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The Essential Facilities Doctrine in Information Economies: Illustrating Why the Antitrust Duty to Deal is Still Necessary in the New Economy

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Cover Page Footnote

I would like to thank Professor Mark Patterson for his advice and guidance, Stephen Dixon and Kate Patton for their hard work, and my wife Katharine Deabler for her support.

The Essential Facilities Doctrine in Information Economies: Illustrating Why the Antitrust Duty to Deal is Still Necessary in the New Economy

Maxwell Meadows*

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INTRODUCTION

The modern economy involves far more commerce centered around the exchange of information than it did twenty years ago.¹ Information is any collection of concepts or details about the operation of the world around us, and can help us to understand what we do, how we can do those things more efficiently, and lead us to discovering new possibilities. The growth in the rate of exchange of information over twenty years, and its utility for commerce, has been spurred by innovations in electronic communications and analysis, and in turn has spurred additional technological innovations. At times, information is the good placed into commerce,² while at other times goods and services are offered so as to make use of information.³ The degree of competitiveness within different information-related markets differs widely—there are many manufacturers of smart phones, but relatively few social networks with large usership such as Facebook, Twitter, LinkedIn, Pinterest, and Google Plus.⁴

¹ See Chuck Jones, *Ecommerce Is Growing Nicely While Mcommerce Is On A Tear*, FORBES (Oct. 2, 2013, 10:08 AM), <http://www.forbes.com/sites/chuckjones/2013/10/02/e-commerce-is-growing-nicely-while-mcommerce-is-on-a-tear/>.

² See, e.g., DC Denison, *Big Data for Sale: Data Marketplaces*, ACQUIA (Mar. 25, 2013), <http://www.acquia.com/blog/big-data-sale-data-marketplaces> (describing public and proprietary data gathered and marketed by vendors such as DataMarket, Factual, Windows Azure Data Marketplace, ManyEyes, Public Data Explorer, Public Data Sets on AWS, and Infochimps).

³ See, e.g., UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, INFORMATION ECONOMY REPORT 2013: THE CLOUD ECONOMY AND DEVELOPING COUNTRIES xi (2013) available at http://unctad.org/en/PublicationsLibrary/ier2013_en.pdf (defining cloud computing as “a paradigm for enabling network access to a scalable and elastic pool of shareable physical or virtual resources with on-demand self-service provisioning and administration”).

⁴ See, e.g., The eBusiness Guide, *Top 15 Most Popular Social Networking Sites*, EBIZMBA, (Mar. 2015) <http://www.ebizmba.com/articles/social-networking-websites>

What distinguishes competition in a market infused with informational elements as opposed to physical goods, or services? Can information be controlled, even monopolized, by a single firm? In that same strain, when is information so unique, complex, or otherwise distinct that a potential competitor in its use cannot feasibly replicate it from another source or by independent effort? Assuming that information is not readily substitutable, and that such information is monopolized by a firm, can the information be called an essential facility or resource for competition in a marketplace?

An example of information that is subject to monopolization involves the use of pharmaceutical distribution agreements (and a related regulatory order from the FDA) to prevent potential competitors from acquiring the information about the drug necessary to know whether they can compete with a pharmaceutical manufacturer after filing an Abbreviated New Drug Application (ANDA).⁵ This case was recently bolstered by the filing of an amicus brief by the Federal Trade Commission in the United States District Court for the District of New Jersey.⁶ The plaintiff alleges that the defendant is using the FDA's order and its distribution agreements to prevent potential generics from purchasing sufficient quantities to conduct bioequivalence testing.⁷ Hence, the defendant is restricting access to the information essential to filing an ANDA and permitting generic entry.⁸

(on file with author) (indicating seven social networks exist with over 100,000,000 unique monthly visitors, with Facebook having three times the second-most popular, Twitter).

⁵ See Brief for Federal Trade Commission as Amicus Curiae at 1, Mylan Pharms., Inc. v. Celgene Corp., (No. 2:14-CV-2094-ES-MAH (D.N.J.) (ongoing 2015), 2014 WL 2968348, at *1; see also Jonathan Hatch and Thomas W. Pippert, *FTC Submits Amicus in Mylan v. Celgene, Citing Potential Refusal to Deal Concerns*, Mondaq 2014 WLNR 25603756 (Sept. 16, 2014) (discussing the FTC's amicus brief filed in support of plaintiffs in *Mylan*). There is presently an interlocutory appeal being considered in the *Mylan* case regarding whether a prior voluntary course of dealing is a necessary element of a refusal to deal claim under the antitrust laws. *Mylan Pharmaceuticals, Inc. v. Celgene Corp.*, No. 14-2094 (ES)(MAH), 2015 WL 409655, at *2 (D.N.J. Jan. 30, 2015).

⁶ See Brief for Federal Trade Commission as Amicus Curiae at 1, Mylan Pharms., Inc. v. Celgene Corp., (No. 2:14-CV-2094-ES-MAH (D.N.J.) (ongoing 2015), 2014 WL 2968348.

⁷ See *id.* at *2.

⁸ See *id.* Note that interlocutory appeal has been certified to the Third Circuit in this case on the question of whether a prior course of dealing is a required element for a

Another framework supporting the potential monopolization of information that one should consider is the following: Firm “X” is a monopolist in the market for the provision of Internet service in a geographic region.⁹ As an Internet Service Provider (ISP), Firm X is able to gather certain information about its users such as age, demographics, wealth, and especially the amount and nature of Internet usage by each individual user. Assume next that Firm X uses the collected pool of information to create a new product or service, such as a personalized bulletin of regional events of interest that is generated from predictive analysis of the individual and aggregated data. Assume further that comparable products cannot be created absent a similarly detailed body of information about the pool of potential consumers. Last, assume that, apart from the provision of Internet services, there is no economically practicable method for obtaining the information about Internet users.

Under these numerous assumptions, the monopolist has exclusive access to a resource essential to competing in the new product market. Thus, by the economic fluke of being a legally sanctioned monopolist in one market, the monopolist has the building blocks for an independent second monopoly. If others had the ability to access and innovate from that foundation it is also possible that additional products or services could be devised from the information the monopolist is privy to. Is this reality simply a windfall for a monopolist, and if so, is there a mechanism under the antitrust laws to inject competition into the subsequent markets? Is antitrust intervention even necessary when measured against the economic incentive to sell access to the information at a monopoly price that extracts the same profits the monopolist could have made through its own exclusive use of the information?

Although the essential facilities doctrine, which grants a limited right of course to essential resources,¹⁰ is potentially the best-situated antitrust theory to require access to information that could spur innovation, it is so narrowly defined under current antitrust

Section Two refusal to deal. *Mylan Pharms., Inc. v. Celgene Corp.*, No. 14-2094 (ES)(MAH), 2015 WL 409655 (D.N.J. Jan. 30, 2015) (letter order).

⁹ Whether by regulatory decisions or a natural monopoly created by the high fixed costs of establishing a network of Internet distribution.

¹⁰ *See infra* Part II.

law that one can question its existence.¹¹ However, information economies have certain attributes that could reinvigorate the essential facilities doctrine.¹² As such, even barring a relaxation of the necessary elements for an essential facilities claim, the essential facilities doctrine may find application in an information economy.¹³ Included in this discussion are a variety of economic and policy arguments for why a less stringent definition of the essential facilities doctrine might be beneficial in an information economy, as opposed to a more traditional economy.

The essential facilities doctrine from antitrust law can address this consideration and continue to foster competition in information economies, as well as encourage innovation based on the exchange of information or ability to exchange information. Part I will discuss what is considered to be an information economy and the characteristics that are attributable to information economies, while Part II of this Note will briefly summarize the essential facilities doctrine under current law. Part III of this Note will then discuss the application of the essential facilities doctrine to information economies, including how any distinguishing features of information economies should or do alter the essential facilities analysis. A brief conclusion on the utility of the essential facilities doctrine as applied to information economies is then included.

I. DEFINING INFORMATIONAL ECONOMIES

Information can be an open resource to all seeking to use it, or be considered a form of intellectual property with some degree of associated private control.¹⁴ From one angle, providing unrestricted access to information permits the dissemination and utilization

¹¹ See, e.g., *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1074 (10th Cir. 2013) (“Essential facilities doctrine offers perhaps an even more controversial example still” of theories of liability for unilateral action.).

¹² See discussion *infra* Part III.A.

¹³ See discussion *infra* Part III and Conclusion.

¹⁴ See Onnig H. Dombalagian, *Licensing the Word on the Street: The SEC’s Role in Regulating Information*, 55 BUFF. L. REV. 1, 4 (2007) (“Scholars have long debated the level of protection that should be given to intellectual property (including information) that falls outside the traditional paradigms of patent and copyright law At the heart of the debate is the perceived need to balance private incentives to produce information against the social benefit of making it broadly accessible.”).

of the existing pool of knowledge,¹⁵ while the intellectual property angle supports a system of incentives meant to encourage the development of new information.¹⁶ Often different types of information exist within one market structure. For example, the financial markets regulated by the SEC can be considered to have at least five kinds of information: company-generated information, market information, formulae to create derivatives, contracts and product design for financial instruments, and the rules for preparing and spreading information.¹⁷ Further, information has multiple purposes, only some of which are economic or innovation focused. Information, in many forms, has as much intellectual, political, or social value as economic value.¹⁸

Networks¹⁹ are often central to information economies, permitting the gathering and distribution of information, and providing the added attractiveness of great interconnectivity.²⁰ Network industries come custom-built with two potential choke points for the distribution of information: interfaces where information producers introduce their content, and the point of distribution to the con-

¹⁵ Although open access may also encourage development of new information, those adding to the pool of collective knowledge are not legally entitled to recoup any of the monetary value of their contributions, as is a fundamental incentive justifying many intellectual property regimes.

