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The Law of Friction

William McGeveran[1]

"Frictionless sharing" is among the buzziest current ideas about the future of social media. A platform based on frictionless sharing discloses individuals' activities within social networks automatically, rather than waiting for them to authorize a particular disclosure. For example, mainstream news web sites such as the *Washington Post*, the *Guardian*, and Yahoo! News all offer "social reading" apps in Facebook. After a one-time user authorization, the apps send routine messages through Facebook to registered users' friends identifying every article they view.[2] Every Facebook user has seen such notifications in the news feed, sometimes aggregated as "trending articles" placed with extra prominence.[3]

Many observers link Facebook's future prospects closely to increased adoption of frictionless sharing and the related notion of the "open graph." Company founder Mark Zuckerberg talks about the rise of frictionless sharing in grandiose terms based on Moore's Law: every year for the foreseeable future, he predicts, the amount of data disclosed about individuals online will double.[4] While the stakes may be especially high for Facebook, numerous other players also promote frictionless sharing. Every other social networking platform — and every publisher and record label and app developer and SEO-craving web site – wants to shift as many aspects of our daily lives as possible from presumptively solitary experiences to social ones. They know that all of us are more likely to click a link or download a song if we see a friend doing so. If Zuckerberg's Law is just halfway right, frictionless sharing will remake the boundaries between public and private.

The popular music streaming service Spotify exemplifies the move toward frictionless sharing. Those who download the Spotify app to their computers or smartphones can play, on demand, any of millions of tracks.[5] But the company does not stop at individual enjoyment and declares on its web site, "Music is social."[6] By default, the platform publishes the songs a user plays and the playlists a user

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[2] In February, Facebook announced another dozen media outlets were unveiling similar social reading apps. See https://www.facebook.com/notes/facebook-media/the-latest-wave-of-media-apps-to-add-to-timeline/328535253848637.
[3] See http://mashable.com/2012/04/26/facebook-trending-articles-test/.
[4] See Paul Boutin, MIT Tech Review (Jan./Feb. 2012), available at http://www.technologyreview.com/web/39321/.
[5] As Spotify's FAQ explains, "We aim to have all the world's music available at Spotify. We are still in the process of acquiring licenses to all music in the world (!), therefore it is possible that you won't be able to find some of your favourite artists or tracks right now. We are signing new labels and adding a great amount [sic] of new tracks every week." http://www.spotify.com/us/help/faq/content/missing/.
[6] http://www.spotify.com/us/about/what/

creates, both within the Spotify app and in Facebook.[7] Beginning in September 2011, new members were required to integrate Spotify with a Facebook account. Notwithstanding some complaints about this change,[8] the company added as many as four million new users in the weeks immediately afterward.[9] In its first year in the U.S., users listened to over 13 billion songs. Spotify now offers unprecedented access both to music and to friends' musical choices.

Netflix, increasingly a video streaming company rather than a DVD rental service, wants to emulate Spotify's embrace of frictionless sharing. It has introduced such a feature in several countries, but has refrained from doing so in the United States. The company believes a rather obscure federal statute called the Video Privacy Protection Act (VPPA)[10] may prohibit it.[11] This law requires separate customer approval for disclosure of each individual movie watched. As explained below, while the VPPA would forbid Netflix from using precisely the same architecture as Spotify, it allows alternatives that are similar and, I will argue, clearly superior.[12] The important point for now is that the approaches of Spotify and Netflix to frictionless sharing seemingly differ only because of divergent legal rules for music and video.

This article critically examines frictionless sharing and its regulation. The analysis engages seriously with the significant advantages of increased information flows through social network platforms while also identifying problems that can result when developers design those flows poorly. The article begins in Part I by describing the VPPA and Netflix's campaign to alter it, which serves as a case study for the remainder of the analysis. Part II documents significant benefits of social media, and particularly disclosures to our social network about our reading, viewing, and listening choices. Part III turns to concerns, focusing on three key areas: threats to intellectual privacy, the special importance of reputation within social networks, and the potential erosion of information quality and the recommendation ecosystem.

Part IV ties this together by comparing the rhetoric of frictionless sharing to the reality. I have argued previously that endorsements or recommendations in social media should be the result of "genuine consent."[13] Similarly, because sharing is a volitional act, "frictionless sharing" is a contradiction

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[7] Spotify's FAQ cheerfully responds to the question "Why does Spotify automatically publish my playlists on my profile page?" by explaining, "It saves you time. Otherwise you'd have to manually publish each new playlist you create." http://www.spotify.com/us/help/faq/social/#why-does-spotify-automatically-publish-my-playlists-on-my-profile-page

[8] See http://www.forbes.com/sites/parmyolson/2011/09/28/spotify-tries-to-soothe-angry-users-over-facebook-conditions/.

[9] See http://articles.businessinsider.com/2011-11-08/tech/30372471_1_spotify-facebook-integration-users

[10] TK CITE VPPA

[11] Netflix US & Canada Blog, *Help Us Bring Facebook Sharing to Netflix USA* (Sept. 22, 2011), http://blog.netflix.com/2011/09/help-us-bring-facebook-sharing-to.html; Testimony of David Hyman, General Counsel, Netflix, at Senate Committee on the Judiciary Subcommittee on Privacy, Technology, and the Law hearing, *The Video Privacy Protection Act in the 21st Century* (Jan. 31, 2012), available at http://www.judiciary.senate.gov/hearings/hearing.cfm?id=f14e6e2889a80b6b53be6d4e412d460f (hereinafter "Hyman Testimony").

[12] TK cross-reference

[13] William McGeveran, *Disclosure, Endorsement, and Identity in Social Marketing*, 2009 U. ILL. L. REV. 1105, 1158-62.

in terms.[14] (This explains why Facebook and other companies appear to have moved consciously away from the more obviously oxymoronic terminology of "passive sharing," which they used earlier.) In the physical world, too much friction can impede movement or even start fires, but too little would cause objects to slide off tables and cars off roads. The key to online disclosures also turns out to be the correct amount of friction, not its elimination.

Finally, Part V sums up the cost-benefit analysis and considers the appropriate regulatory response. This Part shows how a sharing system with too little individualized control – friction, to some – quickly reduces the net benefit to individual users and to society at large, but remains at least temporarily advantageous for intermediaries such as Facebook, Spotify, and Netflix. It then turns to the proper calibration. Mechanical engineers constantly rely on the laws of friction, which can be reduced to mathematical expression. We lawyers usually make our laws less precise.

The argument in this article nonetheless leads to a simple and pragmatic principle that balances the benefits and concerns about automatic disclosures in social media. I propose this fundamental law of friction: ***It should never be easier to "share" something than to do it***. Netflix could comply with this law of friction (and, not coincidentally, with the VPPA as well) if it simply put a "Play and Share" button next to the "Play" button that users must click to stream any video. Netflix would not satisfy the law of friction if it required more effort for users to start viewing a movie than to tell all their Facebook friends what they are watching. It is possible, and certainly would be preferable, for platforms themselves to develop systems that obey this law of friction. Otherwise, policymakers should compel them. This Article provides a framework to do just that.

PART I: A Case Study: The VPPA and Netflix

Congress passed the VPPA in 1988.[15] As often happens with legislation to protect privacy, the proponents of the bill acted in response to a particular attention-grabbing incident. During the fervor over the nomination of Judge Robert Bork to the Supreme Court, an enterprising reporter for an alternative weekly newspaper in Washington, DC obtained the judge's borrowing records from his neighborhood video rental store and published an article about them.[16] Members of Congress, perhaps afraid that reporters in their own hometowns would get similar ideas, galvanized quickly. Displaying much more unity than they had on the Bork nomination itself, both chambers passed the measure by

[14] See Neil M. Richards, *The Perils of Social Reading*, manuscript at 28-35. Despite these flaws, the terminology is unavoidable so I will use both "friction" and "sharing" in this paper, though at times I mock both terms. As discussed further below and especially in Part IV, frictionless sharing is not frictionless because it merely shifts the default – the friction – so that users must take action *not* to disclose information. It is not sharing because true sharing is inherently active, not passive.

[15] P.L. No. 100-618 (1988).

[16] See http://www.theamericanporch.com/bork2.htm. According to the reporter's later account, he used the same rental store and the assistant manager obligingly photocopied the handwritten records of the Bork family's rentals. Id.

voice vote.[17] The resulting statute uses legal rules to create friction against disclosures of the movies individuals watch.

