Introduction: navigating in the dark when bits have no borders[1]

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I.1 INTRODUCTION

Digital communications, it is often claimed, accelerate cultural convergence, disrupt local cultures and threaten the nation state itself.[2] Whether termed a "Flat Earth" or "Global Village," the planet's shrinking and linking is widely accepted as a fait accompli.[3] Many celebrate this supposed acceleration and integration, seeing freedom in globally networked communities or profit in the accumulation of eyeballs to monetize. Others fear a monocultural wasteland; the vision of global unity celebrated by Disneyland's "Small World" is derided as a Potemkin village masking inequalities of access and influence.

But the metaphors and pundits' prognostications hide how little is understood about how the globe produces, consumes, and exchanges cultural media. For example, is it in fact true that the richness of cultural diversity has retreated in the Internet age? The evidence is mixed. Closer examination reveals both peaks and valleys in the "Flat Earth," and the "Global Village" turns out to be as much "Cyberbalkans" as homogenized

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[2] *See, e.g. The Future is Another Country*, THE ECONOMIST, July 24, 2010, at 59.

[3] Thomas Friedman, THE WORLD IS FLAT: A BRIEF HISTORY OF THE TWENTY-FIRST CENTURY (2005); McLuhan, Marshall, UNDERSTANDING MEDIA 6 (1964) (describing the global village created by electric communications).

McWorld.[4] Far from impoverishing global diversity, digital technologies can empower local productions, opening audiences and reducing barriers to entry and distribution costs.

Moreover, rather than passively watch their borders become obsolete, governments have reasserted themselves. Digital communications at every level are increasingly subject to state control from the explicit censorship of "content" (e.g. Internet filtering)[5] to regulation of the "pipes" (e.g. communications standards)[6] to restrictions on "speakers" (e.g. domestic content quotas and media ownership laws).[7] Amidst this thicket of regulatory intervention, cyber-libertarian proclamations of independence today seem naïve.[8]

The normative basis for such interventions, however, is often murky. From Internet governance to intellectual property rights to trade policy and media regulation, we have inherited a patchwork of piecemeal, sometimes contradictory policies. Moreover, our regulatory framework relies on a tool box of shared concepts which is arguably outdated. The peculiar economics of digital production and network industries calls into question long-accepted models concerning industry concentration and international trade. Old goals of media regulation such as "diversity of viewpoint" seem antique given the Internet's ability to provide access to near infinite content.[9] The incentive theory undergirding intellectual property rights provokes similar skepticism; copyright laws are criticized as obsolete relics, rooted in analog-era assumptions of scarcity.[10]

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[4]   Marshall Van Alstyne and Erik Brynjolfsson, *Global Village or Cyber-Balkans? Modeling and Measuring the Integration of Electronic Communities*, 51 MANAGEMENT SCIENCE 851 (2005).

[5]   *See* ACCESS DENIED: THE PRACTICE AND POLICY OF GLOBAL INTERNET FILTERING (R. Deibert et al. eds, 2008).

[6]   Philip J. Weiser, *Cyber Law: Issues Affecting the Internet and its Governance*, 28 N. KY. L. REV. 822 (2001); *A Plaything of Powerful Nations*, THE ECONOMIST, October 1, 2011, at 63.

[7]   *See* Sean Pager, *Beyond Culture vs. Commerce: Decentralizing Cultural Protection to Promote Diversity Through Trade*, 31 NORTHWESTERN J. INT'L L. & BUS. 63, 69, 82, 102–04 (2010).

[8]   *Cf.* John Perry Barlow, *Declaration of Independence of Cyberspace*, quoted in *A Virtual Counter Revolution*, THE ECONOMIST, Sept. 4, 2010, at 75; Philip Elmer-Dewitt, *First Nation in Cyberspace*, TIME International, Dec. 6, 1993 (quoting John Gilmore) ("The Net interprets censorship as damage and routes around it").

[9]   For an analysis, history, and critique of the FCC's media diversity regulation, from its inception in the 1930s to the present, see *Media Ownership Regulation, the First Amendment, and Democracy's Future*, 41 U.C. DAVIS L. REV. 1547 (2008) (reprinted in THE FIRST AMENDMENT LAW HANDBOOK 2009–10 (Rod Smolla, ed.)).

[10]   Eben Moglen, *Anarchism Triumphant*, FIRST MONDAY, 2 Aug. 1999, *available at* http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/684/594.

What are needed, therefore, are new paradigms for regulating cultural production and distribution in the digital age. This book attempts to fill this void, by shedding light on insufficiently examined issues and by highlighting connections that cut across the many different domains in which such regulations operate. In his contribution to this volume, David Post, one of the first and most prominent scholars of cyberlaw, offers a useful framework for conceptualizing the regulatory challenges posed by digital networks. He identifies three aspects in which Internet communication has brought fundamental change: (1) scale; (2) jurisdiction; and (3) identity. Many of the chapters in this volume grapple with issues consistent with Post's framework.