¹⁶ See Dombalagian, *supra* note 144, at 4–6.

¹⁷ See *id.* at 6.

¹⁸ See, e.g., Niva Elkin-Koren, *Making Room for Consumers Under the DMCA*, 22 BERKELEY TECH. L.J. 1119, 1119–21 (2007) (“The use of DRMs turns information, once a non-excludable public good, into an excludable commodity While many concerns raised by the [commoditization of information by DRMs]—such as price and consumer friendliness—are relevant to all types of commodities, other concerns are closely connected to information policy. These new mechanisms for physical control over the use of copyrighted works may threaten intellectual freedom and fundamental liberties.”).

¹⁹ By “network,” I am referring to markets defined by network economic effects, where the value of a good or service increases as the overall number of branches grow: telephones, the Internet, social networks, etc. See, e.g., Daniel F. Spulber & Christopher S. Yoo, *Rethinking Broadband Internet Access*, 22 HARV. J.L. & TECH. 1, 28 (2008).

²⁰ See Mark Cooper, *Open Access to the Broadband Internet: Technical and Economic Discrimination in Closed, Proprietary Networks*, 71 U. COLO. L. REV. 1011, 1013 (2000) (“Networks are the essence of the e-world and the internet century into which we are embarking. Global scale, fluid movement of information, and commerce have created a new economy, a new mode of production.”).

sumer.²¹ The Internet itself consists of various networked physical and electronic resources, the existence of which facilitates the great variety of websites and Internet applications we see today.²² Two aspects of the Internet’s architecture are “essential inputs into downstream production of applications and content,” namely the network of interconnected physical resources, and the logical standards that permit communication between those resources.²³ Access to these resources is essential for the many applications distributing email, messages, and other information content, as well as for the production of websites, blogs, and other Internet-specific content.²⁴ Monopolizing the physical or logical infrastructure of the Internet is unlikely, but one can easily see the implications for competition if a competitor was able to deny access to those resources to its competitors.

Some authors posit that there is an increasing need to recognize the ways in which we exchange information as commons, and to regulate them as such, because private property rights fail to maximize their potential contributions to the public welfare.²⁵ In particular, the idea is that “the most important commons—like highways or electricity, information or the Internet” avoid the necessity of overcoming transaction costs and allow for low-cost innovation.²⁶

²¹ See *id.* at 1013 (stating that many of the facilities at the choke points were historically exclusive, and many may still be natural or economic monopolies).

²² See Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 MINN. L. REV. 917, 1005 (2005).

²³ *Id.* at 1005.

²⁴ See *id.* at 1005 n.334.

²⁵ See, e.g., *id.* at 918–919 (exploring the demand-side implications of treating infrastructure and information as an open access commons); see also Yochai Benkler, *Review: Commons and Growth: The Essential Role of Open Commons in Market Economies, Infrastructure: The Social Value of Shared Resources*, 80 U. CHI. L. REV. 1499, 1499–1500 (2013) (arguing that symmetric access to an open class of potential users, allocated through a non-price mechanism, is beneficial for commons-type goods).

²⁶ Benkler, *supra* note 255, at 1502–03 (“The symmetric-use privileges that typify the most important commons—like highways or electricity, information or the Internet—avoid the need for transactions at the margin and allow for low-cost exploration in an uncertainty space through experimentation, reassessment, and adaptation to new information. Commons obtain this high flexibility at the cost of the power to appropriate the benefits of the new action through control of the resource set that enabled it, requiring enterprises to seek different leverage points and strategies of appropriation. The elegant institutional parsimony of property rights, by contrast, is that, under certain well-

Another lens for viewing information economies is looking for the platforms that support diverse ecosystems of products and services.²⁷ Scholars debate whether these platforms should be analyzed under the net-neutrality framework,²⁸ antitrust tying analysis,²⁹ or the essential facilities as discussed here.

Some of the markets with relatively few competitors—such as social networks—are affected by the economics of networks, where more users equal greater value to all users.³⁰ Network-defined markets tend to support a smaller number of competitors than other markets, and often “tip” towards one of the early entrants once a sufficient level of interconnectivity is achieved.³¹ There is unlikely to be a broadly defined market of “social networks.” Instead, the market is likely defined more narrowly by social networks intended for a particular purpose: Facebook and Twitter for social purposes, LinkedIn for professional networking, and Pinterest for shared interests.³²

Not all information economies are driven by the value of networks *to* consumers. Some, like big data analytics, benefit from the

understood conditions, they combine flexibility, information gathering, and an appropriation mechanism into a single institutional entity and can be brought to bear at the point of action - the transaction. But under the actual conditions of complex modern economies—which exhibit transaction costs and, more importantly, are pervaded by uncertainty (not merely risk) and replete with unknown unknowns—property can often slow down both owners and potential users.”).

²⁷ See, e.g., Jeffrey Jarosch, *Novel “Neutrality” Claims against Internet Platforms: A Reasonable Framework for Initial Scrutiny*, 59 CLEV. ST. L. REV. 537, 538 (2007) (“In today’s Internet, the most important players are not manufacturers, designers, or programmers, but platforms. . . . They offer an *environment* in which users operate, a starting point for them to interact, work, network, and be entertained. These platforms build upon the infrastructure of the Internet.”).

²⁸ See *id.* at 539.

²⁹ See *id.*

³⁰ See *The Secret to Scaling Social Networks and Local Marketplaces*, PLATFORM THINKING, <http://platformed.info/scaling-social-networks-and-marketplaces/> (last visited Mar. 11, 2015).

³¹ See *Reverse Network Effects: Why Today’s Social Networks Can Fail As They Grow Larger*, WIRED, <http://www.wired.com/2014/03/reverse-network-effects-todays-social-networks-can-fail-grow-larger/> (last visited Apr. 7, 2015).

³² See *About Pinterest*, PINTEREST <https://about.pinterest.com/en> (last visited Mar. 27, 2015).

information available *about* large masses of consumers.³³ Others, such as financial markets, benefit from the ability of resources to be efficiently allocated as a result of exchanges of information.³⁴ When information is the good in question, then the ability of the information to be found, accessed, and used by the most interested parties becomes important. Research databases, whether Lexis or Westlaw among the legal providers, or JSTOR or SSRN in the larger academic community, aim to aggregate, organize, and disseminate the information they contain. For some the information and accompanying effort and services are offered for a fee, while others such as SSRN, or even Wikipedia, are open to all comers.

And information itself has value, whether for making informed decisions with monetary consequences like loan negotiations,³⁵ for Google or Bing to refine their search algorithms based on usefulness to searchers,³⁶ or for expansion into a new market that requires familiarity with information that is expensive to acquire.³⁷ If one competitor has the information with certain characteristics necessary to enter a market where competitiveness depends on access to that information, but withholds it from potential competitors, consumers can be harmed.³⁸ Where there could have been numerous competitors using an essential pool of information to innovate and create products that attract consumers, instead there is one competitor determining what product will be developed for the

³³ See Justin Hienz, *Introduction: Defining the Data Movement*, in U.S. CHAMBER OF COMMERCE FOUNDATION, *THE FUTURE OF DATA-DRIVEN INNOVATION* 11 (2014), available at <http://www.uschamberfoundation.org/sites/default/files/Data%20Report%20Final%2010.23.pdf>.

³⁴ See Dombalagian, *supra* note 144, at 1 (“Information is said to be the lifeblood of financial markets . . . [Financial information is necessary] for the efficient allocation of capital in the global economy.”).

³⁵ See Ruling on Motion to Dismiss, In re: LIBOR-Based Financial Instruments Antitrust Litigation, 935 F. Supp. 2d 666 (No. 1:11-md-02262 (NRB), slip op. at 4–8 (S.D.N.Y. filed Mar. 29, 2013), available at <http://sdnyblog.com/wp-content/uploads/2013/03/11-MD-02262-2013.03.29-Ruling-on-Motion-to-Dismiss.pdf>.

³⁶ See Frank Pasquale, *Search as Speech: Two Scenarios*, CONCURRING OPINIONS, 2012 WLNR 11280685 (May 29, 2012) (available on Westlaw Next).

³⁷ See Hienz, *supra* note 333, at 2–6.

³⁸ See Sergio Baches Opi, *The Application of the Essential Facilities Doctrine to Intellectual Property Licensing in the European Union and the United States: Are Intellectual Property Rights Still Sacrosanct?*, 11 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 409, 481 (2001).

market. This has the serious potential to result in higher prices and fewer competing products, as well as fewer products for consumers to purchase in general.

Google scans the information in the inboxes of users of Gmail.³⁹ Facebook has access to information connecting individuals through their geographic ties, educational experiences, social and familial activities, and across a span of years.⁴⁰ Apple has access to the collective multimedia purchasing habits of millions of users, just as Amazon does for a far larger universe of purchases. It is not fundamentally improper for these companies to have acquired the information in their possession, and possession of the information does not necessitate having an anticompetitive purpose in mind. The information is in their possession as a result of the large network of purchasers they have attracted to their products, and is a side effect of that success.

If Google takes the collective information from its users' email and begins to develop a program to offer unsolicited suggestions of websites, literature, and products for consumers, it has an information advantage over its competitors if they do not have access to a comparable source of information. This advantage does not come from greater investment in research for the new market, but instead as a result of the information accompanying its network of integrated Google products. The same would be true of Facebook branching into real estate location suggestions based on its knowledge of the residents of a neighborhood, or Amazon offering financial investment advice based on the detailed purchasing histories of its users and the predictive value of that information.