The VPPA applies only to businesses engaged in the "rental, sale, or delivery of prerecorded video cassette tapes or similar audio visual materials."[18] The bill originally included similar protection for all library borrower records, but this provision was dropped when senators disagreed about law enforcement access to the records.[19] Such businesses cannot disclose any personally identifiable information about their video customers unless they secure "informed, written consent of the consumer given at the time the disclosure is sought" or fall within one of several narrow exceptions. The law provides such exceptions for disclosures incident to the ordinary course of business or in response to court orders.[20] Provided the customer can opt out, covered businesses also may disclose general information about a customer's rentals to third-party marketers, but not particular titles.[21] (Thus, under current law Netflix can disclose that you enjoy foreign films, but not whether you've watched *The Lives Of Others*.) The statute establishes a private right of action and allows minimum liquidated damages of $2500 per violation, punitive damages, and attorney's fees.[22]

After almost 25 years one might expect the statute to become outdated, but its drafters took care to make the VPPA flexible and technology-neutral. Long after VCRs were displaced by DVDs and now by online streaming, the VPPA remains applicable because it included "similar audio-visual materials" in the definition of its scope.[23] Some observers have suggested that the VPPA's "written consent" provision might require pen and paper rather than online authorization.[24] If that were so it would marginalize numerous older statutes that require writings, but Congress already addressed this

[17] President Ronald Reagan signed the bill on Nov. 5, 1988, three days before the election to choose his successor.
[18] 18 U.S.C. § 2710(a)(4).
[19] See S. Rep. 100-599 (1988). This same issue arose again, of course, in debate about the USA PATRIOT Act in the first decade of this century.
[20] 18 U.S.C. § 2710(b)(2)(C), (E), and (F). These exceptions are narrow. For example, even disclosures to law enforcement agencies pursuant to valid warrants require prior notice to the customer. Id. § 2710(b)(3).
[21] 18 U.S.C. § 2710(b)(2)(D).
[22] 18 U.S.C. § 2710(c). Courts have been reluctant to apply the private right of action and damages provisions to other parts of the VPPA besides unauthorized disclosure, such as its data retention limitations. *See* Sterk v. Redbox Automated Retail, LLC, 672 F.3d 535, 538-39 (7th Cir. 2012); Daniel v. Cantrell, 375 F.3d 377, 384–85 (6th Cir. 2004). These courts still recognize that the private right of action and liquidated damages do apply to the VPPA's disclosure rules, which are the ones relevant to frictionless sharing. There is also a split among courts about the availability of a private right of action against third parties who receive information in violation of the VPPA's requirements, often law enforcement authorities. Compare Amazon.com LLC v. Lay, 758 F. Supp. 2d 1154, 1167 (W.D. Wash. 2010) and Dirkes v. Borough of Runnemede, 936 F. Supp. 235, 240 (D.N.J. 1996) with *Daniel*, 375 F.3d at 381–82 . Again, however, this has little bearing on frictionless sharing. Whatever the VPPA says about recipients of information or other third parties, Netflix might still be liable for unauthorized disclosures.
[23] It appears that no court has ruled on the application of the VPPA to video streaming, although the issue has been raised in a VPPA class action case against the video streaming site Hulu. See In re Hulu Priv. Litig., 2012 WL 2119193 (N.D. Cal. Jun. 11, 2012). Legislative history clearly indicates an intent to cover broadly any new technology that served the same function as videocassettes. [TK cites]
[24] See, e.g., Jules Polonetsky and Christopher Wolf, *Viewers Should Be Able to Share Their Playlists*, ROLL CALL (Nov. 29, 2011).

concern comprehensively years ago with passage of the E-SIGN Act.[25] Cases interpreting that statute clearly and consistently find that digital equivalents substitute for statutory requirements of a writing.[26] Any other interpretation would undermine every clickwrap notification and "I agree" button on the internet.

Notwithstanding this flexibility in the VPPA, Netflix uses dismissive rhetoric suggesting that no musty 25-year-old law could possibly address the problems of today's fast-paced digital world.[27] The company similarly argues that the law is ambiguous, without spelling out any perceived confusion.[28] As I've just demonstrated, however, the law is quite simple and easily applied to current technology. Netflix's general counsel made a stronger point at a January 2012 Senate hearing on the VPPA when he argued that video should not be subject to more stringent regulation than books or music.[29] I testified at the same hearing and responded that, instead of diluting the VPPA, legislators should consider applying the VPPA's rules to other forms of media.[30]

Legislation to revise the VPPA, proposed and promoted largely by Netflix, passed the House of Representatives last year without a hearing. Its primary provision would replace the requirement for consent to each individual disclosure and allow consent "in advance for a set period of time or until consent is withdrawn by such consumer."[31] Essentially, this change would allow Netflix to implement Spotify-style frictionless sharing by securing blanket one-time permission to publicize every movie viewed rather than case-by-case approval. The bill also specifies that consent "can be manifested through an electronic means using the Internet."[32] Not only is this clarification unnecessary because of

[25] Pub. L. 106-2291 (2000), codified at 5 U.S.C. §§ 7001-7031.
[26] See, e.g., Campbell v. Gen. Dynamics Gov't Sys. Corp., 407 F.3d 546, 556 (1st Cir. 2005) (holding that E-SIGN Act "likely precludes any flat rule that a contract to arbitrate is unenforceable under the ADA solely because its promulgator chose to use e-mail as the medium to effectuate the agreement"); Berry v. Webloyalty.com, Inc., 2011 WL 1375665 at *7 (S.D. Cal. April 11, 2011) (granting Rule 12(b)(6) motion to dismiss claim because E-SIGN Act means that clicking "yes" button satisfied written consent requirement in another federal statute).
[27] See Netflix US & Canada Blog, supra note 11 (praising "forward-thinking members of Congress " who seek to amend a "1980s law"); Hyman Testimony, supra note 11 (opposing "trying to graft specific notions about video privacy from almost 25 years ago into the dynamic information age of today").
[28] Netflix US & Canada Blog, supra note 11 (apologizing that "a 1980's law creates some confusion over our ability to let U.S. members automatically share the television shows and movies they watch with their friends on Facebook"); Julianne Pepitone, Why Netflix's Facebook App Would be Illegal, CNN Money (March 27, 2012), http://money.cnn.com/2012/03/27/technology/netflix-facebook/index.htm (quoting Netflix spokesman Steve Swasey saying, "It's ambiguous about whether it applies to us. We just don't know, and we'd rather be in compliance than risk stepping over the line").
[29] Hyman Testimony, supra note 11.
[30] Testimony of William McGeveran, Associate Professor, University of Minnesota Law School, at Senate Committee on the Judiciary Subcommittee on Privacy, Technology, and the Law hearing, *The Video Privacy Protection Act in the 21st Century* (Jan. 31, 2012), available at http://www.judiciary.senate.gov/hearings/hearing.cfm?id=f14e6e2889a80b6b53be6d4e412d460f (hereinafter "McGeveran Testimony") ("If the committee revisits this statute, it should consider extending protection to reading and listening habits as well as viewing.").
[31] H.R. 2471 (Dec. 7, 2011).
[32] Id.

the E-SIGN Act, it may actually make the situation worse by limiting consent to communications using internet protocols rather than alternative systems, including many used today by Netflix's competitors.[33]

Nothing in the bill specifies how a user's advance consent would be withdrawn, meaning that a video company could comply by making it very easy to opt in and then very difficult to cancel that authorization. Netflix's proposed interface offers users a prominent button to disable sharing any time a movie is played. Of course, another company might make it less convenient to withdraw consent. The user-friendliness of existing frictionless sharing designs varies greatly. [TK examples: Hulu, Washington Post Social Reader, Socialcam]

At the Senate hearing, the legislation ran into a "buzzsaw" of opposition.[34] Questioning quickly focused on the bill's shift from an opt-in regime to an opt-out regime, and the desirability of each. As Senator Tom Coburn (R-OK), the subcommittee's ranking member, asked Netflix, "What is the difference between an un-share opt-out and a share opt-[in]?"[35] For the moment, there has been no further congressional action on legislation to amend the VPPA. In April, Netflix hired a well-known K Street law firm to lobby for the change.[36] It remains unclear whether the effort will succeed.

