult Entertainment Industry*, STAN. TECH. L. REV. (forthcoming) (manuscript at 4–6) (available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2198934).

68. See, e.g., Oliar & Sprigman, *supra* note 62, at 1790 (“[I]n stand-up comedy, social norms substitute for intellectual property law.”); *id.* at 1791 (discussing reputation costs in stand-up comedy); Fagundes, *supra* note 65, at 1123 n.155.

69. This phenomenon may be understood as a different kind of “piracy paradox” than the one that Raustiala and Sprigman describe in the fashion industry. See Raustiala & Sprigman, *supra* note 62, at 1691–92. Traditionally, designers in the fashion industry have begrudgingly tolerated piracy. In the social innovation context, however, “piracy” in the sense of copying is often welcomed.

70. See Michael Polanyi, *The Republic of Science: Its Political and Economic Theory*, 1 MINERVA 54, 54 (1962) (describing an autonomous scientific community with a high degree of internal communication).

71. See *infra* notes 213–26 and accompanying text.

72. Cf. Mumford & Moertl, *supra* note 15, at 261 (stating that a historic case study approach is “particularly well suited to studying complex, multifaceted phenomena such as social innovation”).

B. Case Studies

1. Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) encompasses a set of psychological techniques for modifying cognition, mood, and behavior.⁷³ As with many social innovations, the history of CBT reveals a long process of evolution and many formative influences. CBT has roots in behaviorism, a psychological movement prominent in the early twentieth century that focused on observable behaviors of people and animals. Early behaviorism focused on theories of learning,⁷⁴ and behavioral therapy, which encompasses strategies to “unlearn” fears through behavior modification, represents one of CBT’s key intellectual foundations.⁷⁵ CBT arose from the merger of the behaviorist tradition with the “cognitive revolution”⁷⁶ of the mid-twentieth century, which placed greater emphasis on the interior thoughts of patients rather than observable behavior.⁷⁷ Aaron Beck and Albert Ellis are widely credited with proposing CBT in the 1960s.⁷⁸ Researchers tested CBT throughout the 1970s and subsequently disseminated it through policy and professional networks.⁷⁹

CBT reflects many of the characteristics of social innovations. First, it addresses the substantive human need for mental health and well-being. CBT has proven to be a highly effective treatment for unipolar depression,

73. See Douglas S. Mennen et al., *United We Stand: Emphasizing Commonalities Across Cognitive-Behavioral Therapies*, 44 BEHAV. THERAPY 234, 234 (2013) (“[CBTs] constitute a family of clinical interventions designed to produce behavior change.”).

74. David M. Clark, *Developing New Treatments: On the Interplay Between Theories, Experimental Science and Clinical Innovation*, 42 BEHAV. RES. & THERAPY 1089, 1090 (2004).

75. See Stanley Rachman, *The Evolution of Cognitive Behaviour Therapy*, in SCIENCE AND PRACTICE OF COGNITIVE BEHAVIOUR THERAPY 3, 6–7 (David M. Clark & Christopher G. Fairburn eds., 1997) (describing behaviorism in the United States and United Kingdom).

76. Mennin et al., *supra* note 73, at 234–35.

77. See Aaron T. Beck, *Cognitive Therapy: Nature and Relation to Behavior Therapy*, 1 BEHAV. THERAPY 184, 184–86 (1970) (discussing the commonalities of behavior and cognitive therapy and distinguishing them from psychoanalysis); Aaron T. Beck, *Cognitive Therapy: Past, Present, and Future*, 61 J. CONSULTING & CLINICAL PSYCHOL. 194, 197 (1993) (discussing similarities between behavior therapy and cognitive therapy). Accounts differ somewhat on the chronology of the merging of behaviorism and cognitive therapy. See, e.g., Rachman, *supra* note 75, at 3–4. In significant part, CBT also reflected a rejection of the “unfalsifiable” tenets of psychoanalysis and a desire to develop an empirically and scientifically rigorous approach to treating mental illness. See *id.* at 10–11.

78. See Clark, *supra* note 74, at 1092 (pointing to Beck’s “key intellectual move” of proposing that negative thoughts were not simply a symptom of depression, but a key factor in sustaining the disease); see also Rachman, *supra* note 75, at 13 (detailing the importance of Beck and Ellis in propagating CBT).

79. Mulgan, *supra* note 2, at 146.

anxiety disorders, and eating disorders, among other conditions.⁸⁰ Furthermore, the cognitive and affective neuroscience literature has helped validate CBT's underlying theory, demonstrating that therapy is associated with changes in physiological activity in the brain.⁸¹ In terms of motivations, there is no indication that the prospect of financial return played a significant role in the development of CBT. The framers of CBT genuinely sought a more effective way to ameliorate mental illness.⁸² Second, although CBT involves the costly expertise of a therapist, it is widely available in the sense that it is not subject to exclusive rights. Indeed, a cottage industry of books has attempted to disseminate CBT broadly throughout the general public.⁸³ Third, CBT is social both because it seeks to instill behavioral change and because it unfolds in the context of an extended interaction between therapist and patient.⁸⁴

Like many social innovations, it can be difficult to clearly demarcate the boundaries of CBT. It does not represent a single treatment protocol but refers to a family of related techniques that share a similar cognitive model of intervention.⁸⁵ Indeed, commentators distinguish between "traditional" CBTs and a host of "recent" CBTs, and new offshoots such as Acceptance and Commitment Therapy (ACT) are stretching the boundaries of CBT.⁸⁶ Furthermore, there is little standardization of care, as many therapists pick and choose from treatment protocols as they see fit and mix CBT with other interventions.⁸⁷

Also typical of social innovations, CBT has faced significant challenges of dissemination. Although CBT is more cost-effective than other treatments for mental illness,⁸⁸ the large advertising budgets that help

80. R. Shafran et al., *Mind the Gap: Improving the Dissemination of CBT*, 47 BEHAV. RES. & THERAPY 902, 902 (2009).

81. Stefan G. Hofmann et al., *The Science of Cognitive Therapy*, 44 BEHAV. THERAPY 199, 203 (2013). While Hofmann et al. use the term "cognitive therapy," that term can be understood as interchangeable with CBT. See, e.g., *History of Cognitive Therapy*, BECK INST. FOR COGNITIVE BEHAV. THERAPY, <http://www.beckinstitute.org/history-of-cbt/>, archived at <http://perma.cc/5GLW-7YDX> (last visited Oct. 10, 2014).

82. Cf. Stephen G. Weinrach, *Cognitive Therapist: A Dialogue with Aaron Beck*, 67 J. COUNSELING & DEV. 159, 159 (1988) (interviewing one of the founders of CBT, Aaron Beck).

83. See, e.g., DAVID D. BURNS, *THE FEELING GOOD HANDBOOK* (1999).

84. Weinrach, *supra* note 82, at 160 (interviewing Aaron Beck, who describes a typical twelve to sixteen week regimen of psychotherapy).

85. Hofmann et al., *supra* note 81, at 206; Mennin et al., *supra* note 73, at 236.

86. Compare Hofmann et al., *supra* note 81, at 201 (describing theoretical differences between ACT and CBT but noting the two approaches are not necessarily inconsistent), with Mennin et al., *supra* note 73, at 235 (characterizing ACT as part of the current expansion of CBTs).

87. Shafran et al., *supra* note 80, at 905.

88. *Id.* at 903; cf. Hofmann et al., *supra* note 81, at 199 ("[P]rovision of CT for common mental disorders is more cost-efficient than pharmacotherapy or other interventions.").

drug companies market pharmacotherapies are absent for CBT.⁸⁹ Furthermore, notwithstanding empirical evidence, some mental health professionals are skeptical of the applicability of CBT to clinical practice.⁹⁰ Beyond CBT, new psychological techniques generally face difficulties of dissemination, particularly across professional and cultural lines. For instance, one study characterized health services as “tribal,” noting the resistance of speech pathologists to adopt treatments developed by psychiatrists and psychologists.⁹¹ Oftentimes, successful dissemination requires “personal contact between the innovators and adopters if change is to happen.”⁹² This need for interpersonal interaction to spread a new practice is a consistent theme applying to many social innovations.

2. Microfinance

Microfinance also reflects many of the characteristics of social innovations. Microfinance refers to a variety of financial services offered to low-income individuals, often with the explicit aim of alleviating poverty by allowing borrowers to invest in revenue-generating activities.⁹³ Microfinance includes microcredit, which refers to originating and servicing loans, but also encompasses a broader suite of financial services spanning savings accounts, insurance, mortgages, and retirement plans.⁹⁴ Microfinance gained widespread prominence due to the work of Muhammad Yunus, who in 1976 lent \$27 to forty-two women who made bamboo stools in Bangladesh.⁹⁵ Yunus founded Grameen Bank, which has gone on to disburse \$9.1 billion in loans and expand to thirty-seven countries.⁹⁶ The United Nations designated 2005 as the International Year of Microcredit,⁹⁷ and Yunus and Grameen Bank jointly won the Nobel Peace Prize in 2006.⁹⁸ As of 2008, 1,000 to 2,500 microfinance institutions

89. Clark, *supra* note 74, at 1100.

90. Shafran et al., *supra* note 80, at 903.

91. Gavin Andrews & Nikolai Titov, *Hit and Miss: Innovation and the Dissemination of Evidence Based Psychological Treatments*, 47 BEHAV. RES. & THERAPY 974, 974 (2009).

92. *Id.* at 975.

93. See Anne Perkins, *A Short History of Microfinance*, GUARDIAN, June 3, 2008, available at <http://www.guardian.co.uk/katine/2008/jun/03/livelihoods.projectgoals1>; see generally Jonathan Morduch, *The Microfinance Promise*, 37 J. ECON. LIT. 1569 (1999).

94. Susanna Khavul, *Microfinance: Creating Opportunities for the Poor?*, ACAD. MGMT. PERSP., Aug. 2010, at 58.

95. Sengupta & Aubuchon, *supra* note 20, at 9.

96. Khavul, *supra* note 94, at 58.

97. J. Jordan Pollinger et al., *The Question of Sustainability for Microfinance Institutions*, 45 J. SMALL BUS. MGMT. 23, 24 (2007).

98. Sengupta & Aubuchon, *supra* note 20, at 9.

(MFIs) served approximately 67.6 million individuals in over 100 countries.⁹⁹

Microfinance is a social innovation in multiple senses of the term. First, MFIs address the serious social problem of persistent poverty; many microfinance initiatives are aimed at the estimated 2.8 billion people who live on less than \$2 a day.¹⁰⁰ The efforts of MFIs are explicitly distributive; Grameen Bank targets the poor and overwhelmingly lends to women, who comprise ninety-seven percent of borrowers.¹⁰¹ Second, while some MFIs, such as Banco Solidario in Bolivia, aim to earn a profit,¹⁰² others, like Grameen Bank, charge below-market rates to promote wide access to credit.¹⁰³ MFIs like Grameen Bank thus fill gaps in the market by serving communities that traditional banks have ignored.¹⁰⁴ Third, microfinance explicitly aims to alter social relations and human behavior. Most MFIs seek to fund wealth-generating activities, such as farming or entrepreneurship, rather than personal consumption. Furthermore, Grameen Bank has pioneered a form of “group lending,” described further below, in which borrowers influence each other in making repayments.¹⁰⁵ Finally, many MFIs are expanding beyond financial services to provide a broader range of social services to low-income borrowers, such as healthcare and educational services.¹⁰⁶

A notable aspect of microfinance, in some ways the quintessential social innovation, is that it is not really new. Traditional village savings and loan associations have operated in a similar fashion for decades.¹⁰⁷ Indonesia, for instance, “has a long history of commercial microfinance” since the emergence of village credit boards in the late nineteenth century.¹⁰⁸ And microfinance itself has evolved through several phases.

99. *Id.* at 10.

100. Khavul, *supra* note 94, at 59.

101. Sengupta & Aubuchon, *supra* note 20, at 11. The effectiveness of microfinance in alleviating poverty is subject to some debate. While Yunus claims that 5% of Grameen Bank’s borrowers leave poverty every year, empirical studies have questioned the degree to which microfinance contributes to such outcomes relative to other factors. Anis Chowdhury, *Microfinance as a Poverty Reduction Tool—A Critical Assessment* 1 (DESA Working Paper No. 89, Dec. 2009); *see* Chowdhury, *supra* at 5 (“In sum, microfinance is not a panacea for poverty reduction, which needs both complementary supply-side and demand-side factors.”).

102. Sengupta & Aubuchon, *supra* note 20, at 15.

103. *Id.* at 10.

104. *Id.* at 9; Khavul, *supra* note 94, at 59, 61; Pollinger et al., *supra* note 97, at 24.

105. *See infra* notes 111–14 and accompanying text.

106. Sengupta & Aubuchon, *supra* note 20, at 10, 14.

107. Perkins, *supra* note 93.

108. Miki Hamada, *Financial Services to the Poor: An Introduction to the Special Issue on Microfinance*, 48 DEVELOPING ECONS. 1, 10 (2010).

From the 1960s to the 1980s, microfinance focused on providing credit for small farmers subsidized by government and donors. After the 1980s, the emphasis of microcredit shifted to the poor.¹⁰⁹ In the 2000s, another shift took place toward “inclusive finance,” which extends beyond microfinance to create a more comprehensive financial system to address the needs of low-income populations.¹¹⁰

Though based on longstanding traditions, the most recent incarnation of microfinance has introduced some new innovations. One development, referred to as “Grameencredit” or more generally as “group lending,”¹¹¹ is a system of lending based on social regulation rather than collateral and enforceable contracts.¹¹² Within Grameencredit, Grameen Bank lends to borrowers self-organized into groups rather than to individuals. Whether or not some group members receive loans depends on the repayment of other members.¹¹³ Through such “associative matching,” MFIs can leverage local information about trustworthiness as well as group pressure to filter out potential credit risks and ensure high repayment rates.¹¹⁴ Such group lending further reflects the “social” nature of microfinance.

3. Combating MRSA

Strategies to combat bacterial infections in hospitals also exhibit many of the characteristics of social innovations. According to the Centers for Disease Control and Prevention, “about 1.7 million people acquire an infection while in a U.S. hospital every year, and nearly 100,000 die as a result of their infections.”¹¹⁵ A significant cause of these nosocomial (i.e., hospital-based) infections is methicillin-resistant *Staphylococcus aureus* (MRSA), a particularly virulent bacterium.¹¹⁶ MRSA infections account

109. *Id.* at 5.

110. *Id.* at 6.

111. *See id.* at 3; Khavul, *supra* note 94, at 61.

112. Sengupta & Aubuchon, *supra* note 20, at 9.

113. *Id.* at 11–12.

114. *Id.* at 12; Khavul, *supra* note 94, at 61; Hamada, *supra* note 108, at 1; Ana Marr, *Effectiveness of Rural Microfinance: What We Know and What We Need to Know*, 12 J. AGRARIAN CHANGE 555, 555–56 (2012).

115. Gina Shaw, *Mastering MRSA: Pilot Project Lowers Rates 73 Percent*, ROBERT WOOD JOHNSON FOUNDATION (Nov. 10, 2009), www.rwjf.org/reports/grr/055726.html; *see also* Marc J. Struelens & Dominique L. Monnet, *Prevention of Methicillin-Resistant Staphylococcus aureus Infection: Is Europe Winning the Fight?*, 31 INFECTION CONTROL & HOSP. EPIDEMIOLOGY, 542, 542 (2010) (describing strategies to combat MRSA infections in European hospitals).

116. Shaw, *supra* note 115, at 2; R. Monina Kleven et al., *Invasive Methicillin-Resistant Staphylococcus aureus Infections in the United States*, 298 J. AM. MED. ASS’N 1763, 1763 (2007); M. Patricia Jevons, “*Celbenin*”-Resistant *Staphylococci*, BRIT. MED. J., Jan. 14, 1961, at 124–25.

for nearly seventy-five percent of intensive care unit (ICU) *S. aureus* infections and sixty percent of non-ICU *S. aureus* infections.¹¹⁷ Although MRSA infections are a serious and challenging problem, stakeholders have developed some highly effective, low-tech, and low-cost innovations to address them. For example, healthcare institutions have promoted changes to health worker attire, conscientious “degowning” techniques, and strict hand-washing protocols to reduce MRSA infections.¹¹⁸

Techniques for reducing MRSA infections reflect many of the qualities of social innovations. First, they address a pressing health need. In 2005, approximately 94,360 people developed MRSA infections related to their hospital care, leading to 18,650 deaths.¹¹⁹ Second, such efforts are intended for broad replication. Indeed, government entities have taken the lead in widely promoting such strategies, which are typically low cost and not subject to exclusive rights.¹²⁰ For example, the UK Department of Health recognizes that it is a “good practice” for healthcare workers to “[w]ear short-sleeved shirts/blouses and avoid wearing white coats” to reduce bacterial transmissions.¹²¹ Furthermore, it discourages wearing rings, wrist jewelry, wristwatches, and neckties because of the potential for spreading microorganisms.¹²² Finally, such efforts to reduce hospital-based infections involve changing human and institutional behavior. As discussed further below, many of these innovations are not technologically advanced or expensive, but they do require altering individual and communal practices.¹²³

117. Julia Moody et al., *Infection Prevention Practices in Adult Intensive Care Units in a Large Community Hospital System After Implementing Strategies to Reduce Health Care-Associated Methicillin-Resistant Staphylococcus aureus Infections*, 41 AM. J. INFECTION CONTROL 126, 126 (2013).