Each of the new products or services that can be offered using the described pools of information is in a market that could be subject to competition. However, without access to a comparable informational resource, the competitors will be unlikely to offer products that are on the same plane as those developed with the information. Consumers will be better off if the information, which was accrued as a result of a different economic enterprise, is shared

³⁹ See *Privacy Policy*, GOOGLE, <https://www.google.com/intl/en/policies/privacy/#infocollect> (last visited Apr. 7, 2015).

⁴⁰ See *Data Policy*, FACEBOOK, <https://www.facebook.com/policy.php> (last visited Apr. 7, 2015).

on reasonable terms as an essential facility in order to facilitate competition on the products that can be developed from that information.

II. THE ESSENTIAL FACILITIES DOCTRINE

Amongst the variety of anticompetitive practices that have been alleged as tools of monopoly or dominant firms is the denial of a facility essential to competition.⁴¹ The essential facilities doctrine posits that it is anticompetitive to allow a monopolist in a market that has exclusive control over an input essential to that market to deny potential competitors access in order to concentrate control over that market.⁴²

In *MCI Communications Corp. v. American Telephone and Telegraph Co.* the Seventh Circuit articulated the four elements of the essential facilities doctrine: “(1) control of the essential facility by a monopolist; (2) a competitor’s inability practically or reasonably to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility.”⁴³ The first element under *MCI* necessarily has two sub-elements that also need to be proven: a defined market in which the defendant is a monopolist over the facility or resource; and the defined market for which the facility is purportedly essential.⁴⁴ Another aspect is implicated by the first *MCI* factor, but is addressed directly in the second *MCI* element: the essential nature of the facility. If sufficiently close substitutes existed, or if the facility were

⁴¹ See, e.g., *TCA Building Co. v. Nw. Resources Co.*, 873 F. Supp. 29, 39 (S.D. Tex. 1995).

⁴² See, e.g., Opi, *supra* note 388, at 437–39.

⁴³ *MCI Commc’ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1132–33 (7th Cir. 1983). Note also that the essential facilities doctrine is occasionally conflated with the antitrust doctrines of refusal to deal, and the antitrust duty to deal, which have different required elements from the essential facilities doctrine. See, *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1074 (10th Cir. 2013) (distinguishing refusal to deal from the essential facilities doctrine). For example, refusal to deal requires a pre-existing profitable relationship between firms. See *id.* at 1074–75.

⁴⁴ See *TCA Building Co.*, 873 F. Supp. at 34.

easily replicated, then the facility in question would not be essential.⁴⁵

Monopoly power is, in a nutshell, the ability to raise prices without losing profit in information economies as well as other markets. A firm with monopoly power is not constrained by its competitors, so that raising prices to a monopoly level equates to increased profits as opposed to an unprofitable loss of business to competitors.⁴⁶

Monopolization is the active behavior with an intent to acquire or maintain the power to raise prices supracompetitively through anticompetitive means.⁴⁷ The state of being a monopoly is not itself a base of liability.⁴⁸ Monopolies that exist or are maintained as a result of business acumen, historic accident, or changes in consumer demand are not the object of the antitrust laws.⁴⁹ It is only when a firm seeks to obtain a monopoly and presents a substantial danger of succeeding,⁵⁰ or attempts to maintain a monopoly through anticompetitive measures, that there is liability under the antitrust laws.⁵¹

Firms can compete against one another based on price or quality *within* a market for a good—and attempt to monopolize the provision of that good—or firms can compete *for* a market that can only support a single firm. Price competition within a market can occur when multiple firms produce highly substitutable goods, thus pushing prices down towards marginal cost.⁵² Markets with this

⁴⁵ See, e.g., *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1129–30 (9th Cir. 2004); *TCA Building Co.*, 873 F. Supp. at 39.

⁴⁶ See *Novell*, 731 F.3d at 1070.

⁴⁷ U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT, at 5 (2008), available at http://www.justice.gov/atr/public/reports/236681_chapter1.pdf.

⁴⁸ See *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 429–30 (2d Cir. 1945).

⁴⁹ See *id.*; see also *Standard Oil Co. v. United States*, 221 U.S. 1, 61–62 (1911); Daniel F. Spulber & Christopher S. Yoo, *Mandating Access to Telecom and the Internet: The Hidden Side of Trinko*, 107 COLUM. L. REV. 1822, 1826–27 (2007).

⁵⁰ See *Novell*, 731 F.3d at 1071 n.2 (citing *Spectrum Sports v. McQuillan*, 506 U.S. 447, 459 (1993)).

⁵¹ See *id.* at 1070.

⁵² See *MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1123 (7th Cir. 1983).

dynamic can, and are expected to, support multiple firms.⁵³ By comparison, some markets are natural monopolies that can only sustain a single firm of large scale, whether a local telephone network⁵⁴ or the market for PC software⁵⁵ in information economies. Frequently, these markets are described as Schumpeterian markets, where the competition is *for* the market in a serial set of contests to become the sitting monopolist.⁵⁶

If a market is capable of supporting multiple firms competing on quality or price, then market share is a useful proxy for market power.⁵⁷ Although the amount of market share necessary to raise prices is different on a case-by-case basis, one rule of thumb is that there can be no market power with a share of 33% or less; there may be market power with a share of 60% or more; and market power may generally be presumed with a share of 90%.⁵⁸ In markets competing on price and quality, monopolization is best understood as the anticompetitive effort to consolidate market share sufficient to raise prices.⁵⁹ Informational markets supporting multiple competitors competing on price or quality do not require a different form of analysis than comparable traditional markets for monopoly power, or monopolization.⁶⁰ Monopoly power is represented by the proxy of market share, or direct evidence,⁶¹ while monopolization continues to be the attempt to acquire or maintain the desired power

⁵³ See Marina Lao, *Search, Essential Facilities, and the Antitrust Duty to Deal*, 11 NW. J. TECH. & INTELL. PROP. 275, 291-97 (2013) (discussing the distinction between markets facing dynamic competition compared to price competition).

⁵⁴ See Axel Gautier and Manipushpak Mitra, *Regulation of an Open Access Essential Facility*, 75 ECONOMICA 662, 662 (2008).

⁵⁵ See Richard Schmalensee, *Antitrust Issues in Schumpeterian Industries*, 90 AM. ECON. REV. 192, 192-96 (2000).

⁵⁶ See *id.*

⁵⁷ See, e.g., *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1076-77 (10th Cir. 2013).

⁵⁸ See *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 424 (2d Cir. 1945).

⁵⁹ See, e.g., LAWRENCE J. WHITE, MARKET POWER AND MARKET DEFINITION IN MONOPOLIZATION CASES: A PARADIGM IS MISSING, (Jan. 24, 2007) available at http://www.justice.gov/atr/public/hearings/single_firm/docs/222104.pdf.

⁶⁰ See Philip J. Weiser, *The Internet, Innovation, and Intellectual Property Policy*, 103 COLUM. L. REV. 534, 593-94 (2003).

⁶¹ See *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 190-91 (3d Cir. 2005) (concerning direct evidence in a section 1 case).

through anticompetitive means, including abuse of an essential facility.⁶²

If competition in a market is more aptly described as competition *for* the market, then defining market power is conceptually more difficult. Successful possession of the market equates to high market share and the ability to set prices,⁶³ but there is the added behavioral constraint of who might be on the horizon to take the market with a new product if the return to the sitting firm is too lucrative, or self-innovation too slow.⁶⁴ Just as a competitor should not be punished for succeeding at the task society asks of it,⁶⁵ a competitor who succeeds and wins a market that makes it a de facto monopolist should not be liable to, or handicapped relative to, its potential competitors.⁶⁶

Monopolization in this environment takes on an entirely new color. Monopolists should be permitted to, and encouraged to, compete on the merits because this is what drives innovation and better prices for consumers.⁶⁷ However, the development of dynamic markets should not be impeded by the actions of the sitting monopolist because this forecloses new benefits from competitive enterprise.⁶⁸ This is especially true if that monopolist is using the sword of monopoly control of an essential resource and is simultaneously adopting the shield that market power is difficult to infer in a market imbued with Schumpeterian tendencies.⁶⁹

A. Procompetitive Purpose of the Essential Facilities Doctrine

The essential facilities doctrine, on its face, appears to reinforce the requirement that competitors compete on the merits of their products and not on advantages resulting from factors outside the particular market, like the supply of inputs. If competition is the mechanism provided by markets to drive down costs and improve

⁶² See Spulber & Yoo, *supra* note 499, at 1826–27.

⁶³ See Schmalensee, *supra* note 55, at 194.

⁶⁴ See *id.*

⁶⁵ See *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 430 (2d Cir. 1945).

⁶⁶ See Schmalensee, *supra* note 55, at 194–95.

⁶⁷ See Spulber & Yoo, *supra* note 499, at 1827–28.

⁶⁸ See Tilman Klump and Xuejuan Su, *Open Access and Dynamic Efficiency*, 2 AM. ECON. J.: MICROECON. 64, 64–66 (2010).

⁶⁹ See *id.*

the quality of products and services, then foreclosing competition on all of the features other than the essential input due to one party's exclusive control is detrimental to consumers.⁷⁰ Antitrust law is intended to foster competition where practicable in the name of consumer welfare, and the essential facilities doctrine can be seen as a means of protecting or injecting competition into a market susceptible to monopolization due to structural factors.⁷¹

B. Limits of the Essential Facilities Doctrine

The essential facilities doctrine is not without its skeptics, shortcomings, intellectual and practical difficulties. As Justice Scalia noted in *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, the Supreme Court has never expressly embraced, or even used the essential facilities doctrine.⁷² The essential facility may find its intellectual roots in Supreme Court doctrine,⁷³ but it has not received subsequent recognition by the Court to-date. Although the Supreme Court has not accepted the essential facilities doctrine, neither has it expressly rejected it.⁷⁴ Because of this, plaintiffs have continued to bring claims under the essential facilities doctrine, and at least some courts have entertained them.⁷⁵ A

⁷⁰ See, e.g., *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1073 (10th Cir. 2013).