For the time being, Netflix still does not offer a mechanism in the United States to publish movie choices in social media. As noted above and explained further in Part V below, the company could design a "Play and Share" button that seeks permission for social media disclosures whenever users watch a film. Other video companies have made different strategic choices, some of them with dubious adherence to the VPPA. [TK Hulu, Socialcam] And of course most frictionless sharing apps do not involve video and therefore remain free to transfer information as they wish. The next two parts consider the advantages and disadvantages of those frictionless information flows in the absence of any legal restrictions.

PART II: Benefits of Social Media Disclosures

A properly designed social Netflix app would be great. It could make it easy for people to swap playlists and queues within their networks, to learn about movies from trusted friends, and to chat about them. Personally, I use Facebook and Twitter every day, and listen to music on Spotify often (although usually in "private session" with sharing functionality disabled). I can imagine using Netflix socially as well.

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[33] McGeveran Testimony, supra note 30 (noting that this internet-specific language might exclude mobile devices such as the Kindle, devices that receive signals via satellite, and cable television transmissions including on-demand or DVR services).

[34] Susan Crawford, Column, *The Pandora's Box of Privacy*, WIRED Epicenter Blog (Feb. 2, 2012), http://www.wired.com/epicenter/2012/02/column-crawford-vppa-video/.

[35] TK CITE transcript.

[36] Brendan Sasso & Rachel Leven, *Netflix Hires More Lobbyists for Push on Video Rental Law*, HILLICON VALLEY BLOG (April 23, 2012) (reporting that Netflix had hired Greenberg Traurig).

This Part considers the benefits of authentic social sharing, using Netflix and movies as its example throughout. First it explains the primary advantages for the person who discloses movie selections. Then it discusses what we all gain, as individuals and as a society, by receiving these messages from friends. Finally, it turns to intermediaries such as Netflix, Facebook, or content providers like movie studios, and the reasons they are so keen to promote these increased information flows. Any regulation of frictionless sharing should strive to preserve all these benefits to all these different parties and should not impose unnecessary interference with these information flows.

A. Benefits of Disclosing Information

I benefit, as an individual, from sharing personal information within my social network (and so might you). Facebook did not force nearly a billion people to use its service. Consumer demand has driven the continued explosive growth of social media. These users clearly recognize value when they purposefully share information with friends.

Perhaps most important, individuals express themselves by announcing their tastes and preferences to the world. This is the same drive that leads people to display radio station bumper stickers on their cars, to wear t-shirts referring to beloved sports teams or movies, and to compose long lists of favorites in online spaces like Facebook profiles or dating sites. To be sure, as discussed below, part of that expressive value requires that individuals control the revelations they make. Nevertheless, it is crucial to acknowledge how social media has become a key forum for individual speech – by far the most significant for many ordinary people. Individuals' commentary about films they have seen unquestionably represents valuable and constitutionally protected communication.

Another aspect of this expressive interest comes from promoting the work of others. For a devoted fan of a particular restaurant, political cause, band, or movie, social media provides a wonderful way to spread the word about it. Individuals accrue several kinds of personal rewards from making these recommendations.[37] They can help both their friends and the artists or activists whose work they admire. They can also advance their personal agendas if social disclosures get others interested in their favorites and help ensure success: more diners in that little restaurant will help keep it open, and gathering more donors or voters for that cause may add support for personal political views. By serving as a tastemaker among friends, the discloser may get to feel like part of the cognoscenti – knowledgeable, hip, and artistically sensitive. Finally, like all altruistic acts, matchmaking between my favorites and my friends makes me feel good.[38]

Finally, this social process of sharing tastes and other personal news becomes an important aspect of forming our own identity.[39] [TK MORE, drawing on social psychology & sociology research.]

[37] See generally McGeveran, supra note 13, at 1130. ("Many motivations inspire individuals to engage in word-of-mouth interactions, including desires to feel smart, to be helpful, to express themselves, or to affiliate themselves with groups that share their opinions."). Of course, many businesses also offer more concrete incentives like discounts to customers who refer their friends.

[38] TK CITE Lewis Hyde [TK: altruism economics, gift economy]

[39] TK CITES for danah boyd, James Grimmelmann; Pew polls.

B. Benefits of receiving Information

People derive benefit from listening in social networks as well as through talking. Increased information from friends about the things they love helps each of us to find new things we will love too. Netflix, Amazon, and many online retailers commonly recommend products purchased by an aggregate of other patrons with browsing patters similar to the user. This information can be useful, although it is prone to bizarre misfires as well. Referrals within social networks are even better because recipients know the actual person whose lead they are following. We trust our friends to direct us to things we will like because we value their opinions, we can assess their reliability, and we often share their preferences. If I like my brother-in-law's home décor but not his taste in movies, I know which of his recommendations to follow.

Information from friends helps us navigate the flood of choices we now have available in everything from books to kitchen gadgets. I find an increasing portion of my internet browsing is shaped by following links in Facebook and Twitter. A recent survey and report by Oxford University's Reuters Institute dramatically demonstrated the power of social media in driving news readership.[40] The survey found that 41% of respondents in the United States said they had used social media as a source for locating news stories that they read within the previous week.[41] Links to web content are only one type of useful recommendation conveyed through social sharing. Spotify emphasizes this discovery of music as an integral aspect of its service.[42] In a 2006 study by Harris Interactive, a whopping 89% of respondents agreed that they "seek or use information and advice from other people" about restaurants (25% doing so to a "great extent"), and 76% sought such help about movies (15% did "to a great extent").[43]

In addition to helping us shop and consume, our interactions in social networks help create bonds between individuals. The opportunity for friends to discuss movies they have seen enhances their enjoyment of both the friendship and the movie. When acquaintances discover that they like the same things, it can intensify their relationship, as anyone who has ever compared favorite books and films with a blind date can attest. Sharing of information is a key to strengthening intimacy between individuals.[44] Properly designed social networking platforms can facilitate those connections. It is easy to imagine a Netflix app that allowed friends in different places to watch videos "together" and discuss

[40] Reuters Inst. For the Study of Journalism, Univ. of Oxford, *Reuters Institute Digital News Report 2012: Tracking the Future of News*, (Nic Newman ed., July 2012), available at http://reutersinstitute.politics.ox.ac.uk/publications/risj-digital-report.html [hereafter "Reuters Institute Report"].
[41] Reuters Institute Report, supra note 40, at 27. This figure was significantly higher than in four European nations surveyed, which probably results from lower adoption of social media in those countries. *Id*.
[42] http://www.spotify.com/us/about/what/ ("It's now easier than ever to discover and share music with your friends.")
[43] Dee T. Allsop et al., *Word-of-Mouth Research: Principles and Applications*, J. OF ADVERTISING RES. (Dec. 2007) at 398, 400-01. Comparatively, only 37% relied on "information and advice from other people" about athletic shoes, and only five percent did so "to a great extent."
[44] TK CITES: Fried, social psychology, etc.

them – perhaps in real time during viewing.[45] This could become the high-tech version of the scene in *When Harry Met Sally* where the two friends watch *Casablanca* on television while commenting to each other over the telephone.[46]

Virtual sharing also can enable real-world connections. This may be particularly true with geolocation apps such as foursquare, which allow users to publicize their location, find out if friends are nearby, and get recommendations from people within their social network who have been to the same place.[47] In an enthusiastic video promoting the new Google Latitude service, which adds participating friends' locations to Google Maps, the narrator determines that her parents made it home from the airport and that her friends are playing tennis nearby.[48] Google, foursquare, and many other companies anticipate that users will find disclosures about the whereabouts of their family and friends very useful in daily life.

Reliable information about our friends' preferences also plays an integral role in the internet's well-known "long tail" phenomenon, a concept popularized by Chris Anderson.[49] The basic idea is that the demand for many products falls in a power-law distribution so that, plotted on a graph, a huge spike on the left depicts a few items purchased by many people and then a long tail trails off to the right where a large number of offerings each attracts many fewer customers. Certainly distribution of first-run feature films tends to follow this model: studios produce a few blockbusters and then many other releases are Hollywood bombs, niche offerings, and independent or documentary films. The hits cross-subsidize the misses. Many other cultural products like books, popular music, and television programs traditionally have fallen within the same pattern.

Anderson explained how the internet changes this dynamic. In movie rental, the online service Netflix had a crucial advantage over bricks-and-mortar Blockbuster Video. The latter confronted fixed overhead costs, finite shelf space, and a limited geographic area from which to draw customers. As a result, it concentrated on offering a restricted number of broadly popular titles that were sure to earn their keep in a limited inventory. Concentrating on movies most likely to draw a sizable audience tends to encourage appealing to the lowest common denominator. Netflix, in contrast, can stock an effectively infinite selection (and, as it shifts to streaming, it can even shed additional costs such as warehouse facilities and shipping). Crucially, online vendors like Netflix, Amazon, or iTunes make exactly as much on each customer selection from the long tail as they do on each mega-hit. A foreign film like *The Lives of Others* can earn the same profit margin as a superhero sequel.