118. See *infra* notes 124–28 and accompanying text. See also Amy Kapczynski & Talha Syed, *The Continuum of Excludability and the Limits of Patents*, 122 YALE L.J. 1900, 1902 (2013) (describing how a simple checklist covering well-known hygienic practices has been effective in reducing infections from central-line catheters).

119. Klevens, *supra* note 116, at 1769.

120. See, e.g., J.E. Coia et al., *Guidelines for the Control and Prevention of Methicillin-Resistant Staphylococcus aureus (MRSA) in Healthcare Facilities*, 63S J. HOSP. INFECTION S1 (2006).

121. Graham Jacob, *Uniforms and Workwear: An Evidence Base for Developing Local Policy*, DEP’T OF HEALTH 7 (2007), http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_078435.pdf; see Amy M. Treacle, *Bacterial Contamination of Health Care Workers’ White Coats*, 37 AM. J. INFECTION CONTROL 101, 101 (2009) (describing the UK Department of Health recommendations); *id.* at 103 (describing study results that health care workers’ white coats are frequently contaminated with *S. aureus*, many of which are methicillin resistant).

122. Jacob, *supra* note 121, at 9–10.

123. In this fashion, underinvestment in strategies to prevent MRSA infections may reflect distortions in private investment toward highly excludable interventions (such as patented

Notably, several strategies to combat MRSA infections are quite simple and inexpensive. Evidence suggests that clothing is a vector for transmitting MRSA¹²⁴ and that simple interventions like changing healthcare worker attire and eliminating neckties may reduce infections.¹²⁵ Other low-tech approaches involve changing degowning techniques and washing one's hands. For example, Jasper Palmer, a patient transport worker at Albert Einstein Medical Center, developed a method of removing one's gown, rolling it into a baseball-sized sphere, and then pulling one's glove over it to minimize spreading bacteria.¹²⁶ In one study at a 350-bed, tertiary hospital, introducing antimicrobial hand hygiene gel to the ICU as well as a hospital-wide MRSA surveillance program reduced the rate of MRSA infections.¹²⁷ The Institute of Healthcare Improvement recommends improved hand hygiene among several strategies to reduce MRSA and other nosocomial infections.¹²⁸

As with many social innovations, much of the challenge of combatting MRSA infections inheres not in developing some advanced technology but in translating knowledge "into social and behavioral change."¹²⁹ Combining a variety of low-tech strategies along with community buy-in, four of six healthcare centers in a pilot project saw a seventy-three percent reduction in MRSA infection rates.¹³⁰ Engaging front-line staff was particularly important to the success of these innovations.¹³¹ In one set of pilot studies, small group conversations with front-line staff, dubbed "Discovery and Action Dialogue," were critical to internalizing best practices throughout hospitals.¹³² At the Pittsburgh Regional Healthcare Initiative, a "positive deviance"¹³³ approach to instilling cultural change in

pharmaceuticals) and away from highly nonexcludable ones (such as behavioral changes). See Kapczynski & Syed, *supra* note 118, at 1937.

124. Jacob, *supra* note 121, at 6.

125. Shaw, *supra* note 115, at 4; see also Steve Nurkin, *Doctor's Neckties: A Reservoir for Bacteria?*, 104TH GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY (May 23–27, 2004); K.C. Koh et al., *High Prevalence of Methicillin-Resistant Staphylococcus aureus (MRSA) on Doctors' Neckties*, 64 MED. J. MALAY. 233, 233 (2009).

126. Shaw, *supra* note 115, at 4.

127. H. Humphreys, *Can We Do Better in Controlling and Preventing Methicillin-Resistant Staphylococcus aureus (MRSA) in the Intensive Care Unit (ICU)?*, 17 EUR. J. CLINICAL MICROBIOLOGY & INFECTIOUS DISEASES 409, 411 (2008).

128. F.M. Byrne & M.H. Wilcox, *MRSA Prevention Strategies and Current Guidelines*, 42 INJURY S3, S4 (2011).

129. Shaw, *supra* note 115, at 2.

130. *Id.* at 4; Curt Lindberg et al., *Letting Go, Gaining Control: Positive Deviance and MRSA Prevention*, 2 CLINICAL LEADER 60, 62 (2009).

131. Shaw, *supra* note 115, at 6.

132. Lindberg et al., *supra* note 130, at 63.

133. See *infra* notes 191–201 and accompanying text.

front-line staff led to a fifty percent decrease in the infection rate.¹³⁴ The Department of Veterans Affairs adopted this approach in almost all of its hospitals, and from October 2007 to June 2010, MRSA infections in ICUs at 153 hospitals dropped by forty-five percent.¹³⁵ Community buy-in was critical for effectively spreading this social innovation.

These case studies of CBT, microfinance, and strategies to combat MRSA infections reflect many of the characteristics of social innovations. They all address substantive social challenges, ranging from mental illness to persistent poverty to hospital-based infections. And while it is difficult to look inside the minds of those who developed these innovations, it is fair to say they were largely motivated by a desire to enhance social welfare rather than maximize profits. Furthermore, these innovations are all intended for wide dissemination. Although labor and resource costs (such as for therapists applying CBT) naturally constrain the availability of these innovations, none of them is subject to formal exclusive rights. Furthermore, these innovations are “social” in that they seek to change human behavior and social relations. This is a vibrant, incredibly valuable arena of innovation, and yet it largely proceeds outside of the patent system. Indeed, the empirical reality of social innovation helps illustrate the narrow and highly particularized conception of innovation embedded in patent law, a phenomenon which the next Part explores.

II. INNOVATION WITHIN AND BEYOND THE PATENT PARADIGM

This Part draws on the previous discussion to compare and contrast social innovation with patent law’s conception of legally protectable innovation. The objective of this Part is not to lay a foundation for extending patent protection to social innovations.¹³⁶ Nor does it argue for a sharp distinction between social and technological innovation, which are overlapping domains.¹³⁷ Rather, it aims to bring into sharper relief the highly particularized conception of innovation that patent law reifies and

134. Tina Rosenberg, *When Deviants Do Good*, N.Y. TIMES (Feb. 27, 2013).

135. *Id.* Because this was not a randomized control trial, it is unclear how much of the improvement is attributable to positive deviance strategies.

136. Indeed, this Article will argue against extending exclusive rights to social innovations. See *infra* Part III.A.

137. See JONATHAN WALTERS, PRICEWATERHOUSECOOPERS, UNDERSTANDING INNOVATION: WHAT INSPIRES IT? WHAT MAKES IT SUCCESSFUL? 21–22 (2000); Mulgan et al., *supra* note 2, at 12 (“[M]ost of what we now count as progress has come about through the mutual reinforcement of social, economic, technological, and political innovations.”); see, e.g., *Tools for Better Living*, FORTUNE, Dec. 11, 2006 (describing seven technologically driven innovations aimed at enhancing social welfare).

protects. In many ways, patent law's conception of innovation deviates sharply from the manner in which social innovations arise. Ironically, the communal, organic nature of social innovation also applies to much "classic" technological innovation that qualifies for patent protection. This Article thus argues that patent law's unique policy mechanism of assigning individual rights to inventions leads to a distorted conception of the innovative processes it seeks to promote.

A. Knowledge Assets and Public Goods

Before considering differences, it is instructive to explore commonalities between social innovations and patent law's conception of protectable innovation. To start, social innovations, like patentable technologies, largely qualify as public goods.¹³⁸ Economists have long observed that technical information, such as the design of a new Blu-ray player, is a public good, which is both nonrival¹³⁹ (i.e., multiple parties can use it without diminishing its availability) and nonexcludable (i.e., absent legal intervention, it is difficult if not impossible to exclude others from appropriating it).¹⁴⁰ Economic theory holds that a competitive market will produce a suboptimal level of new technology because the ease of appropriating such assets will lead to free riders, thus diminishing incentives to invent.¹⁴¹ Patents mitigate this market failure by granting exclusive rights, thus enhancing incentives to invent.

In a formal sense, social innovations share these public good attributes.¹⁴² I will challenge this notion later, but for now it suffices to say that social innovations are essentially knowledge assets as well that are

138. In other work, I have criticized the characterization of technical information as a public good given the highly "tacit" nature of such information, which must be transferred through costly, labor-intensive interpersonal interactions. See Peter Lee, *Transcending the Tacit Dimension: Patents, Relationships, and Organizational Integration in Technology Transfer*, 100 CALIF. L. REV. 1503 (2012) [hereinafter Lee, *Tacit Dimension*]. Such concerns arguably apply with greater force to social innovations. See *infra* notes 221–37 and accompanying text.

139. See THE WRITINGS OF THOMAS JEFFERSON VOL. VI 180–81 (H.A. Washington ed., Taylor & Mary 1854) (describing ideas as "expansible over all space, without lessening their density in any point").

140. See generally Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY 609, 614–16 (Nat'l Bureau of Econ. Research ed., 1962) (noting the difficulties of preventing outside parties from appropriating information); Nancy Gallini & Suzanne Scotchmer, *Intellectual Property: When Is It the Best Incentive System?*, in INNOVATION POLICY AND THE ECONOMY, VOLUME 2, at 51, 52 (Adam B. Jaffe et al. eds., 2002).

141. See Eisenberg, *supra* note 5, at 1024–25.

142. Pol & Ville, *supra* note 14, at 883.

theoretically capable of open and inexhaustible appropriability.¹⁴³ Like the design of a pharmaceutical drug, the information embedded in the concept of microfinance or a protocol to reduce hospital-based infections is in some general sense nonrival and nonexcludable. This Article will later argue, however, that even though patentable technologies and social innovations are both formally public goods, they face different challenges of underproduction. Furthermore, exclusive rights are likely to play very different roles in motivating their creation.¹⁴⁴ This Part further explores a host of substantive differences between innovation in the social and patent frameworks.

B. Individuals and Communities

Although innovation in the patent paradigm focuses on individual inventors, social innovation reveals that many creations arise more collectively from communal efforts. Patent law perpetuates and reifies a conception of invention arising from discrete, identifiable inventors.¹⁴⁵ The patent statute states that a patent application “shall include . . . the name of the inventor for any invention claimed in the application.”¹⁴⁶ Of course, the statute also provides for granting patents to joint inventors, though it requires that they apply for a patent together.¹⁴⁷ A group of joint inventors is termed an “inventive entity,” and it is treated as a discrete, integrated party that is independent from the human beings comprising it.¹⁴⁸ As a doctrinal and statutory matter, the patent statute heavily emphasizes identifying individual inventive entities.

143. Cf. Kapczynski & Syed, *supra* note 118, at 1902 (characterizing a hospital checklist to reduce infections as a “classic information good”). The importance of tacit knowledge in technological and social innovations complicates characterizing these entities as pure public goods. Furthermore, the character of knowledge manifested in these domains of innovation may differ slightly. See, e.g., Dominique Foray & David Hargreaves, *The Production of Knowledge in Different Sectors: A Model and Some Hypotheses*, 1 LONDON REV. EDU. 7, 8 (2003) (distinguishing between the “science-in-technology” mode of knowledge production predominant in classic technical fields and the “humanistic” mode of knowledge production that often plays a more important role in other sectors).

144. See *infra* Part III.A.

145. See Mark A. Lemley, *The Myth of the Sole Inventor*, 110 MICH. L. REV. 709, 710 (2012) [hereinafter Lemley, *Sole Inventor*] (“[T]he patent law betrays its individual-inventor bias at various points, from the requirement that patents always issue to individuals rather than to companies to the traditional rule that the first to invent, not the first to file, is entitled to the patent.”); see generally ANDREW HARGADON, *HOW BREAKTHROUGHS HAPPEN* 93–94 (2003) (describing the “Cult of the Inventor” in popular conceptions of the history of technology).

146. 35 U.S.C. § 115(a) (2013).

147. 35 U.S.C. § 116 (2012).

148. See, e.g., *In re Bass*, 474 F.2d 1276, 1277 (treating a three-person group as an inventive entity distinct from its constituent members).

This focus on individual inventorship directly reflects the mechanism by which the patent system achieves its policy objectives; it allocates private property rights to enable incentives to invent and innovate. Patents most effectively shore up such incentives if the rewards of exclusivity accrue to a single owner rather than a diffuse group among whom rents must be split. Thus, it is imperative for patent law to identify individual inventors to whom it can assign exclusive rights.¹⁴⁹ Individual ownership of patents also relates to the information efficiencies of organizing technological production in markets. Given that the unit of decision-making capacity in the market is typically an individual or firm, assigning property rights to individual entities best enables the market transactions that optimize technological development. On a related note, one influential (though contested) justification for patents holds that granting exclusive rights to individual patentees enhances social efficiency by allowing the patentee to rationally coordinate the development of a technological prospect.¹⁵⁰ These efficiency gains emerge from a *single* entity managing a technological resource and would be lost if a diverse group of loosely affiliated individuals all had claims on the invention.¹⁵¹ Ultimately, these considerations help inform patent law's concern with identifying individual inventive entities to whom it can assign exclusive rights.

The history of social innovations, however, reveals that new practices often do not arise from a single inventor. These innovations are “social” not only because they serve the public good but also because they emanate from communities.¹⁵² Who invented cognitive behavioral therapy? Although Aaron Beck and Albert Ellis played critical roles in its articulation, CBT has long roots dating back to the merger of behaviorism and the cognitive revolution.¹⁵³ A similar story applies to microfinance. While social innovations are frequently associated with a single, charismatic leader, such as Muhammad Yunus, oftentimes “individuals are

149. These inventors, of course, can assign their rights to other entities (such as the firms that employ them), which in turn enjoy the revenue streams arising from exclusive rights.

150. See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 266 (1977) (articulating the “prospect theory” of patents).

151. Cf. Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 354–56 (1967).

152. See A. Wren Montgomery et al., *Collective Social Entrepreneurship: Collaboratively Shaping Social Good*, 111 J. BUS. ETHICS 375, 376 (2012) (“[M]uch of social entrepreneurship appears, in fact, to be collaborative and collective, drawing on a broad array of support, cooperation, and alliances to build awareness, gain resources and, ultimately, make change.”); HARGADON, *supra* note 145, at 11; cf. Leadbeater, *supra* note 6, at 2; James B. Taylor, *Introducing Social Innovation*, 6 J. APPLIED BEHAV. SCI. 69, 77 (1970).

153. See *supra* notes 73–79 and accompanying text.

the carriers of ideas rather than originators.”¹⁵⁴ Of course, this quality of pluralistic inventorship is more evident when describing a social innovation at a high level of abstraction. Indeed, social innovations writ large, such as feminism and environmentalism, percolated from dozens of leaders and millions of individuals.¹⁵⁵ In a similar sense, broad technological fields such as electric lighting¹⁵⁶ or semiconductors also arose from multiple contributors as well. Nonetheless, even more discrete social innovations tend to arise collaboratively from communities. Indeed, the innovation process itself is intrinsically interactive and communicative, exploiting “the synergic advantages of networks and clusters.”¹⁵⁷ As such, assigning inventorship to a social innovation is often an arbitrary and potentially distorting exercise.

The communal nature of social innovation contrasts sharply with the rigid conception of individual inventorship celebrated and reified by patent law. Based on its very nature and purpose, patent law is preoccupied with identifying individual inventors. In so doing, however, it may reflect and corroborate a distorted perception of innovation dynamics. In fact, much technological innovation that qualifies for patentability also arises from communal origins. For instance, scientific articles often list up to a dozen or more coauthors, and the number of coauthors often exceeds the number of inventors listed on a corresponding patent.¹⁵⁸ Patent law’s insistence on a small number of inventors appears to obscure the larger reality of group-based invention.¹⁵⁹ Studies of simultaneous invention further reveal that even in the technological realm, “[i]nvention appears in significant part to be a social, not an individual, phenomenon.”¹⁶⁰ Mark Lemley’s account of technological innovation applies as well to social innovation when he observes that “the value of an idea often comes only after various people have honed and refined it in various ways.”¹⁶¹ And as Laura Pedraza-Farina observes, “a sociological view of innovation emphasizes the central role of communities of practice in which individual inventors are

154. Mulgan et al., *supra* note 2, at 15.

155. *Id.*

156. ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 271 (6th ed. 2013).

157. Mulgan et al., *supra* note 2, at 26.

158. Philippe Ducor, *Coauthorship and Coinventorship*, 289 *SCIENCE* 873, 873 (2000).

159. See, e.g., Robert C. Allen, *Collective Invention*, 4 *J. ECON. BEHAV. & ORG.* 1, 1–2 (1983) (examining collective invention in the blast furnace industry).

160. Lemley, *Sole Inventor*, *supra* note 145, at 711.

161. *Id.* at 714.

embedded.”¹⁶² Within this view, “discovery is relational, emerging from an iterative back-and-forth among researchers in different communities of practice.”¹⁶³ Patent law’s insistence on individual inventors obscures the true communal nature of both social and technological innovation.

C. Discrete Invention and Historical Evolution

Social innovation also reveals the idiosyncratic nature of patent law’s preoccupation with discrete dates for inventive milestones. One of the primary requirements of patentability is novelty.¹⁶⁴ For most of its history, the United States was a “first-to-invent” jurisdiction in which the date of invention was critical for determining novelty and priority.¹⁶⁵ This system, of course, required a legal definition of invention, particularly for priority disputes when two parties both claimed to have invented a technology first. Consequently, courts determined priority by considering relative dates of conception¹⁶⁶ (the mental aspect of invention) and reduction to practice¹⁶⁷ (the physical aspect of invention) as well as the diligence of the first to conceive and the second to reduce to practice, if applicable.¹⁶⁸ With the 2011 America Invents Act, novelty is now based on the date of filing a patent application, not the date of invention.¹⁶⁹ Nonetheless, patent law maintains a strong focus on timing and sequence, particularly when determining which of two parties should receive a patent.