⁷¹ See Lao, *supra* note 53, at 287.

⁷² 540 U.S. 398, 411 (2004).

⁷³ See, e.g., *United States v. Terminal R.R. Ass'n*, 224 U.S. 383 (1912) (an essential point of rail line access into St. Louis); *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973) (an essential means of power transmission to a local distribution network); see also Opi, *supra* note 388, at 435-39.

⁷⁴ See *Trinko*, 540 U.S. at 411 (“ . . . we find no need either to recognize it or repudiate it here.”).

⁷⁵ See, e.g., *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1129 (9th Cir. 2004) (*Trinko* was decided “[e]ven though the essential facilities doctrine is followed in this and other circuits”), *on remand from Qwest Corp. v. MetroNet Servs. Corp.*, 540 U.S. 1147 (2004) (following decision on *Trinko*); *Covad Commc’ns Co. v. BellS. Corp.*, 374 F.3d 1044, 1049-50 (11th Cir. 2004) (recognizing that the essential facilities continues in a more restricted form), *on remand from BellS. Corp. v. Covad Commc’ns Co.*, 540 U.S. 1147 (2004); *Sunbeam Television Corp. v. Nielsen Media Research, Inc.*, 763 F. Supp. 2d 1341, 1349-50 (S.D. Fla. 2011); *Nobody in Particular Presents, Inc. v. Clear Channel Commc’ns, Inc.*, 311 F. Supp. 2d 1048, 1112-14 (D. Colo. 2004). *Contra* *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1072 (10th Cir. 2013) (reiterating opposition to the essential facilities doctrine); *cf.* *SolidFX, LLC v. Jeppesen Sanderson, Inc.*, 935 F. Supp. 2d 1069, 1083 (D. Colo. 2013).

final decision on the utility of the essential facilities doctrine is still percolating in the district and circuit courts.

Further, lower courts have applied the requirements articulated in *MCI* in a narrow fashion, requiring a high degree of control by the monopolist, significant barriers to reproduction of the facility, articulable means of permitting access, and denials of access without sufficient alternate justifications.⁷⁶

C. *What is an Essential Facility in the Information Economy?*

There are numerous situations when a particular form or quantity of information is necessary to compete in a market. As illustrated in the introduction, knowledge of the bioequivalency of patented pharmaceutical compounds to potential generics is necessary to file an ANDA.⁷⁷ Search engines require multitudes of data from users on the utility of results in order to “train” and refine the algorithms.⁷⁸ Even political data services require vast stores of information about the electorate to identify and capitalize on the possibility of micro-targeting likely voters during election cycles.⁷⁹ Information can therefore be essential for competition in a marketplace.⁸⁰ For example, in financial markets, much of the information about financial instruments is available publicly through the marketplace or through disclosures *eventually*, but even differential timing of access to the information can impact commerce, and greater restrictions on access “might result in the limitation of downstream uses.”⁸¹

⁷⁶ See Spulber & Yoo, *supra* note 499, at 1848–49.

⁷⁷ See Brief for Federal Trade Commission as Amicus Curiae at 1, *Mylan Pharms., Inc. v. Celgene Corp.*, (No. 2:14-CV-2094-ES-MAH (D.N.J.) (ongoing 2015), 2014 WL 2968348, at *3.

⁷⁸ See Pasquale, *supra* note 366.

⁷⁹ See *How ‘Microtargeting’ Works in Political Advertising*, PBS NEWSHOUR (Feb. 18, 2014, 6:27 PM), available at <http://www.pbs.org/newshour/bb/how-microtargeting-works-political-advertising/>.

⁸⁰ See, e.g., Dombalagian, *supra* note 144, at 1–2 (“The availability of and access to such [financially related] information on reasonable terms has been identified as one of the essential characteristics of strong financial markets.”) (discussing the SEC’s role in regulating access to information in financial markets).

⁸¹ See *id.* at 83 (suggesting that the SEC should consider prohibiting vertical integration of “essential” information with entities downstream where there are potential conflicts of interest, but that “[o]therwise, privately adopted limitations on information or other goods that are “inputs” for subsequent processes are best left to antitrust law”).

In addition to information itself being essential for competition, access to the channels of distribution of information can be essential. The essential facilities doctrine, although tentatively traceable in its early expression to concerns about access to the infrastructure supporting commerce by railroad⁸² may be most applicable when the facility in question is akin to an infrastructure resource.⁸³

Sometimes that information can be acquired through the investment of any interested competitor, or the information is openly shared. Databases exist for many types of information on a subscription basis, from records of commercial transactions, social activities online, and data sets collected by international organizations.⁸⁴ Surveys may be commissioned.⁸⁵ Research, experimentation, and individual effort can develop the required information.⁸⁶ Government and academic resources have compiled many data sets that are open for commercial use, or commercial uses may be negotiated for.⁸⁷ Or, competitors can often buy the underlying data directly from a willing competitor.⁸⁸

⁸² See Spulber and Yoo, *supra* note 499, at 1829 (discussing how *Terminal Railroad* was decided under section 1 of the Sherman Act, as it was a collective group of railroads excluding access to the facility to competitors, and also that multiple other means of bringing goods and people into the community existed).

⁸³ See Benkler, *supra* note 255, at 1529 (discussing Frischmann's analysis of ideas, intellectual property, telecommunications, roads, and ecosystems as forms of infrastructure broadly, and treating that infrastructure as a subset of a legal commons); see also Lao, *supra* note 53, at 287-90 (discussing how two of the most applicable market structures for the essential facilities doctrine may be natural monopolies, especially in infrastructure, and public utilities).

⁸⁴ See Hienz, *supra* note 373, at 3.

⁸⁵ See, e.g., SURVATA, <http://www.survata.com/how-it-works>; SURVEY MONKEY, <http://www.surveymonkey.com/audience>; QUALTRICS, <http://www.qualtrics.com/>.

⁸⁶ See John Raidt, *The Competitiveness Agenda*, in U.S. CHAMBER OF COMMERCE FOUNDATION, *THE FUTURE OF DATA-DRIVEN INNOVATION* 31, 32-33 (2014), <http://www.uschamberfoundation.org/sites/default/files/Data%20Report%20Final%2010.23.pdf> (discussing the technologies such as sensors that can generate information about consumer use of products).

⁸⁷ See Leslie Bradshaw, *The Great Data Revolution*, in U.S. CHAMBER OF COMMERCE FOUNDATION, *THE FUTURE OF DATA-DRIVEN INNOVATION* 21, 26 (2014) (discussing Harvard's Engineering Social Systems program, as well as non-profit and governmental data sets).

⁸⁸ See, e.g., Denison, *supra* note 2 (discussing Microsoft's Windows Azure Data Marketplace).

In other circumstances, significant barriers exist to the acquisition of the needed information. If, for example, an aggregation of information about a number of consumers, or an equivalent large database of information, is necessary in order to develop a product in an informational market, then all potential entrants in that market will be seeking that information.⁸⁹ However, the size of that data set may require purchasing access to multiple pre-existing commercial databases at a combined cost that is prohibitive.⁹⁰ Or, if it is necessary to develop the information from the ground up, the per-unit cost of information may be prohibitively expensive to justify gathering solely for the purpose of developing a single product in a single market.⁹¹ Absent some other reason that the information would be developed—for example, value in multiple markets that defrays the costs or its creation as a side-effect of a separate, tipped, network-economy market—there would be little incentive for any potential entrant to develop the good.⁹²

Acquisition, or creation, of the information may be infeasible both practically and economically. Either the costs of creating the resource exceed any potential profits, or if multiple parties invest in developing the resource separately the resulting pool of profits is not large enough to divide and successfully recoup anyone's costs, in which case parties would only invest if they could be sure no others were investing.⁹³

⁸⁹ See, e.g., Dombalagian, *supra* note 144, at 1–2 (discussing the drive to collect information in financial markets, and the strength provided to the financial system when information is widely disseminated).

⁹⁰ See, e.g., Matthew Harding, *Good Data Public Policies*, in CHAMBER OF COMMERCE FOUNDATION, *THE FUTURE OF DATA-DRIVEN INNOVATION* 43, 47 (2014) (discussing the structural and cost burdens associated with generating and aggregating useful data).

⁹¹ See Pasquale, *supra* note 366 (discussing the “brute disadvantage” faced by search engines without access to the user data held by Google).

⁹² See *id.*; Frank Pasquale, *Beyond Innovation and Competition: The Need for Qualified Transparency in Internet Intermediaries*, 104 NW. U.L. REV. 105, 156 n.273 (2010) (noting that Internet Service Providers are gaining the capacity to track the kinds of content transmitted through their systems).

⁹³ See, e.g., Bradshaw, *supra* note 877, at 28 (discussing some of the advantages that can accrue to a first-mover).