With this increased choice, however, comes increased confusion and difficulty locating what we want. For this reason, Anderson sees a critical role for recommendation systems and other tools that

[45] According to a recent study by the Pew Center for the Internet and American Life, an estimated 23% of mobile phone users have exchanged text messages with friends while watching the same television program. See http://www.pewinternet.org/Reports/2012/Connected-viewers/Findings.aspx.
[46] TK CITE When Harry Met Sally.
[47] See https://foursquare.com/about/.
[48] See http://www.google.com/mobile/latitude/
[49] CHRIS ANDERSON, THE LONG TAIL: WHY THE FUTURE OF BUSINESS IS SELLING LESS OF MORE 98–124 (2006); Chris Anderson, *The Long Tail*, WIRED (Oct. 2004).

allow the "wisdom of crowds" to help us identify the best choices – ratings and reviews through services like Amazon, Angie's List, Trip Advisor, and Yelp. As we saw above, recommendations of this type from within a social network – sources with which we have particularly strong affinity, trust, and understanding – are likely the most valuable. Recommendations from friends help us steer a path through the clutter of the long tail toward the things we will enjoy.

The long tail also works beyond the realm of books, music, and movies. Smaller-scale competitors of all types can use the same techniques to gain access to the market against dominant incumbents. Recommendations, "likes," and sharing in social networks help these efforts tremendously. Earlier in 2012 a start-up firm called Dollar Shave Club launched from beta with a hilarious advertising video that mocked overpriced razors from Gillette and Schick and promoted its monthly razor blade subscription plans.[50] The ad rapidly went viral, largely through social networks, and although the company does not release sales figures one business journalist estimated it may now be earning $200,000 a month in revenue.[51] Online word of mouth allowed this low-cost competitor to enter a market previously controlled by two enormous corporate entities and helped thousands of individuals locate a convenient low-cost service.

Beyond the benefits to individuals who receive helpful tips about long-tail offerings from their friends, increased information sharing confers significant benefits on society in the aggregate. For ordinary products like razor blades, social sharing fosters competition, supports small businesses, and increases consumer choice. For cultural products, social recommendations allow greater diversity. Instead of a creative economy obsessed only with developing the next blockbuster, digital distribution and digital recommendation allow people to find and support talent that didn't have realistic access to the marketplace before. It permits wider exposure for high-quality writing, film, and music that now might be limited to specialist niches. Social sharing rewards quality by driving audiences towards the best stuff. It crowdsources and democratizes tastemaking functions that were formerly the exclusive province of gatekeepers such as critics, record labels and radio stations, television networks, and even librarians. Those gatekeepers remain important as guides, but they no longer reign as the exclusive source of content or of information about content. And the ability to tap into social networks with similar inclinations can help otherwise "niche" offerings find a market sufficient to support them.

Music appears already to be experiencing some of these benefits of the long tail. Artists unaffiliated with any major record label can find and cultivate a following online. While online reviews and ratings by strangers can help create buzz, once again, recommendations between friends are more powerful and effective. Because of higher production costs, there has been less amateur filmmaking in search of an audience, but that is changing. Many observers believe that cheaper video production and increased comfort with offbeat and short-form online material could herald a new era for both documentary and narrative cinema.[52] Some of these new works surely would exemplify the "remix

[50] See http://www.dollarshaveclub.com/ (last visited July 19, 2012).
[51] See http://www.forbes.com/sites/jjcolao/2012/04/03/dollar-shave-club-breaking-the-razor-blade-monopoly/
[52] TK CITES

culture" that many celebrate in intellectual property discourse.[53] If so, social networks would be crucial. They would transmit the trusted recommendations necessary to help viewers navigate their increased and disintermediated choices.

Therefore as a society we should strive to maintain this channel of communication that promotes both enhanced economic competition and a richer shared culture. Collectively, we want swapping of playlists and other recommendations to continue and grow. This is even true for those individuals who don't themselves elect to participate – the conversation enabled by social media brings these previously obscure sources to the forefront where many more people can appreciate them.

C. Benefits to Intermediaries

Finally, of course, Facebook, Netflix, and moviemakers benefit from frictionless sharing because it constitutes free publicity for their respective businesses.

More mentions in social media mentions will draw more eyeballs to the underlying content. A digital media executive at the *Guardian*, which participates in Facebook's frictionless sharing program, stated that the site subsequently received more inbound visits from Facebook than from Google searches.[54] Social media reportedly accounts for almost ten percent of traffic to the web site of *The Economist*.[55] An intermediary that facilitates frictionless sharing also benefits from free advertising every time a user sends messages through its services. Spotify added millions of members when it shifted to a frictionless sharing model integrated with Facebook. In Spotify's "freemium" business model, each of these new users either increases the audience for advertising in the app or becomes a potential recruit to upgrade to the premium paid service. These are the compelling business arguments that make Netflix so eager to introduce frictionless sharing throughout its services.

As discussed above, marketers believe "word of mouth" is among the most powerful forms of promotion for a product or service, from household goods to books. Consumers find information from a disinterested person similar to themselves to be "immediate, personal, credible, and relevant."[56] The internet, and particularly social networks, allow word of mouth to travel further and faster than ever before.[57] Facebook has staked its future profitability in part on the notion that buzz from friends about a product or service will be especially powerful publicity that the company can eventually monetize with marketers. Zuckerberg calls these "trusted referrals" the "Holy Grail" for advertisers.[58]

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[53] TK CITE e.g. Lessig, Katyal, Jaszi, Fisher.

[54] Reuters Institute Report, supra note 40, at 15.

[55] Reuters Institute Report, supra note 40, at 15.

[56] Maria Flores Letelier et al., *Strategies for Viral Marketing*, *in* KELLOGG ON INTEGRATED MARKETING 90, 90 (Dawn Iacobucci & Bobby Calder eds., 2003).

[57] See Eric Goldman, *Online Word of Mouth and Its Implications for Trademark Law*,in TRADEMARK LAW AND THEORY: A HANDBOOK OF CONTEMPORARY RESEARCH 404, __ (Graeme B. Dinwoodie & Mark D. Janis eds., 2008); McGeveran, supra note 13, at 1109-13.

[58] *See* Posting of Dan Farber to Between the Lines, Facebook Beacon Update: No Activities Published Without User Proactively Consenting, http://blogs.zdnet.com/BTL/?p=7188 (Nov. 29, 2007, 19:05) (reporting Zuckerberg's remarks); *see also* Story, *supra* note 2 ("Nothing influences a person more than a recommendation from a trusted

For movies, word of mouth is more influential than almost any other source of information.[59] Recall the study indicating that over three three-quarters of people seek out advice from friends when deciding whether to see a movie.[60] A social Netflix would allow individuals to send and receive precisely the most valuable sort of information. Because Netflix and film producers alike want to encourage those conversations, they will be drawn toward designs that minimize obstacles.

Increasingly, we can expect monetizing word of mouth to become part of the financial structure of services like Facebook and Netflix. We have become accustomed to the proposition that targeted advertising is more profitable than traditional advertising. We largely accept the notion that tracking and monetizing users' personal information allows web sites such as Facebook, Google, and many newspapers to remain free of (monetary) charge. In this way, each of us "buys" services with a bit of our individual privacy.[61] Similarly, maintaining an open flow of shared information about movies and similar tastes can help support the popular online services that bring us information, content, and social connection. Compared to targeted advertising or data mining, the promotion of frictionless sharing is a far less invasive way for businesses like Facebook or Netflix to earn more revenue. After all, designed correctly, the platforms are helping us do exactly what we already want.

Needless to say, there are still some problems, both of privacy and information quality. The next Part considers the most serious of these.

PART III: Concerns About Frictionless Sharing

In spite of the significant benefits of *intentional* communication with our friends, frictionless sharing raises serious concerns about privacy and information quality resulting from *unintentional* disclosures.