This doctrinal edifice reflects and reifies a conception of invention as reducible to discrete historical milestones. This is yet another example of how patent law’s project of assigning individual property rights has influenced its conception of invention. Although two parties may have both contributed significantly to an invention around the same time, a regime of individual property rights requires assigning rights to one or the other, and patent law uses the doctrine of priority to determine who gets the patent. However, studies of social innovations reveal the difficulty of

162. Laura G. Pedraza-Farina, *Patent Law and the Sociology of Innovation*, 2013 WIS. L. REV. 813, 820.

163. *Id.*

164. 35 U.S.C. § 102(a) (2012).

165. *See* 35 U.S.C. § 102(a) (2006).

166. *See* *Technitrol, Inc. v. United States*, 440 F.2d 1362, 1369 (Ct. Cl. 1971).

167. *See* *DSL Dynamic Scis. Ltd. v. Union Switch & Signal, Inc.*, 928 F.2d 1122, 1125 (Fed. Cir. 1991).

168. In the case where one party was the first to conceive but the second to reduce an invention to practice, the first to conceive will prevail if she was diligent from a time prior to the other party’s conception through to her own reduction to practice. *See* 35 U.S.C. § 102(g) (2012).

169. 35 U.S.C. § 102(a) (2012).

pinning invention dates on such creations.¹⁷⁰ When was microfinance invented? While Muhammad Yunus has attracted significant attention, it is not historically accurate to say that he invented microfinance in 1976 when he began lending to women in Bangladesh. As discussed earlier, microfinance has long roots stretching back to village credit associations and public subsidies for farmers in the mid-twentieth century.¹⁷¹ Turning to another example, the environmental movement has developed over centuries from multiple movements, including nineteenth-century efforts to protect landscapes, scientifically motivated calls to protect biodiversity, more politicized movements to oppose corporate pollution, and contemporary confrontational groups like Greenpeace (which itself has Quaker origins).¹⁷² Additionally, the innovation of community policing, which involves officers patrolling neighborhoods on foot, has roots in both the historical role of police officers as “night watchmen” as well as psychological research in the 1960s demonstrating the importance of maintaining aesthetic order in communities.¹⁷³ Social innovations often go through many stages of development, thus making invention dates difficult to identify.¹⁷⁴

Notably, the arbitrary nature of assigning dates of invention to social innovations applies to many patentable technologies as well. As Lemley observes, “invention is often an incremental process, not a series of discrete ideas conceived in isolation.”¹⁷⁵ All too often, “history has chosen to highlight the first person to make one significant step in the chain while ignoring the developments that precede and follow it.”¹⁷⁶ Of course, the challenge of assigning inventive dates to innovations depends on the level of granularity at which the analysis proceeds. While it would be difficult to pin down an invention date for semiconductors (writ large), it is somewhat easier to identify dates of invention for specific developments in the field, such as the transitions from diodes to triodes to transistors. Similarly, while it is difficult to determine the invention date for

170. See, e.g., Rachman, *supra* note 75, at 4 (“It is impossible to give a precise date for the birth of a new form of psychological therapy but one can identify the period in which it emerged.”).

171. See *supra* notes 107–10 and accompanying text.

172. Mulgan et al., *supra* note 2, at 15. Additionally, other areas of social innovation, such as the feminist and disability rights movements, also have long and multifaceted histories. See *id.* at 14–15.

173. See Kelling & Wilson, *supra* note 23, at 33–34.

174. Mulgan, *supra* note 2, at 154.

175. Lemley, *Sole Inventor*, *supra* note 145, at 714; see *id.* at 715–16 (“[T]he vast majority of the most important inventions of the past two centuries . . . were themselves the result of gradual social processes in which multiple inventors developed the key parts of the invention at about the same time.”).

176. *Id.* at 714–15.

microfinance, it is easier to assign invention dates to particular developments, such as Grameen Bank's introduction of group liability lending. Nonetheless, patent law reflects and perpetuates a conception of invention as a discrete act instead of a long, disjunctive, organic process. Although this simplification may be necessary to resolve priority disputes and grant exclusive rights to an individual party, it tends to distort the inventive process.

Patent law not only insists on discreteness of inventions in time, but also discreteness in boundaries. All patents must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention."¹⁷⁷ As Giles Rich famously observed, "the name of the game is the claim";¹⁷⁸ claims define the effective scope of patents. Patent law's insistence on claiming assumes and reinforces a notion of discrete invention in which clear boundaries can circumscribe technologies. The history of social innovation, however, shows that innovations often have fuzzy, unclear borders that evolve over time. What exactly is CBT? As previously discussed,¹⁷⁹ the boundaries of traditional CBTs have stretched with the emergence of recent CBTs, and experts in the field debate whether contemporary offshoots such as Acceptance and Commitment Therapy constitute part of CBT.¹⁸⁰ Here again, social innovation helps highlight a fundamental reality that pertains to many technologies that qualify for patent protection. Within patent law, there are grave concerns regarding the efficacy of translating novel technologies into discrete linguistic claims.¹⁸¹ Many of the most pressing problems in patent law, including patent trolls and the vagaries of software patents,¹⁸² are exacerbated by the failures of clear claiming. Ultimately, although patent law attempts to fit technologies into discrete, demarcated packages, both social and technological innovations are organic entities that resist precise definition and claiming.

177. 35 U.S.C. § 112(b) (2012); see *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120 (2014) (shoring up the requirement of claim definiteness and rejecting the Federal Circuit's "insolubly ambiguous" standard).

178. Giles S. Rich, *The Extent of the Protection and Interpretation of Claims—American Perspectives*, 21 INT'L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990).

179. See *supra* notes 85–87 and accompanying text.

180. See *supra* note 86 and accompanying text.

181. *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 397 (Ct. Cl. 1967) ("Things are not made for the sake of words, but words for things.").

182. See Mark A. Lemley, *Software Patents and the Return of Functional Claiming*, 2013 WIS. L. REV. 905 (discussing the difficulties of ambiguous claiming in software patents).

D. Novelty Versus Extending What Has Already Worked

Studies of social innovation also call into question patent law's preoccupation with novelty. It seems axiomatic that an innovation must be new, an intuition captured in patent law's novelty requirement.¹⁸³ Novelty is assessed relative to the prior art, the repository of all publicly accessible knowledge existing at a given time, such as the date of invention or the date of filing a patent application.¹⁸⁴ Courts have developed a large body of doctrine to define both prior art and novelty, and the standard for achieving novelty can be quite demanding. Rather obscure prior art references, such as an oil company's practice of searching for hydrocarbons in a remote area outside of Palestine, Texas,¹⁸⁵ or a dissertation filed and indexed in a university library in Germany,¹⁸⁶ have been found to destroy the novelty of later claimed inventions.

However, many highly valuable social innovations are not strictly novel in a patent sense.¹⁸⁷ They may be "new" in that they have only recently achieved prominence,¹⁸⁸ but their value lies in applying and extending what has already been done. This notion is manifested, for example, in Benjamin Franklin's advocacy of paving and lighting of public streets; the idea for this social innovation already existed, but Franklin was the one who made it a reality.¹⁸⁹ As Michael Mumford observes, "innovation may depend as much on recognizing a good idea when it presents itself as initial generation of the idea."¹⁹⁰

A prominent kind of nonnovel social innovation is captured in the concept of positive deviance. Although "deviance" normally has a negative connotation, positive defiance refers to the presence of extraordinarily good outcomes at one end of a normal distribution of

183. 35 U.S.C. § 102(a) (2012).

184. See MERGES & DUFFY, *supra* note 156, at 340–41.

185. *Rosaire v. Baroid Sales Div., Nat'l Lead Co.*, 218 F.2d 72, 72–74 (5th Cir. 1955).

186. *In re Hall*, 781 F.2d 897, 897 (Fed. Cir. 1986).

187. This also appears to be true of more traditional technologies that have been subject to patent protection. See, e.g., HARGADON, *supra* note 145, at 24 (describing how Edison's inventions were actually constructive assimilations of existing technologies).

188. See Phills Jr. et al., *supra* note 3, at 37–38 (identifying the two key characteristics of a social innovation as novelty and improvement).

189. Mumford, *supra* note 2, at 259–60.

190. *Id.* at 260. Of course, there are significant pressures within the social innovation field to develop and fund novel initiatives, sometimes at the expense of existing programs with demonstrated success. Joanna Jacobson, *Has Venture Philanthropy Passed Its Peak?*, STAN. SOC. INNOVATION REV., Feb. 26, 2013, http://www.ssireview.org/blog/entry/has_venture_philanthropy_passed_its_peak.

behaviors.¹⁹¹ These outliers, which “positively deviate” from the mean, represent promising candidates for replication. Positive deviance achieved prominence in the 1970s, when public health advocates started designing interventions around “uncommon, beneficial health behaviours that community members already practised.”¹⁹² A particularly visible example in more recent times concerns the challenge of alleviating childhood malnutrition in Vietnam.¹⁹³ Researchers surveyed poor families in local communities and found some whose children were unusually well-nourished.¹⁹⁴ They observed that parents of such children supplemented their diets with shrimp, crabs, and snails from rice paddies. Most community members considered these foods unsafe for children and avoided them. Positively deviant families also fed their children multiple smaller meals, which allowed small stomachs to digest more food every day. Furthermore, contrary to local wisdom, these families fed their children even when they had diarrhea, and they washed their children’s hands before they ate.¹⁹⁵ Based on these findings, researchers encouraged similar practices among other community members. By the end of the program’s first year, eighty percent of enrolled children were adequately nourished, compared to a baseline of thirty-five percent prior to the program’s start.¹⁹⁶ Vietnamese authorities ultimately replicated the program in 250 communities.¹⁹⁷

Positive deviance reflects a form of innovation that encompasses extending what already works.¹⁹⁸ Such approaches have “helped to reduce rates of female genital mutilation in Egypt, improved prisons in Denmark, helped the mentally ill in Pittsburgh . . . and cut infections in Veterans

191. See Tim Brown & Jocelyn Wyatt, *Design Thinking for Social Innovation*, STAN. SOC. INNOVATION REV., Winter 2010, at 31, 32; Gretchen M. Spreitzer & Scott Sonenshein, *Toward the Construct Definition of Positive Deviance*, 47 AM. BEHAV. SCI. 828, 828–30 (2004) (considering positive deviance in the context of positive organizational studies); Mulgan, *supra* note 2, at 150 (discussing positive deviants).

192. David R. Marsh et al., *The Power of Positive Deviance*, 329 BRIT. MED. J. 1177, 1177 (2004).

193. *Id.* at 1177–78; Lindberg et al., *supra* note 130, at 61.

194. Rosenberg, *supra* note 134.

195. *Id.*

196. See Brown & Wyatt, *supra* note 191, at 31–32; see also Monique Sternin et al., *Rapid, Sustained Childhood Malnutrition Alleviation Through a Positive-Deviance Approach to Rural Vietnam: Preliminary Findings*, in HEARTH NUTRITION MODEL: APPLICATIONS IN HAITI, VIETNAM, AND BANGLADESH 59 (1997).

197. Rosenberg, *supra* note 134.

198. Casasnovas & Bruno, *supra* note 43, at 174 (“[I]nnovative solutions usually start in a local area, but as problems are often more global, replicating successful initiatives in other settings is often an attractive scaling strategy.”).

Affairs hospitals across the United States.”¹⁹⁹ One benefit of solutions arising from positive deviance is that “because they come from within, these solutions are less likely to be rejected as impractical, too difficult or inappropriate for a particular institution’s culture.”²⁰⁰ This form of social innovation thus captures the ingenuity behind how individuals “improvise their way through their daily lives.”²⁰¹

Positive deviance reflects another aspect of a significant amount of social innovation—it is user generated.²⁰² As Eric von Hippel, Katherine Strandburg, and others have demonstrated, users (rather than commercial producers) are a significant source of innovation in areas as diverse as scientific instrumentation, semiconductors, circuit boards, and mountain biking.²⁰³ Such is the case with many innovations arising from positive deviance, in which individuals facing a challenge (such as malnutrition) develop and extend solutions to address their own needs. In this vein, EMUDE (Emerging User Demands for Sustainable Solutions) is a project of the European Commission that recognizes “groups of active, enterprising people inventing and putting into practice original ways of dealing with everyday problems.”²⁰⁴ Studies of leading social innovations reveal that they commonly “focus explicitly on mobilizing existing assets of marginalized groups to improve their lives, rather than delivering outside resources and services.”²⁰⁵ User-generated innovation reflects both the communal nature of creativity as well as the fact that much valuable innovation simply involves expanding existing practices.

E. Invention Versus Implementation, Replication, and Extension

On a related note, patent law’s conception of innovation focuses much more on invention rather than the implementation, replication, and

199. Rosenberg, *supra* note 134.

200. Shaw, *supra* note 115, at 3.

201. Brown & Wyatt, *supra* note 191, at 33.

202. See David Bornstein, *The Rise of the Social Entrepreneur*, N.Y. TIMES (Nov. 13, 2012), available at http://opinionator.blogs.nytimes.com/2012/11/13/the-rise-of-social-entrepreneur/?_php=true&_type=blogs&_r=0; Trisha Greenhalgh et al., *Diffusion of Innovation in Service Organizations: Systematic Review and Recommendations*, 82 MILBANK Q. 581, 604 (2004).

203. See, e.g., Eric von Hippel, *Users as Innovators*, in THE SOURCES OF INNOVATION 11 (1988); Christian Lüthje et al., *User-Innovators and “Local” Information: The Case of Mountain Biking*, 34 RES. POL’Y 951, 951–52 (2005); Katherine J. Strandburg, *Users as Innovators: Implications for Patent Doctrine*, 79 U. COLO. L. REV. 467, 469 (2008).

204. *Publishable Final Activity Report*, EMUDE 1 (2004), <http://cordis.europa.eu/documents/documentlibrary/126376051EN6.pdf> [hereinafter EMUDE, *Final Activity Report*]; see also OECD, *FOSTERING INNOVATION*, *supra* note 13, at 12.

205. Alvord et al., *supra* note 47, at 270.

extension of new technologies.²⁰⁶ As the novelty requirement reveals, patent law has long emphasized early-stage milestones such as the date of invention or the date of filing a patent application.²⁰⁷ At a deeper conceptual level, patent law most directly rewards invention, not innovation (in the patent sense of the term). Indeed, one can get a patent without even building a working prototype of an invention.²⁰⁸ How then do patented technologies, which may be fairly embryonic, become commercial products? Patent law is largely silent on this issue, as it implicitly relies on market incentives to motivate either further in-house development or licensing of a patent to downstream entities for commercialization.²⁰⁹ To be sure, well-established patent theory holds that exclusive rights provide incentives not only to invent but to innovate as well.²¹⁰ However, the guiding assumption is that once patent rights are granted over some early-stage invention, the market will “work[] its wonders”²¹¹ to allocate resources for further development and dissemination.²¹²

As studies of social innovation reveal, however, oftentimes the real value of innovation is not the initial invention, but the implementation, replication, and extension of an existing creation.²¹³ A conventional economic perspective assuming rational behavior and utility maximization presumes that actors will naturally adopt a superior innovation once it exists.²¹⁴ In reality, however, there are significant barriers to

206. Cf. John F. Duffy, *Reviving the Paper Patent Doctrine*, 98 CORNELL L. REV. 1359, 1361 (2013) (noting contemporary doctrine in which mere disclosure of an invention—rather than actually practicing it—provides the theoretical justification for granting exclusive rights).

207. See 35 U.S.C. § 102(a) (2006); 35 U.S.C. § 102(a) (2012). These citations reflect novelty provisions of the patent statute both before and after passage of the AIA.

208. See, e.g., *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986). Indeed, certain aspects of patent law, such as public use statutory bars, provide an incentive for inventors to patent very early-stage inventions. See 35 U.S.C. § 102(b) (2006); Christopher A. Cotropia, *The Folly of Early Filing in Patent Law*, 61 HASTINGS L.J. 65, 72–82 (2009); Ted M. Sichelman, *Commercializing Patents*, 62 STAN. L. REV. 341, 343 (2010).

209. Cf. F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 703 (2001).

210. Eisenberg, *supra* note 5, at 1037.

211. Cf. Oliver E. Williamson, *The New Institutional Economics: Taking Stock, Looking Ahead*, 38 J. ECON. LITERATURE 595, 598 (2000).

212. Lee, *Tacit Dimension*, *supra* note 138, at 1513–14.

213. See Jeffrey L. Bradach, *Going to Scale: The Challenge of Replicating Social Programs*, STAN. SOC. INNOVATION REV., Spring 2003, at 19, 19 (“Nearly every problem has been solved by someone, somewhere. . . . [However,] we can’t seem to replicate [those solutions] anywhere else.”) (second alteration in original) (quoting Bill Clinton).