I.2 SCALE

First, the Internet has revolutionized scale. As Post says:

> We're operating at a scale here that is orders of magnitude larger than anything that has ever come before it in human experience . . . the Internet is big, [and] it really matters that it's big . . . The question of whether and how law operates at this scale is a very serious one, and yet we spend hardly any time thinking about it, because we have no framework or vocabulary to do so.

Several contributors take up Post's challenge to explore the implications of the internet's colossal scale. Daniel Gervais envisions a future in which "[e]verything digital will be in the Cloud. Almost every bit of human culture, every song, book, document, and movie ever made." He argues that issues of access and control become critical to realizing the benefits of this new "amalgamation paradigm." Similarly, Philip Napoli and Mira Burri question the premises of existing diversity regulation in an era of abundant content in separate contributions on media regulation that focus, respectively, on domestic and international contexts. Post himself questions the ability of copyright law to cope with the volume at which new content is being created and distributed. He calls for a fundamental re-engineering of current law.

Daniel Gervais advances a similar critique in the context of cloud computing. He concludes that "copyright control may indeed be easier" in the digital Cloud but questions "[w]hether [it] makes sense . . . to put the brakes on the most powerful distribution network ever invented." For Gervais, the scaling effects of cloud computing – which magnify by several orders the accessibility of creative content – argue for a new commercial paradigm in which the ability of users to locate content becomes the source of the content's underlying value rather than an artificially induced scarcity of supply.

However, the scale implications of the digital technologies go well beyond the "bigness" of the Internet. Digital networks have not only expanded capacity, they have also dramatically lowered costs: content distribution over the internet is virtually free. Digital content also tends to be much cheaper to create and edit than comparable analog media, lowering the capital requirements for cultural participation. Such radical downsizing of costs further explains the exponential growth of digital content that Post chronicles.

Driving the economics of abundance are not only economies of scale, but also a related, but less examined attribute – economies of scope. Whereas scale economies involve lower marginal costs to produce additional content of the same kind, economies of scope are realized through reductions in the marginal cost of providing different types of content and services using shared infrastructure.[11] The protean character of digital technology makes scope economies pervasive. For instance, cellphones provide access to movies, books, Internet access, gaming – and even voice communications. Rather than requiring expensive infrastructure dedicated to any one of these tasks, content providers can bundle complementary goods and services, creating value through integrated solutions. As a result, digitization has blurred the typical boundaries of media provision.

This blurring, furthered by economies of scope and scale, results in regulatory confusion because it disrupts the FCC's technology-specific, "silo"-type regulation. Title II of the United States (US) Communications Act regulates telephones, Title III regulates broadcast, and Title VI regulates cable. But, as telephones provide video and cable provides telephone service and the Internet provides everything, these categories teeter on their own irrelevance. The recent history of United States domestic telecommunications regulation seems like a "whack-a-mole" game. Regulators classify services provided on different technologies, creating rules that seem to work but are quickly outdated as those services migrate to yet another different technology.[12]

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[11] "[E]conomies of scale exist when the production cost of a single product decreases with the number of units produced; economies of scope are cost-saving externalities between product lines (e.g., the production of good A reduces the production cost of good B)." Jean Tirole, THE THEORY OF INDUSTRIAL ORGANIZATION 16 n. 4 (2003). The expansion of Amazon's product line from books to goods of all kinds offers an example of the potential for e-commerce platforms to exploit such economies of scope.

[12] The legal challenges of the FCC's regulation of competitor access to last-mile Internet provision reflect this challenge. The question of whether to regulate the Internet as an "information service," "telecommunications service," or "cable service" dominate the last decade of telecommunications regulation. *See National*

Economies of scope underwrite the Internet's content cornucopia in other ways. Digital technologies facilitate the creation of mash-ups and multimedia presentations. The ease with which digital media can be manipulated has blurred boundaries between users and producers. The result has been a radical decentralization and democratization of cultural production.[13] The diversity of expression thereby generated represents yet another scale effect of the Internet. However, the story here is arguably as much about "smallness" as it is about "bigness." By empowering "pajama bloggers" and digital pamphleteers of every stripe, the result has been a cacophony of voices catering to every conceivable audience, however tiny.

The lower marginal costs of digital production and distribution are also changing the economics of commercialized content. E-commerce platforms typically have lower capital requirements than "bricks-and-mortar" equivalents. Search engines also make it easier to locate relevant content amidst the mountains of data. Contrary to standard narratives of media imperialism in which integration rewards scale economies, digital ecosystems therefore seem peculiarly hospitable to diverse forms of expression.

