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Richard A. Epstein†

Joint efforts by two or more parties can be achieved either through voluntary cooperation, through state coercive activity under some version of the takings power, or by the creation of some form of commons. Network industries, such as telecommunications, cannot usually work by the former, and thus require some level of state coercion. The choice of the method of coercion is, however, critical because the use of the eminent domain power does not work well when applied to a high frequency of low level transactions that are difficult to price and monitor. In contrast, the creation of an interconnection obligation, while it requires the duplication of facilities, has the greater advantage of removing the fatal imbalances generated under the 1996 Telecommunications Act, which authorizes the mandatory sale of unbundled network elements. Virtually all of the many dysfunctional results under the 1996 Act stem from its failure to make interconnections the sole method of network creation.

Introduction

There is widespread agreement today on all sides of the telecommunications wars that something is deeply flawed with the design or

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implementation (or both) of the Telecommunications Act of 1996.\textsuperscript{1} The immediate grounds for this judgment lie in the short term wreckage that has come in wake of its passage. The ostensible end of the 1996 Act was the introduction of competition into an industry that has long been dominated by the local exchange carriers (LECs), which operated under a statutory monopoly for their respective territories. But the term "competition" carries with it a distinctive connotation in telecommunications. As a network industry, no free-standing entity can enter the market and win away customers from an incumbent by the simple expedient of offering a better product at a lower price. Some form of cooperation among rival firms is strictly necessary in order to achieve the ideal of any network industry: every customer of every carrier should be able to reach every customer of every other carrier. In principle the network should operate like a seamless web so that no matter which firm a given customer goes to, he or she will be able to reach every other person who joins the network.\textsuperscript{2} In light of this constraint, isolated firms, just like isolated individuals, are not part of the communications grid. In a market in which all transactions proceed only by mutual consent, the incumbents (who by definition serve the entire market) can simply refuse to deal with the new entity so as to keep it from gaining a market foothold. Some level of state coercion is needed to allow new entrants to participate on existing networks.

The near-decade long battle has been over the terms and conditions under which the needed interaction between rival carriers takes place. A purely competitive market needs no central agency to set prices for either inputs or outputs. In contrast, "competition" in a network industry requires at least one centralized decision maker to allow the various entities to compete for customers on the consumer side of their business while coordinating their operations on the production side. The choice of institutional mechanism for achieving this result is absolutely critical to the overall competitive effort once the decision has been made to abandon the old, pre-1996 Act monopolistic model, which was subject to rate regulation. Here there are two, and only two, possible ways in which the government regulation can procure the internal infrastructure needed to make the network cohere. The 1996 Act allows for both, and with the best of intentions opted for a network design that contained the seeds of its own destruction.

First, the law can develop interconnection rules that allow two separate networks to pass traffic back and forth between them.\textsuperscript{3} The clear implication of this system is that any new entrant has to invest in its own facilities in order to gain access to the market. The disadvantage of that solution is that it requires, at a minimum, a duplication of capacity that raises the cost of production above

\begin{footnotesize}
\begin{enumerate}
\item See, e.g., OZ SHY, THE ECONOMICS OF NETWORK INDUSTRIES 5-6 (2001) (noting that "these [network] markets cannot function as competitive markets") (emphasis omitted).
\end{enumerate}
\end{footnotesize}
that which would be achieved if seamless communication could take place on a single network shared by multiple providers. Second, the only way to avoid the cost of duplicate facilities is to allow the new entrant to gain access to the critical components of the existing LEC by instituting some mechanism that allows for the purchase or lease of the various network components. These components are generally described as unbundled network elements, or "UNEs." In principle, the formation of these rival synthetic networks could introduce a measure of competition without incurring the costs of assembling an expensive set of independent facilities. But in a world in which all alternatives are imperfect, this approach has its own downside: it is difficult to decide which UNEs the incumbent local exchange carrier (the ILEC), such as SBC or Verizon, should supply to the competitive local exchange carrier (the CLEC), such as Covad, and at what price. The two battles, therefore, are over access to particular elements and the price at which their transfer is ordered.