Social apps are designed to make it as likely as possible that users automatically inform their social networks about their activities. The *Washington Post* Social Reader app within Facebook, for example, is quite easy to install by mistake and not at all easy to deactivate. Suppose you have not activated the Social Reader yourself and you receive a message from the app in your Facebook News Feed indicating that a friend read a particular article. If you click on the link, the next screen presents two buttons, "Okay, Read Article" (which is the default choice) or "Cancel."[62] Only the much smaller print below explains that clicking the "Okay, Read Article" button also activates social reading

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friend." (quoting Zuckerberg)); Press Release, Facebook, Facebook Unveils Facebook Ads (Nov. 6, 2007), http://www.facebook.com/press/releases.php?p=9176 ("Social actions are powerful because they act as trusted referrals and reinforce the fact that people influence people." (quoting Zuckerberg)).

[59] See Yong Liu, Word of Mouth for Movies: Its Dynamics and Impact on Box Office Revenue, 70 J. Marketing No. 3, at 74-89 (2003), available at http://www.journals.marketingpower.com/doi/abs/10.1509/jmkg.70.3.74 (In general, it is believed that [word of mouth] strongly influences people's movie selections.").

[60] See supra note 43 and accompanying text.

[61] TK CITE Whittington & Hoofnagle, *The Cost of "Free."*

[62] Screenshot on file with author. See also http://news.cnet.com/8301-31322_3-57324406-256/how-facebook-is-ruining-sharing/.

functionality so that the *Post* will disclose every article you read to all your Facebook friends. Once turned on, it takes some effort not to share articles on the Post, and you do not even receive notice each time the app sends out a notification to your social network.[63] This is a model well-suited to the older language of "passive sharing."

Inevitably, frictionless sharing leads to accidents. I know this is so because I have spoken to multiple friends who were quite sheepish to discover that they had unintentionally broadcast on Facebook that they read certain news articles.[64] Moreover, even users who are dimly aware that their activities might be "shared" are not engaging in the type of authentic sharing that maximizes the benefits discussed in Part II. This Part reviews major concerns about frictionless sharing that must be weighed against the potential benefits discussed above.

A. Intellectual Privacy

The most obvious concern about frictionless sharing are privacy-related. The information others can glean from disclosures about our reading, viewing, and listening habits may prove particularly revealing.

At its simplest, certain facts are embarrassing. Depending on their circumstances, people may not want to disclose their reading about particular medical, sexual, religious, or political issues. During the VPPA hearing, Chairman Al Franken (D-MN) offered the hypothetical example of someone who watched *Yoga for Health: Depression and Gastrointestinal Problems*.[65] Similarly, people may not want to admit that they rock out to Justin Bieber hits at home on a Saturday night. Or they may prefer not to disclose that they are watching television rather than doing their homework after school. These concerns resemble those that arise in other areas of data privacy, from the smart grid to behavioral advertising. Little tidbits of information about our daily activities can expose us to broader judgments or misjudgments that harm our dignity, autonomy, and serenity.

These are important worries. But when frictionless sharing discloses certain activities, there is more to it than simple embarrassment. The brand of toothpaste I buy tells you much less about my inner self than do the music or e-books I download or the web pages where I browse. The unique additional harm from frictionless sharing of reading, viewing, and listening is the potential threat to "intellectual privacy." Neil Richards coined this term to describe the danger that exposure of these individual choices will constrain the freedom to explore and experiment with ideas and art.[66] His theory builds on varied sources, from other legal scholars such as Marc Blitz and Julie Cohen,[67] to sociological literature in surveillance studies and the classic examples of Bentham's Panopticon and Orwell's

[63] See http://allfacebook.com/facebook-readers_b74261.
[64] Richards has had similar conversations with his acquaintances. See Richards, supra note 14, manuscript at 29.
[65] TK Cite hearing.
[66] See Richards, supra note 14; Neil M. Richards, *Intellectual Privacy*, 87 TEX. L. REV. 387 (2008).
[67] See, e.g., Marc Jonathan Blitz, *Constitutional Safeguards for Silent Experiments in Living: Libraries, the Right to Read, and a First Amendment Theory for an Unaccompanied Right to Receive Information,* 74 UMKC L. REV. 799 (2006); Julie E. Cohen, *A Right to Read Anonymously: A Closer Look at "Copyright Management" in Cyberspace,* 28 CONN. L. REV. 981 (1996).

telescreen.[68] In short, the possibility that we might be monitored leads us to censor ourselves. Traditionally, the greatest threat to individual private space for contemplation came from the state, and constitutional doctrine sought to shield individuals from intrusions into their reading, writing, and thought processes under both the First Amendment[69] and the Fourth Amendment.[70] Richards argues that the private sector, through its promotion of frictionless sharing, now poses a similar threat to the solitary acts of reading and thinking.[71] If pervasive disclosure becomes the norm, individuals might hesitate before downloading or browsing or streaming, effectively chilling their engagement in intellectual or artistic activity.[72]

Not only could unwanted disclosures inhibit individuals from engaging with certain books, web sites, or films, it could actually begin to distort their thought processes. Paul Schwartz has explained this aspect of privacy by referring to the concept of preference falsification in social norm theory.[73] Everyday social pressures and the human desire to please others constantly influence individuals' presentation of themselves. Eventually preference falsification can *alter* a person's views and tastes, driving him or her toward conformity with peers. And when individuals don't have enough control over the disclosure of information about those preferences, the falsification can spread throughout their media diet, increasing their conformity.[74] That, after all, is how the Panopticon and the telescreen work: the subjects do not know whether they are being watched, so they always act as if they are.

Many people experience crude versions of preference falsification in junior high school; they start to say they like the same bands or TV shows as their friends, and over time their tastes evolve to the point that they actually do like them. To be sure, learning from friends' wise recommendations drives some of this transformation in tastes, but at least some of it is a pernicious hollowing out of individuality. The wisdom of the crowd can turn into groupthink instead. (Plus, it saddles us with a lot of vapid boy bands.)

These harms most obviously affect the individual subjects of unwanted frictionless sharing disclosures. Yet the resulting problems of a chilling effect, the distortion of individuals' views, and interference with honest discourse could hurt all of us, both speakers and listeners. If frictionless sharing becomes pervasive, we risk the creation of a fishbowl society where a norm of disclosure forces all of us to act as if we are being watched at all times. The central importance of intellectual privacy for our polity and culture gives rise to an especially compelling *collective* public interest in maintaining boundaries.[75]

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[68] See Richards, supra note 14, manuscript at 17-21.

[69] See, e.g., Stanley v. Georgia, 394 U.S. 557 (1969) (First Amendment); Tattered Cover, Inc. v. City of Thornton, 44 P.3d 1044, 1053 (Colo. 2002)(state constitutional law); Richards, *Intellectual Privacy* , supra note 66, at 393-407; Daniel J. Solove, *The First Amendment as Criminal Procedure,* 82 N.Y.U. L. REV. 112 (2007);

[70] TK CITE 4th Amendment cases

[71] See Richards, supra note 14, at 28-35.

[72] Cf.

[73] *See* Paul M. Schwartz, *Internet Privacy and the State,* 32 CONN. L. REV. 815, 840-43(2000).

[74] See Seth Kreimer, *Sunlight, Secrets, and Scarlet Letters: The Tension Between Privacy and Disclosure in Constitutional Law*, 140 U. PA. L. REV. 1, 97 (1991); Paul M. Schwartz, *Internet Privacy and the State,* 32 CONN. L. REV. 815, 840-43(2000).

[75] TK CITE Anita Allen.

For this reason, legal rules ought to protect personal information such as playlists more comprehensively when it implicates intellectual privacy, much as the EU Privacy Directive applies more stringent regulation to certain categories of "sensitive data."[76] As Richards has argued, "If we value a pluralistic society or the cognitive processes that produce new ideas, then some measure of intellectual privacy, some respite from cognitive surveillance, is essential."[77]

B. Social Privacy

Besides the special nature of intellectual privacy, there is another key difference between frictionless sharing and some other privacy issues: the audience. Disclosures within an individual's social network risk much greater privacy harms than other information flows.

Most of us realize, at some level, that credit bureaus, data brokers, search engines, and web sites assemble massive dossiers about each of us.[78] Many appear to feel uneasy about this profiling.[79] And many scholars (including me) have argued about the deleterious effects that this online monitoring can cause.[80] In response, most Americans have sighed wistfully and clicked "I agree." Virtually no one seems to object to the fact that Netflix as a corporation collects data showing all the movie choices of over 24 million people. Even the stringent VPPA includes an exception for general disclosures of this data to third-party marketers.