Economies of scope underlie much of this diversification of content. Chris Anderson has popularized the concept of "long-tail markets" in which "the biggest money is in the smallest sales."[14] Long-tail markets exploit the reduced marginal costs of adding additional content, and different types of content, encouraging retailers to cater to niche audiences and potentially auguring a shift in consumer demand toward more diverse media offerings. Several contributors explore the implications of long-tail markets.

Michal Shur-Ofry cites long-tail phenomena in her defense of copyright law against charges that it impoverishes media diversity. Napoli and Burri similarly argue that government diversity regulations need to take account of the diversity potential of long-tail markets. Burri offers policy suggestions to reinforce this potential. Napoli, however, notes debate as to whether "the resultant fragmentation of audiences into specialized 'silos' is ultimately beneficial."

Cable & Telecommunications Association et al. v. Brand X Internet Services et al., 545 U.S. 967 (2005); *AT&T Corp. v. City of Portland*, 216 *F.3d* 871 (9th Cir. 2000) – and, indeed, given the appeals recently filed challenging on jurisdictional grounds the FCC's latest network neutrality order, will continue to dominate law and policy controversy. *See* In the Matter of Preserving the Open Internet Broadband Industry Practices, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order (rel. December 23, 2010).

[13] Yochai Benkler, The Wealth of Networks 15 (2006); Madhavi Sunder, *IP3*, 59 Stan. L. Rev. 257, 262–64 (2006).

[14] Chris Anderson, The Long Tail: Why the Future of Business is Selling Less of More, 23 (2006).

Such "fragmentation" concerns arguably recede where the specialization of digital media tracks pre-existing fault-lines of communal identities. By unifying dispersed communities, digitally networked technologies help them to sustain their distinct identities within the Global Village.[15] Larisa Mann explores this potential in her chapter on Jamaica's dancehall. She shows how digital communications, such as cellphones and inexpensive playback media, have empowered Jamaican *musickers* to project their identities onto a global stage. Kim Christen similarly highlights ways in which indigenous peoples exploit digital platforms to project their identities and perpetuate their cultural heritage. Sean Pager offers additional examples from Brazil's *tecno brega* music scene and Culture Points initiative. These case studies demonstrate how the downsizing of digital cost curves can sustain diverse subcultures and empower localized production.

Nollywood, the Nigerian video film industry, offers an even more dramatic example of the empowering potential of digital technologies. The implications of Nollywood's improbable emergence from guerilla filmmaking to global audio-visual powerhouse are explored in contributions by both Sean Pager and Mark Schultz. As Pager notes, the low-cost, high-volume production model pioneered by Nollywood has been imitated in several African countries. The implications for trade policy, copyright, democracy, and much else are worth considering.

I.3   JURISDICTION

The Internet is not just big; it is also (allegedly) "borderless." Early fantasies about evading government control have given way to a new assertion, however tentative and awkward, of state jurisdiction over activity conducted on and through the Internet. Given the ubiquitous nature of online content, such regulatory interventions raise novel issues concerning conflicts of law. Several contributors explore the problems arising from the Internet's ability to project a "virtual presence" anywhere in the world. As Post explains, the "multiple overlapping jurisdictional assertions by state, international, and even nonstate communities" creates novel legal, analytic and policy challenges.[16]

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[15]   *See A New Sort of Togetherness*, The Economist, May 22, 2010, at 64; *A Cyber-House Divided*, The Economist, Sept. 4, 2010, at 61.
[16]   Post here is quoting from Douglas Schiff Berman's 2012 book, Global Legal Pluralism: A Jurisprudence of Law Beyond Borders.

Lili Levi's contribution addresses the issue of overlapping jurisdiction directly in the context of libel tourism, the phenomenon in which libel plaintiffs forum shop (or travel) to foreign jurisdictions, mostly prominently England, in order to press libel suits that would fail in the plaintiffs' home. She analyzes the recently passed SPEECH Act that the United States (US) Congress enacted "in response to high profile libel lawsuits against American authors and publishers in England by plaintiffs with thin ties to the forum."[17] The Act responds to the scenario that "the Internet and the international distribution of foreign media [might en]danger . . . freedom of expression worldwide on matters of valid public interest."[18] Levi, however, raises serious concerns about the effectiveness of the SPEECH Act and proposes other approaches to protect against libel while still protecting free speech on the global Internet.

Other contributors explore similar threats to free speech arising from such jurisdictional convergence. Daniel Gervais examines the possibility that the migration of Internet content to the Cloud could accentuate such threats. He worries that the move to a recentralized architecture, could make "control of digital files easier for copyright holders and governments."

