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RE-THINKING INTERNET'S REGULABILITY: FROM LESSIG TO IPV6

Vasiliki Koniakou
University of Turku, Faculty of Law

Introduction

The wide dissemination of the Internet at the beginning of the 1990s incited a vibrant debate on the feasibility and desirability to regulate individuals' actions online.¹ Initially the Internet was perceived as unregulable from two aspects; firstly, it was considered that its design characteristics prevent attempts of external regulation;² and secondly, that the traditional State regulation, based on the notion of territorial sovereignty, cannot be enforced nor function in *cyberspace*.³ From the first aspect stems the idea that from a technical perspective the Internet is inherently unregulable, due to its innate ability to resist regulation, vigorously advocated by techno-enthusiasts, such as Barlow, Dibbell and the EFF.⁴ The second reflects a modest version of cyber-libertarianism, originally manifested by Johnson and Post, who argued that the peculiarities of the Internet render State regulation inadequate.⁵

The question over the "*regulability*" of the Internet became crucial, as it progressively increased its population coverage,⁶ particularly, after the launch of Mosaic and World Wide Web.⁷ Nowadays, the question of regulability remains remarkably relevant, especially as the transition from IPv4 to IPv6 gives new impetus to the discussion of Internet Governance. This article addresses regulability of the Internet under the light of the new features IPv6 will introduce, focusing primarily on anonymity. It aims to prove that anonymity – usually cited as a main reason why the Internet is unregulable, or resistant to State regulation – is only the result of specific protocol design choices made during Internet's infancy, and will be less common under the new Internet Protocol. It concludes that there is no valid ground anymore to argue that the Internet is inherently unregulable, while the significant limitation of anonymity will allow better State regulation.

The academic discourse

One of the most highly celebrated characteristics of the early Internet, commonly emphasized by those championing the idea of innate unregulability, is anonymity.⁸ The proponents of this concept claimed that since for any State to regulate it is necessary to determine a person's identity as well as location⁹ and the Internet does not require any kind of identification facts, on the contrary it facilitates anonymity, it is designed to prevent

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regulation.¹⁰ This argument, echoing technological determinism, practically suggests that the Internet's resistance to regulation lies in its protocols.¹¹

It is true that the Internet has no mandatory framework requiring and enabling user's identity verification or physical location detection.¹² Currently the Internet Protocol addresses (IPv4) are simply logical addresses that serve their purpose without requiring or allowing for connection with exact physical location. Additionally, the dynamic IPs, the Large Internet Carriers, cases of IP collision and the multiple ways to conceal one's true IP, complicate regulation since there is no simple way to individualise and allocate a user. Yet, this observation about how the Internet functions is hardly sufficient to support the assumption that it cannot function differently.¹³

Many legal scholars engaged with the argument that the Internet is "naturally" unregulable, trying to refute it from different angles. Lessig, describing this view as the fallacy of "is-ism", argued that even if the Internet lacks identification features now, this does not mean that they cannot be added in the future if there is such a need. Furthermore, using cookies-technology as an example, he maintained that the commercialization of the Internet, the participation of businesses and commercial applications, as well as the ISPs market have led to the development of identification layers or means, making anonymity less common.

Zittrain and Brown explained anonymity via reviewing the history of the Internet, exploring the reasons its architectural principles were adopted. The Internet was created with aims and objectives significantly different from those one would imagine, judging by how it has developed.¹⁴ Born within a US military project and developed in Universities and engineers' circles, the Internet was built upon simplicity, openness and trust,¹⁵ characteristics that prescribe its generic nature and were central to its robust development. The absence of identification features in the Internet's protocols can be explained from the lack of such necessity during its early days.

Finally, Goldsmith and Wu go one step further challenging techno-utopianism as a whole, tackling the idea of the borderless nature of the Internet and the allegedly State inadequacy to regulate it. They claim that the Internet is no different from other means of communication and, presenting the eBay case, they argue that it is not only possible for the States to regulate the Internet but also highly desirable.

Internet Protocol version six

The current version of the Internet Protocol (IPv4) was developed in the 1970s, when nothing foreshadowed the rapid spread of the Internet or the multiple applications attached to it. As early as the 1994 it became apparent that IPv4 was not a long-term protocol, since it did not anticipate a number of requirements that turned out to be crucial, due to the vast expansion of the Internet.¹⁶

The forthcoming shortage of available IP addresses forced the IETF to initiate the design and development of a new Internet Protocol. In the meantime in response to the growing demand for IPs a number of solutions were

deployed, such as Large Internet Carriers, furtherly obscuring identification. Additionally some protocol vulnerabilities caused cases of IP collision,¹⁷ making identification and regulation even more challenging.

IPv6 might not be fundamentally different from IPv4, however, it has some key aspects that make anonymity less common. The newer protocol, offering 128-bit addresses will allow a nearly infinite number of available addresses, preventing cases of IP collision and rendering the use of Large Carriers unnecessary,¹⁸ canceling the potential of hiding behind them. The capacious source of unique IPs may also challenge the status quo of dynamic IPs towards static ones, enhancing tracing through reverse look up, thus leading to simpler and less time-consuming identification. "Address spoofing" or the usage of VPN services that rely on PPTP to conceal ones' IP will be harder if not impossible, enabling easier and better control and enforcement.

Conclusions

IPv4 was designed for a different era in Internet's history, an age of innocence that has ended a long time ago. IPv6 is the first Internet Protocol designed to facilitate the needs of a global mean of communication and commerce. The new protocol ultimately proves there is nothing necessarily unchangeable in the Internet's original architecture that hampers regulation, ending permanently the discussion over the regulability of the Internet. Simultaneously, making anonymity significantly harder it allows for State regulation to become easier and more efficient.

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¹¹ See 8

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¹⁵ Brown, Ian. *Research Handbook on Governance of the Internet*. Edward Elgar
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¹⁶ See Internet Protocol, Version 6 (IPv6) Specification, IETF
<https://www.ietf.org/rfc/rfc2460.txt>

¹⁷ See on that ARIN: IPv6 & Internet Governance Developments (August 2014)