214. George J. Papagiannis et al., *Toward a Political Economy of Educational Innovation*, 52 REV. EDUC. RES. 245, 260 (1982); HARGADON, *supra* note 145, at 27 (describing the common misperception that “good ideas will sell themselves”).

implementation and adoption, including learning costs and institutional inertia. These barriers, moreover, may be particularly acute for social innovations because of their tendency to implicate changes in human and institutional behavior. For instance, the leveraging of positive deviance to fight childhood malnutrition in Vietnam illustrated to one researcher that “[k]nowledge doesn’t change behavior Practice changes behavior.”²¹⁵ Compared to new technologies,

a new social form is not introduced so easily. An innovative kind of school, a new way of dealing with poverty, a new procedure for resocializing delinquents, a new technique for rehabilitating the schizophrenic—all are likely to disrupt complex and valued roles, identities, and skills. The disruption may have widespread and ramifying effects, so that whole communities may be challenged and angered.²¹⁶

Accordingly, it is critical to prototype, test, iterate, and refine social innovations in real-world situations.²¹⁷ Indeed, the UK’s National Health Service, which provides comprehensive health and rehabilitation services to residents, took forty years to move from idea to reality.²¹⁸ And studies of educational innovation reveal that “neglect of implementation issues is perhaps the major cause of the failure of innovative projects.”²¹⁹ Bringing social innovations to life involves considerable testing and failure.²²⁰

Endemic to implementing, replicating, and extending social innovations is overcoming human and institutional resistance to change.²²¹ Perceptions of an innovation’s consistency with existing values and beliefs, characteristics of prospective adopters, and contextual factors can all affect the success and speed of dissemination.²²² In this regard, conducting demonstration projects²²³ and embedding new innovations within a relevant user community are often critical to successful

215. Rosenberg, *supra* note 134.

216. Taylor, *supra* note 152, at 70.

217. See Brown & Wyatt, *supra* note 191, at 35; Mumford & Moertl, *supra* note 15, at 263.

218. Mulgan et al., *supra* note 2, at 23.

219. Papagiannis, *supra* note 214, at 247.

220. Mulgan, *supra* note 2, at 151–52.

221. Mulgan et al., *supra* note 2, at 4 (“In all cases, innovation usually involves some struggle against vested interests.”). See, e.g., Donald M. Berwick, *Disseminating Innovations in Health Care*, 289 J. AM. MED. ASS’N 1969, 1970 (2003) (observing that it took 264 years from the discovery that certain foods prevented scurvy to official British policy applying that finding in medical treatments for sailors).

222. *Id.* at 1970–73.

223. Mumford & Moertl, *supra* note 15, at 263.

development and dissemination.²²⁴ This is evident, for example, in social innovations built around positive deviance, which, by definition, extend existing practices from some members of a community to others.²²⁵ One meta-study of the diffusion of innovations in social organizations found that they spread more rapidly when they are clearly advantageous, compatible with existing norms, simple, available for use on a trial basis, observable, adaptable to local needs, codified, and available with additional support.²²⁶ All of these factors help overcome intrinsic resistance to change.

Moving beyond implementation in a local context, these human and institutional challenges are exacerbated in attempts to expand social innovations to new contexts.²²⁷ Difficulties of dissemination appear to be particularly acute in the health care field;²²⁸ studies have shown that improvements to obstetrics, asthma treatment, suturing, and antibiotic use that arose in one part of an integrated health care system did not spread to other parts.²²⁹ The tacit, “humanistic” knowledge embodied in many social innovations often requires interpersonal interaction to transfer.²³⁰

In this sense, social innovations diverge quite sharply from patent law’s conception of readily and objectively reproducible technology. The central quid pro quo of the patent system involves an exchange of exclusive rights for technical disclosure.²³¹ A patent must enable a “person of ordinary skill in the art” (“PHOSITA”) to make and use an invention²³² as well as adequately describe the invention.²³³ Among other objectives, these disclosure requirements seek to make patented inventions objectively reproducible. They depersonalize inventions by making the subjective contents of the inventor’s mind publicly accessible. As such, a patent severs the tie between an inventor and an invention. In theory, a PHOSITA seeking to practice an invention need not have any direct

224. See, e.g., Kanter, *supra* note 20, at 129–30; Charles A. Gardner et al., *Technological and Social Innovation: A Unifying New Paradigm for Global Health*, HEALTH AFF., July/Aug. 2007, at 1052, 1055 (“[S]ocial innovations almost always require adaptation to local conditions.”).

225. Marsh et al., *supra* note 192, at 1177.

226. Greenhalgh et al., *supra* note 202, at 594–98.

227. See Mulgan, *supra* note 2, at 153; *Let’s Hear Those Ideas*, ECONOMIST, Aug. 12, 2010, at 55.

228. Berwick, *supra* note 221, at 1970 (“In health care, invention is hard, but dissemination is even harder.”).

229. *Id.*

230. Foray & Hargreaves, *supra* note 143, at 9.

231. See MERGES & DUFFY, *supra* note 156, at 259–60.

232. 35 U.S.C. § 112 (2012).

233. *Id.* Additionally, although its importance has weakened in recent patent reform, it is still a formal requirement that a patent disclose any “best mode” known to the inventor for practicing an invention. *Id.*

relationship with the inventor; she need only read the patent. Such disclosure thus renders replicating the invention a fairly easy task.

Many social innovations, however, are far from objectively reproducible in this manner. They do not represent discrete, packageable technologies that are easily separated from their creators. Rather, they spread more like buds or grafts with a direct connection to the original innovation or innovator. Social innovations are often embedded in programs and organizations, and Gregory Dees and his colleagues provide a useful typology of various organizational modalities for spreading such innovations.²³⁴ First, *dissemination* occurs when a social entrepreneur provides information and technical assistance to others. This is the case with KaBOOM!, a nonprofit that builds and rehabilitates playgrounds, which provides online tools, publications, and training to those seeking to replicate their program.²³⁵ Second, *affiliation* involves a formal relationship between organizations within a network. For example, Social Venture Partners began as a single entity in Seattle that connected philanthropists with nonprofits and has since grown into an international network of organizations.²³⁶ Finally, *branching* involves creating new sites within an existing organization. For example, the Nature Conservancy is a Virginia-based environmental organization with fully integrated offices in all fifty states and twenty-two foreign countries.²³⁷ A consistent pattern of all of these diffusion models is some direct connection to the original social innovation or entrepreneur.

A related principle that applies to the spread of social innovation is the importance of networks.²³⁸ When social innovations first emerge, they usually do so in small groups characterized by close geographic or social links.²³⁹ Modeling work shows that if agents involved in social innovation are clustered in enclaves with strong internal connections, knowledge transfer proceeds very quickly.²⁴⁰ One route for scaling up a social

234. J. Gregory Dees et al., *Scaling Social Impact: Strategies for Spreading Social Innovations*, STAN. SOC. INNOVATION REV., Spring 2004, at 24, 28. Other commentators distinguish between “*diffusion* (passive spread)” and “*dissemination* (active and planned efforts to persuade target groups to adopt an innovation).” See, e.g., Greenhalgh et al., *supra* note 202, at 582.

235. Dees et al., *supra* note 234, at 28.

236. *Id.* at 29.

237. *Id.*

238. Cf. WALTERS, *supra* note 137, at 27 (“[M]any of the innovations that show strong replicative powers are in program or policy areas where there are ‘established, strong national networks of practitioners.’”).

239. Young, *supra* note 15, at 21285. Even architecture plays a role here, as organizations whose buildings encourage hallway chats may experience faster dissemination of novel practices. Berwick, *supra* note 221, at 1972.

240. Young, *supra* note 15, at 21286.

innovation involves connecting the “bees” (i.e., small, agile social entrepreneurs) with the “trees” (i.e., larger, more established entities that can expand existing innovations).²⁴¹ Trees may lack the creativity to develop their own social innovations, but they are highly proficient in implementation and extension.²⁴² Indeed, “connectors” who link “people, ideas, money, and power” play a particularly important role in spreading social innovations.²⁴³ Far from a model of objective, independent reproducibility, diffusion of social innovations frequently requires robust networks of interaction.

In highlighting the challenges of implementation, replication, and extension as well as the importance of networks, social innovation may simply illustrate general facets of innovation (including technological development) that patent law often obscures. This is evident, for example, in the health care field, which spans both social innovations (as herein characterized) and traditional, patentable technologies: “The problem of dissemination of change applies not only to formally studied bioscientific innovations, but also to the numerous effective process innovations that arise from improvement projects . . . in local settings, pilot sites, and progressive organizations.”²⁴⁴ Indeed, there is a wide literature on the difficulties of developing and commercializing patented technologies; some scholars have even proposed “commercialization patents” or “innovation warrants” to motivate postinvention development of new technologies.²⁴⁵ Indeed, in the history of technology, oftentimes the real value (and historical credit) for an invention arises not with the inventor, but with the individual who implemented or refined it in a substantial way. For example, the idea of the telegraph existed before Samuel Morse (the nominal “inventor” of that technology) introduced the application of electromagnets to increase signal strength.²⁴⁶ Furthermore, particularly for relatively early-stage, embryonic inventions, a patent disclosure that satisfies the enablement and written description requirements may nonetheless fail to disclose valuable tacit knowledge in the inventor’s

241. Mulgan et al., *supra* note 2, at 5; *see also* OECD, *FOSTERING INNOVATION*, *supra* note 13, at 23.

242. Mulgan et al., *supra* note 2, at 20.

243. *Id.* at 5.

244. Berwick, *supra* note 221, at 1970.

245. Sichelman, *supra* note 208, at 341 (proposing commercialization patents); William Kingston, *Innovation Needs Patents Reform*, 30 RES. POL’Y 403 (2001) (proposing innovation warrants); *see also* Michael Abramowicz, *The Danger of Underdeveloped Patent Prospects*, 92 CORNELL L. REV. 1065 (2007) (proposing an auction system for extending patent terms to promote commercialization).

246. Lemley, *Sole Inventor*, *supra* note 145, at 719–20.

mind that is highly relevant for implementing, replicating, and extending an invention.²⁴⁷ Networks and personal interactions are critical to diffusing such tacit knowledge and developing patented technologies.²⁴⁸

In sum, patent law's focus on invention may often obscure the real value and challenge of developing and spreading an innovation. Although creating a new technology or social idea is certainly important, implementation, replication, and extension do not simply happen automatically. Implementing an innovation and spreading it in ways that overcome human and institutional resistance to change are essentially social endeavors that require a high degree of personal touch.

F. The Charismatic Entrepreneur

On a related note, patent law's project of "objectifying" inventions obscures the important role of an inventor or entrepreneur in propagating a new innovation. As mentioned, patent law's requirement of technical disclosure aims to depersonalize technology, divorcing the invention from the inventor.²⁴⁹ However, related to the importance of human interactions in social innovation, the charismatic entrepreneur plays a central role in developing and diffusing new social practices.²⁵⁰ At first glance, this phenomenon may seem to be at odds with the earlier observation that most social innovations do not have identifiable inventors but evolve organically from communal efforts. However, both elements play critical roles in social innovation: a community of contributors as well as charismatic entrepreneurs who can coalesce, coordinate, and publicize such efforts to bring new ideas to fruition.²⁵¹

Certainly, history is speckled with enterprising social entrepreneurs who have literally changed the world. Well-known figures include Robert Owen, the British pioneer of cooperatively run factories, and Muhammad Yunus, the celebrated founder of Grameen Bank.²⁵² Lesser-known social entrepreneurs include Norma Hotaling, a former prostitute and "outside gadfly as change agent" who spearheaded the First Offender Prostitution

247. See Lee, *Tacit Dimension*, *supra* note 138, at 1523–24.

248. *Id.* at 1547.

249. See *supra* Part II.E.

250. Mulgan, *supra* note 2, at 148; see Bornstein, *supra* note 202.

251. Cf. Montgomery et al., *supra* note 152, at 375–76 (recognizing the role of both individual entrepreneurs and "outside actors, stakeholders, networks, organizations, and institutions" in propagating social innovations).

252. Mulgan, *supra* note 2, at 148; see Martin & Osberg, *supra* note 19, at 30 (comparing Yunus to Steve Jobs); *Let's Hear Those Ideas*, *supra* note 227, at 55 (characterizing Yunus as probably the best known social entrepreneur).

Program.²⁵³ In a broad sense, social innovation is a “people-driven business,”²⁵⁴ and personalities matter. Social innovation requires individuals of visionary leadership “who are unusually skilled at the art of persuasion.”²⁵⁵ Indeed, replication of a social innovation may be difficult when it is divorced from the personality of a charismatic entrepreneur.²⁵⁶ Related to the importance of networks in propagating social innovations, leaders have a high degree of “bridging capacity” to connect a diverse set of people, institutions, and resources.²⁵⁷ Sometimes an outsider is the catalyst for social change, as in the case of Hotelling. In other situations, leadership from an established authority figure can help overcome opposition to a disruptive innovation.²⁵⁸ For example, the development of scientific management as well as standardized testing for college admissions arose not from outsiders, but from individuals with longstanding involvement in the field.²⁵⁹

Notably, scholars have also recognized the importance of charismatic leaders (who may or may not be inventors) in disseminating scientific and technological advances.²⁶⁰ Frequently, the person whom history extols as the “inventor” of some technology is in fact the shrewd entrepreneur who commercialized it and brought it to scale. For example, Thomas Edison did not actually invent the light bulb, but he was extraordinarily successful in commercializing it.²⁶¹ Similarly, Henry Ford did not invent the automobile but developed a manufacturing process to accelerate its production.²⁶² In many instances, the initial inventors are rather bad at commercializing their inventions, perhaps because they did not fully appreciate their potential.²⁶³ Similarly, a social entrepreneur’s value may come not in formulating a new idea, but expanding and amplifying an existing idea.

253. WALTERS, *supra* note 137, at 15, 35. See *supra* note 34 and accompanying text.

254. WALTERS, *supra* note 137, at 34.

255. Mumford & Moertl, *supra* note 15, at 264.

256. Cf. Dees et al., *supra* note 234, at 30.

257. Alvord et al., *supra* note 47, at 271–74.

258. Gigi Georges & Tim Glynn Burke, *Disruptive Logic: A New Paradigm for Social Change*, SOC. SPACE, 2011, at 93, available at <http://www.innovations.harvard.edu/cache/documents/21111/2111123.pdf>.

259. Mumford & Moertl, *supra* note 15, at 262.

260. See Robert K. Merton, *The Matthew Effect in Science*, 159 SCIENCE 56 (1968).

261. HARGADON, *supra* note 145, at 7; Lemley, *Sole Inventor*, *supra* note 145, at 723.

262. *Id.* at 724–25. But see HARGADON, *supra* note 145, at 43 (noting that Ford’s assembly line was not necessarily novel).

263. *Id.* at 742. In some cases, though, inventors play an important role in championing their creations, compelling parties to further develop and commercialize them. See Lee, *Tacit Dimension*, *supra* note 138, at 1532–33.

G. Toward a More Holistic Conception of Innovation

Empirical accounts of social innovation reveal a very different conception of innovation than that embedded in patent law. The patent paradigm casts invention as the discrete, individualistic creation of something new, which the patentee makes objectively reproducible through codification. It pays less attention to the challenges of implementing, replicating, and extending that creation as well as the importance of human and institutional factors in those endeavors. Much social innovation, however, emerges from long processes of communal development, and the resulting creation is amorphous and evolves constantly. Oftentimes, the innovation is not strictly novel, but its real value lies in spreading an existing idea. Furthermore, innovation is essentially a human, social process in which some kind of contact with the original innovator greatly accelerates the spread of new practices.

A consistent theme arising from this analysis is that the unique policy mechanisms of patent law lead to a rather narrow conception of protectable innovation. Patent law's project of assigning individual exclusive rights to inventions, thus enabling functioning markets for technology, requires identifying individual inventors to receive those rights. It also requires identifying specific inventive milestones so as to resolve priority disputes between competing inventors, and it mandates that patentees attempt to claim inventions as discrete, bounded technologies. The market orientation of patents also seeks to sever the link between inventor and invention through robust public disclosure. Furthermore, confidence in the market helps explain the patent system's preoccupation with invention rather than implementation, replication, and extension, which will presumably unfold through voluntary market exchanges. The patent system is designed to enable market incentives to drive technological innovation, and it consequently views innovation through the lens of exclusive rights. Other forms of innovation beyond the patent paradigm, however, require very different mechanisms of promotion, a topic to which this Article now turns.

III. ACCELERATING SOCIAL INNOVATION

Turning from the descriptive to the prescriptive, this Part draws from the prior analysis to propose various strategies for accelerating social innovation. In so doing, it fills a gap in the innovation literature, which overwhelmingly focuses on promoting "traditional" technological innovation protectable by patents. Accordingly, this Part builds upon a

rich body of scholarship comparing the relative merits of exclusive rights, public funding, prizes, and other inducement mechanisms to promote innovation.²⁶⁴ These analyses, moreover, provide a framework for selecting one or several of these mechanisms to promote particular kinds of social innovations within particular contexts. While this Part argues against extending intellectual property rights to social innovations, it argues that selective provision of public and private funding, prizes, social capital markets, and infrastructure, as well as insights from the theory of the firm, user innovation, and commons-based peer production, can all accelerate social innovation.

A. The Inappropriateness of Exclusive Rights

Of course, one obvious candidate for accelerating social innovation is to extend exclusive rights over such creations, much like the patent system grants exclusive rights over technologies. For a variety of reasons, however, this Article argues against such a potential policy intervention. Before addressing this question, however, it is worthwhile to consider the antecedent issue of whether most social innovations are even patentable.