Hannibal Travis paints a picture of nation-states using their power within their borders to chill speech beyond them. He details a long and detailed litany of national governments censoring and limiting online speech and describes their numerous strategies for doing so. He argues that this censoring can have a pernicious effect on Internet freedom worldwide – suggesting that nation states can "leverage" their jurisdiction over geographic boundaries into the Web. Given uneven protections of free speech globally, Travis argues for a multipronged policy response, concluding that in expression-restrictive countries, "self-help, defense of new public spheres, transborder cooperation, and voting with one's feet are more likely to succeed than filing lawsuits or asserting constitutional rights."

Rather than express concern about the effect of strengthened national authority over the web, Kevin Saunders examines ways to strengthen

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17   *See* Lili Levi, Chapter 3 in this volume.
18   *See* SPEECH Act, Pub. L. No. 111-223, § 2 (4), 124 Stat. 2380 (2010) (quoting UN Human Rights Comm'n Report); U.N. Human Rights Comm., Consideration of Reports Submitted by States Parties Under Article 40 of the Covenant, Concluding Observations of the Human Rights Committee, United Kingdom of Great Britain and Northern Ireland, ¶ 25, U.N. Doc. CCPR/C/GBR/CO/6 (July 30, 2008).

national jurisdiction – for the purpose of protecting children. Saunders suggests in his chapter 'Balkanizing the Internet' that all Web address be required to have national demarcations. Parents could easily filter out sites from nations that do not adequately protect children from pornography and other harmful activity. In other words, Saunders proposes an innovative technological means to resolve the jurisdictional conflict conundrum.

As nation-states expand their control of Internet content, an accompanying debate concerning the legitimacy of such control, from both a normative and an international law perspective, has developed. In an important addition to that debate, Milton Mueller makes an impassioned critique of process-oriented proposals to evaluate government internet blocking. He concludes that "advocates [of process-based blocking norms] are confused about the political determinants of censorship policies, and about how and why state power ever gets limited or moderated and concludes that "[f]ighting for process norms largely co-opts and diverts . . . political energy into less productive channels."

The regulatory challenges transcend state actors. To use Post's language, "jurisdictional hybridity" has increasingly become a conundrum of private law, as well as public. Private Internet intermediaries, such as broadband service providers and backbone haulers have the power to act as private censors, controlling what content users can communicate and access. Several commentators examine legal responses to potential abuses by such intermediaries in a jurisdictionally hybrid Internet.

The growing control over digital ecosystems exercised by a small number of private corporations raises concerns about potential censorship. As Christoph Graber observes, the code that regulates cyberspace empowers private bodies. Graber argues that threats to free-speech values on the Internet arise more often from private regulation rather than from state intervention.

Graber makes the case for "'constitutional rights in the private sphere'" in the digital networked ecology. He suggests that "[w]hat is required is a regulatory framework assuring transparency, presumption of innocence, judicial response and due process. Moreover, framework requirements would be necessary to regulate the design of the technological infrastructure where this is necessary to protect the associative link between creative user activities and the integrity of digital systems."

Daniel Gervais similarly worries about "defective or suboptimal intermediation in Cloud access and content generation." He notes a role for competition law and other regulatory interventions to police such risks. Yet, he also worries that government intervention may itself invite potential abuses. Instead, Gervais argues for rethinking our current copy-

right paradigm to realign the incentives of content providers. Without such restructuring, he warns that the increased control afforded to rights-holders in a centralized digital ecosystem will prove increasingly counterproductive.

Even without centralized hosting of digital content, Larisa Mann argues that digital networks can bring an unwelcome extension of copyright enforcement. Drawing on Julie Cohen's work on "pervasively distributed copyright enforcement," she worries that networked technologies create a standardized geography of information space that disrupts communal norms and inhibits vital cultural expression. Mann also highlights the unequal ability of poorer communities to comply with the new requirements of legal formalism that networked information management regimes demand. At the same time, she takes comfort in the enforcement gaps that limit the reach of the new global order in developing countries such as Jamaica. In her view, such jurisdictional lacunae provide the space for diverse sources of creativity.

The jurisdictional gaps that Mann welcomes represent part of a broader phenomena of evasion that the distributed nature of digitally networked media facilitates. In this regard, the original libertarian narrative of cyberspace as a lawless realm beyond the writ of governments retains some force. From the standpoint of commercial content producers, such lawlessness appears a vital threat in which lack of control trumps concerns about heavy-handedness, and enforcement gaps loom larger than the threat of overreach. As Gervais notes, the ease by which digital media can be pirated has spurred a sustained effort to expand global copyright norms.