Disclosures to complete strangers can cause privacy harms and the law should recognize this fact. But disclosures within our individual social networks generally do more damage. This is the space where we care most keenly about our reputation. We pay more attention to recommendations from people we know because we have a stake in their opinion. That very same stake, however, makes inaccurate or embarrassing information more damaging when our friends hear it.

[TK Discuss Charles Fried and selective revelation; sociological and social psychology literature on reputation and intimacy]

C. Information Quality and Spammification

Have your eyes begun to skim past the Spotify items in your news feed? Mine have. This speaks to another shortcoming of frictionless sharing that is less directly classified as a privacy concern, but does impinge on the benefits of social sharing. Unintentional disclosures could destroy the recommendation ecosystem. This Section will start by discussing a reduction in information quality, and then look at the corresponding increase in quantity.

[76] TK CITE EU Privacy Directive
[77] Richards, *Intellectual Privacy*, supra note 66, at 404.
[78] See DANIEL J. SOLOVE, THE DIGITAL PERSON: TECHNOLOGY AND PRIVACY IN THE INFORMATION AGE (2006).
[79] TK CITE recent survey data
[80] TK CITE Kang, Solove, Nissenbaum, Cohen, McGeveran, etc

First, as to information quality: Automated disclosures of page views, downloads, or playlists do not always match up with intentional recommendations. Apps that look over a user's shoulder during web browsing misrepresent casual clicking as conscious choices to recommend particular links. The fact that your friend watched or read or listened to something does not mean that your friend liked it, or recommends it.

Thus, removing "friction" also removes the very choice that gives my browsing or my playlist any value to my friends. I previously made this argument about social marketing messages, such as those transmitted by Facebook's disastrous Beacon program, which allowed web sites to disclose an individual's activity on partner web sites in the news feeds of that person's Facebook friends. What I said there is equally true of other forms of frictionless sharing:

> An in-person recommendation to a friend, or even a general review written on a blog, requires the endorser's thought and volition. Recipients of these trusted referrals rely on them in part precisely because of their voluntariness. Routinized social marketing messages, however, require no such effort or choice, diminishing their value from heartfelt true endorsements to mechanized impersonal advertisement.[81]

In short, friction may be the same thing as intent or choice, and those mental states are the ones that make the shared information valuable. People pay attention to these messages precisely because their friend made the effort to send them. When instead they are sent frictionlessly or passively, they lack that value.[82]

Frictionless sharing also lacks context. I make playlists for my eight-year-old daughter, and I assure you I do not like every song they contain. A friend who took one of these playlists as a recommendation of music to try had better enjoy a certain kind of top 40 dance pop. Sometimes while surfing the web I click idly, because a clever headline or an arresting photo catches my eye, but the page that loads turns out not to be worthwhile. The nature of the web encourages this sort of exploratory browsing, because the back button restores you after any wrong turn. But again, friends who choose to look at an article because I glanced at it for 15 seconds probably aren't discovering hidden gems as a result.

These inaccurate indicators of individuals' preferences also interfere with their ability to tell their own story. As noted above, people engage in *authentic* sharing as a means of self-expression, identity formation, connection with friends, and promotion of artists they admire. A clutter of unintended passive sharing interfered with all of these goals. Increasingly we all cultivate our own online reputation. It could be as simple as limiting the sorts of things we post on Twitter, or crafting a perfect home page. Adding lots of noise to that signal threatens the reputation and influence each person has established.

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[81] McGeveran, supra note 13, at 1129.

[82] See Molly Wood, *How Facebook Is Ruining Sharing*, CNET (Nov. 18, 2011), at http://news.cnet.com/8301-31322_3-57324406-256/how-facebook-is-ruining-sharing/ ("Sharing and recommendation *shouldn't* be passive. It should be conscious, thoughtful, and amusing--we are tickled by a story, picture, or video and we choose to share it … We *choose* these gems from the noise. Open Graph will fill our feeds with noise, burying the gems.").

An increase in quantity exacerbates this quality problem. As discussed above, businesses support frictionless sharing because it results in more messages, and thus drives more traffic and raises more revenue. But this only works in the short term. As everyone sees more and more messages about friends' purchasing choices or media consumption – and especially as the utility and accuracy of those messages declines – we all become less likely to pay attention. Consumer attention is a finite and fragile resource, and excessive exploitation will deplete it.[83] If it unleashes too many meaningless messages, frictionless sharing will end in "spammification" and pollute the recommendation ecosystem described earlier.[84]

To sum up, frictionless sharing threatens to kill the goose that laid the golden egg. If greed drives platforms to maximize potential gains by promoting social information flows to the greatest possible extent, they will destroy what it special and effective about them. If these types of messages from friends become just another form of advertising clutter, they will no longer deliver most of the benefits catalogued in Part II. Importantly, however, existing companies have very little incentive to be judicious and conserve the valuable resource of consumer attention for the future. As explained in Part V, this may justify regulatory intervention.

Before turning to this analysis, however, Part IV considers the rhetoric of frictionless sharing against the backdrop of the potential benefits and costs we have seen. The terminology profoundly shapes thinking about interface design and legal rules in ways that do not necessarily match the pros and cons discussed thus far.

PART IV: The Rhetoric of Frictionless Sharing

The metaphor of "frictionless sharing" represents an ingenious rhetorical move. It is no surprise that intermediaries eager for more disclosures have chosen a catch phrase that valorizes their position. These days, supporters of frictionless sharing rarely use its older name of "passive sharing," and I believe the shift is quite intentional. Of course, "sharing" sounds desirable. By depicting anything that impedes this sharing as "friction," the new catchphrase implicitly frames the natural status quo as one in which individuals reveal abundant information unless some malevolent outside force interferes. At first glance, a "frictionless" process sounds wonderful. It eliminates a nuisance. It frees everyone to share.

This techno-libertarian posture appears constantly in debates about privacy. As Julie Cohen summarizes it, the narrative assumes that disclosure and analysis of ever more information inevitably leads to various benefits, and particularly to greater truth.[85] The corollary, which Cohen calls the "Luddism Proviso," stipulates that "pre-determined limits on information processing are a manifestation of irrationality, and those who endorse them are fundamentally antiprogress."[86] Proponents of

[83] TK CITE Desai, Pasquale, Goldman
[84] *See* McGeveran, supra note 13, at 1129-1130.
[85] Julie E. Cohen, CONFIGURING THE NETWORKED SELF: LAW, CODE, AND THE PLAY OF EVERYDAY PRACTICE 248-252 (2012).
[86] Id. at 249.

amending the VPPA rely upon this playbook when they argue that the original statute inhibits "choice."[87] Individuals are not passive in this construct – they are free.

This Part grapples with the rhetoric of frictionless sharing. At one level this might seem like a pointless semantic exercise, since arguably everyone understands what Zuckerberg or Netflix mean by the term. I think that the examination is worthwhile nonetheless. The language and the attitude it embodies are pervasive but invisible. Although the metaphors embedded in "frictionless sharing" initially seem powerful, they collapse into incoherence on close examination. Once analyzed, "frictionless sharing" reveals itself as a comically inapt pair of buzzwords. In several important respects, the phenomenon is neither frictionless nor sharing.

A. Friction

The "frictionless sharing" metaphor misrepresents the character of friction. Even setting that error aside, the term inaccurately describe the sort of interface Netflix desires in two fundamental respects.

In physics, friction is simply a force that resists motion between two surfaces where they touch. In everyday applications, mechanics and engineers frequently want to make things move – perhaps to help gears to turn or wheels to roll down tracks. In these situations they use both equations and lubricants as tools to reduce friction. Probably because of this typical goal of fighting it, in ordinary language friction took on a negative connotation. Friction became synonymous with strife or discord within relationships of all kinds.[88] Economists refer to many additional costs that encumber efficient transactions as friction.[89] The word also entered the slang of Silicon Valley, business management, and how-to books, where it can describe any sort of irritating obstacle.[90] The pejorative flavor of the word "friction" isn't really faithful to the metaphor, however. A truly frictionless world would be a nightmarish

[87] See, e.g., Testimony of Christopher Wolf, Director, Privacy and Information Management Practice, Hogan Lovells US LLP, Founder and Co-Chair, Future of Privacy Forum, at Senate Committee on the Judiciary Subcommittee on Privacy, Technology, and the Law hearing, *The Video Privacy Protection Act in the 21st Century* (Jan. 31, 2012), at 2-3, available at http://www.judiciary.senate.gov/hearings/hearing.cfm?id=f14e6e2889a80b6b53be6d4e412d460f (hereinafter "Wolf Testimony") (arguing that application of VPPA to online setting "can be read to frustrate the choice of consumers who want to authorize the disclosure on an ongoing basis of the streaming movies they watch online").