It is doubtful that many social innovations would satisfy the threshold requirements of patent eligibility. Patentable subject matter encompasses “any new and useful process, machine, manufacture, or composition of matter,”²⁶⁵ and courts have long construed these categories expansively.²⁶⁶ Perhaps the most likely route to patenting many social innovations would be to claim them as business methods, which courts have held may comprise patentable subject matter.²⁶⁷ For example, one could attempt to claim a process for increasing job opportunities by providing free voice mail to indigent individuals²⁶⁸ as a business method. However, since, the high water mark of patent eligibility in the late 1990s, courts have recently construed patentable subject matter—including business methods—more

264. See, e.g., Brett Frischmann, *Innovation and Institutions: Rethinking the Economics of U.S. Science and Technology Policy*, 24 VT. L. REV. 347 (2000); Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 TEX. L. REV. 303 (2012); Kapczynski, *supra* note 9; Kapczynski & Syed, *supra* note 118; Joseph E. Stiglitz, *Economic Foundations of Intellectual Property Rights*, 57 DUKE L.J. 1693 (2008); Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 AM. ECON. REV. 691 (1983).

265. 35 U.S.C. § 101 (2011).

266. See *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980) (“In choosing such expansive terms as ‘manufacture’ and ‘composition of matter,’ modified by the comprehensive ‘any,’ Congress plainly contemplated that the patent laws would be given wide scope.”).

267. See, e.g., *State Street Bank v. Signature Fin. Grp.*, 149 F.3d 1368 (Fed. Cir. 1998); *Bilski v. Kappos*, 130 S. Ct. 3218 (2010).

268. See *supra* note 42 and accompanying text.

narrowly.²⁶⁹ For example, in *Bilski v. Kappos*, the Supreme Court reinvigorated the “abstract idea” exception to patentable subject matter in rejecting claims to a method of hedging risks in commodities trading.²⁷⁰ These decisions cast some doubt on the patent eligibility of social innovations claimed as business methods, particularly if done so at a high level of abstraction. For instance, a claim to a process of providing loans to indigent individuals to fund revenue-generating activities would likely fail as impermissibly abstract.²⁷¹

Notwithstanding potential difficulties of patentable subject matter, other requirements of patentability, such as novelty and nonobviousness, would also represent formidable obstacles. As mentioned, many social innovations are not strictly new but represent extensions or adaptations of existing practices.²⁷² For example, an attempt to patent techniques related to microfinance may fail on novelty and nonobviousness grounds. Even an innovation that might technically be novel, such as Grameen Bank’s process of group lending,²⁷³ would likely face significant nonobviousness hurdles.²⁷⁴ Similarly, an attempt to patent simple strategies for preventing MRSA infections, such as not wearing neckties or degowning into a glove, would also likely fail on nonobviousness grounds.

Further complicating attempts to patent social innovations is the public, open nature of such creations. Within the United States’ first-inventor-to-file system, if an inventor publicly discloses an invention more than a year before filing a patent application, he will destroy his own invention’s novelty.²⁷⁵ As previously mentioned, social entrepreneurs typically do not keep their innovations secret, and in fact they aim to publicize and

269. Compare *State Street*, 149 F.3d at 1373 (equating patentable subject matter with anything that produces “a useful, concrete and tangible result”), with *In re Nuijten*, 500 F.3d 1346, 1347 (Fed. Cir. 2007) (denying the patent eligibility of electronic signals), and *In re Comiskey*, 499 F.3d 1365, 1365–66 (Fed. Cir. 2007) (denying the patent eligibility of certain claims covering a method of arbitrating legal disputes). See also John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139, 1181 (1999) (criticizing *State Street*’s expansive conception of patentable subject matter).

270. 130 S. Ct. 3218, 3231 (2010).

271. Cf. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014) (articulating a two-part test for determining whether a claimed invention covers an abstract idea).

272. See *supra* notes 191–201 and accompanying text.

273. See *supra* notes 111–14 and accompanying text.

274. The Supreme Court recently articulated a more stringent nonobviousness requirement. See *KSR Int’l v. Teleflex Inc.*, 550 U.S. 398, 421 (2006) (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.”).

275. 35 U.S.C. § 102(b)(1)(A) (2011).

disseminate them rapidly.²⁷⁶ Unless this practice were coupled with a norm of quickly filing patent applications (which seems highly unlikely), it would tend to defeat attempts to patent social innovations.

Even if social innovations were patentable, exclusive rights would not be a prudent policy instrument for promoting them. Patents (in theory) represent an intrinsic tradeoff: they enhance incentives to invent but at the cost of constraining access to existing creations. In the context of social innovations, the benefits of patent protection would be almost nonexistent and the costs would be highly deleterious. On the benefits side, patents resolve market failure by granting patentees a right to exclude others from using their inventions, thus shoring up incentives to invent. Although patents *enable* market incentives to motivate inventors to invent, they do not *create* market incentives; it is ultimately market demand that drives the generation of patented technologies. Here, the patent paradigm fails to translate to social innovations, for almost by definition, there is relatively little market demand for such innovations. That is, even assuming strict excludability (which is a dubious assumption), patenting a social innovation would be unlikely to generate significant revenues and thus incentives for creation. If Springwire attempted to charge patent-inflated prices for community voice mail,²⁷⁷ homeless individuals would simply stop using the service, and no other organizations would likely license the patent.

Additionally, even if exclusive rights provided significant financial remuneration (which they probably do not), such incentives are not particularly germane to most social innovations. As noted, the motivations underlying social innovations are generally altruistic, aimed at advancing the public interest rather than maximizing income.²⁷⁸ In particular, for user-generated social innovations, the challenge of an individual confronting an everyday, real-world problem provides ample motivation to create an innovative solution. As such, profit motives would provide relatively little marginal incentive for creating social innovations.

Furthermore, exclusive rights on social innovations are plagued by difficulties of monitoring and enforcement. As others have described, monitoring processes is much more difficult than monitoring the manufacture and sale of products.²⁷⁹ Many social innovations, such as hand-washing protocols to prevent MRSA infections, are processes. If

276. See *supra* Part I.A.

277. See *supra* note 42 and accompanying text.

278. There are, however, exceptions and mixed cases. See *supra* note 20 and accompanying text.

279. Kapczynski & Syed, *supra* note 118, at 1920.

such innovations were subject to exclusive rights, patentees would face significant challenges in identifying infringement and bringing enforcement actions, which would further depress incentives to patent in the first place.

Additionally, the perceived informational benefits of utilizing patents and markets to allocate resources for innovation would not apply to social innovations. A classic argument in favor of patents over public funding of technological development is that market exchanges create price signals that allocate resources for invention more efficiently than centralized planning.²⁸⁰ As F.A. Hayek influentially described, the information needed to create an optimal economic order is widely dispersed throughout society and is very difficult to concentrate within a single entity, such as a government body.²⁸¹ For Hayek, the best system for dynamically exploiting such distributed information is the market.²⁸² By aggregating information from millions of actors, the price system ensures the most efficient allocation of resources in society. The information efficiency of markets is thus an underappreciated link that justifies a patent system over other approaches (such as broad public funding) to subsidize research and development. However, the perceived information advantage of prices does not hold in all contexts; in particular, patents “fare poorly when market signals are weak proxies for social value.”²⁸³ This is the case with many social innovations; there may be enormous social demand for strategies to reduce homelessness, but this is not translated into commensurate *market* demand because of the low purchasing power of the individuals who value this innovation. Because prices reflect market rather than social value, the perceived informational advantage of markets is largely inapposite to social innovations.

While the benefits of patent protection would largely be absent for social innovations, the costs would be significant. At a fundamental level, the exclusivity of patents would defeat the purpose and character of most social innovations. Exclusive rights produce deadweight loss,²⁸⁴ which is particularly deleterious for innovations aimed at low-income populations with very little purchasing power. Furthermore, extending patent rights to

280. Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & ECON. 1, 11–14 (1969); see Kapczynski, *supra* note 9, at 974–75 (describing and criticizing this argument).

281. F.A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519, 519 (1945).

282. *Id.* at 525–26 (“Fundamentally, in a system where the knowledge of the relevant facts is dispersed among many people, prices can act to coordinate the separate actions of different people.”).

283. Hemel & Ouellette, *supra* note 264, at 328.

284. See, e.g., WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 16–21 (2003); Kapczynski, *supra* note 9, at 982.

social innovations could “crowd out” more altruistic efforts, thus resulting in no net increase—and perhaps a decrease—in social innovations.²⁸⁵ Additionally, it is possible that profit motives would change the nature of social innovations, perhaps for the worse. Along these lines, studies of blood donation reveal no increase in the overall supply of blood when it was available for purchase.²⁸⁶ Furthermore, “sold” blood was of lower quality than donated blood.²⁸⁷ Extrapolating from these studies, it appears that introducing profit motives in domains traditionally governed by altruism may actually undermine efforts to serve the public interest. For a variety of reasons, extending exclusive rights to social innovations would be ineffective and ill advised.²⁸⁸

B. Funding

1. Government Grants and Social Capital Markets

Exclusive rights, however, are far from the exclusive mechanism for promoting innovation.²⁸⁹ Several other approaches would bear significant fruit, and a robust literature has developed addressing the comparative merits of various inducement mechanisms.²⁹⁰ Social innovation demands significant sums of money,²⁹¹ and governments at many levels should consider expanding their funding of such endeavors. Public funding

285. See Bruno S. Frey & Felix Oberholzer-Gee, *The Cost of Price Incentives: An Empirical Analysis of Motivation Crowding-Out*, 87 AM. ECON. REV. 746, 746 (1997) (presenting a theory stipulating that “intrinsic motivation is partially destroyed when price incentives are introduced”).

286. RICHARD M. TITMUS, *THE GIFT RELATIONSHIP: FROM HUMAN BLOOD TO SOCIAL POLICY* 245–46 (1971).

287. *Id.*

288. Although this discussion has argued against patenting social innovations, one should acknowledge that other forms of intellectual property protection, such as trademark, may play a salutary role in promoting and disseminating such creations. As commentators have observed, certain forms of “open” innovation may be more dependent on intellectual property rights than initially meets the eye. See Dreyfuss, *Does IP need IP?*, *supra* note 60, at 1448–52. As previously discussed, in the social innovation sphere, organizations often license their creations and utilize a franchising model to disseminate them, which suggests that trademark law may be helpful in generating and spreading such innovations. See *supra* notes 234–37 and accompanying text. Social enterprises that do not seek to maximize profits may nevertheless desire the recognition of developing a new innovation as well as the ability to influence how it is disseminated, both of which would be facilitated by trademark.

289. It bears emphasizing that the case for exclusive rights to promote the technologies that traditionally fall within the ambit of patent protection is also debatable. See Gallini & Scotchmer, *supra* note 140, at 53 (“Arrow explained why *some* incentive scheme is needed, but not *which* scheme.”).

290. See *supra* note 264.

291. See, e.g., Mulgan et al., *supra* note 2, at 37 (“An equivalent mix of funding sources is needed for social innovation, for experiments, start ups and then for growth.”).

directly subsidizes such social innovations without subjecting them to exclusive rights, thus helping to promote their wide accessibility. In this regard, a public strategy for promoting social innovations would resemble federal funding of basic scientific research, the fruits of which are generally available in the public domain.²⁹² This approach reduces deadweight losses associated with exclusive rights and has progressive distributional effects where social innovations are funded from general tax revenues.²⁹³ Ultimately, “there are weighty reasons to justify government support [of social innovations] because they improve social performance, entail information spillovers and may engender future business innovations that otherwise would never happen.”²⁹⁴

A significant number of social innovations, including the ones profiled previously, are completely or partially subsidized with public funds. CBT arose in significant part from publicly funded academic research in psychology and psychiatry.²⁹⁵ The Central Bank of Bangladesh provided early support for Grameen Bank, in which the national government still holds a ten percent stake.²⁹⁶ Furthermore, governmental entities such as the UK Department of Health have funded the dissemination of standards to prevent MRSA infections.²⁹⁷

Many national governments directly fund social innovation.²⁹⁸ In the United States, the Obama administration created the Office of Social Innovation and Civic Participation, which supports a Social Innovation Fund administered by the Corporation for National and Community

292. See Arrow, *supra* note 140, at 623 (concluding that optimal allocation of resources to invention requires research financing by government or some other nonmarket agency). Although universities may patent the results of publicly funded, academic research under the Bayh–Dole Act, truly “upstream” discoveries that arise from such funding may not satisfy the requirements of patentability in many cases, thus remaining in the public domain.

293. Cf. Hemel & Ouellette, *supra* note 264, at 345–46.

294. Pol & Ville, *supra* note 14, at 883.

295. See Rachman, *supra* note 75, at 4–22 (discussing the origins of CBT in the United States and United Kingdom).

296. *A Short History of Grameen Bank*, GRAMEEN BANK, http://www.grameen-info.org/index.php?option=com_content&task=view&id=19&Itemid=114, archived at <http://perma.cc/6CER-V3S7> (last updated July 15, 2013).

297. Jacob, *supra* note 121, at 7; see Treacle, *supra* note 121 at 101 (describing the UK Department of Health recommendations); *id.* at 103 (describing study results that health care workers’ white coats are frequently contaminated with *S. aureus* colonies, many of which are resistant to methicillin).

298. Governments also provide significant support for social innovations through tax incentives, such as tax deductions for charitable donations and tax-exempt status for nonprofit organizations. See generally Hemel & Ouellette, *supra* note 264 (comparing tax incentives, prizes, patents, and grants as mechanisms to promote innovation).

Service.²⁹⁹ The Fund was formally created by the Edward M. Kennedy Serve America Act, which Congress enacted in 2009.³⁰⁰ The Fund “combines public and private resources to grow promising community-based solutions” in the areas of economic opportunity, health, and youth development.³⁰¹ It funds several intermediary grant-making entities that identify promising programs in local communities. The intermediaries must match federal funds on a one-to-one basis, and they select local nonprofit organizations to receive grants and run programs. These local organizations are also required to match funds and submit to program evaluations.³⁰² In its first three years, the Fund awarded \$137 million in grants to twenty intermediary entities, which in turn awarded grants to 197 nonprofit organizations.³⁰³ These organizations operate several innovative initiatives, from a “shared equity homeownership” program that improves the ability of local organizations to manage public investments in homeownership to an after-school soccer program that educates low-income youth about health and nutrition.³⁰⁴ These organizations have committed to raising an additional \$350 million in nonfederal funds to support their programs.³⁰⁵

Although public funds for social innovation are helpful, the creation of a robust market for social capital may have even greater impact.³⁰⁶ In this vein, UK Prime Minister David Cameron has helped implement an initiative now known as Big Society Capital to “help finance social enterprises, charities, and voluntary groups through intermediaries.”³⁰⁷ This initiative is supported by £400 million from dormant bank accounts and £200 million from the four largest UK banks.³⁰⁸ This novel institution aims to fund a variety of projects, particularly those that help the long-

299. *Social Innovation Fund*, OFFICE OF SOCIAL INNOVATION AND CIVIC PARTICIPATION (2014), <http://www.whitehouse.gov/administration/eop/sicp/initiatives/social-innovation-fund>, archived at <http://perma.cc/U89K-WTL6>.

300. *Id.*

301. *Id.*

302. *Id.*

303. *Social Innovation Fund Grantee Overview*, CORP. FOR NAT'L & CMTY. SERV. 1 (Oct. 2012), http://www.nationalservice.gov/sites/default/files/documents/factsheet_sifgrantees.pdf.

304. *Id.* at 1–2.

305. *Id.* at 1.

306. Sir Ronald Cohen, *Big Society Capital Marks a Paradigm Shift*, STAN. SOC. INNOVATION REV., Summer 2012, at 21, 21 (“Yet there is one resource—vastly bigger than the resources currently available to either government or the social sector—that has remained largely untapped for social purposes: the capital markets.”).

307. *Let's Hear Those Ideas*, *supra* note 227, at 55.

308. Nicholas Watt, *David Cameron Launches £600m 'Big Society' Fund*, THE GUARDIAN, Apr. 3, 2012, <http://www.theguardian.com/society/2012/apr/04/david-cameron-big-society-fund>, archived at <http://perma.cc/7HKD-PDFP>.

term unemployed obtain jobs.³⁰⁹ This infusion of capital will far outstrip the estimated £165 million that went to social investments in the previous year.³¹⁰ Similar to the Obama administration's Social Innovation Fund, Big Society Capital will act as a wholesaler, investing through intermediaries that will make subsequent grants to local organizations.³¹¹ In addition to more traditional grant-making functions, Big Society Capital employs a social innovation of its own: Social Impact Bonds.³¹² Charitable organizations use these bonds to raise funds, thus allowing them to bid for and participate in government payment-by-results contracts. The bonds attract investors who are interested in accruing social in addition to financial returns on their investments.³¹³ Big Society Capital has created several funds for socially innovative programs, such as one that finances franchise contracts to allow unemployed persons to start businesses and another to support disadvantaged communities seeking to reduce their carbon footprint.³¹⁴

In parallel to national governments, international organizations have a strong role to play in providing high-level coordination and technical assistance for social innovation. In 2000, the Organisation for Economic Co-operation and Development (OECD) created the Forum on Social Innovations to identify and disseminate social innovations and transfer best practices.³¹⁵ The European Commission has funded EMUDE (Emerging User Demands for Sustainable Solutions), which aims "to explore the potential of social innovation as a driver for technological and production innovation, in view of sustainability."³¹⁶ It supports community-based, innovative solutions to social challenges.³¹⁷ Such solutions include Aquarius, an innovative elderly community where residents help each other with basic services, as well as the Neighbourhood Shares program, in which residents assume responsibility from the city for certain public services.³¹⁸ Ultimately EMUDE seeks to

309. *Id.*

310. Sarah Neville & Jonathan Moules, 'Big Society Bank' to Start Providing Capital, *FIN. TIMES* (Apr. 4, 2012), <http://www.ft.com/intl/cms/s/0/51466676-7d8f-11e1-bfa5-00144feab49a.html>.