III. THE ROLE OF THE ESSENTIAL FACILITIES DOCTRINE IN INFORMATION ECONOMIES

Access to this information as an essential facility fosters competition that benefits consumers. While many commentators suggest a hands-off approach to antitrust intervention in dynamic information economies,⁹⁴ others take the position that erring on the side of requiring more competition at every level is better public policy.⁹⁵ As one commentator mentioned:

It is impossible to find better interpretations and applications of data without access to it Current advantage [in certain scale industries liked] search is likely to be self-reinforcing, especially given that so many more people are using the services now than when Google overtook other search engines in the early 2000s.⁹⁶

When the above market conditions exist and one competitor has possession of the essential facility as a result of investments in exogenous markets or as a fortuitous side-effect of being the monopolist to which a network-economy tipped, or because it is simply in possession of information *about* intellectual property that is instrumental to competition, public policy would suggest that the resource be shared.⁹⁷

Courts certainly will have to consider whether the possessor happened upon the opportunity to possess the information—or elected to invest in its creation and the extraction of its value for another, independent, market in ruling on an essential facilities

⁹⁴ See, e.g., Spulber & Yoo, *supra* note 499, at 1900–01.

⁹⁵ See Cooper, *supra* note 20, at 1014 (“Moreover, when we come to information industries and networks, public policy should be particularly procompetitive and err toward requiring more, not less, competition. Interconnection creates greater leverage than one finds in other markets. Information flows not only through the marketplace of goods and services, but also through the marketplace of ideas.”).

⁹⁶ See Pasquale, *supra* note 366 (illustrating how the First Amendment defense to antitrust allegations leveled at search engines often skips any analysis of whether there is any competition).

⁹⁷ See, e.g., Mark R. Patterson, *Leveraging Information About Patents: Settlements, Portfolios, and Holdups*, 50 Hous. L. Rev. 483, 484 (2012) (discussing the litigation advantage held by patent holders due to uncertainty about the underlying patent’s scope and validity, not the existence of infringement).

doctrine claim.⁹⁸ Barring situations in which the information is protected by intellectual property rights granting exclusive control for all uses of the information, consumers of resulting goods and services benefit from policies encouraging the possessor to compete for any additional profits from possession of the information.⁹⁹ The potential long-term impact on the dynamic market is discussed below.

A. What Are Monopolization and Monopoly in the Information Economy?

As noted above in Part II, monopoly power is the ability to raise prices without losing profits in information economies as well as other markets. Whether information is the product, as in the provision of financial market information,¹⁰⁰ or information is an input into a product, such as predictive advertising¹⁰¹ or knowledge of a pharmaceutical's bioequivalency,¹⁰² the consumer harm is the ability to unilaterally raise prices or decrease quality.¹⁰³ Although the harm feared is the same in informational as well as other markets, the ability to define and identify the presence of monopoly power presents some of the greatest difficulty.¹⁰⁴

⁹⁸ See, e.g., Hienz, *supra* note 373, at 4 (“Data is an asset. As such, much of the data generated every day is proprietary. An online retailer owns the data listing its customers’ purchases, and a pharmaceutical company owns data from testing its products. This is appropriate, since businesses bear costs to generate, store, and analyze data and then enjoy the innovative fruits that grow out of it.”).

⁹⁹ See James Turney, *Defining the Limits of the EU Essential Facilities Doctrine on Intellectual Property Rights: The Primacy of Securing Optimal Innovation*, 3 NW. J. TECH. & INTELL. PROP. 179, 183 (2005) (“as a matter of policy, competition law should not intervene to protect competitors unless the ultimate benefits to consumers outweigh the rights of the intellectual property right holder.”).

¹⁰⁰ See, e.g., *supra* notes 14–17 and accompanying text.

¹⁰¹ See, e.g., Adam Popescu, *The Next Wave of Ads Knows Everything About You—Before You Do*, MASHABLE (July 26, 2013), <http://mashable.com/2013/07/26/inference-advertising/>.

¹⁰² See Brief for Federal Trade Commission as Amicus Curiae at 1, *Mylan Pharms., Inc. v. Celgene Corp.*, (No. 2:14-CV–2094-ES-MAH (D.N.J.) (ongoing 2015), 2014 WL 2968348, at *3.

¹⁰³ See *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1070 (10th Cir. 2013).

¹⁰⁴ See *id.* at 1071 (discussing how the issue of market definition and market power had been stipulated by the parties, avoiding a protracted analysis on what is usually the core issue).

As discussed in Part II, above, the state of being a monopoly is not itself a base of liability; acts of monopolization are necessary. Monopolies that exist or are maintained as a result of business acumen, historic accident, or changes in consumer demand are not the object of the antitrust laws.¹⁰⁵ It is only when a firm seeks to obtain a monopoly and presents a substantial danger of succeeding,¹⁰⁶ or attempts to maintain a monopoly through anticompetitive measures, that there is liability under the antitrust laws.¹⁰⁷ Examples of monopolization that are pertinent to informational markets include Microsoft's multiple efforts to prevent Netscape from gaining traction against Internet Explorer in order to preserve the Windows operating system monopoly,¹⁰⁸ and the continued purchasing of user data and the expertise necessary to understand it by companies like Facebook and Google.¹⁰⁹ Withholding an essential facility from competitors to foreclose competition in an adjacent market is the core theory of monopolization in this analysis.¹¹⁰

Competition in markets tends to take one of two forms, as discussed in Part II. Firms can compete against one another based on price or quality *within* a market for a good (and attempt to monopolize the provision of that good), or firms can compete *for* a market that can only support a single firm. Price competition within a market is exemplified by multiple firms producing highly substitutable goods.¹¹¹ Markets with this dynamic can, and are expected to, support multiple firms.¹¹² By comparison, some markets are natural

¹⁰⁵ See *United States v. Aluminum Co. of Am.*, 148 F.2d 416, 429–30 (2d Cir. 1945); see also *Standard Oil Co. of N.J. v. United States*, 221 U.S. 1, 61–62 (1911); Spulber & Yoo, *supra* note 499, at 1826–27.

¹⁰⁶ See *Novell*, 731 F.3d at 1071 n.2 (citing *Spectrum Sports v. McQuillan*, 506 U.S. 447, 459 (1993)).

¹⁰⁷ See *id.* at 1070.

¹⁰⁸ See *id.*

¹⁰⁹ See Martin Robbins, *Mark Zuckerberg's Information Monopoly*, VICE (Feb. 28, 2014), <http://www.vice.com/read/google-whatsapp-martin-robbins> (discussing the implications of Facebook's acquisition of WhatsApp and Google's prior acquisition of DeepMind Technologies).

¹¹⁰ See, e.g., Spulber & Yoo, *supra* note 499, at 1833–34 (discussing the vertical relationship of markets under the essential facilities doctrine).

¹¹¹ See Alan J. Meese, *Monopolization, Exclusion, and the Theory of the Firm*, 89 MINN. L. REV. 743, 773 (2005).

¹¹² See Lao, *supra* note 53, at 291–97 (discussing the distinction between markets facing dynamic competition compared to price competition).

monopolies that can only sustain a single large firm, whether a local telephone network¹¹³ or the market for PC software¹¹⁴ in information economies. These Schumpeterian markets exhibit competition *for* the market in a serial set of contests to become the sitting monopolist.¹¹⁵

If a market is capable of supporting multiple firms competing on quality or price, then market share is a useful proxy for market power.¹¹⁶ Informational markets supporting multiple competitors competing on price or quality are no different in analysis than comparable traditional markets.¹¹⁷ Monopoly power is represented by the proxy of market share, or more rarely is shown by direct evidence,¹¹⁸ while monopolization continues to be the attempt to acquire or maintain the desired power through anticompetitive means, including abuse of an essential facility.¹¹⁹

Monopolization in an environment of competition for the market takes on an entirely different color.¹²⁰ Monopolists should be permitted to, and encouraged to, compete on the merits in order to innovate and offer better products at better prices.¹²¹ However, the development of dynamic markets should not be impeded by the actions of the sitting monopolist where subsequent innovation is foreclosed.¹²² This is especially true where a monopolist is simultaneously utilizing monopoly power over a resource while adopting the shield that market power is difficult to infer in a market imbued with Schumpeterian tendencies.¹²³

It is the opinion of many commentators that given the dynamic nature of information economies, static measures of market power

¹¹³ See Gautier & Mitra, *supra* note 54, at 662.

¹¹⁴ See Schmalensee, *supra* note 55, at 193.

¹¹⁵ See *id.*

¹¹⁶ See, e.g., *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1071 (10th Cir. 2013).

¹¹⁷ See Weiser, *supra* note 60, at 575.

¹¹⁸ See *United States v. Dentsply Int'l, Inc.*, 399 F.3d 181, 190–91 (3d Cir. 2005) (direct evidence in a section 1 case).

¹¹⁹ See Spulber & Yoo, *supra* note 499, at 1826.

¹²⁰ See discussion *supra* Part II.

¹²¹ See Spulber & Yoo, *supra* note 499, at 1827–28.

¹²² See Tilman Klumpp and Xuejuan Su, *Open Access and Dynamic Efficiency*, 2 AM. ECON. J.: MICROECON. 64, 64 (2010).

¹²³ See, e.g., *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064 (10th Cir. 2013).

are inadequate under the circumstances.¹²⁴ Static snapshots of a market's division do not account for the rapid pace of growth, innovation, and disruption of market positions.¹²⁵ Assuming that this argument that static measures of markets are imperfect gauges of ongoing change is true, economic analyses still suggest that static analysis may be sufficient for antitrust purposes (as well as one of the most stable options conceptually).¹²⁶ Where there is competition for a market, as opposed to price competition within a market, the ability to exclude subsequent potential entrants from the market may initially incentivize innovation, but, if too effective, deter innovation beyond the first-mover's.¹²⁷

B. What Does Control Over and Unjustified Denial of an Essential Facility Look Like?

In order to establish a claim under the essential facilities doctrine in an information economy, in addition to identifying an essential facility as discussed above, a claimant must demonstrate that the defendant exercised control of that facility (the first *MCI* element) and denied access unjustifiably (the third *MCI* element).¹²⁸ Accompanying the section, above, on identifying when a facility is essential for competition in an information economy, was a discussion of the economic and legal barriers that can exist to the duplication of a facility.¹²⁹ As discussed below, some of these attributes, such as intellectual property rights or the necessity of an underlying natural monopoly to the development of information, also speak to control of an essential facility by a monopolist.¹³⁰

¹²⁴ See, e.g., *id.* at 1071; Lao, *supra* note 53, at 291.