It is worth noting, however, that as both Schultz and Pager observe, demand for more effective enforcement is emanating from emerging-market producers as well as those in developed markets. Rampant piracy inhibits investment in creative content industries that can themselves constitute diverse sources of expression. Jurisdictional gaps in the digital ecosystem thus stand a potential threat to diversity as well as its guarantor.

Finally, Kimberly Christen offers an account of indigenous communities' ability to bend technologies to their own needs in ways that arguably transcend existing paradigms. By transposing communal norms regarding information access into technologically mediated access controls, Christen argues that such communities have bypassed existing debates about openness versus closure and individuals versus groups in favor of pragmatic solutions. However, she notes that "what is missing is the same amount of openness and creativity from non-indigenous players to recognize, respect, and integrate indigenous models of information management into the mainstream."

I.4   IDENTITY

Digital networks do not just spawn jurisdictional complexities, they also connect communities in novel ways that bring issues of identity to the fore. David Post focuses on the cyber-dimensions of such identity formation. He describes how the Internet has created new networks of individuals linked not by nation-state, geography, political persuasion, or religion – but rather united by the interests that the Internet itself defines and creates, that is, to use Post's term, "Netizens." Post emphasizes that such Internet allegiances exist on top of pre-existing commitments to national and local identities, rather than in lieu of them. However, he calls for such emerging constituencies to embrace their Netizen identities in order collectively to envision solutions to their common challenges.

The cause of Internet freedom has long provided a rallying cry for Netizens to unite around. Travis, Graber and Mueller's contributions all consider the extent to which free speech ideals provide a global paradigm for Internet regulation in ways that resonate with Post's Netizen perspective. As Travis notes, Hilary Clinton's elevation of Internet freedom to become an explicit goal of US foreign policy similarly reflects a Netizen-like vision of a global information commons.[19] Yet, Travis also points to contradictions in the US position with regard to copyright liability that undermine its claim to universality. It remains unclear whether defining a shared Netizen identity can help us to resolve such normative impasses.[20]

For many policy-makers, however, the challenge posed by the Internet is less one of nourishing a shared Netizen identity than of safeguarding local identities against the centralizing pull of global media. As noted, there are reasons to think that the Internet differs from previous communications technologies that led to greater concentration and homogeneity of globalized expression. Several contributors to this volume consider the effects of digital networks on local identities, and in many respects the accounts presented here support an optimistic outlook.[21] Contrary to

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[19]   *See also* Noah Shachtman, *Social Networks as Foreign Policy*, THE NEW YORK TIMES MAGAZINE, Dec. 11, 2009.

[20]   *Cf. A Cyber-House Divided*, THE ECONOMIST, Sept. 4, 2010, at 61. Similar problems bedevil the net neutrality principle adverted to by Mira Burri. While Netizens may embrace neutrality ideals in the abstract, implementing such ideals entails working through complexities in which such superficial consensus rapidly founders. *See* Adam Candeub and Daniel John McCartney, *Law and the Open Internet*, 64 Fed. Comm. L.J. (forthcoming).

[21]   See especially Chapter 13 by Mann, Chapter 11 by Schultz, Chapter 12 by Pager, and Chapter 14 by Christen.

the standard narratives of media imperialism, digital technologies have in many respects served to empower local expression and reinforce cultural diversity.

Yet, valid grounds for skepticism remain. The Jamaican dancehall might be flourishing, but other local cultures are clearly in decline.[22] Some see the competition between global memes as a zero-sum game. For example, Nollywood's success has prompted complaints about Nigerian cultural imperialism.[23] Moreover, as Christen notes, the resourcefulness displayed by indigenous peoples in adapting technology to their cultural needs can only go so far in a world that "continue[s] to devalue indigenous knowledge systems." Similarly, while debunking accusations that copyright law tilts consumer tastes toward mass-media consumption, Shur-Ofry identifies a multiplicity of causal influences that push toward precisely such an outcome.

Part of the problem remains logistical. For all the Internet's democratizing force, inequalities of access remain a persistent obstacle.[24] Yet, even as efforts to erase the digital divide proceed, increased connectivity brings challenges of its own. Arguably, the lack of connectivity has preserved islands of diversity against an influx of homogenizing influences. While few would advocate imposing such a technological quarantine involuntarily, Jon Garon describes the proposals to regulate cultural exchange that push in analogous directions. Garon's chapter chronicles the emergence of an ethic of cultural conservationism aimed at stemming potential losses to cultural diversity. He describes how international initiatives have advanced a novel form of intellectual property rights in intangible heritage aimed at preventing commodification of indigenous culture rather than encouraging it. Such rights seek to prevent "mass extinctions" of indigenous cultures through use-restrictions analogous to environmental conservationism.