[88] See, e.g., Greg Miller, *FBI Gets New Role in Domestic Intelligence*, WASH. POST (June 20, 2012) at A4 (explaining that a change in oversight of intelligence activities "is intended to improve collaboration, but some officials say it has created new friction between the FBI and CIA"); Nick Wingfield, *Microsoft Sharpens Its Aim*, N.Y. TIMES (June 25, 2012) at B1 (describing Microsoft's introduction of a tablet computer as "the most striking evidence yet of the friction between Microsoft and its partners on the hardware side of the PC business");

[89] TK CITE

[90] See, e.g., Adam Pash & Gina Trapani, LIFEHACKER: THE GUIDE TO WORKING SMARTER, FASTER, AND BETTER 174 (2011) (describing use of keyboard shortcuts and macros as ways to reduce friction in daily tasks); David Pogue, *Technology's Friction Problem*, SCI. AMERICAN (April 2012) ("Friction is a hassle. Steps. Process. And in this increasingly technified world, there is still a surprising amount of red tape …"); Scott Belsky, *Why We Should Declare War On Friction*, THE 99 PERCENT, http://the99percent.com/articles/7015/Why-We-Should-Declare-War-On-Friction (last visited July 10, 2012) ("I call this stuff "friction" – it's the tax filings, paperwork, waiting time, protocols, forgotten passwords, spam clearing, bureaucratic nonsense, big egos, and the ever-increasing information overload that we try to digest every day. It kills us with a thousand tiny paper cuts.").

place where cars would slide off roads and we would be unable even to pick up a laptop, much less watch a movie on one.

If we pretend it gets the physics right, "frictionless" is still misleading language for two reasons. First, even Mark Zuckerberg does not really contemplate zero friction. A user must first download the Spotify app and agree to terms of service before revealing any information about music choices. Netflix emphasizes that use of its frictionless sharing features would be optional too. In physics, engineers who want to reduce friction to make something work better rarely desire the complete elimination of friction, which would cause a host of other problems. They seek the optimal amount of friction, and that depends on what result they sought in the first place. Likewise, views about the correct amount of friction attached to sharing will vary with views about its underlying normative purposes.

Technology does enable truly frictionless collection and disclosure of information, but it typically makes users and policymakers extremely uncomfortable. For example, when the media first reported that the iPhone retained location data in its cache, the backlash from consumers and politicians was fierce. Most actors, including the industry, condemn spyware and other clandestine data-gathering techniques. These are the examples of real frictionless-ness. They are rightfully condemned as unwarranted intrusions on privacy.

One might conclude that using the word "frictionless" instead of something more accurate like "reduced friction" amounts to harmless puffery. Undoubtedly "frictionless" is catchier. But it ignores the fact that zero friction would be intolerable to most observers. It supports a simplistic assumption that choices about friction are binary – that we can have either old-fashioned burdensome solitude or shiny new unencumbered sharing. The reality is more complex. We can choose to calibrate the amount of friction at an infinite number of levels. More important, we cannot avoid making some choice, whether through code or law; there is no "natural" state of friction to which we should aspire.[91]

Second, frictionless sharing does not really reduce overall friction, but only shifts it from some users to others.[92] Under the VPPA, Netflix users who want to disclose their Friday night movie pick in Facebook must take a step to do so. Without the VPPA, users who wish to keep that choice to themselves would need to take a comparable step. The innovation of frictionless sharing automatically introduces friction-filled privacy. By eliding this trade-off, the rhetoric of "frictionless sharing" once again presents disclosure as the natural and beneficial activity, the one which should be lubricated as much as possible. As the next subsection explains, however, if we grease the skids for sharing too much, it ceases to be sharing at all.

2. Sharing

"Sharing" certainly sounds like a positive word. We tend to like people who share our tastes or values, and we may then share our belongings or our feelings with them. Characterizing social networking activity as sharing enhances its image as an authentic, intimate, interpersonal activity.

[91] TK Cite Lessig's *Code*.
[92] See Richards, supra note 14, at [TK PAGES].

Perhaps for this reason, the terminology of "sharing" has been a part of Facebook from the very beginning. It has become so ingrained in the language of the world-wide web that it is now invisible. The word seems like the most natural way to describe any transmission of information in social networks. Google recently bowed to the inevitable by changing the name of the "+1" button in its Google search results to a "share" button.[93]

But crucially, the sharing activities that give the word its positive tone are based on active choice. I may decide to share my dessert with you. If you start taking bites of it without my permission, you are stealing, or at the very least displaying poor manners. We only "share" our ideas and opinions, like we share a piece of cake, on purpose. I have argued in the past that disclosures within social networks should require "genuine consent" – an intentional rather than an accidental approval by the user.[94] Anything less cannot be described as "sharing" in any meaningful sense.

For that reason, as noted earlier, "frictionless sharing" is an oxymoron. By conceiving of personal control as mere friction to be worked around, the phrase perverts the meaning of sharing. It turns a volitional and even noble act into an accidental byproduct of going about our business.

More subtly, "sharing" buttresses the position noted before, that constant disclosure of information is the natural state of being. Who doesn't want to share? Cranky toddlers and greedy misers. If the stream of information sent through social networks is sharing, then refusing to send that information is its opposite, and no one wants to be anti-sharing. Once again, language frames the debate, and portrays friction – privacy, choice, and control – as an obstruction to inherently virtuous activity.

To demonstrate how much work the "sharing" does in "frictionless sharing," imagine substituting another word. Friction starts to sounds a lot better when one considers frictionless babbling. The publishers and movie studios who support so strongly the technological wonders of frictionless sharing change their tone when faced instead with digitally enabled frictionless copying (which most of them call "piracy"). In fact, when it comes to copying, these very same people want to interpose legal obstacles in the place of the practical and technical difficulties that used to provide friction. Even replacing the emotionally laden "sharing" with a more neutral word changes the rhetoric entirely. "Frictionless disclosures" sound likely to cause some problems.

And this brings us back to where we started: friction is only good or bad in relation to the underlying force it acts against. When we want something to move, we should reduce friction. When we want to keep something still we want more friction (indeed, we want traction). If Netflix tells a user's friends what movies they watch, we have seen that the resulting information flow is neither entirely

[93] This mechanism allows users of the Google+ social network to distribute links from within search results to the feeds of Google+ friends. It is not frictionless sharing, however – users are presented with a dialog box where they must authorize the publication of the link, and can add comments and control recipients.
http://www.digitaltrends.com/social-media/google-replaces-the-1-button-with-a-google-share-link-in-search-listings/

[94] McGeveran, supra note 13, at 1158-60.

good or bad, but rather a mixed bag. Thus, we must just the right amount of friction. The next Part considers how to determine this amount.

PART V: The Law of Friction

Friction is so important to mechanical physics that its study constitutes an entire subfield called tribology. Leonardo Da Vinci originally conceptualized friction, but the French physicists Guillame Amontons and Charles-Augustin de Coulomb independently developed the ideas and published them at the end of the seventeenth century, reduced to several essential "laws of friction."[95] We cannot match the empirical rigor of their scientific experimentation, but now that we have cleared away the rhetorical haze of "frictionless sharing" we can repeat the observations made in Parts II and III about the forces at work. Having done so, we will be prepared to articulate our own law of friction for the world of social networks.

Part II of this article showed that flows through social networks of personal information, such as the movies one views, confer significant benefits. An individual making a disclosure engages in self-expression and self-definition and influences others. An individual receiving a disclosure may receive useful advice and recommendations, strengthen bonds within a social network. As a whole, society benefits from this exchange, not only because people have fun, but because it improves the information available about all kinds of goods and services, enhancing competition and improving the availability of many cultural products. Finally, intermediaries promote themselves and draw customers through all this peer-to-peer activity.

Part III of this article identified three potential negative consequences of poorly designed frictionless sharing. These effects are particularly pronounced when the messages concern their reading, viewing, and listening habits, but some apply to all sharing. First, these disclosures can be embarrassing or sensitive and so undermine individual privacy, especially the intellectual privacy needed to explore new ideas. Second, the violation of privacy within individuals' social networks causes them greater harm than parallel information flows that send information to remote and impersonal institutions. Third, inaccurate messages threaten to destroy the impact of all social sharing and recommendations through spammification.