These two issues of access and price for UNEs, respectively, have been the source of intense litigation in which the outcome has proved to be something of a draw. The CLECs have by and large won the battle over the question of price. For instance, the Supreme Court has upheld against statutory challenges the decision of the Federal Communications Commission (FCC) to base the prices for UNEs not on the historical costs incurred to assemble the network, but on TELRIC, or total element long-run incremental cost. The use of the latter price rests on the assumption that the ILEC is able to put in place the most efficient network at the time that UNEs are transferred to the CLECs. Yet it appears that the ILECs have now won the battle over access with the critical decision of the District of Columbia Court of Appeals in *United States*

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(c)(3) Unbundled access.—The duty to provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory in accordance with the terms and conditions of the agreement and the requirements of this section and section 252 of this title. An incumbent local exchange carrier shall provide such unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service.
(d)(2) Access standards.—In determining what network elements should be made available for purposes of subsection (c)(3) of this section, the Commission shall consider, at a minimum, whether—
(A) access to such network elements as are proprietary in nature is necessary; and
(B) the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer. Note that the obligation to supply unbundled network elements has been transformed into the duty to supply bundled "unbundled network elements," in order to forestall the possibility that the incumbent will disassemble a bundled element just to frustrate the new entrant. The FCC's regulation requiring the preservation of existing bundles was upheld in *AT&T Corp. v. Iowa Util. Bd.*, 525 U.S. 366, 394-95 (1999).

5 See id. at 374 n.3: "TELRIC pricing is based upon the cost of operating a hypothetical network built with the most efficient technology available."
Telecom Association v. FCC. For the third time, the court invalidated the proposed regulations that a sharply divided FCC had issued for determining whether or not there was an "impairment" that justified the statutory sale of unbundled network elements under section 251(c)(3). Unless a CLEC could show such "impairment" it could not gain access to the UNEs at bargain prices. But that critical threshold question has neither a clear ordinary meaning nor a specific statutory definition. The choice of institutional arrangement may seem to be a distinctly second-order question because both remedial devices allow the government to coerce exchanges with unwilling parties. But it hardly follows that just because both interconnection and sale obligations necessarily reject the strong libertarian bias in favor of voluntary transactions that they should be treated as equal in the eyes of the law. To the contrary, the nonstop litigation and recrimination that has marked the nine years since the passage of the 1996 Act has brought in its wake severe adverse economic and social consequences. Their toll is measured by a rash of bankrupt telecommunications firms and huge losses of capitalized market value of established telecommunications carriers, prompting anguished cries of protest and appeals for reform. The stakes of institutional design are thus high. In evaluating these alternatives, my central thesis is that it is not too late to recognize a proposition that should be clear in retrospect: the fundamental mistake in design of the 1996 Act is that it created a complex system for the purchase of UNEs. Instead, it should have limited itself to the more mundane task of facilitating or, if need be, ordering interconnection agreements between carriers. The difference in the difficulty of the two tasks is captured by a simple physiological analogy. The need to establish interconnections is not a trivial task, but is comparable to joining together the different elements of the spinal column. The sale of UNEs in contrast is a task comparable in difficulty to cutting up different nerves of the spinal cord into small segments and then putting them back together again.

6 In reverse order, these decisions are United States Telecom Ass'n v. FCC, 359 F.3d 554 (D.C. Cir. 2004) (USTA II); United States Telecom Ass'n v. FCC, 290 F.3d 415 (D.C. 2002) (USTA I), which invalidated much of the FCC's second effort at issuing the appropriate regulations. The initial effort on these impairment regulations was invalidated in AT&T Corp. v. Iowa Utilities Board, 525 U.S. at 389-90.