311. *Cf. id.*

312. BIG SOCIETY CAPITAL, ANNUAL REPORT AND FINANCIAL STATEMENTS 2012, at 8 (2013) (quoting Nick O'Donohoe, Chief Executive Officer, Big Society Capital).

313. *Id.*

314. *Id.* at 20.

315. OECD, FOSTERING INNOVATION, *supra* note 13, at 18.

316. *A Digital Magazine for the Creative Communities*, EMUDE CREATIVE COMMUNITIES (2014), <http://www.sustainable-everyday-project.net/emude/2013/04/03/a-digital-magazine-for-the-creative-communities/>, archived at <http://perma.cc/GK63-5TDF>.

317. EMUDE, *Final Activity Report*, *supra* note 204, at 4.

318. *Neighbourhood Shares*, EMUDE CREATIVE COMMUNITIES (2014), <http://www.sustainable->

support creative communities in becoming sustainable “diffused social enterprises.”³¹⁹

Local governments also have a strong role to play in supporting social innovation, particularly given the local nature of such activities. In 2006, New York City mayor Michael Bloomberg created the Center for Economic Opportunity (CEO) to invest both public and private money to fund social entrepreneurs.³²⁰ CEO funds more than 40 poverty-fighting initiatives, such as job-training and asset-building programs.³²¹ CEO and the Mayor’s Fund to Advance NYC received a Social Innovation Fund grant from the federal Corporation for National and Community Service to administer antipoverty programs in and around New York City.³²² Additionally, the mayor of San Francisco maintains an Office of Civic Innovation.³²³ Among other functions, the office manages Living Innovation Zones, a novel initiative that helps innovators, artists, and designers utilize public spaces in San Francisco to demonstrate and test new projects.³²⁴

In sum, public funding and technical assistance can play a vital role in supporting social innovations. As a general matter, “government grants are most effective when the government has a comparative advantage relative to the private sector in evaluating the costs and benefits of potential projects.”³²⁵ This is the case for social innovations, as their considerable value is not reflected in market prices. Although political decision making is subject to its own deficiencies,³²⁶ the political sphere is in many ways better situated than the market to define societal priorities in classic domains of social innovation such as health, education, welfare, and economic opportunity. The model of public funding profiled here has several benefits. First, as in the Social Innovation Fund and Big Society Capital, government support can help generate additional money from the private sector, thus amplifying the economic impact of taxpayer

everyday-project.net/emude/2013/04/03/neighbourhood-shares/, archived at <http://perma.cc/44L3-P6RY>.

319. EMUDE, *Final Activity Report*, *supra* note 204, at 22; cf. Montgomery et al., *supra* note 152.

320. N.Y.C. CTR. FOR ECON. OPPORTUNITY (2014), <http://www.nyc.gov/html/ceo/html/home/home.shtml>; *Let’s Hear Those Ideas*, *supra* note 227, at 56.

321. Georges & Burke, *supra* note 258, at 96.

322. *Social Innovation Fund*, N.Y.C. CTR. FOR ECON. OPPORTUNITY, <http://www.nyc.gov/html/ceo/html/initiatives/sif.shtml>, archived at <http://perma.cc/SZ4Z-2DDZ>.

323. See INNOVATESF, *supra* note 53.

324. *Living Innovation Zones*, THE MAYOR’S OFFICE OF CIVIC INNOVATION (2014), <http://liz.innovatesf.com/>, archived at <http://perma.cc/P2WG-YY4X>.

325. Hemel & Ouellette, *supra* note 264, at 375.

326. See *supra* notes 44–45 and accompanying text.

assistance. Second, this model delegates final grant-making decisions to intermediaries, thus reducing information costs for national decision makers, who may not be familiar with local needs and organizations. While such an approach may not replicate the information cost efficiencies of market-based production,³²⁷ utilizing local knowledge offers distinct advantages relative to purely centralized decision making.

Of course, public funding is subject to its own limitations. Public choice theory predicts that political interests may bias grant-making decisions; like other forms of patronage, grantors may favor grantees that have curried favor.³²⁸ Furthermore, governments are notoriously poor at “picking winners.” Contrary to the distributed information efficiencies of the market, public funding requires a centralized authority to make broad investment decisions with limited information. Although some of these information costs can be mitigated by using local intermediaries, it will always be difficult to assess whether government is investing in the “right” social innovations to the appropriate degree.³²⁹ Along these lines, although the Social Innovation Fund’s investment of \$137 million over three years may sound impressive, it is relatively small compared to other federal funding priorities,³³⁰ and it is unclear what the optimal amount of public support should be. Nonetheless, public funding represents a powerful engine for promoting social innovation while not subjecting it to a counterproductive regime of exclusive rights.

2. *Inducement Prizes*

In addition to ex ante grants, prizes awarded on an ex post basis can powerfully promote innovative activity.³³¹ So-called “inducement prizes” encourage contestants to achieve a specific objective and only award funds upon its satisfactory completion.³³² Notably, the resulting prize-winning

327. See *supra* notes 280–82 and accompanying text.

328. Dreyfuss, *Does IP Need IP?*, *supra* note 60, at 1440.

329. These limitations are potentially significant given that the quality of grant-making decisions will heavily impact the course of progress in a particular field. *Id.*

330. By comparison, the National Institutes of Health provides about \$30.1 billion for biomedical research every year. See *NIH Budget*, NIH (Mar. 11, 2014), <http://www.nih.gov/about/budget.htm>.

331. See, e.g., Pol & Ville, *supra* note 14, at 883 (suggesting government-awarded prizes to promote social innovations).

332. Thomas Kalil, *Prizes for Technological Innovation*, THE BROOKINGS INSTITUTE 5 (Dec. 2006), available at <http://www.brookings.edu/~media/research/files/papers/2006/12/healthcare%20kalil/200612kalil.pdf>.

innovation is generally subject to open access rather than exclusivity.³³³ Inducement prizes have a long history. Throughout the seventeenth and eighteenth centuries, prizes stimulated the development of a workable water turbine,³³⁴ seaworthy chronometer,³³⁵ and method of preserving food.³³⁶ In the eighteenth and nineteenth centuries, European scientific societies routinely offered prizes for solving theoretical and applied problems.³³⁷ In a particularly famous prize from 1919, French hotelier Raymond Orteig offered a \$25,000 prize for the first nonstop flight between New York and Paris; Charles Lindbergh won the prize in 1927.³³⁸ Prizes like these have seen a resurgence of late. In particular, the XPRIZE Foundation has sponsored several high-profile competitions,³³⁹ and the World Health Organization and the World Bank have proposed prizes for vaccines for use primarily in the developing world.³⁴⁰ In 2009, one study estimated the aggregate value of the prize sector to be “as much as \$1 to 2 billion.”³⁴¹ Subject to certain limitations, prizes represent a valuable mechanism for encouraging social innovation.³⁴²

As recent experience demonstrates, government prizes have significant potential to promote innovative activity. For example, the Defense Advanced Research Projects Agency (DARPA) recently sponsored a challenge whereby participants had to identify the exact location of ten

333. See Steven Shavell & Tanguy Van Ypersele, *Rewards Versus Intellectual Property Rights*, 44 J. L. & ECON. 525, 530 (2001) (“[T]he reward system is superior to patent in that deadweight loss due to monopoly pricing is avoided under rewards.”).

334. Gallini & Scotchmer, *supra* note 140, at 53.

335. Kalil, *supra* note 332, at 5; Pol & Ville, *supra* note 14, at 883. The UK Board of Longitude ultimately awarded the prize to J. Harrison. Kalil, *supra* note 332, at 5.

336. Kalil, *supra* note 332, at 5. See also Donald E. Tepper, *Contemporary Topics in Health Care: Crowdsourcing*, PT IN MOTION, Feb. 2013, at 26, 26 (2013). Nicolas Appert won the prize in 1810 by developing the practice of sealing food in glass jars. *Id.*

337. Toni Feder, *Incentive Prizes Reinvented to Solve Problems*, PHYSICS TODAY, Nov. 2010, at 22.

338. Tepper, *supra* note 336, at 26.

339. Hemel & Ouellette, *supra* note 264, at 317; Kalil, *supra* note 332, at 5; Tepper, *supra* note 336, at 26.

340. Gallini & Scotchmer, *supra* note 140, at 55–56.

341. MCKINSEY & CO., “AND THE WINNER IS . . .”: CAPTURING THE PROMISE OF PHILANTHROPIC PRIZES 16 (2009).

342. Commentators have also explored creative approaches to integrating prizes within the patent system. See, e.g., Michael Abramowicz, *Perfecting Patent Prizes*, 56 VAND. L. REV. 115, 119–21 (2003) (providing examples). This Part focuses on inducement prizes, which provide a monetary reward to induce innovative activity. Recognition prizes such as the Nobel Prize (whose principal value is reputational rather than financial) can also motivate innovative activity. Cf. Kalil, *supra* note 332, at 5; see also *Innovations in American Government Awards*, *supra* note 56 (describing a Kennedy School program that provides Innovation in American Government Awards).

large, red balloons across the United States.³⁴³ A team from MIT won the \$40,000 prize by utilizing social media to complete the challenge in less than nine hours.³⁴⁴ Notably, the techniques used to win this challenge may address a wide variety of social needs, such as finding missing children, publicizing recalls of unsafe products, and coordinating rescue efforts during natural disasters.³⁴⁵ The Obama administration has taken a strong interest in prizes; the White House Office of Science and Technology Policy helps lead an initiative aimed at expediting the processes by which federal agencies can offer prizes.³⁴⁶ Furthermore, in September 2012, the federal government launched challenge.gov.³⁴⁷ Although most of the challenges appearing on this website are technological in nature, some have a more explicitly social dimension.³⁴⁸ For instance, the Environmental Protection Agency (EPA) is sponsoring a Campus RainWorks challenge to encourage college students to design innovative stormwater management projects, thus raising awareness of green design.³⁴⁹ At the local level, San Francisco's Office of Civic Innovation is offering inducement prizes in an initiative called ImproveSF, which is an online platform that "[c]onnect[s] civic challenges to community problem-solvers."³⁵⁰ Recent prizes include a "rags to revenue" challenge to develop a better system for repurposing excess donated textiles to benefit underprivileged populations.³⁵¹

Prizes have also seen a resurgence in the private sector, most prominently due to the XPRIZE Foundation. The Foundation ran the high-profile Ansari XPRIZE, which awarded \$10 million to Scaled Composites for developing a "spacecraft capable of carrying three people one hundred

343. *MIT Red Balloon Team Wins DARPA Network Challenge*, DARPA (Dec. 5, 2009), <http://archive.darpa.mil/networkchallenge/darpanetworkchallengewinner2009.pdf>.

344. *Id.*; *A Social Network that Ballooned*, MIT MEDIA RELATIONS (Dec. 11, 2009), <http://web.mit.edu/press/2009/darpa-challenge-1210.html>, archived at <http://perma.cc/BV3C-GABK>.

345. *Id.*

346. Feder, *supra* note 337, at 22; see Hemel & Ouellette, *supra* note 264, at 318 ("[B]etween September 2010 and September 2013, fifty-eight different federal agencies administered a total of 228 'challenge competitions.'").

347. CHALLENGE.GOV (2012), <http://challenge.gov/>.

348. The USPTO's Patents for Humanity program, which recognizes and rewards the use of patented technologies for humanitarian purposes, operates on challenge.gov. See *USPTO Patents for Humanity*, CHALLENGE POST, <http://patentsforhumanity.challengepost.com/>, archived at <http://perma.cc/4MYC-LDAW>; *supra* note 31 and accompanying text.

349. *A Partnership Between the Public and the Government to Solve Important Challenges*, CHALLENGE.GOV (2014), <https://challenge.gov/>.

350. *ImproveSF*, S.F. MAYOR'S OFFICE OF CIVIC INNOVATION, INNOVATESF, <http://innovatesf.com/projects/improvesf/>.

351. *How Can We Turn "Rags to Revenue?"*, IMPROVESF (2014), <http://www.improvesf.com/how-can-we-turn-rags-to-revenue/>, archived at <http://perma.cc/M5GB-85U6>.

kilometers above the earth's surface, twice within two weeks."³⁵² Other prize competitions have tackled challenges with significant technological and social implications, such as developing fuel-efficient cars, methods of cleaning oil spills, vertical takeoff and landing rockets, and innovative approaches to genome sequencing.³⁵³ Additionally, a small industry has emerged to facilitate prizes in the public and private sectors. For example, InnoCentive creates online platforms for prize competitions and bills itself as the "global leader in crowdsourcing innovation problems to the world's smartest people."³⁵⁴

Commentators have argued for government-sponsored prizes for social innovations when adequate market incentives do not exist.³⁵⁵ Prizes exhibit several informational advantages relative to traditional grant making. Most notably, they don't require a sponsor to determine *how* a problem is solved or identify (on an ex ante basis) *who* is best situated to solve it.³⁵⁶ Along these lines, prizes share some of the decentralized information advantages of markets³⁵⁷ and can stimulate nontraditional participants with fresh ideas who would not normally vie for public grants.³⁵⁸ They are best suited when government entities can establish a clear goal and an appropriate prize size (or a clear metric for calculating the prize size) but may not be able to identify the most promising means to achieve the goal on an ex ante basis.³⁵⁹ Furthermore, prizes avoid the incentive in grant-making systems of potential grantees overpromising on what they can deliver, as participants will only receive a prize if they are the first to solve a challenge.³⁶⁰ Finally, prizes often stimulate additional philanthropic and private investment to augment the cash value of the prize.³⁶¹ There is a further "multiplier" effect in that prizes encourage parallel efforts to provide solutions by multiple participants, which can far outstrip the value of the cash purse.

352. *Ansari XPRIZE*, XPRIZE FOUNDATION (2011), <http://space.xprize.org/ansari-x-prize>, archived at <http://perma.cc/ER5L-DHLS>.

353. *Id.* Outside of the XPRIZE Foundation, other entities have also sponsored prizes geared more specifically toward social innovation. See, e.g., ASIA SOCIAL INNOVATION AWARD, <http://www.socialinnovationaward.asia/>; Dell Social Innovation Challenge, DELL, <http://www.dell.com/learn/us/en/uscorp1/corp-comm/cr-social-innovation-competition>.

354. *What We Do*, INNOCENTIVE (2013), <http://www.innocentive.com/about-innocentive>, archived at <http://perma.cc/3JSJ-G9GY>; see Brown & Wyatt, *supra* note 191, at 34.

355. Pol & Ville, *supra* note 14, at 885.

356. Kalil, *supra* note 332, at 6.

357. Kapczynski & Syed, *supra* note 118, at 1954.

358. Kalil, *supra* note 332, at 7.

359. Hemel & Ouellette, *supra* note 264, at 376.

360. Kalil, *supra* note 332, at 6–7.

361. *Id.* at 7.

However, inducement prizes are subject to certain limitations. As with direct government funding, they require an entity to determine, through nonmarket mechanisms, what innovations to pay for and how much to spend.³⁶² They also require a sponsor to precisely define a goal as well as the rules of a challenge.³⁶³ There is of course a possibility that decision-making boards will make mistakes both with defining a challenge and selecting a winner.³⁶⁴ Prizes involve significant risk on the part of participants;³⁶⁵ it is possible that one will invest significantly in trying to win a prize but ultimately receive nothing.³⁶⁶ Oftentimes, participants end up spending more money on their solutions than the prize award, thus requiring outside fundraising.³⁶⁷ And, of course, the multiplier effect of prizes, which can be beneficial from one perspective, also represents duplicative and potentially wasteful effort.³⁶⁸ Prizes may be inapposite for many kinds of social innovations that do not resemble discrete technologies, such as a spacecraft, which a prize winner can simply hand off to a sponsor. As noted, many social innovations involve long-term behavioral change, monitoring, and maintenance.³⁶⁹ Prizes are best suited for “pie in the sky” leaps in innovation³⁷⁰ and may be too tenuous to satisfy immediate human needs for health, shelter, and social services.

Prize sponsors also face the challenge of determining the “right” size of an award. While it is typically assumed that is done on an *ex ante* basis, this need not be the case. Recent proposals to structure prizes have focused on tying the size of the prize award to measurable metrics, such as sales of some new technology.³⁷¹ Although this may be inapposite for social innovations that do not aim for market impact, prize sponsors may apply this intuition by calibrating the size of the award to some desirable (and measurable) metric, such as number of people served or improvements in health outcomes for a target population.

362. Cf. Kapczynski, *supra* note 9, at 986.

363. Feder, *supra* note 337, at 22; Kalil, *supra* note 332, at 6; Robb Mandelbaum, *The X Factor*, DISCOVER, Feb. 2009, at 50.

