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Meeting the challenges of the 'shadow Internet'

If history provides any useful lessons, not surprisingly, a new set of tools developed to support Middle Eastern freedom fighters may transform today's largely territorially grounded Internet into a truly vibrant cyberspace — and the latest enforcement headaches for trademark and copyright owners. Between the mobile "shadow Internet" equipment reportedly being provided Middle Eastern rebels by the U.S. government and a new domain name registry that promises to eliminate the monopoly of earlier Internet protocols, we may be witnessing the birth pangs of "Internet 4.0." Beyond the collaboration of Internet 2.0 and the "cloud" of Internet 3.0 may lie a new digital network that has the promise of becoming a truly borderless communications media.

This new network may still have geographically bounded end users, but its infrastructure will no longer be tied to fixed points of contact such as servers or controllable domain name registries. The promise of such wide open territories of communication will be a bonanza for those seeking greater information access with fewer government controls. Perry Barlow's claim in the latter decades of the 20th century for an Internet that "does not lie within your borders" may well become a reality. But with such truly unbounded cyberspace comes the equally unbounded problem of a communications media that is even more impervious to legal controls than today's free-wheeling digital environment.

Intellectual property laws have always played a game of catch-up with technology. Since the development of photography in the 19th century, copyright has struggled to strike the appropriate balance between content control and reproductive availability. The appearance of a publicly accessible World Wide Web in the 1990s, with the rapid onset of a collaborative culture and the technology to share the results on a nearly instantaneous global basis, continues to roil present policy debates. International initiatives directed toward the geographically locatable elements of the Internet play an increasingly prominent role. "Three strike" rules that prevent illegal file traders from accessing the Internet, and recent "seizures" of websites to eliminate pirate streaming video sites, rely on service providers as the active source of information and control for enforcement techniques. A critical assumption for these techniques is that service providers, and the servers that they use, are locatable and



Global IP

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subject to the territorially bounded controls of governments. The development of a shadow Internet that eschews such geographically bounded infrastructures underscores how unstable, and ultimately ineffective, such enforcement efforts may soon become.

The technological details of the new shadow Internet equipment being provided various Middle Eastern activists is a closely guarded secret. According to published reports in June, however, this shadow Internet consists of "mesh network" technology that transforms devices like laptops and cellphones into makeshift servers, creating an invisible wireless Web that operates without the need for centralized service providers. The mobile shadow Internet of Middle East activists may currently be relatively small, but as the music industry learned with the advent of Napster, small technological advances can overturn established norms overnight. Furthermore, the erosion of geographically bounded infrastructure is not limited to the elimination of definable service providers. In fact, the most worrisome advances are those independent of physical infrastructure. Even the protocols for governing the registration of domain names have come under attack in recent months.

The rules governing the international registration of domain names are created and administered by the Internet Corporation for Assigned Names and Numbers (ICANN). The success of ICANN's ability to regulate domain names is premised on the assumption that no desirable alternative address protocols exist. ICANN itself, however, has begun to undermine its control by establishing a new registry system that will allow the creation of a potentially unlimited number of unique Generic

Top Level Domains (gTLDs). These gTLDs are represented by the portion of the domain name that appears after the "dot" and serve to limit the choices and registries available for present domain name registrants. Under the new system, a company that meets the technological and financial qualifications for administering a domain name registry can create and administer a gTLD composed of any terms it chooses, including, most significantly, a company name or trademark, such as .google or .nike. Unlike earlier gTLD roll outs, at least as currently planned, trademark owners will not be given presumptive rights to these new gTLDs. Dissatisfaction with ICANN's leadership has led to increasing threats to set up alternative registries outside ICANN's control. More problematic may be the increasing significance of hash tags on Twitter as methods for organizing information on the Internet. Such hash tags, symbolized by the use of "#" followed by a search term, such as #HarryPotter, are not officially created by Twitter nor monitored by it. Yet they are increasingly being used to direct readers to competitive consumer information. With the increasing prominence of social media sites these nondomain name uses will become more pervasive and more problematic.

The ultimate loss of traditional content controls as Internet 4.0 emerges will put greater stress on end users as content providers seek the only remaining geographically viable targets. Such efforts are already underway with new consideration by ICANN of greater restrictions on what types of information registrants must provide to obtain a domain name. The old days of being able to register under a fake name and address may be over. Yet such a narrow focus threatens to forestall serious consideration of the broader issues presented by this new cyberspace. As opposed to playing catch-up, perhaps now is the time to get ahead of the technology curve and begin to create new techniques to deal with the promise and challenge of Internet 4.0. Workable digital licensing mechanisms for both copyright content and trademarks should be placed on the front burner, including evolving business models that treat streaming Internet sites like old time radio stations complete with collective license obligations for featured content. If we do not begin now to consider the issues of Internet 4.0, content owners, end users and the intellectual policy and practices used to manage them may be doomed to fall even further behind.