7 See supra note 4 for the operative provision.

8 See infra at 127-29.

9 See, for example, a letter to President George Bush that appears to summarize the present bleak state of affairs.

Since 2000, telecommunications service providers and the equipment manufacturers that supply them have lost several hundred thousand jobs and have lost over $1 trillion in market capitalization, while annual investment declined by more than $70 billion and the United States lingered at 11th in the world in deployment of advanced broadband networks. Letter from Twenty-Two Economists, to the President of the United States (Mar. 25, 2004) (on file with author) [hereinafter Economists' Letter]. The letter urged President Bush to oppose allowing the FCC to take the case to the Supreme Court. Certiorari was in fact denied in Nat'l Ass'n of Regulatory Util. Comm'n v. United States Telecom Ass'n, 125 S. Ct. 313, 2004 U.S. LEXIS *6710 (2004). For a further account of the dislocations, see Michael Heller, The UNE Anticommons, 22 YALE J. ON REG. 275 (2005).
The 1996 Act repeats several old mistakes. First, it falls into the typical nirvana trap, and identifies some flaw with the existing system of rate regulation. The old system was ushered in by the 1982 settlement of the Justice Department's successful effort to break up the Bell system by creating monopolies at the local exchange level and then superimposing on them a long-distance system that was supposed to operate in a more or less competitive environment. Any system of direct regulation of monopoly has problems of its own. But in this case, the dominant system of regulation had evolved to a system of rate caps under which the rates were consistently lowered over time to track the consistent reduction in the cost of communication. That system was not perfect, but it generated only a fraction of the litigation and confusion that takes place under the current law. In addition, technology would have forced the strength of the local exchange monopoly to dwindle in any event, rendering the rate caps superfluous, so that genuine deregulation could have taken place without strong government intervention. As the price of mobile phones goes down, more people, especially single people forever on the move, are prepared to do without a wire-based connection. In addition, the ability to introduce internet or cable based local exchanges offers a second direct challenge to the traditional local exchange monopoly. The upshot is that advances in technology in all likelihood would have redefined the boundaries of the relevant market, allowing competitive forces to do their work so long as some system of interconnection could be created between the various networks. The costs of facilities should not, therefore, be measured in terms of the new telecommunications network that might be created, but the available networks that may not be converted to new uses at low costs.


The drafters of the 1996 Act systematically underestimated the rate of technological innovation in the industry. Instead of allowing the gradual liberalization of these markets to take place, they decided that they had to "jump start" competition by shifting away from rate caps to facilitating the entry of competitive firms at the local level.\(^{12}\) In order to achieve that end, the 1996 Act was consciously ecumenical by allowing two different regimes of cooperation to operate side by side. But instead of getting the best of both worlds, it generates the worst. It is yet another case in which we have paid a heavy price for ignoring the power of the maxim "simple rules for a complex world." The applicable principles in this area, moreover, are not confined to telecommunications, but derive from more general considerations that should be deployed to determine the choice of coordination arrangements for telecom in general. That some rethinking of this subject is needed seems evident, for shipwrecks of this magnitude do not just happen by chance; nor can they be attributed to earthquakes or acts of God. The difficulties begin squarely at home, with the basic institutional structure. Only after we have some sense as to how these business and cooperative ventures should be organized in principle is it possible to address the second question of what has gone wrong.

The multiplicity of various schemes thus invites a full-scale inquiry on how best to organize the telecommunications network once rate regulation of the telecom monopoly is put to one side. Part I examines the respective sphere for three different types of sharing arrangements. The first of these arrangements is contractual, with business operations that are conducted through complex voluntary agreements, often in some partnership form. The second type relies on government coercion through a takings power. That power allows for the transfer of private property under government order from A to B, circumscribed, perhaps, by some limitation that the taking in question must be done for a public use (or, as is often said inaccurately, public purpose).\(^ {13}\) The third type of sharing arrangements involves operating through some form of a legal commons, which is open to all. These legal commons arise in a large number of different contexts, from the allocation of certain resources like water or oil and gas, to the proper formation of highways, to the delineation of legal regimes that deal with the different forms of intellectual property.

Any choice of institutional arrangements is not confined to these three pure types, but could involve some amalgam of them. It is helpful for the analysis to start with the simpler types before considering any of the blended cases that occur so often in fact. At the outset of the inquiry, I will assume that there is no constitutional impediment to the choice of these three different devices, and will seek only to identify the set of circumstances under which

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each of these arrangements should be preferred. Thereafter, in Part II, I shall turn to the question of the various arrangements for coordinated activities that exist in the communications arena, in which all three of these mechanisms are deployed, albeit in the wrong proportions. In some sense, the resolution of all these short-term issues is not the initial purpose of this paper. Rather, the larger question is one of institutional design. I now think that that the entire 1996 Telecommunications Act was a mistake. Going forward we should rethink the question from scratch and devise a new plan under which the chief role of the FCC is to oversee interconnection arrangements.

I. Choosing the Right Church

Choosing a legal regime to govern the cooperation among different actors presents a challenge that is as old as the law of property itself. Yet if all the details are put to one side, at root we can identify only three broad types of legal regimes. The first involves voluntary contracts. The second allows for the transfer of property from one party to another by the use of state force upon payment of just compensation. The third involves the creation of some form of a commons or public domain property. Each of these regimes has a place in the overall picture. This Part first describes these various regimes, and indicates the tasks for which each is best suited. Section A then deals with contractual arrangements; Section B discusses the use of takings; and Section C addresses various forms of the commons. Section D provides a short summary of their proper respective spheres. This broad discussion then lays the foundation for an analysis of the 1996 Act, which allows the identification of the reasons why it has run so badly aground.