Yet, unlike a wilderness that can be preserved in its pristine state, cultures persist through human agency. Rather than "creating a museum out of culture," Garon argues that to keep local cultures vital, they need the means to join in the global circulation of ideas. He advances a regulatory ideal of localism that focuses on increasing the supply of local content rather than restricting its distribution. Garon's call for investment in local

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22   See Jon Garon's Chapter 15 in this volume for a description of the global threat to cultural heritage.
23   *See Lights, Camera, Africa*, THE ECONOMIST, Dec. 18, 2010, at 85.
24   *See* William Wresch, *Progress on the Global Digital Divide*: *An Ethical Perspective Based on Amartya Sen's Capabilities Model*, 11 ETHICS INFORMATION TECH. 255, 256 (2009).

creative capacity is arguably exemplified by Brazil's Culture Points initiative. As Sean Pager describes, this innovative Brazilian program trains members of Brazil's marginalized communities to produce original creative content and provides the technological means through community-based sites. Such digital empowerment is also reflected in proposals to assist user-generated content considered by Mira Burri and Philip Napoli.

Technological empowerment, while necessary, is arguably an insufficient basis to sustain culture diversity without other regulatory complements. Much of the debate in recent years has focused on the role of intellectual property rights. On the face of it, the contributions in this volume point to diverging prescriptions. Larisa Mann's account of the positive effects of networked technology in supporting the vitality of Jamaica's dance-hall is tempered by the prospect of expanded copyright enforcement that chills local creativity. By contrast, Mark Schultz and Sean Pager offer a more sympathetic view of copyright's potential to sustain creative investments in emerging culture industries. Yet, these views are not necessarily inconsistent. One can favor allowances for the kind of creative remixes that Jamaica *musickers* generate while still recognizing the importance of protecting commercial content producers such as Nollywood against wholesale commercial piracy.[25]

For her part, Shur-Ofry locates the real threats to cultural diversity outside the copyright system. To paraphrase Shakespeare's Cassius, her argument, in essence, is that the fault lies not in our copyright system but in ourselves. While not denying that copyright plays a contributory role, she argues that policy attention should focus on other factors that reinforce mass-media hegemony.

Shur-Ofry's challenge is taken up by Mira Burri and Philip Napoli. In separate contributions, each takes a fresh look at cultural diversity in the digital environment. Both emphasize the need for a fundamental rethink of current policy. Burri notes that new technologies have eroded the effectiveness of existing tools; for example, supply-side quotas are meaningless in a world of on-demand content. Napoli similarly observes that some goals of diversity regulation, such as concentration on media ownership, have assumed a diminished importance in the digital era; while new ones, such as a focus on individual users, are emergent. Both consider a range of practical suggestions to retool diversity policy. However, their contribution is as much conceptual as pragmatic.

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[25]   As Pager notes, differences between music and film in terms of capital intensiveness of production and feasibility of alternative performance revenues may also justify diverging treatment.

Burri criticizes current conceptions of culture diversity as "absurdly 'all-encompassing.'" Too often, she observes, diversity is treated merely as a proxy for national production, or else appears as a rhetorical flourish empty of any substance. She questions, for example, whether "[the] mere depiction of a French castle from the reign of Louis XIV in an online game" serves to perpetuate French heritage. Instead, she calls for more interactive elements to engage the creativity of users.

Napoli, similarly, stresses the need to look beyond a theoretical diversity of content measured solely in terms of supply. While the Internet makes a broader range of content accessible, Napoli asks "to what extent should the existence of this diversity matter if it turns out that little of it is actually being consumed?" At the same time, Napoli observes that turning to a "'demand side' approach" raises novel challenges: it is easier to count Internet pages than to judge how often they are read or why. Moreover, in an era of user-generated content, "it is not just audiences' consumption behaviors that [matter] . . . audiences' production and distribution behaviors need to be factored into the analytical calculus as well."

Both Burri and Napoli conclude with a call for further research to understand the emerging dynamics of the digital media environment. Answering this call, this volume closes with empirical contributions by Wayne Fu and by Sang Yup Lee and Steven Wildman, respectively. Both analyze film box office data to explain global media flows. While film exhibition differs in several respects from the digital technology considered elsewhere in this volume, the conclusions these studies reach have important implications for the cultural diversity concerns described above.

As noted, diversity policy often treats culture as a black box, either captured by proxy through national boundaries or simply left undefined. The two chapters here shed new light on the dynamics of diversity by exposing some of culture's motive forces. Fu's contribution shows how cultural differences shape audience preferences for Hollywood movie genres. Fu calculates intercountry cultural differences primarily by using a pre-existing measure developed by Geert Hofstede. He shows that the "cultural distance" between any two countries successfully predicts the extent to which the consumptive preferences of national audiences correlate. While the existence of such "cultural proximities" and "cultural discounts" have long been postulated theoretically, Fu demonstrates that such cultural factors can be modeled empirically with predictive force.