364. Pol & Ville, *supra* note 14, at 883.

365. *Id.*

366. Kalil, *supra* note 332, at 7.

367. Feder, *supra* note 337, at 23.

368. Kalil, *supra* note 332, at 7.

369. See *supra* notes 214–26 and accompanying text.

370. Cf. Mandelbaum, *supra* note 363, at 53 (quoting William Whittaker, Carnegie Mellon University).

371. Hemel & Ouellette, *supra* note 264, at 332; Kapczynski & Syed, *supra* note 118, at 1955.

3. Crowdfunding

Funding is critical to enabling social innovation, but it need not come from traditional grants or prizes. Myriad financing models abound. For instance, traditional charitable donations continue to play an important role in funding social innovations.³⁷² Additionally, the Internet boom of the 1990s spawned a new generation of “venture philanthropists” who have committed substantial funds to early-stage, innovative endeavors.³⁷³ Recently, more diverse and sophisticated financing models have emerged as well.³⁷⁴ One prominent example is crowdfunding, in which social entrepreneurs (and, indeed, entrepreneurs of all kinds) seek funding from the public at large. Crowdfunding has even attracted significant policy attention; in 2012, President Obama signed the JOBS (Jumpstart Our Business Startups) Act, which relaxes securities regulations to encourage crowdfunded investments.³⁷⁵

Entrepreneurs have utilized crowdfunding to finance a wide variety of projects, including social innovations. The most prominent crowdfunding (or “micropatronage”) site is Kickstarter,³⁷⁶ which was founded in 2009 and has raised over \$20 million for projects from books³⁷⁷ to scientific research.³⁷⁸ A slew of subject-specific crowdfunding sites³⁷⁹ have sprung up, such as the Open Source Science Project³⁸⁰ and SciFlies,³⁸¹ which fund scientific and technological research, and RocketHub, which funds artists and entrepreneurs.³⁸² Additionally, several crowdfunding sites have a

372. Certainly, policy makers should not neglect the power of old-fashioned charitable giving. *Cf.* Leadbeater, *supra* note 6, at 9 (“Gifts can create and convey emotional bonds and relationships [that] transactions do not.”).

373. See Jacobson, *supra* note 190. Along somewhat related lines, the Bill and Melinda Gates Foundation plays a particularly important role in philanthropic giving, especially in the realm of global health. See GRAND CHALLENGES IN GLOBAL HEALTH (2003–13), <http://www.grandchallenges.org/Pages/BrowseByGoal.aspx>, archived at <http://perma.cc/833U-MZR9>.

374. BIG SOCIETY CAPITAL, *supra* note 312, at 12.

375. Harry McCracken, *The Kickstarter Economy*, TIME, Oct. 1, 2012, at 32, 34; Erik A. Christiansen, *Obama Signs Jumpstart Our Business Startups Act into Law*, SEC. LITIG. J., Spring 2012, at 22.

376. Emily Gould, *Start Me Up*, TECH. REV., Jan./Feb. 2011, at 76; see McCracken, *supra* note 375, at 32.

377. Gould, *supra* note 376, at 76.

378. Jim Giles, *Finding Philanthropy: Like It? Pay for It*, 481 NATURE 252, 252 (2012).

379. As of February 2012, Funding Launchpad reported there were 138 crowdfunding sites in the United States. McCracken, *supra* note 375, at 36.

380. *About Us*, THE OPEN SOURCE SCIENCE PROJECT, <http://www.theopensourcescienceproject.com/aboutus.php>, archived at <http://perma.cc/VRL2-23QG>; Giles, *supra* note 378, at 252.

381. SCIFLIES (2014), <http://sciflies.org/>, archived at <http://perma.cc/Z4S6-F3UY>.

382. Giles, *supra* note 378, at 253; ROCKETHUB (2014), <http://www.rockethub.com/>, archived at <http://perma.cc/X68E-EVKW>.

public-interest focus. For example, Kiva is a website that allows individuals to lend small amounts to individuals in low- and middle-income countries, many of whom use these funds for entrepreneurial activities.³⁸³ Between 2005 and 2012, over 600,000 lenders provided about \$275 million in loans on the website.³⁸⁴ Furthermore, Citizinvestor allows municipalities to solicit funds for public projects that have languished because of lack of money,³⁸⁵ and Givezooks! is a crowdfunding site aimed at nonprofits.³⁸⁶ Micropatronage provides another promising mechanism to fund social innovations.

Although it shows potential, there are certainly downsides to crowdfunding. The market (in theory) allocates resources efficiently based on economic value, and government (in theory) allocates resources based on some estimation of social value. However, crowdfunding has attracted criticism as allocating resources based on trendiness and consumer whim.³⁸⁷ In a broader sense, the “wisdom of crowds” that represents one of crowdfunding’s perceived virtues may prove to be illusory,³⁸⁸ as “sexy” projects that are presented in a hip, engaging way tend to do well on crowdfunding sites.³⁸⁹ Furthermore, entrepreneurs can become beholden to investors,³⁹⁰ chasing and appeasing them in ways that distract from providing innovative social services. Additionally, crowdfunding works best for projects that have a definitive end rather than long-term projects that serve intractable social needs, and the total amount of money disbursed thus far has been relatively small.³⁹¹ Despite these limitations, crowdfunding can play a valuable role in a multiprong strategy to promote social innovation.

383. *How Kiva Works*, KIVA (2014), <http://www.kiva.org/about/how>, archived at <http://perma.cc/RP5Y-XNXS>.

384. Giles, *supra* note 378, at 253. Notably, Kiva is a forum for lending rather than donation, which is more typical of crowdfunding sites.

385. CITIZINVESTOR (2014), <http://www.citizinvestor.com/>; Noreen Malone, *Fund Me, I'm Useless: Kickstarter's Empty Promise*, NEW REPUBLIC, Dec. 6, 2012, at 8; *Breaking Ground: Online Start-Ups Are Rallying Citizens to Revamp Their Neighbourhoods*, ECONOMIST, May 18, 2013.

386. GIVEZOOKS! (2014), <https://www.givezooks.com/>; Rob Tornoe, *Alternative Funding: What You Need to Know Before Outsourcing Your Business Model*, EDITOR & PUBLISHER (May 13, 2013), <http://www.editorandpublisher.com/Features/Article/Alternative-Funding--What-You-Need-to-Know-Before-Outsourcing-Your-Business-Model>, archived at <http://perma.cc/6GHZ-AJTB>.

387. See, e.g., Malone, *supra* note 385, at 8 (describing a proposal for a giant RoboCop statue that raised \$67,436 on Kickstarter).

388. *Cf. id.*

389. *Cf. Giles, supra* note 378, at 253 (suggesting that crowdfunding for scientific research may only work for “sexy” projects).

390. Gould, *supra* note 376, at 77.

391. See *id.* at 76 (reporting that the leading crowdfunding site, Kickstarter, has raised approximately \$20 million).

C. Infrastructure, Networks, and Incubators

Public and private entities can accelerate social innovation by providing infrastructure in addition to funding. In particular, they can play an important role in facilitating the networks and communal interaction that drive social innovation.³⁹² Relationships matter a great deal in social innovation, as they serve as the primary conduits for obtaining knowledge.³⁹³ Not surprisingly, innovative communities often exhibit close relationships among their members.³⁹⁴ In addition to helping create social innovations, networks are also important for disseminating them.³⁹⁵ Social interaction represents “a sophisticated interface that provides the user with access to knowledge from individual social members and, through extension, to a variety of information systems” to help adopt a new practice.³⁹⁶ According to Trisha Greenhalgh and her colleagues, innovation adoption by individuals “is powerfully influenced by the structure and quality of their social networks.”³⁹⁷ This is particularly evident in the dissemination of CBT, which proceeded through professional and policy networks.³⁹⁸

One of the reasons that networks are so important for generating and spreading social innovations is because of their highly tacit nature.³⁹⁹ A recent strand of IP literature has examined the importance of tacit, uncodified knowledge in transferring patented technologies from one entity to another. As I and others have explored, even when an invention is formally disclosed in a patent, much invention-related tacit knowledge remains undisclosed in the inventor’s mind, and this tacit knowledge can

392. Allen Foster, *A Nonlinear Model of Information-Seeking Behavior*, 55 J. AM. SOC. FOR INFO. SCI. & TECH. 228, 229 (2004); Nicola Morelli, *Social Innovation and New Industrial Contexts: Can Designers “Industrialize” Socially Responsible Solutions?*, DESIGN ISSUES, Autumn 2007, at 3, 11; see generally HARGADON, *supra* note 145, at 5–6 (describing the importance of networks in innovation).

393. Mulgan et al., *supra* note 2, at 42; see Marlene J. Le Ber & Oana Branzei, *(Re)Forming Strategic Cross-Sector Partnerships: Relational Processes of Social Innovation*, 49 BUS. & SOC. 140, 143–49 (2010) (exploring how relational processes affect social innovation in the context of nonprofit and for-profit partnerships).

394. Emil Badilescu-Buga, *Knowledge Behaviour and Social Adoption of Innovation*, 49 INFO. PROCESSING & MGMT. 902, 909 (2013).

395. Berwick, *supra* note 221, at 1974 (“Spread requires social interaction.”).

396. Badilescu-Buga, *supra* note 394, at 905.

397. Greenhalgh et al., *supra* note 202, at 601.

398. Mulgan, *supra* note 2, at 146.

399. Cf. Bradach, *supra* note 213, at 21 (noting the importance and prevalence of tacit knowledge in the nonprofit sector).

vastly accelerate the transfer and development of a new technology.⁴⁰⁰ In similar fashion, the effective spread of social innovations often requires transferring tacit knowledge. The “know-how” for implementing and spreading a social innovation resides in personal experience rather than documentation. In the context of educational innovations, for example, “[n]umerous practices remain tacit; not explicated and not articulated, invisible and difficult to transfer.”⁴⁰¹ The tacitness of social innovations further underscores the importance of human conduits by which they spread.

More broadly, the unique nature of social innovations requires relational avenues for their dissemination, particularly compared to the seemingly objectively reproducible technologies of the patent system.⁴⁰² As discussed above, most social innovations are not discrete, physical devices, but implicate changes in routines, practices, and behavior.⁴⁰³ For example, the true “innovation” in reducing hospital-based infections involves not only a novel technique of removing one’s gown into a glove but actually inculcating a behavioral norm of consistently applying this practice among busy healthcare workers. Such human and institutional change requires a significant amount of “laying on of hands” in the form of direct personal engagement, education, and social reinforcement to spread an innovation. Such processes are highly personal in nature and not reducible to merely following steps in an instructional guide. Indeed, in some cases transferring a social innovation requires extending a particular organizational culture to a new context, which is very difficult to accomplish in discrete, arm’s length transactions.⁴⁰⁴

Governments and private entities can play a powerful role in enabling the networks that allow social innovations to coalesce and spread. After all, “bottom-up” social innovations, particularly those that are user generated, can benefit substantially from “top-down” policy intervention and support.⁴⁰⁵ For example, EMUDE, which is an initiative of the European Commission, provides enabling platforms such as “systems of

400. See, e.g., Lee, *Tacit Dimension*, *supra* note 138; Dan L. Burk, *The Role of Patent Law in Knowledge Codification*, 23 *BERKELEY TECH. L.J.* 1009, 1014–16 (2008).

401. DOMINIQUE FORAY & JULIO RAFFO, ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE, *A SMALL EXPLOSION: PATENT IN EDUCATIONAL AND INSTRUCTIONAL TECHNOLOGIES AND METHODS; WHAT DO THEY TELL US?* 9 (Sept. 24–25 2009), available at http://www.epip.eu/conferences/epip04/files/FORAY_Dominique.pdf; see also Foray & Hargreaves, *supra* note 143, at 13.

402. See *supra* Part II.E.

403. See *supra* notes 33–38 and accompanying text.

404. See Bradach, *supra* note 213, at 20–21.

405. Cf. EMUDE, Final Activity Report, *supra* note 204, at 7.

technologies, infrastructures, legal frameworks, and modes of governance and policy making”⁴⁰⁶ for social innovations. It has established a network of observers, called Antennas, at eight European design schools to help identify and share information on new practices.⁴⁰⁷ In this manner, EMUDE plays the role of a “signal amplifier” for social innovations throughout Europe.⁴⁰⁸ Governments can also provide infrastructure such as citizens’ agencies, collective spaces, and multiuser resources, such as payment schemes, that can aid a wide variety of social enterprises.⁴⁰⁹ Additionally, private efforts to support and formalize networks can also promote social innovation. For example, Ashoka represents a global network of social entrepreneurs that provides start-up financing, professional services, and connections for its members.⁴¹⁰

In a more concentrated fashion, social incubators are leveraging the power of proximity and knowledge exchange to promote social innovations. A wide literature has developed on the importance of “agglomeration economies” such as Silicon Valley, where the close proximity of firms in high-tech industries facilitates rapid dissemination of knowledge and collective technological advancement.⁴¹¹ Similarly, infrastructure in the form of social enterprise hubs, business parks, and more formalized networks may speed the development and dissemination of social innovations.⁴¹² For example, the Global Social Benefit Incubator at Santa Clara University and Project Momentum, sponsored by ESADE Business School and Banco Bilbao Vizcaya Argentaria, provide training, resources, and networking opportunities for new social ventures.⁴¹³ Additionally, Panzanee, a social enterprise incubator in Chicago, fosters co-working and communal interactions.⁴¹⁴ These incubators can promote the networks and connections that drive social innovation.

406. *Id.* at 11, 16.

407. *Id.* at 2.

408. *Id.*

409. *Id.* at 25. At a more foundational level, legal constructs like the nonprofit corporate form and tax exempt status for charitable organizations also represent “infrastructure” that ultimately helps promote social innovations. *Cf.* Hemel & Ouellette, *supra* note 264, at 353 (discussing tax incentives that help benefit Wikipedia).

410. ASHOKA INNOVATORS FOR THE PUBLIC (2014), <https://www.ashoka.org/>; see Bornstein, *supra* note 202; William Drayton, *Everyone a Changemaker: Social Entrepreneurship’s Ultimate Goal*, INNOVATIONS, Winter 2006, at 80.

411. See, e.g., ORLY LOBEL, TALENT WANTS TO BE FREE 79 (2013); Lee, *Tacit Dimension*, *supra* note 138, at 1536–39.

412. Leadbeater, *supra* note 6, at 10.

413. Casasnovas & Bruno, *supra* note 43, at 175.

414. Anne Field, *One-Stop Incubators Hatching Social Enterprise Startups*, FORBES (Apr. 20, 2012), <http://www.forbes.com/sites/annefield/2012/04/20/one-stop-incubators-hatching-social-enterprise->

D. Organizational Extension and the Theory of the Firm

Beyond networks, sometimes the best mechanism for spreading a social innovation is to expand the capabilities of an existing organization. This illustrates another significant difference between social innovations and patent law's conception of protectable innovation. As discussed above, many aspects of patent law—such as assigning individual exclusive rights in inventions, requiring robust disclosure, and emphasizing discrete claiming—aim to make patented technologies more easily tradable in markets.⁴¹⁵ In the classic formulation, markets not only motivate the generation of new technologies, they also help disseminate them.⁴¹⁶ Markets help transfer technologies from one producer to another, such as when a biotechnology firm licenses a patent to a pharmaceutical company for further development. Markets also help transfer technologies from producers to end consumers, such as when that pharmaceutical firm sells a patented drug to a patient. This model, of course, works best for discrete, “packageable” technologies that do not require a high degree of information exchange for intermediate or end users to adopt.⁴¹⁷ This model does not work well for many social innovations, which require more intensive information exchange and personal interactions for dissemination and adoption.

The theory of the firm sheds useful light on the challenges of spreading social innovations. This literature generally contrasts two archetypes for organizing production of some output: market-based processes, in which specialized firms create inputs and sell them to downstream firms that create finished products, and vertical integration, in which the “upstream” and “downstream” functions of production are integrated within individual firms.⁴¹⁸ Ronald Coase's central insight was that transaction costs explain the existence of integrated firms; in some cases, the transaction costs of integrating production within a single firm are lower than the transaction costs of market-based production.⁴¹⁹ While Coase and others highlighted “classic” transaction costs such as the expense of finding contracting parties, negotiating agreements, and contending with strategic behavior,⁴²⁰

startups/; PANZANZEE (2014), <http://panzanzee.com/>.

415. See *supra* Parts II.B–II.D; Lee, *Tacit Dimension*, *supra* note 138, at 1510–18.

416. See Kieff, *supra* note 209, at 703.

417. See Lee, *Tacit Dimension*, *supra* note 138, at 1527–28.

418. See generally R.H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386 (1937); Lee, *Tacit Dimension*, *supra* note 138, at 1541–42.

419. Coase, *supra* note 418, at 390.

420. See, e.g., *id.* at 390–93.

other costs can also stymie market-based transactions, particularly for social innovations. Even assuming that classic transaction costs are low, an effective program to combat MRSA infections cannot simply be purchased “off the shelf” in an arm’s-length transaction.⁴²¹ The need to transfer tacit knowledge, inculcate long-term behavioral change, and overcome institutional intransigence all represent costs that complicate one-off market exchanges of social innovations.⁴²² In order to spread a social innovation both to other providers as well as users, it is often helpful to embed that innovation in some kind of longer-term institutional framework.

Accordingly, the high cost of spreading social innovations helps account for the more relational and organizational modes of transfer described above: dissemination, affiliation, and branching.⁴²³ Branching is “particularly attractive when successful implementation of the innovation depends on tight quality control, specific practices, knowledge that is not explicitly documented or readily communicated, and strong organizational cultures.”⁴²⁴ Along these lines, scholars suggest that plans “to support social innovation could use industrial logics to generate organizational structures, to capture codified and (to a certain extent) tacit knowledge, and to generate economy of scope.”⁴²⁵ Relatedly, a common mechanism for spreading social innovations is through organizational growth, franchising, and building partnerships between institutions.⁴²⁶ Thus, the appropriate metaphor for spreading a social innovation may not entail packaging a discrete technology and selling it on the market, but rather expanding the reach of an existing organization, allowing buds and grafts to take root in new contexts.