A. Contractual Relationships

The first and simplest way to govern cooperation between parties is to allow for the coordination of activity between two or more persons through a voluntary agreement. For these purposes, the general definition of a contract is an agreement between two or more individuals whereby each agrees to perform or forbear from the performance of some particular action. The standard form of contractual theory treats the content of the obligation as a matter of supreme indifference to the state agency charged with the validation or enforcement of the

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14 See, for example, the definition of a contract as "an agreement by which two parties reciprocally promise and engage, or one of them singly promises and engages to the other to give some particular thing, or to do or abstain from doing some particular act." POTHIER, TREATISE ON OBLIGATIONS, OR CONTRACTS (Evans trans., 1806), quoted in FRIEDRICH KESSLER & GRANT GILMORE, CONTRACTS: CASES AND MATERIALS 96 (2d ed. 1970); see also RESTATEMENT OF CONTRACTS, § 1 (1932). The broad definition does not strictly require consideration, although it is usually embedded in commercial transactions.
contract. The reason for this indifference to the content of a contract is the strong conviction that any voluntary transaction between two or more individuals will work to the advantage of both or all. That conclusion follows from the assumption that each side will take care of its own self-interest, so that it will only enter into an agreement if it thinks that it is better off with what it has received than with what it has surrendered. Thus, in economic jargon, contracts are always Pareto improvements for the parties to them. Since this condition holds no matter how many parties join in a particular agreement or how many sequential agreements a particular party chooses to enter, the bottom line is that low transaction costs for voluntary contracts translate into high levels of social welfare. It is this conclusion, rather than some fantasy about how the world looks when the costs of transactions are zero, that offers the true explanatory role for transaction costs, which is central to the work of Ronald Coase.

To complete this picture, the initial presumption is that any external effects from the typical successful voluntary transaction are likely to be positive. The greater the wealth of the two trading partners, the more likely it is that opportunities for trade will open up to third parties. So long as we take into account the wealth of the transactors and of everyone else, voluntary contracts move us along the path to some social optimum.

This skeletal account of contracts, however, is far from a complete explanation of how the process of contracting works in practice. The most obvious absence in the general theory is that it does not take into account the specific content of the particular contracts in deciding on the question of institutional design. Yet that element is absolutely critical to the ground-level question of how individual parties decide on both the contracts they should enter into and the form these contracts should take. That question depends critically on the ratio between expected benefits and expected costs, which in turn depends on the probability of performance or breach and the payoffs that are received or made in all different states of the world. At the practical level, therefore, each potential transactor has to take into account the mix of social and legal sanctions that it can bring to bear on the other side and those sanctions that can be brought to bear on it. That ratio of legal and social sanctions is not constant across different types of relationships, but varies with the identity of trading partners and the types of transactions.

15 The initial statement here comes from Hobbes, and is worth recounting: "The value of all things contracted for, is measured by the appetite of the contractors; and therefore the just value, is that which they be contented to give." THOMAS HOBBES, LEVIATHAN 117 (Oakshott ed., 1962). For various defenses of freedom of contract, see Printing and Numerical Registering Co. v. Sampson, 19 L.R.-Eq. 462, 465 (Eng. Ch. 1875); LORD GEORGE BRAMWELL, LAISSEZ FAIRE 8 (1884) ("All that the advocates of laissez faire demand, is that freedom of contract shall not be interfered with without good reason."). For my defense of the doctrine, see, for example, Richard A. Epstein, Unconscionability: A Critical Reappraisal, 18 J.L. & Econ. 293 (1975).


322
The first point depends on the types of obligations in question. Many voluntary transactions result in clean deals, whose sole function is to move some specific asset from one person to another. For example, the ordinary contract of sale, in its simplest and most common form, substitutes the buyer for the seller as the single owner of the asset. The key point is that once clean deals are concluded, there is no longer a continuing relationship between the two sides. (I sell my house to you and move out of town. From the date that you acquire ownership, no lingering obligations bind us together, say in the form of a financing or warranty arrangement.) Thus, clean deals foster the following remedial pattern. The level of trust between the two parties need not be particularly high. Since most contracts of sale of large assets, such as homes, are made with strangers, the difficulty in nursing the transaction through the executory phase is often eased by a set of brokers, escrow agents, lawyers, and insurers. Once the deal closes, all relationships between the parties are at an end. A sound set of legal rules works to eliminate the uncertainty in obligations, as by insisting on written documents for enforcement and by eliminating, often through merger clauses, parol evidence that could be introduced to vary the terms of the arrangement ex post.