¹²⁵ See Schmalensee, *supra* note 55, at 193.

¹²⁶ See Joshua Gans, *When is Static Analysis a Sufficient Proxy for Dynamic Considerations? Reconsidering Antitrust and Innovation*, in 11 INNOVATION POLICY AND THE ECONOMY xiii (2011) (Introduction on file with author).

¹²⁷ See *id.* (discussing how allowing an established incumbent to prevent entry has the effect of reducing investment in innovation, which results in greater utility of static analyses in assessing dynamic markets).

¹²⁸ See *MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1132–33 (7th Cir. 1983); see also discussion *supra* Part II.

¹²⁹ See discussion, *supra*, notes 77–93 and accompanying text.

¹³⁰ See discussion, *infra*, notes 134–158 and accompanying text.

Control of an essential facility can be understood as the ability to exclude others from its use.¹³¹ Essential facilities in the information economy can be both information necessary to compete in an industry or channels of distribution for information-related products and services, as discussed in the above section on defining essential facilities.¹³² The ability to restrict access to either essential information or means of distribution in their entirety would demonstrate control adequate for the essential facilities doctrine.¹³³

If the essential facility is information, then exclusion can occur as the result of intellectual property rights possessed over the information¹³⁴ or simply by being the firm in possession of information that cannot feasibly be duplicated by competitors.¹³⁵ Intellectual property rights over information essential to competition are most likely to exist in the form of patents or trade secrets.¹³⁶ In most instances, copyright protection would extend only to a particular expression of the essential information and not the underlying information itself.¹³⁷ Similarly, the protection trademarks extend to marks identifying manufacturers is unlikely to impact essential information.¹³⁸ Additionally, mere possession of the information can equate to control if the information is of a type incapable of duplication due to economic or practical realities.¹³⁹

Possession of intellectual property rights over the essential information adds a complication to the essential facilities analysis. Information in the information economy frequently has intellectual

¹³¹ See, e.g., Opi, *supra* note 388, at 502–03.

¹³² See discussion *supra* Part II.C.

¹³³ See Lao, *supra* note 53, at 298.

¹³⁴ See Joseph Farrell, *Intellectual Property as a Bargaining Environment*, 9 INNOV. POL'Y AND THE ECON. 39, 39 (2009) (“Intellectual property policy relies on bargaining in the shadow of exclusivity.”).

¹³⁵ See discussion *supra* notes 89–93 and accompanying text.

¹³⁶ See, e.g., Amy Rachel Davis, Note, *Patented Embryonic Stem Cells: The Quintessential “Essential Facility”?*, 94 GEO. L. REV. 205, 218 n.58, 228–29 (2005); Lao, *supra* note 53, at 282, 282 n.43.

¹³⁷ See, Opi, *supra* note 388, at 448 (citing Mark R. Patterson, *When is Property Intellectual?: The Leveraging Problem*, 73 S. CALIF. L. REV. 1133, 1139–41 (2000)).

¹³⁸ See, e.g., *Krehl v. Baskin-Robbins Ice Cream Co.*, 664 F.2d 1348, 1353 (9th Cir. 1982) (describing trademarks as protecting the goodwill and quality standards of a business).

¹³⁹ See discussion *supra* Part II.C.

property rights attached.¹⁴⁰ Although the mere existence of intellectual property rights, such as patents, is not determinative of market power,¹⁴¹ if the information has already been deemed essential for competition in a market, then the grant of exclusivity confers market power.¹⁴² As in the realm of pay-for-delay agreements with patents, the balance between intellectual property rights and antitrust law is complicated.¹⁴³ Patents and trade secrets, with their grants of exclusivity, have different implications for the essential facilities doctrine, which looks to unjustified denials of access.¹⁴⁴ Although there may be uses of information outside of the grant of the intellectual property rights implicating the essential facilities doctrine, this Note primarily analyzes information unencumbered by intellectual property.

Determining the appropriate balance between the exclusivity given to holders of intellectual property rights and the essential facilities doctrine is not necessary within the scope of this Note. However, the general criticism of the doctrine in the absence of intellectual property suggests that policy arguments would favor intellectual property over forced grants of access as an essential facility.¹⁴⁵

In the example supported by the FTC in its amicus brief, even with situations involving intellectual property, the essential information can be information about the intellectual property and not the information contained and protected by intellectual property itself.¹⁴⁶ The bioequivalencies of a patented pharmaceutical,¹⁴⁷ the scope and validity of a patent,¹⁴⁸ or the pool of data used to refine

¹⁴⁰ See Dombalagian, *supra* note 144, at 4.

¹⁴¹ See *Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 31 (2006).

¹⁴² See Farrell, *supra* note 1344, at 39.

¹⁴³ See *Federal Trade Commission v. Actavis, Inc.*, 133 S. Ct. 2223, 2227 (2013).

¹⁴⁴ See Pasquale, *supra* note 366 (describing how the information contained within a patent is public and protected for a limited period, whereas trade secrets are protected for as long as the information can remain hidden).

¹⁴⁵ See Lao, *supra* note 53, at 307.

¹⁴⁶ See Brief for Federal Trade Commission as Amicus Curiae at 1, *Mylan Pharms., Inc. v. Celgene Corp.*, (No. 2:14-CV-2094-ES-MAH (D.N.J.) (ongoing 2015), 2014 WL 2968348, at *1.

¹⁴⁷ See *id.*

¹⁴⁸ See Patterson, *supra* note 977, at 484.

an algorithm protected as a trade secret¹⁴⁹ are all within the realm of the essential facilities doctrine and the more straightforward analysis discussed next. The ability to exclude others from use of information purely by their inability to access comparable alternatives is more straightforward. If it is (a) known from the analysis on essentiality that information is not feasible to reproduce¹⁵⁰ and it is (b) known that only one firm possesses the information,¹⁵¹ then that firm controls the information.

If the essential facility is the means of distributing information, as opposed to the information itself, then the analysis focuses on the degree of a firm's control over the channels of distribution and whether competitors are being denied access.¹⁵² In particular, if there is evidence that the potential competitors could buy access to the channel of distribution, then the monopolist is likely not denying access.¹⁵³ Especially if the monopolist is providing retail access to non-competitors at the same price offered to potential competitors.¹⁵⁴ Even asking for an access fee in excess of the retail cost is not determinative on the question of whether access is being unjustifiably denied to competitors.¹⁵⁵ Whether a monopolist elects to offer access to its resource may also depend on any inherent capacity limits for the resource that would force a choice between their own uses and access to others.¹⁵⁶ In the absence of anticompetitive purpose, even a monopolist can choose whom to deal with and on what terms,¹⁵⁷ including extracting the monopoly price from a potential competitor through price-discrimination.¹⁵⁸

Proof of denial of access to an essential facility must be buttressed by evidence that the denial was unjustified.¹⁵⁹ Innovation in

¹⁴⁹ See Pasquale, *supra* note 366.

¹⁵⁰ See discussion *supra* Part II.C.

¹⁵¹ This aspect is necessary for the firm to be the proper defendant to any litigation as a monopolist, a point an improperly sued litigant would surely raise in a motion to dismiss.

¹⁵² See Lao, *supra* note 53, at 298.

¹⁵³ See *id.*

¹⁵⁴ See *In re Adderall XR Antitrust Litigation*, 754 F.3d 128, 135 (2d Cir. 2014).

¹⁵⁵ See *id.* (discussing the Supreme Court's consideration of refusal to sell at retail price as a factor to consider).

¹⁵⁶ See Spulber & Yoo, *supra* note 499, at 1861.

¹⁵⁷ See *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919).

¹⁵⁸ See Spulber & Yoo, *supra* note 499, at 1859.

¹⁵⁹ See Lao, *supra* note 53, at 301-02.

goods and services receives incentives from many directions: intellectual property rights, public investment in research, the profit motive in a capitalist economy, and competition from competitors for those profits are just a few examples.¹⁶⁰ Few intellectuals would go so far as to say that any of the above incentives alone is adequate to sustain innovation, and one focus is to find a mix of incentives to innovate.¹⁶¹ Demonstrating a justification for denial that is not likely to support innovation will best frame an essential facilities doctrine claim.

In the context of broadband networks, ISPs have been considered competitors of a cable-affiliated ISP where the network for transmission—cable transmission particularly—was controlled by a monopolist.¹⁶² In the context of “music download platforms,” Apple’s use of Digital Rights Management (DRM) software to restrict downloaded music to Apple products was held not to be anti-competitively wielding market power.¹⁶³ Instead, between the exclusivity granted to copyrighted materials and the work-around of burning music to a CD before reloading it into a different music platform that was available to consumers, the DRM was found not to be a facility essential for the development of platforms.¹⁶⁴

Many information-based economies, such as the “burgeoning worlds of social and mobile computing” require a great deal of infrastructure to reach scale, and may also require the proprietary information that comes from “a base of users that ‘train’” a system.¹⁶⁵ Also to be considered is whether the denial of the use of the

¹⁶⁰ See generally BHASKAR SASTRY, MARKET STRUCTURE AND INCENTIVES FOR INNOVATION (June 2005), available at <http://www.intertic.org/Policy%20Papers/Sastry.pdf>.