E. Harnessing User Innovation and Commons-Based Peer Production

Insights from user innovation and commons-based peer production may also accelerate social innovation. As described above, much social innovation is actually user generated, arising when individuals seek to

421. See *supra* Part I.B.3.

422. See Lee, *Tacit Dimension*, *supra* note 138, at 1544.

423. See *supra* notes 234–37 and accompanying text.

424. Dees et al., *supra* note 234, at 29.

425. Morelli, *supra* note 392, at 15.

426. See Alvord et al., *supra* note 47, at 274 (“In some cases, expansion has taken the form of building a large organization to expand operations to affect hundreds of thousands of people, such as SEWA, Grameen Bank, and BRAC. For other initiatives, expansions have taken the form of building alliances with many other agencies rather than growing their own organizations.”); Bradach, *supra* note 213, at 19 (describing franchising as an effective model for growing a social enterprise).

solve everyday challenges.⁴²⁷ For example, the “positively deviant” practice of poor families in Vietnam serving shrimp, crabs, and snails to their children led to better health outcomes.⁴²⁸ Again, the model of innovation here is very different from that of the patent system, for at least two reasons. First, user innovation arises not because of exogenous profit incentives, but from individuals’ endogenous motivations to solve their own life challenges.⁴²⁹ Second, innovation here emphasizes identifying and spreading solutions that users have already generated rather than formally devoting resources to create something new.⁴³⁰ Public and private entities should devote more resources to scanning communities of practice to ascertain beneficial innovations that can be brought to scale.⁴³¹ Just as “crowds” can be rich sources of funding,⁴³² they can be rich sources of innovations themselves. The Internet can be a powerful tool in identifying and spreading these innovations. For example, several government agencies are using IdeaScale to gather ideas from employees and citizens to improve services and policy.⁴³³

Lessons for accelerating social innovation also arise from commons-based peer production, which has received significant attention in the IP realm.⁴³⁴ As illustrated in the development of open-source software, peer production is “radically decentralized, collaborative, and nonproprietary; based on sharing resources and outputs among widely distributed, loosely connected individuals who cooperate with each other without relying on either market signals or managerial commands.”⁴³⁵ Initiatives that harness commons-based production to serve the public good may constitute social innovations, such as Wikipedia, the user-generated, Internet-based encyclopedia.⁴³⁶ Such production promotes both efficiency and widespread distribution, as the fruits of such initiatives are generally

427. See *supra* notes 202–05 and accompanying text.

428. See *supra* notes 191–97 and accompanying text.

429. See *supra* note 201 and accompanying text.

430. See *supra* notes 198–201 and accompanying text.

431. Cf. Berwick, *supra* note 221, at 1973 (proposing that health care institutions formally devote resources to scanning the literature and attending conferences to ascertain novel practices).

432. See *supra* Part III.B.3.

433. *Open Government*, IDEASCALE (2014), <http://ideascale.com/gov/>.

434. See YOCHAI BENKLER, *THE WEALTH OF NETWORKS* 59–90 (2006) [hereinafter BENKLER, NETWORKS]; Yochai Benkler, *Coase’s Penguin, or, Linux and the Nature of the Firm*, 112 YALE L.J. 369 (2002) [hereinafter Benkler, *Linux*]; Michael J. Madison et al., *Constructing Commons in the Cultural Environment*, 95 CORNELL L. REV. 657 (2010); Kapczynski, *supra* note 9, at 990.

435. BENKLER, NETWORKS, *supra* note 434, at 60.

436. See Kapczynski, *supra* note 9, at 973 (describing Wikipedia as an example of a commons-based approach to cultural production).

broadly accessible.⁴³⁷ Another example of socially valuable peer production is the Audubon Society's Christmas Bird Count, which enlists volunteers to identify, count, and report the birds they see, thus serving the social good.⁴³⁸ Similarly, the reCAPTCHA security feature on many Web registration forms, in which users type words appearing in an image, is actually part of a worldwide effort to digitize books and other content.⁴³⁹ Notably, as in many areas of social innovation, commentators have recognized the importance of strong, charismatic leaders to coordinate "peer" production.⁴⁴⁰ As seen in these examples, government and private entities can again play important roles in fostering commons-based peer production to serve the social good.

More ambitiously, the aggregation of independent but parallel social innovations creates enormous potential for social transformation. As EMUDE recognizes, "there exists a new form of creativity: a diffused creativity put co-operatively into action by 'non-specialised' people."⁴⁴¹ It goes on to recognize "the concept of *diffused social enterprise (DSE)*, as the evolution of *creative communities* in more mature and lasting forms of social organization."⁴⁴² The diffused social enterprise represents a more macroscopic, stable, sustainable version of local creative communities.⁴⁴³ In sum, through funding, sharing information, providing technical assistance, and sponsoring forums for communities to coalesce, public and private entities can play an important role in harnessing distributed activities on a mass scale to promote the public interest.

* * *

The challenges of the contemporary era, from education to eldercare, demand new social innovations.⁴⁴⁴ Once policy makers and business leaders began to appreciate the social and economic importance of technological innovation, they supported it with large-scale public funding, corporate and university research departments, and systematic testing of new ideas.⁴⁴⁵ Social innovation has yet to undergo a similar

437. *Id.* at 1000–01.

438. Tepper, *supra* note 336, at 28. In 2011, 62,624 observers counted 61,359,451 birds in North and South America. *Id.*

439. *Id.*

440. See, e.g., Dreyfuss, *Does IP Need IP?*, *supra* note 60, at 1453–54.

441. EMUDE, Final Activity Report, *supra* note 204, at 3 (emphasis omitted).

442. *Id.* at 4.

443. *Id.* at 5.

444. See Mulgan, *supra* note 2, at 159.

445. *Id.*

revolution of recognition,⁴⁴⁶ and the time is ripe for such a revolution to begin. Exclusive rights would be a poor strategy for promoting social innovation, but public and private entities can do much to accelerate this important domain of human creativity. Grants and social capital markets can provide the necessary financial resources to drive social innovation without subjecting it to a counterproductive regime of exclusive rights. Prizes may be particularly well suited for discrete, ambitious social challenges for which a prescribed solution does not exist. Crowdfunding may be useful for early-stage social innovations as long as more reliable funds are available to address pressing needs. Governments and private entities can also promote social innovation through providing enabling infrastructure and fostering networks and incubators. At a theoretical level, proponents of social innovation should look beyond market models of dissemination to explore extending existing organizational capacities. Finally, public and private entities can scan the prior art for user innovation and coordinate peer production to serve the public interest. In this manner, supporting social innovation will not only serve immediate public needs, it will also lead to a more innovative society.

IV. TOWARD A MORE HOLISTIC FRAMEWORK FOR INNOVATION LAW AND POLICY

This Part builds upon the previous discussion to contribute to a more holistic framework for innovation law and policy, both in its objectives and the means employed to accomplish them. One aspect of this project involves drawing upon social innovation to strengthen efforts to promote more “traditional” technological innovation. More broadly, this project requires that innovation law and policy adopt a more capacious understanding of innovation, one that spans social, technological, utilitarian, and distributive values.

A. Enhancing Technological Innovation in Light of Social Innovation

Although proponents of social innovation can learn much from intellectual property law and efforts to promote traditional technology, the reverse is true, too. Attempts to promote technological innovation can certainly benefit from the insights of social innovation. This should not be surprising given that there is no bright line separating these two domains

446. Cf. *id.*

of innovation;⁴⁴⁷ these labels simply reflect differences in focus within the general realm of creative activity. While patents play an important role in generating and disseminating new technologies, a more holistic conception of innovation can lead to a broader suite of policy tools for promoting technological progress.

To begin, this study reveals the deeply communal nature of innovation, both technological and social. Although patent law's project of assigning individual property rights obscures this reality, federal and local technology policy should more explicitly support the networks and agglomeration economies that facilitate communal innovation.⁴⁴⁸ One clear policy proposal is to foster technological districts such as Silicon Valley and the Research Triangle area in North Carolina, which some localities have attempted with varying degrees of success.⁴⁴⁹ At a more local level, "boundary-spanning" entities play a crucial role in transferring technical knowledge between diverse realms.⁴⁵⁰ For example, technology transfer offices (TTOs) at universities can play a stronger role in bridging institutional and cultural gaps between academia and industry,⁴⁵¹ thus driving communal progress. In terms of bridging communities, government can play a salutary role by fostering interdisciplinary research, which is often the fount of new breakthroughs.⁴⁵² As an example in this regard, the National Institutes of Health has created an interdisciplinary facility to perform neuroscience research,⁴⁵³ thus bringing together diverse expertise.

A related policy intervention involves government-sponsored infrastructure around which innovative efforts can coalesce. Broad, enabling resources such as the Internet, interface protocols, and communal assets such as GenBank (an open-access database of nucleotide

447. See *supra* note 137 and accompanying text.

448. See Lee, *Tacit Dimension*, *supra* note 138, at 1536–39, 1546–47.

449. See Jennifer L. Croissant & Laurel Smith-Doerr, *Organizational Contexts of Science: Boundaries and Relationships Between University and Industry*, in *THE HANDBOOK OF SCIENCE AND TECHNOLOGY STUDIES* 691, 694 (Edward J. Hackett et al. eds., 3d ed. 2007).

450. See Lee, *Tacit Dimension*, *supra* note 138, at 1561.

451. *Id.* at 1561–62.

452. Pedraza-Farina, *supra* note 163, at 838–39 (“[D]iscovery is inherently relational, emerging from a complex, interactive back-and-forth among researchers, often in different communities of practice or social worlds.”).

453. Carla Garnett, *Final Part of Bldg. 35, 'Porter II' Nears Groundbreaking*, NIH REC., Aug. 20, 2010, at 1, 6, available at http://nihrecord.od.nih.gov/newsletters/2010/08_20_2010/story1.htm; cf. Pedraza-Farina, *supra* note 163 (noting that a high proportion of significant breakthroughs are interdisciplinary in nature).

sequences)⁴⁵⁴ can help establish the conditions of creativity that drive collective innovation. Of course, a broadly enabling resource that should not be ignored is money. Although the patent system prides itself as a market-based system of technological development, such private innovation rests upon a broad foundation of publicly funded research.⁴⁵⁵ Just as public funding can vastly accelerate social innovation, it is also necessary to drive technological advancement.

Finally, this study of social innovation reveals that the true value of innovation often lies not so much in invention but in implementation, replication, and extension.⁴⁵⁶ This parallels empirical accounts of technological development, in which invention still left significant technical challenges to be solved. As such, a legal and regulatory framework dedicated to promoting technological innovation should address these important considerations. In this regard, commentators have suggested “commercialization patents” and “innovation warrants” to help encourage the transition from invention to commercial product.⁴⁵⁷ Federal funding for development and translational research can also help promote more valuable “downstream” development and dissemination.

B. Pluralizing Conceptions of Innovation and Serving Distributive Values

In addition to augmenting patent law’s narrow conception of innovation, this Article also seeks to pluralize the values that contemporary innovation law and policy serves. In ways both subtle and explicit, current innovation law and policy is heavily oriented toward satisfying market needs. Patents represent governmental interference with the market, but they do so under the guise of “correcting” market failure, thus shoring up incentives to invent. The resulting generation and distribution of technology is perceived to be the ineluctable consequence of natural forces. Relatedly, the framing of patents as property rights further undergirds a conception of the patent system—and the portfolio of technologies it helps produce—as the “natural” result of initial

454. *GenBank Overview*, NAT’L CTR. FOR BIOTECH. INFO. (2014), <http://www.ncbi.nlm.nih.gov/genbank/>.

455. See, e.g., Peter Lee, *Contracting to Preserve Open Science: Consideration-Based Regulation in Patent Law*, 58 EMORY L.J. 889, 975 (2009); Lee, *Distributive Commons*, *supra* note 9.

456. Cf. Gardner et al., *supra* note 224 at 1052 (“[Innovation] encompasses the entire process—from idea to implementation—for new products, services, processes, practices, and policies.”).

457. See *supra* note 245 and accompanying text.

entitlements coupled with voluntary transactions.⁴⁵⁸ But this system is far from neutral. Most obviously, the market utilizes ability to pay rather than human need, moral desert, or other criteria to ration technology, meaning that many innovations will be inaccessible to low-income populations. More substantively, the market neither captures nor reflects the full social value of innovations.

Markets do not only apply value-laden criteria to select who gets existing innovations, they also determine the *kinds* of innovations that society develops in the first place. Not surprisingly, markets select for innovations that are valued in markets.⁴⁵⁹ Such a system is unlikely to allocate significant resources toward innovations of great social value but low market value, such as those that primarily address the needs of the poor.⁴⁶⁰ Furthermore, the market is poorly situated to generate innovations arising from diffuse, communal origins where it is difficult to identify and remunerate individual owners who contribute value.⁴⁶¹ This Article's analysis of social innovations is thus inseparably intertwined with a distributive critique of market-oriented, patent-based innovation.⁴⁶² Such a system works fairly well for a discrete slice of technological innovation, but it largely ignores an important realm of innovation that serves substantive needs of underprivileged populations.

Patent law is a cultural artifact. It is in some measure an indication of the types of innovations—and innovative processes—that a society deems valuable. IP scholars warn that policy makers should be wary of the “if value, then right” fallacy,⁴⁶³ just because a creation is valuable does not mean it should be subject to intellectual property rights.⁴⁶⁴ Conversely, policy makers should be wary of the “if right, then value” fallacy; just

458. See Harry First, *Controlling the Intellectual Property Land Grab: Protect Innovation, Not Innovators*, 38 RUTGERS L.J. 365, 370 (2007) (“Indeed, there is a long history of proponents of greater protection for such products using the word ‘property’ to legitimize their arguments.”).

459. See *supra* notes 12–13.

460. See Amy Kapczynski et al., *Addressing Global Health Inequities: An Open Licensing Approach for University Innovations*, 20 BERKELEY TECH. L.J. 1031, 1051 (2005) (“A mere ten percent of the world’s expenditure on R&D is devoted to conditions that cause ninety percent of the global disease burden”); cf. LOBEL, *supra* note 411, at 254 (“As a society, we value progress in areas such as health, education, research, equality, art, and science that is not reflected solely in the dollar value of the immediate transactions that occur in the market.”).

461. Cf. Benkler, *Linux*, *supra* note 434.

462. See Kapczynski, *supra* note 9, at 999 (“[D]istributive justice plausibly demands not just fair distribution of information goods but also equitable production of information goods.”).

463. See Rochelle Cooper Dreyfuss, *Expressive Genericity: Trademarks as Language in the Pepsi Generation*, 65 NOTRE DAME L. REV. 397, 405 (1990) (describing the emergence of the “if value, then right” rationale in trademark law).

464. See, e.g., *id.*; Peter Lee & Madhavi Sunder, *Design Patents: Law Without Design*, 17 STAN. TECH. L. REV. 277, 298 (2013).

because some creations are subject to exclusive rights does not mean that those that are freely available lack value. In fact, innovations that fall outside the patent paradigm may be incredibly valuable and deserving of public and private support. Carol Rose once observed that the common law of first possession reflects “the articulation of a specific vocabulary within a structure of symbols understood by a commercial people.”⁴⁶⁵ In similar fashion, the contemporary innovation law and policy framework—of which patent law constitutes a significant part—reflects a commercially oriented conception of value. While this is an important kind of innovation with significant implications for economic and social welfare, a holistic legal and policy framework must go further to promote forms of innovation beyond the patent paradigm that serve other values as well.

CONCLUSION

Although a smartphone is clearly an important innovation, so is a novel strategy for reducing hospital-based infections. This Article has broken new ground by exploring the underappreciated phenomenon of social innovation. Rather than offer a crisp definition of social innovation, this Article argues that it is best understood by its distinguishing characteristics. Social innovations, such as CBT, microfinance, and strategies to reduce nosocomial infections, aim to enhance social welfare, are generally intended for wide distribution, and seek to change individual and institutional behavior. They often address the gaps left by market and political limitations and are distributive in nature, serving the needs of the underprivileged. Social innovation represents an important realm of innovation, and it proceeds almost completely outside of patent law.

This study of social innovation reveals the rather crabbed, particularistic conception of innovation embedded in patent law. Within the patent paradigm, protectable innovation is individualistic, discrete, novel, and objectively reproducible. Much social innovation, however, is communal, somewhat amorphous, not strictly novel, and depends significantly on sustained human interaction for replication and extension. Notably, these attributes apply to innovation dynamics more generally, including technological innovation that is subject to patents. Patent law’s project of assigning individual rights to inventions thus relies upon and reinforces a somewhat distorted conception of the innovative processes it seeks to promote.

465. CAROL M. ROSE, *PROPERTY AND PERSUASION* 20 (1994).

Moving from the descriptive to the prescriptive, this Article has offered several proposals to accelerate social innovation. It cautions against extending exclusive rights over such creations and instead argues for more public and private funding of social innovation through grants, social capital markets, prizes, and crowdfunding. It further argues that governments and private entities can accelerate social innovation through providing enabling infrastructure and fostering organizational strategies of dissemination, user-generated creativity, and commons-based peer production.

At a more fundamental level, this Article has argued for a more comprehensive, holistic framework for innovation law and policy. It contends that policy makers should recognize and account for the narrow way in which patent law conceives of innovation. Although exclusive rights represent a powerful tool for promoting technological progress, policy makers in the public and private sectors should also promote creative communities, provide enabling infrastructure, and prioritize implementation, replication, and extension of existing innovations. Furthermore, this Article has argued for an innovation law and policy framework more sensitive to interests beyond market value, such as distributive equity. Through applying these lessons, public and private parties can transcend the patent paradigm to promote a more vibrant, multifaceted approach to innovation that serves all of society's diverse needs. Innovation, after all, is an inherently social enterprise.