Practical Pitfalls of Regulating Technology
When legislation meets scientific reality
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How has social media helped or hindered efforts to mitigate the global COVID-19 pandemic? How has user-generated content affected the U.S. election process? How and for what purposes do interdependent companies share customer information? How do algorithms influence credit, housing, and job opportunities in local communities?

Technology platforms—a collective description for the various digital environments and algorithms that power services we use and rely on every day—are profoundly influencing our lives. Society is increasingly asking difficult questions about the impact of technology platforms on global health and safety, national politics, and our individual livelihoods. In response, law makers and regulators across jurisdictions are seeking to establish or update laws and regulations that address the role of technology in our lives. Prominent discussions include the handling of misinformation on social media platforms, responsibility for content moderation, liability around information sharing, and transparency of algorithms that influence personal feeds and search results.

While efforts to regulate technology platforms tend to receive significant media coverage, the technical aspects of these laws and regulations are not often widely discussed. A variety of practical pitfalls can reduce the effectiveness of laws and regulations or make implementation of ensuing rules and standards either challenging or irrelevant. Integrating proper technical expertise into the regulatory framework discussion can help law makers and regulators avoid these pitfalls and achieve desired outcomes without imposing undue, potentially detrimental restrictions on the technology industry or individual users.

The Unintended Consequences of Laws

Regulation of technology platforms is generally considered in terms of problems created or exacerbated by a given platform and how companies can be constrained or incentivized to fit existing regulatory or legal frameworks to mitigate these problems. In some cases, regulations may be ineffective or introduce detrimental unintended consequences because of underlying technical aspects of associated platforms or systems. In other cases, the intended outcome of regulations may be circumvented by new or amended technological approaches that can satisfy new laws or regulations without providing the intended benefits. When this happens, regulatory efforts are wasted while nonetheless costing the technology industry significant time and money in re-engineering their systems.

Assume, for the sake of illustration, a hypothetical situation where platforms bear full responsibility for the content provided by their users. A potential regulatory proposal could require platforms to moderate 100% of content before posting. Because there is no practical way for many platforms to adjudicate every user post in real time, this restriction would effectively shutter these platforms. An alternative proposal could require platforms to build systems that seek out suspicious behavior, such as autonomous posting or other spam-like activities, and allow fact checkers to quickly address content deemed egregious. This second approach could

offer progress toward the intended outcome (e.g., restricting misinformation) while reducing the risk of unintended consequences that overshadow or nullify a platform's merits.

Matching Means to Objectives

Another potential regulatory proposal could seek access to certain users' messages for law enforcement and counterterrorism purposes. Typically, such access cannot be granted without introducing intentional vulnerabilities into the existing encryption scheme, which could compromise the privacy of all users. Associated platforms may, however, be able to provide other information that addresses security and policing concerns without destroying the encryption, such as anonymized metadata, which may allow legitimate law enforcement investigation without exposing users to vulnerabilities that could be misused by other entities.

Impartial, third-party experts like Exponent can provide technical advice on the merits and consequences of different regulatory stances, as well as the extent to which regulatory proposals can meet stated objectives. Our team can also offer technology companies independent reviews regarding the applicability of laws and regulations to a given platform/system; the ability of a platform/system to comply with new requirements; how a platform/system can achieve compliance without undermining core aspects of the technology; how to communicate technical implications of new regulations to relevant governing bodies; and how to dispute new or changing regulations.

For example, Exponent can assess regulatory objectives and help develop technical considerations within a suitable framework for evaluating the optimum means for achieving a set of objectives. The specific questions addressed by such a framework will depend on the given situation, and will likely include:

1. Motivations – What perceived problems prompted a regulatory effort?

2. Goals – What are the desired outcomes of the regulation, and what are suitable metrics for quantifying and evaluating these outcomes?

3. Implementation Methods – What technical approaches may achieve the desired outcomes, and how is each approach expected to influence corresponding metrics?

4. Technical Considerations – What technology services will be affected, and how does each potential implementation impact the scalability and resource efficiency of effected technology services?

5. Compliance Practicalities – Is it feasible for affected technologies to make reasonable accommodations to satisfy each approach? What kind of accommodations will be required, and are these exclusively technical, or will they require business operation and legal changes as well?

How Exponent Can Help

Exponent's multi-disciplinary team of technology and industry experts can offer impartial technical advice to assist regulators in understanding technology while helping the technology industry navigate a changing regulatory landscape. Our team is well placed to guide both regulatory bodies and technology companies through a changing society where business models and associated technological approaches may require vigilant monitoring to enable the benefits of new platforms without unintended consequences.

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