¹⁶¹ See, e.g., Benkler, *supra* note 255, at 1533 (“What we have long known in intellectual property, that innovation and creativity require a mix of property and robust, substantial commons, is true more generally for complex modern economies.”) (arguing that another factor that can increase innovation is recognition of certain assets as commons that should be accessible to all).

¹⁶² See Cooper, *supra* note 20, at 1023–24 (discussing *AT&T v. City of Portland*, No. CV99-65-PA (D. Or. June 7, 1999)).

¹⁶³ See Elkin-Koren, *supra* note 188, at 1154 n.121.

¹⁶⁴ See *id.*

¹⁶⁵ See Pasquale, *supra* note 366 (discussing how it would take “Goliaths like Facebook and Apple” to displace Google from these markets, a result that would not assuage the

facility is able to be justified in some manner, be it through the standard of a legitimate business justification,¹⁶⁶ or a demonstrably pro-competitive justification.

C. How Feasible is Requiring Access to the Facility for Competitors?

Information is a non-exhaustible, highly shareable resource.¹⁶⁷ Much like the characteristics defining information economies, once developed, the marginal cost of sharing information is relatively low.¹⁶⁸ Further, at no point can a limit be reached where no more individuals can use information.¹⁶⁹ With the exception of information carrying legally-enforceable limits on distribution, such as intellectual property¹⁷⁰ or government restrictions,¹⁷¹ information bears few of the structural limitations to access that plague many other essential facilities or resources.¹⁷²

Even channels of distribution for information are often less capacity-restricted than traditional channels of distribution. As highlighted by Professor Lao, if the purported essential facility in search is access to information by consumers, then the channels for information are numerous: in addition to Google, consumers have access to Bing, Yahoo, Facebook, as well as URLs.¹⁷³ Only when the essential facility is alleged to be a finite resource like the top search result, or the first page of results, do feasibility concerns arise.¹⁷⁴

concerns of monopolization of pools of data presenting “brute disadvantages” to potential competitors).

¹⁶⁶ See Lao, *supra* note 53, at 308–13 nn.246–47 (suggesting that similarly to the dicta in *Aspen* that a legitimate business justification can support a refusal to deal, some essential facility caselaw suggests the same standard is applicable to denial of use of an essential facility).

¹⁶⁷ See Dombalagian, *supra* note 144, at 5–6.

¹⁶⁸ See JOSEPH KENNEDY, *THE DATA-DRIVEN ECONOMY*, in U.S. CHAMBER OF COMMERCE FOUNDATION, *THE FUTURE OF DATA-DRIVEN INNOVATION* 17 (2014), available at <http://www.uschamberfoundation.org/sites/default/files/Data%20Report%20Final%2010.23.pdf>.

¹⁶⁹ See Hienz, *supra* note 373, at 3.

¹⁷⁰ See Farrell, *supra* note 1344, at 39.

¹⁷¹ See Hatch & Pippert, *supra* note 5 (discussing distribution limitations enforced by the FDA).

¹⁷² See, e.g., Lao, *supra* note 53, at 302–04 (discussing the limits accompanying defining the first slot as an essential facility).

¹⁷³ See *id.* at 298–301.

¹⁷⁴ See *id.* at 302–04.

Paying the marginal cost of added capacity to a channel of distribution is a potential solution for circumstances involving structural limitations.¹⁷⁵

Granting access to information and channels of distribution does not require courts to act as a “central authority,” always setting prices.¹⁷⁶ Royalty rates can be negotiated based on the value of information to potential competitors.¹⁷⁷ These rates do, however, have the potential to approximate monopoly prices.¹⁷⁸

Where capacity is not a significant limiting factor, and the monopolist’s use of the facility is not impeded by the added use of a competitor, access can be granted on a variety of terms.¹⁷⁹ Access can be provided on a retail basis,¹⁸⁰ on a wholesale basis,¹⁸¹ or on the basis of “interconnection,” “platform,” “bundled,” or “unbundled” access to the essential facility.¹⁸² Where capacity is a significant constraint, the monopolist first has a stronger argument that the denial of access is justified,¹⁸³ and second has greater ability to approach monopoly pricing for access, even with court supervision.¹⁸⁴ Many channels of distribution for information are under regulatory burdens,¹⁸⁵ which might require permitting access,¹⁸⁶ provide a pricing structure,¹⁸⁷ or remove the necessity of

¹⁷⁵ See, e.g., Spulber & Yoo, *supra* note 499, at 1844.

¹⁷⁶ See *id.* at 1867–69 (discussing the judiciary’s lack of skill at the task and positing methods of access that can mitigate the dangers).

¹⁷⁷ See Davis, *supra* note 1366, at 245–46.

¹⁷⁸ See *id.*

¹⁷⁹ See Spulber & Yoo, *supra* note 499, at 1874–1907 (discussing a multitude of forms of access left open by the Supreme Court’s ruling in *Trinko*).

¹⁸⁰ See *id.* at 1878–83.

¹⁸¹ See *id.* at 1883–87.

¹⁸² See *id.* at 1888–1907.

¹⁸³ See discussion *supra* note 156 and accompanying text.

¹⁸⁴ See Davis, *supra* note 1366, at 245–46.

¹⁸⁵ See Lao, *supra* note 53, at 288 (discussing the multitude of regulated natural monopolies and public utilities that come to be defined as essential facilities).

¹⁸⁶ See, e.g., *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408–09 (2004) (describing how the regulatory structure had in the instant case *not* required access enforceable under the antitrust laws).

¹⁸⁷ For example the maximum access rates set by the FCC. *Understanding Your Telephone Bill*, FCC <http://www.fcc.gov/guides/understanding-your-telephone-bill> (last visited Apr. 8, 2015).

antitrust analysis completely.¹⁸⁸ In many instances, fostering competition is a goal of the regulatory body. For example, the FCC has focused on “foster[ing] competition, in particular cost-oriented access to essential local network facilities, and [] promot[ing] an open network architecture.”¹⁸⁹

Some channels of information distribution may be evaluated as the equivalent of infrastructure, potentially to the degree of being a regulated utility.¹⁹⁰ Even advocates of treating “privately-owned commercial infrastructure” as a commons suggest that the proper mechanism for doing so are the “essential facilities [doctrine] on the antitrust side, and natural monopoly and social policy constraints on the regulatory side” as opposed to direct government regulations.¹⁹¹ Included in this proposal are several reasons why private owners might permit access on a commons-equivalent basis, or, alternatively, justifications for requiring access, namely: “engaging competitors in cooperative codevelopment, engaging users, and maintaining flexibility in the face of uncertainty.”¹⁹²

The feasibility of requiring access in information economies is not a significant enough burden to pose a systematic challenge to the essential facilities doctrine.¹⁹³ Many forms of access exist that can address or mitigate a multitude of concerns related to this element of the essential facilities doctrine.¹⁹⁴

D. Addressing Weaknesses in the Application of the Essential Facilities Doctrine

Some commentators, including Phillip Areeda, have expressed concern over the essential facilities doctrine requiring grants of ac-

¹⁸⁸ See *Trinko*, 540 U.S. at 408–09.

¹⁸⁹ See Cooper, *supra* note 20, at 1027 n.40.

¹⁹⁰ See *FCC Launches Broad Rulemaking to Protect and Promote the Open Internet*, FCC, <http://www.fcc.gov/document/fcc-launches-broad-rulemaking-protect-and-promote-open-internet> (last visited Apr 8, 2015).

¹⁹¹ See Benkler, *supra* note 255, at 1526–27.

¹⁹² See *id.* at 1528 (“These reasons certainly do cohere with the experience of network and high-technology industries That is, where downstream innovation increases the total value of the infrastructure, commons management can encourage that downstream effort.”).

¹⁹³ See, e.g., Spulber & Yoo, *supra* note 499, describing five forms of access that can be utilized post-*Trinko*.

¹⁹⁴ See generally *id.*

cess to utilities under the guise of a tipped-network economy when, in fact, the utility is replicable or other alternatives exist.¹⁹⁵ Given the stringent requirements of proof for the essential facilities doctrine, these critiques read more as hornbooks on defending against a claim than arguments to eliminate the doctrine from antitrust law.¹⁹⁶

Additionally, information is often considered as an item of intellectual property, and in many instances is encapsulated within the grant of exclusivity accompanying copyrights or patents.¹⁹⁷ Requiring access to these resources cannot disregard the attached intellectual property rights, and the essential facilities doctrine is unlikely to supersede the policy of incentivizing innovation through granting exclusivity. Concerns about intellectual property, and its interaction with antitrust law, are ongoing considerations¹⁹⁸ outside the immediate scope of this piece. However, the presence of intellectual property is no more a universal protection of information held by a firm¹⁹⁹ than it is a presumption of market power.²⁰⁰

There are also persuasive economic theories that undercut the utility of the essential facilities doctrine.²⁰¹ Proprietary standards may be “a natural-monopoly bottleneck,” but if the underlying market is ordinarily dynamic, requiring access could forestall inno-

¹⁹⁵ See Dombalagian, *supra* note 144, at 60–61 n.245, citing Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841 (1990) for the premise that it is difficult to limit the essential facilities doctrine so as not to force a duty to deal on dominant networks by virtue of their status.

¹⁹⁶ See discussion *supra* Part II.C., where this information would be useful in challenging the essential nature of a facility.

¹⁹⁷ See Elkin-Koren, *supra* note 188, at 1154 n.121 (noting how copyright protection of DRM software undercut arguments that Apple was abusing its dominance in the music download market as there was no obligation to grant access to the DRM, and the DRM itself was not essential to downloading music).