Cultural affinities also figure in Lee and Wildman's analysis of global film markets. They reveal the effect of linguistic affinities that "blur the economic boundaries between countries." In particular, Lee and Wildman demonstrate the advantage enjoyed by English-language filmmakers in gaining access to the worldwide English-language film market, a benefit

conferred disproportionately on small countries such as New Zealand. In doing so, Lee and Wildman push beyond the "standard model" that Wildman himself helped to develop, which explains global media flows in terms of national market size.[26]

Lee and Wildman offer suggestions as to how to frame cultural promotion policies in light of their empirical insights. However, perhaps the broader lesson that emerges from their analysis – in line with Burri and Napoli's contributions above – is that policy-makers need to look beyond national boundaries in thinking about culture. The potential to profit from such cultural affinities has important implications in an era of digital content production. For example, Mark Schultz's chapter on Nollywood explains the success of Nigerian films as based on a massive cultural discount that African audiences apply to imported films. He argues that such cultural discounts represent an opportunity for other upstart industries. Sean Pager builds on this insight, explaining how digital technologies have made it feasible for emerging content producers to tap into hitherto unexploited global demand for culturally diverse content.[27]

Framing specific policy measures to exploit such opportunities, however, remains a challenge. A clear theme running throughout this volume is uncertainty as to the complex interactions between policy, technology, and markets governing digital content. The Internet may loom large in scale and potential impact, yet we lack an understanding of its motive forces. Before venturing into the hazardous realm of normative prescription, we must therefore acknowledge the extent of our ignorance.[28]

Daniel Gervais compares the current digital transition to "the shift from mechanical to quantum physics." On some levels, his analogy captures nicely the radical downsizing in digital costs toward a frictionless environment, in which the rules for commercializing creativity fundamentally change.[29] Yet, given the depth of our ignorance, perhaps a better analogy

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[26]   Cultural proximities are only one variable that affects market formation. Where Lee and Wildman understand markets as transcending national boundaries, Mark Schultz makes a reciprocal point: he argues that market potential should be measured by the size of non-pirate market from which content producers can viably extract revenues. For Nollywood producers, this means a much smaller market than GDP measures would predict.

[27]   *See* Sean Pager's Chapter 12 in this volume; Pager, *supra* note 8, at 121–23, 128–29.

[28]   Donald Rumsfeld's oft-quoted dictum about known unknowns and unknown unknowns seems apropos, http://en.wikipedia.org/wiki/There_are_known_knowns.

[29]   *Cf.* Chris Anderson, Free: The Future of a Radical Price (2009) (describing the psychological magic of zero price offerings); Anderson, *supra* note 17, at 18 (hailing brave new "world of abundance" vs. "scarcity").

is the quandary faced by physicists today. Even as particle accelerators smash together ever-higher energies of matter in their effort to perfect physics' unified field theory, cosmologists are grappling with evidence that the observable universe described by this "theory of everything" in fact accounts for less than 5 percent of the universe.[30] The other 95 percent of the universe is said to be composed of "Dark Matter" and "Dark Energy," labels used to denote mysterious forces stemming from unknown causes.[31]

Like physics, the regulatory domains addressed in this volume have their standard models and well-rehearsed arguments. Yet, the Internet is forcing us to reckon with similarly "dark" realms for which existing paradigms offer little purchase. The challenge is partly definitional[32] and partly normative;[33] even descriptive issues pose surprisingly hurdles: as Adam Candeub has observed, a basic mapping of the Internet, the plumbing underlying our global communications networks, remains elusive. We know too little about how the Internet routes traffic.[34] We also lack understanding as to who owns many of the key components. This stands in marked contrast to all previous communications networks, such as telegraph or telephone, which industry and regulators could map with relative ease.[35] Like the physicists preoccupied with their observable 5 percent of

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[30] *And They're Off; Particle Physics*, THE ECONOMIST, July, 31, 2010, at 65 (describing the race to uncover the elusive "Higgs Boson," postulated as the missing link needed to complete the standard model of physics that explains the effects and interactions of all known physical forces).

[31] *Id.*

[32] For example, copyright scholars have struggled to determine which rights are implicated by digital transmissions. Mark A. Lemley, *Dealing with Overlapping Copyrights on the Internet*, 22 U. DAYTON L. REV. 547, 549 (1997) (noting "[a] single act of transmission or browsing on the Net can potentially violate *all* of the exclusive rights listed in the Copyright Act"). International trade lawyers similarly argue as to whether online transactions constitute goods or services. *See* Sacha Wunsch-Vincent, *Trade Rules for the Digital Age*, *in* GATS AND THE REGULATION OF INTERNATIONAL TRADE IN SERVICES 497, 498 (Marion Panizzon, Nicole Pohl, and Pierre Sauve eds, 2008).