This brings us to the ultimate questions. Given these costs and benefits, should the VPPA be changed to allow Netflix to implement its desired form of frictionless sharing? Or should other social media operate under rules more akin to the VPPA? This final Part considers those questions. It first discusses the best policy, and then the possible ways that policy might be enforced.

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[95] The laws are:

1. The force of friction is directly proportional to the applied load. (Amontons's First Law)
2. The force of friction is independent of the apparent area of contact. (Amontons's Second Law)
3. Kinetic friction is independent of the sliding velocity. (Coulomb's Law)

TK cite

In response to alarm about privacy problems with frictionless sharing, Netflix and other boosters often insist that individuals continue to have plenty of choice and control over their information. A privacy-sensitive individual does not need to use Netflix's social app at all, they point out. Moreover, the Netflix interface allows users to opt out of sharing individual movies or playlists.[96] And, their argument continues, too much friction will limit the use of social sharing. Some raise the specter of constant pop-up windows pestering users for authorization, perhaps recalling the failures of Microsoft Explorer's intrusive cookie notifications in the 1990s.[97]

Everything in this argument boils down to the same decision: calibrating the optimal amount of friction in the decision to transmit personal information to a social network. That's it. A simple comparison of costs and benefits should dictate where to direct how much friction. Just like engineers designing moving machinery can adjust angles, add lubricant, or change surface materials, we have a lot of control over the location and degree of friction in the architecture of sharing.

One seemingly radical option is zero friction. In that case, Netflix could distribute playlists and movie choices to a user's friends without any opt-in. Indeed, this describes the original working of Facebook's failed Beacon initiative. A truly frictionless regime would permit disclosures even about people with no desire to reveal anything about their viewing habits. As noted earlier, however, today even supporters of frictionless sharing do not actually intend to offer *frictionless* sharing. Facebook's developer policies do not permit this model.

With very few exceptions, however, zero friction is now allowed by law.[98] The only real impediment to Beacon under current law was the VPPA (in instances where Beacon partner Blockbuster disclosed information about users' video choices).[99] A less scrupulous firm with less concern for the reputation of its brand might make a different choice – perhaps not movie rental companies, thanks to the VPPA, but certain types of noncommercial video sites might. Platforms might presumptively share virtually any other category of information: books, web sites, music, location, restaurant reservations, purchases, and on and on.

At the other hypothetical extreme, we could make it so difficult to transmit information that no sharing occurs. I don't know of anyone who supports this option. The benefits explored in Part II make it clear that we would lose a great deal if we strangled playlist sharing or obstructed individuals from posting links to recommended content.

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[96] The Netflix-supported bill to change the VPPA specifies that consumers may "withdraw their consent." H.R. 2471 (Dec. 7, 2011). But the bill does not require that companies such as Netflix offer a case-by-case opt-out, and it does not ensure that cancelling the authorization is reasonably easy. See McGeveran Testimony, supra note 30.

[97] Leslie Meredith, *Senators Consider Banning Automatic Media Sharing on Facebook*, SCI AMERICAN (Feb. 12, 2012), http://www.scientificamerican.com/article.cfm?id=senators-consider-banning ("Nagging requests for permission could overwhelm Facebook if the Senate decides all media should be governed" by the VPPA); TK CITE Chris Wolf testimony.

[98] In theory the nature of the movie choices could be so private that it would violate the public disclosure of private facts tort. It is difficult to imagine disclosures of media choices sufficiently "outrageous" to trigger liability. TK CITE Restatement. Moreover, the publication requirement in some jurisdictions might prevent the application of the tort to limited publications among Facebook friends. CITE cases, Strahilevitz article.

[99] McGeveran, supra note 13, at 1139-40.

If there should not be either zero friction or extreme friction, then our task is setting the degree in between those two poles. With perfect information I suspect we could plot out curves that would pinpoint this ideal amount of friction. I would predict that the decrease in people's willingness to share is not constant – that some additional increment of friction causes a large drop in propensity to share. Perhaps that tipping point comes, for example, when we add nuisance pop-up windows seeking consent. We would not want to set barriers beyond that point. Likewise, I would predict that at some point friction's effectiveness as a safeguard against erroneous disclosures levels off. On an imaginary perfect graph, we could determine the correct policy with the mathematical precision of Amontons' first law of friction. Needless to say, this is not quite possible.

We can get some guidance about the degree of friction from the architecture of these systems themselves. The Netflix interface necessarily imposes some friction on the decision to *watch* a movie, not just to share it. Users must log in to the Netflix site or app (although they can eliminate that friction by setting their device to remember the password or staying logged in permanently). They must locate the movie they want using the search box, their queue, or Netflix's recommendations. Even a user who knows in advance that she wants to stream the next episode of *Mad Men* on her television needs to push some buttons. If the future brings us motion-sensing or voice-activated systems, there will still be a moment when a user decides what to watch and takes action. On Netflix's own terms, all of this is friction. And no matter how futuristic you want to be, it is hard to imagine the complete elimination of this friction, absent a mind-reading Netflix implant in users' brains.

Now consider how much additional friction Netflix must add to comply with the VPPA. Going back to the traditional interface on a computer or tablet, at a minimum every user clicks a PLAY button to start the movie. The VPPA requires explicit consent for any disclosure of that movie selection, but under the E-SIGN Act any digital equivalent suffices.[100] As I suggested when testifying against amendment of the VPPA, the company could simply place a PLAY AND SHARE button next to every PLAY button.[101]

Users would experience infinitesimal additional friction. The only added obstacle would be the instant of extra thought to decide whether to push the second button and publicize a particular movie choice. It is difficult to imagine a design that placed less additional burden on the benefits of sharing described in Part II.

Fittingly, the small extra increment of friction in this model is precisely the amount necessary to secure genuine consent.[102] Thus it narrowly addresses the concerns in Part III, all of which arise when disclosures occur without sufficient control by users. Another beauty of the solution is its close connection to the technology that enables frictionless sharing in the first place. The very same technology that makes it easier to watch movies and to share movie choices with friends also makes genuine consent easier.

[100] See supra notes 24-26 and accompanying text.
[101] See McGeveran Testimony, supra note 30.
[102] See supra notes __-__ and accompanying text.

The PLAY AND SHARE button would work just as well in many other interfaces. Spotify, for example, works in much the same way as Netflix: a user must press a button to play a song. Users could decide whether to broadcast each song selection in their social network. An extra wrinkle appears because Spotify also allows users to assemble and listen to playlists of different songs. In theory it is possible that a person might wish to share the first three songs in a playlist but not the fourth. However, the friction required to ask for permission before each song played would become a nuisance and intrude on the benefits of social sharing. Instead, users should be asked whether to share the entire playlist at the same time they play the whole thing. This observation allows us to improve the original formulation of the law of friction, keying the friction of sharing to the friction of use.

Thus, we arrive at the law of friction. ***It should never be easier to "share" something than to do it***.

It is possible, and would be preferable, for the industry to build this law of friction into its practices voluntarily. In particular, the large social networking sites serve as chokepoints in the social sharing ecology and they could enshrine this requirement in the rules they set for app developers. If Facebook adopted the law of friction it probably would take hold as industry practice.

While this route may be preferable, it is unlikely. As noted throughout the article, and especially in Part II.C, intermediaries like Facebook and Netflix have good reason for wanting to reduce friction as much as possible. They externalize the costs of frictionlessness onto their customers and society at large, and even if the market ultimately penalizes the activity it takes a while. By subsuming the decision to share a movie selection within the decision to watch the movie, Netflix could dramatically increase the amount of information users disclose and thus increase its own benefit.

If companies do not adopt the law of friction on their own, various forms of "soft law " might establish it instead. Many kinds of industry standards or codes of conduct, or standard-setting bodies such as the W3C, can promulgate rules that effectively bind most actors to follow them. Again, however, because these self-regulatory bodies usually work on consensus models, the short-term interests of some intermediaries might trump the long-term interests of disclosers, recipients, and society as a whole.

In that event, the law of friction could be a template for regulators such as the Federal Trade Commission or state attorneys general to demand genuine consent. The proposal asks for very little. It is technology-neutral and flexibly tied to the individual design of an interface. Those that figure out ways to reduce friction of use will be able to reduce friction in sharing commensurately. Ultimately, however, Netflix never will figure out how to play the right movie without asking you. It should not be allowed to talk to your friends about it without asking you either.