

The Locknet: How China Controls Its Internet and Why It Matters

China, its companies, and its citizens play a major role in the global internet: producing infrastructure, services, and content upon which people around the world depend. Yet, China's extensive online censorship system remains poorly understood by most of the internet's users, and the ways it alters both the physical and digital architecture of the internet are too often overlooked.

For more than a year, ChinaFile Senior Editor for Investigations Jessica Batke and Northeastern University Assistant Professor Laura Edelson explored how China censors its internet, interviewing experts, reviewing decades of computer science research, and tracking policy and regulatory changes over time. Their cross-disciplinary approach afforded them a broad view of the interplay between the technological and social aspects of China's censorship regime, yielding new insights about the system's purpose, its capacity, and its likely trajectory in the years to come. It also allowed them to clear up longstanding misconceptions and establish new frameworks for future research.

Among their key findings:

The system is not just a “firewall.” Rather, it is a dynamic, multi-part, adaptable apparatus that spans the online and offline worlds.

- The authors call this system **“the Locknet”** for its resemblance to water control systems like locks and sluices, which can either hold water back or allow it to circulate. Through a combination of **service-level censorship** (surveillance that companies must carry out on their own platforms at the government's behest), **network-level censorship** (the inspection and blocking of internet traffic crossing national borders), and **offline compulsion** (regulations, punishments, and social pressures), Beijing has created a complex socio-technological system with unprecedented reach.
- The Locknet aims to curate not just what citizens can say online, but what they know and, ultimately, what they think. Internet traffic must pass through a gauntlet of censorship mechanisms that, though individually imperfect, combine to effectively limit what users in China can access.

China's censorship is getting harder to evade.

- Beijing deploys a range of methods to prevent internet users in China from sidestepping censorship. This includes hunting down devices with telltale circumvention “fingerprints,”

as well as ensuring private companies don't offer circumvention tools, such as VPNs, in their app stores. Many users won't expend the effort now required to find a functional circumvention tool. Censorship mechanisms are also becoming more covert, making it difficult for Chinese netizens to know when their information is being censored and when they might need to seek out circumvention tools or unfiltered information.

- It's harder and harder for internet users in China to access certain information or services, even if they want to. But there are many more people who are deterred from even trying. For circumvention tool developers, creating a lasting, reliable tool that can function inside China has also become significantly more difficult.

China's censorship is creeping into the global internet.

- Beijing's network-level censorship systems censor international internet traffic that just so happens to transit China, no matter its origin or destination. Platforms and services that operate in China, including Chinese platforms like WeChat, but also international products like Microsoft's Bing search engine, have conducted censorship that affected users who have never set foot in the mainland, sometimes by design and sometimes by accident.
- International internet users may find themselves subject to China's censorship dictates, even if they are outside China. In some cases, international companies reproduce this censorship, for example by incorporating censored large language models into their products, which are then used around the globe.

New internet standards degrade user privacy for the sake of efficiency.

- New internet standards promoted by Chinese tech companies alter the internet's basic functioning in ways that allow for easier surveillance and censorship. These standards offer increased efficiency, but they do so at the expense of user privacy. Systems using these standards have already been deployed inside and outside of China.
- If international standards bodies and governments fail to recognize the implications of such standards, efforts to help build out the internet of tomorrow could undermine online privacy, with serious consequences for freedom of expression in authoritarian countries.

Those who seek to defend the free and open nature of the global internet must recognize the dangers of a censorship system that crosses national borders, as well as the threats to user privacy alternative internet standards may bring.

The Chinese Communist Party views online censorship as an essential tool of governance, something it won't easily, if ever, abandon. So for the foreseeable future, users in China will continue to be bound by the strictures of the Locknet, while users elsewhere in the world will find it ever harder to avoid.