[33] For example, are intellectual property rights obsolete in the digital age? Do cultural diversity regulations make sense online? As the contributions in this volume demonstrate, viewpoints on these issues range across an entire spectrum.

[34] Adam Candeub and Daniel John McCartney, *Network Transparency: Seeing the Neutral Network*, 8 NORTHWESTERN J. OF IP AND TECH. 228 (Spring 2010); Adam Candeub and Daniel John McCartney, Law and the Open Internet, Fed. Comm. L.J. (2011); see also k.c. claffy, *Ten Things Lawyers Should Know About the Internet* (Cooperative Association for Internet Data Analysis – CAIDA San Diego Supercomputer Center, University of California, San Diego, 2008), http://www.caida.org/publications/papers/2008/lawyers_top_ten.

[35] *See* Candeub and McCartney, *supra* note 20.

the universe, policy discussion in the United States has centered around market power in the last mile of telecommunication access. Yet, by ignoring market and technical dynamics in the infrastructural backbone that lies beyond such end-user connections, we forfeit an understanding of the structural forces which may ultimately drive the Internet's evolution.

Furthermore, digital architecture continues to evolve. As technology develops, some argue that the forces governing digital networks themselves are in flux. But how? In cosmology, Dark Matter and Dark Energy famously function as opposing forces: the former acts as a centripetal force that holds galaxies together, and the latter acts centrifugally, tearing the universe apart.[36] Astrophysicists tell us that Dark Energy predominates in the physical universe, but which force prevails in the digital realm?

Gervais, as well as other authors in this volume, points to cloud computing as a potentially transformative phenomenon that strengthens the hand of governments and platform owners. Does this entail a fundamental shift toward centralized control and away from the distributed end-to-end connectivity that has been the Internet's hallmark? Pundits duly predict the growth of private intranets, walled gardens, and variable access.[37] But an opposing view is also possible. The Cloud offers more than just a platform for hosting content; it also puts powerful processing capabilities within reach of anyone with an Internet connection. Access to such globalized utilities benefits small players who cannot afford in-house capabilities and allows "developing countries to leapfrog traditional information technology."[38] Likewise, the advent of the mobile Web has proved a game-changer for developing countries which have long lagged in wired infrastructure.[39] As such, emerging technologies could push toward more distributed production of creative content, rather than greater centralization.

Similar uncertainty clouds predictions on cultural diversity. Just as Dark Matter and Dark Energy tug in opposite directions, so two decades ago Benjamin Barber prophesized a political future driven by two similarly opposing forces: tribalism and globalism. Barber characterized this conflict as "Jihad vs. McWorld" – a clash between the centrifugal pull of

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[36] Liz Kruesli, *Will Dark Energy TEAR the Universe Apart*? 37 ASTRONOMY 34 (2009).

[37] Chris Anderson, *The Web is Dead. Long Live the Internet*, WIRED MAG., September, 2010; *A Virtual Counter Revolution*, THE ECONOMIST, Sept. 4, 2010, 76–77.

[38] *Tanks in the Cloud*, THE ECONOMIST, January 1, 2011, 49.

[39] *Digital Revolution*, THE ECONOMIST, April 9, 2011, 74.

parochial identities and the centralizing logic of markets.[40] These centripetal versus centrifugal tensions that Barber identified remain very much at play in cyberspace. However, the picture has grown more complex. Identity itself has become a globalized commodity, and diversity a selling point.[41] Meanwhile, as Post observes, emerging Netizen allegiances cut across our existing "tribal" divisions. The net outcome of these cross-cutting centripetal and centrifugal forces remains far from clear.

Navigating this Brave New World of digital uncertainty does not absolve policy-makers of responsibility to act as best they can. Yet, it does suggest two things. First, we should be modest in our ambition. Burri calls for a Hippocratic approach to diversity policy that first "do[es] no harm." Pager similarly advocates a multifaceted approach that hedges its normative bets, allowing for content producers to choose between different models. Second, and relatedly, we need to encourage experimentation. Indeed, if there is a common denominator running through these chapters, it is a call for fresh thinking and reconsidering received wisdoms in light of new realities. The works in this volume may not provide a complete answer to the challenges ahead. However, they represent an important step toward clarifying the issues we face and the choices that await us.

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[40] Benjamin Barber, *Jihad vs. McWorld*, The Atlantic, March 1992.
[41] *See* Pager, *supra* note 8, at 115–16; Sunder, *supra* note 16, at 275.