¹⁹⁸ See, e.g., *Federal Trade Commission v. Actavis, Inc.*, 133 S. Ct. 2223 (2013).

¹⁹⁹ See, e.g., *Patterson*, *supra* note 977, at 484–85; see also Brief for Federal Trade Commission as Amicus Curiae Supporting Plaintiff at 1, *Mylan Pharmaceuticals, Inc. v. Celgene Corp.*, No. 2:14-CV-2094-ES-MAH (D.N.J.) (ongoing 2015), 2014 WL 2968348, at *1; see discussion *supra* Part III.B.

²⁰⁰ See *Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28, 31 (2006).

²⁰¹ See, e.g., *Spulber & Yoo*, *supra* note 499, at 1836–37 (discussing the One Monopoly Rent theory).

vation that would make the proprietary standard irrelevant.²⁰² A market with competition but little innovation avoids the extraction of monopoly rent, but may provide less welfare to consumers in the long-run, than a “serial monopoly” where rents are extracted, but innovation means larger returns in utility for consumers.²⁰³ In an information economy consistently described as subject to Schumpeterian disruption and innovation, it is argued that even the (“unspoken”) rule of thumb that “Big is Bad” is inapt given that size is not strongly correlated with economic staying power, with AOL given as a prime example.²⁰⁴ However, just as the appropriate measure of market power in Schumpeterian markets continues to be disputed, the anticompetitive or procompetitive impact of many actions is as-yet undetermined, and should not be declared per se legal before experience can make an appropriate judgment.²⁰⁵

Just as the high investment costs may deter any entry into a market by firms building their products or services from the ground up,²⁰⁶ requiring access to existing informational infrastructures can over-incentivize entry.²⁰⁷ This has the potential to reduce consumer welfare through wasted investment resources and the failing of superfluous firms.²⁰⁸

²⁰² See Richard N. Langlois, *Design, Institutions, and the Evolution of Platforms*, 9 J.L. ECON. & POL'Y 1, 4 (2012) (discussing Joseph Schumpeter's impact on the analysis of whether intervention is warranted).

²⁰³ See *id.* (arguing that serial monopolies are likely, and preferable in markets bound by narrow technological standards, but that “[e]ven when platform standards are relatively wide in scope and seemingly durable . . . it may well be that competition among platforms remains the superior alternative, especially if one refuses to see antitrust and other forms of regulation as disinterested and costless”).

²⁰⁴ See Lao, *supra* note 53, at 317–19.

²⁰⁵ See, e.g., James Keyte, *Reasonable as a Matter of Law: The Evolving Role of the Court in Rule of Reason Cases*, ANTITRUST MAG. (Summer 2014) (discussing the potential for per se legality on vertical restraints after *Leegin*).

²⁰⁶ See discussion *supra* accompanying notes 89–92, on the cost-structures in the marketplace that could deter entry and permit only those with current access to an essential resource to build out.

²⁰⁷ See Spulber & Yoo, *supra* note 499, at 1843–45.

²⁰⁸ See Thomas W. Hazlett, *The Irony of Regulated Competition in Telecommunications*, 4 COLUM. SCI. & TECH. L. REV. 6 (2002) (“Where firms—entrants or incumbents—have been allowed wide latitude in constructing new networks, robust investment incentives have resulted and consumer gains have been realized. Where regulators have, alternatively, ambitiously regulated incumbents through network sharing obligations designed to ease entry barriers, an unsuitable level of entry has occurred that has resulted

Some antitrust commentators, looking at the essential facilities doctrine within the context of information economies, view the policy considerations as favoring a limited construction of the doctrine.²⁰⁹ For example, it is argued that requiring Google to provide “access” to the top result slot would freeze innovation in the market for search, and prevent competition with the evolving products and services offered by Apple, Facebook, and Amazon.²¹⁰ However, this critique is distinguishable in that the top result slot is a non-shareable resource and is a product of consistently changing utility to consumers, as indicated earlier in the same argument.²¹¹ As Professor Lao states: “A distinction should be drawn between a simple preference for one’s own products and services, on the one hand, and unjustified affirmative conduct to block the competitive process, on the other.”²¹²

An additional concern is present in the information economy: the “self-reinforcing ‘Matthew Effect’ . . . to those who already have much, more is given.”²¹³ According to a “somewhat skeptical” Professor Lao, the argument that requiring access to essential facilities will negatively impact the incentives to invest and innovate “seem[s] overstated,” in part as “mandatory sharing may unleash innovation and competition from *rivals* in the downstream market.”²¹⁴

Although there are a number of criticisms of the essential facilities doctrine, both by itself,²¹⁵ and in the context of the information economy,²¹⁶ none are so persuasive as to require setting aside the

in widespread losses across the industry without countervailing consumer benefits. By limiting the award of ‘options’ to access existing network infrastructure, rational investment calculation will return to the sector, restoring productive growth.”).

²⁰⁹ See Lao, *supra* note 53, at 313.

²¹⁰ See *id.* at 314–15.

²¹¹ See *id.* at 302–04, 317 (“Giving priority to a search engine’s own proprietary content in the presentation of search results is quite different [than Microsoft and Netscape, or *Lorain Journal*] because it does not affirmatively thwart a competitor’s efforts to compete.”).

²¹² *Id.* at 316.

²¹³ Pasquale, *supra* note 366 (citing Robert Merton).

²¹⁴ See Lao, *supra* note 53, at 314.

²¹⁵ See *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 410–11 (2004).

²¹⁶ See generally Lao, *supra* note 53.

doctrine in light of the different market structures inherent in information economies whose long-term implications are as-yet unknown.

E. Aligning the Purpose of the Essential Facilities Doctrine With Competition in the Information Economy

The essential facilities doctrine seeks to benefit consumers by encouraging competition in markets that are susceptible to extension of a monopolist's control. Information economies are particularly dynamic, and information has an important role to play in subsequent innovation and competition. With information economies, as the information involved can generate innovation and subsequent competition in its own right, access to that information is closely tied to the continued evolution of the new economy.²¹⁷ When the market in which a facility is denied is itself one dedicated to innovation, such as stem cell research denied access to patented stem cell technology, then the denial is additionally egregious.²¹⁸

Consumers are more likely to see benefits when more competitors have access to the information necessary to compete in a market, or in Schumpeterian environments for the market. Competition for potential profits is a driving premise of capitalism.²¹⁹ Fostering competition to create new products and services,²²⁰ to innovate on the quality or cost of existing services,²²¹ and to add more competitors to the fight for Schumpeterian markets²²² is likely to

²¹⁷ See, e.g., Cooper, *supra* note 20, at 1027 n.40 (“What is threatened if open competition [for access to the Internet] is not maintained, is the continuing evolution of the Internet, the innovation in and the evolution of electronic network-based business, and therefore the competitive development of the network economy as a whole . . . Since damage to the dynamic of the Internet evolution could cause great economic harm, policy should start from a presumption that competition in access and throughout the Internet system must be maintained.”).

²¹⁸ See Davis, *supra* note 1366, at 222 (2005) (“[T]he essential facilities doctrine seems like a logical means of compelling an upstream patent holder to provide access to those research tools deemed ‘essential’ to competition in downstream innovation markets.”).

²¹⁹ See, e.g., *Goss Int'l Corp. v. Man Roland Druckmaschinen Aktiengesellschaft*, 434 F.3d 1081, 1099 (8th Cir. 2006) (Smith, J., concurring) (“Competition is the very hallmark of American free enterprise.”).

²²⁰ See Hienz, *supra* note 373, at 5–6.

²²¹ See KENNEDY, *supra* note 1688, at 9.

²²² See Pasquale, *supra* note 366.

result in better outcomes for consumers.²²³ Although requiring access to information developed by one firm has the potential to decrease the incentives of all firms to invest in information gathering and innovation, rigorous enforcement of the requirement that a facility be essential is an opposing consideration mitigating this concern.²²⁴

Innovation, interoperability, and competition are defining characteristics of information economies both in the United States and large portions of the world, and the information necessary to accomplish these goals is an important foundational element.²²⁵ Information is no less susceptible to characterization as a resource or facility than tangible items, and the economic and legal concepts underpinning the essential facilities doctrine are pertinent to encouraging competition and innovation.²²⁶

CONCLUSION

Information economies are no less susceptible to the existence of essential facilities or resources than other segments of the economy. Perhaps information has a greater likelihood of being essential to competition, given the capacity of information to be shared, the high fixed costs that can accompany its development, and its integral role in many lines of commerce. These possibilities are further bolstered by the reality that information begets innovation, which is a fundamental part of recent economic growth.

Considering that information economies are yet to be understood to the same degree as more traditional economies, even doctrines that have found limited applicability in one venue may find more utility in a new environment. As laid out in the discussions above, the elements of the essential facilities doctrine have many potential footholds in information economies that were more lim-

²²³ See Gans, *supra* note 1266, at 56.

²²⁴ See discussion *supra* Part III.C.

²²⁵ See Marina Lao, *Networks, Access, and 'Essential Facilities': From Terminal Railroad to Microsoft*, 62 SMU L. Rev. 557, 557-58 (2009).

²²⁶ See *id.* at 557-58 (“[T]he same legal and economic principles are equally applicable even if the ‘facility’ is information or some other intangible asset. Thus, the doctrine can also be effective in redressing competitive problems caused by the lack of access or interoperability in modern network industries.”).

ited before. There are policy arguments in addition to these structural elements that may provide new opportunity for the doctrine. The very nature of innovation and competition in information economies makes for a strong policy argument that favoring greater access to information as an essential facility has the potential to benefit consumers through greater competition and innovation.