A second type of contractual arrangement contemplates not a sharp conclusion to a transaction, but some limited continuing relationship between the parties, as with real estate transactions in which the seller retains an interest in or near the property sold to the buyer. Most leasehold arrangements routinely require some continued level of cooperation between the parties. Some of these obligations, such as the payment of rent, are fixed and definite in their content. But others most certainly are not. A standard lease could often require a landlord to make reasonable repairs on the premises, but that obligation differs from the standard obligation to convey in two particulars. First, its content is not specific, but depends on some joint assessment of future circumstances unknown at the time of agreement. Second, the subtext of the obligation is one of cooperation. If the landlord has to make repairs, the tenant has to allow him access into the leased space. In these situations, the parties become more selective in their choice of contracting partners in order to reduce the stress on the continuing relationship. The situation only gets more complicated in situations in which a single landlord has multiple tenants, for then cooperation, or at least compatibility, is needed in both vertical and

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18 For an application of these clauses, see *Danann Realty Corp. v. Harris*, 157 N.E.2d 597 (N.Y. 1959), allowing use of specific merger clauses to block actions based on fraudulent misrepresentation.

19 For an extended discussion, see Ian R. Macneil, *The New Social Contract: An Inquiry into Modern Contractual Relations* (1980); and Ian R. Macneil, *Values in Contract: Internal and External*, 78 Nw. U. L. Rev. 340 (1983). Macneil stresses that even the simplest transaction has a relational component. But the differences in degree matter. A vendor will sell gasoline to anyone who can pay the price, but he will not hire just anyone to work behind the counter.
horizontal dimensions. At this point, the shrewd landlord will choose to rent only to tenants who are likely to share common values and behaviors in order to reduce the potential conflicts that might hinder cooperation at both levels. The importance of the choice of contracting partners thus rises symmetrically with the amount of cooperation needed between them. Further, in this cooperative context the soft social mechanisms to control low level disputes often overshadow the legal remedies that are by and large reserved to deal with major dislocations that call for termination of the relationship—through either eviction from or abandonment of the premises.

Within this framework, the choice of trading partners becomes progressively more important, and the transaction costs correspondingly rise. No one confuses the level of cooperation needed in an ordinary lease with that needed in a business partnership or employment relationship, in which constant sharing of tasks and information is par for the course, and fiduciary duties are the norm.

Moving on to those latter service-intensive relationships, it is clear that they are at the opposite end of the spectrum from the clean deal, out-and-out transfer of real property. Here the term "relational contract" carries even more weight than with the landlord-tenant relationship. Thus, within the general parameters of the deal, virtually all daily decisions are resolved in a continuous and ongoing relationship that depends on some high level of trust and cooperation. In some instances, the relationship is that of an employer and employee. The adoption of that general framework signals two strong, fixed elements to the arrangement. First, it gives the employer the right to set the task, for which he agrees to take the role of a residual claimant on the firm's income. Second, within the domain of human capital, the employee functions as a creditor of the firm, and the employer as a holder of equity—at least until more complicated compensation forms, such as commissions or bonuses, alter that stark delineation of risk by making the employee an implicit part-owner of the business.

In many cases, however, the firm is operated as a partnership in which the basic agreement states the split of profits (and losses) between the partners, and indicates the level of initial contribution of cash or in-kind in the firm. Since partnerships have no clear hierarchical arrangement, the level of trust and cooperation needed for them to work is higher still. For example, the modern law on the subject still follows the Roman rule that each partner owes a generalized duty of good faith when dealing with the other. That duty covers not only honesty in fact but has a second equally precise meaning: each partner is expected to treat the costs and benefits of his partners with the same respect

For the basic classifications, see BARRY NICHOLAS, AN INTRODUCTION TO ROMAN LAW 186 (1962).

324
that he treats his own.\textsuperscript{21} If that maxim is complied with in full, all private decisions are made with an eye to the optimization of the welfare of the group as a whole. There is no doubt that there is some (and in some cases, much) deviation from the rule. Since the legal sanctions tend to kick in only on the termination of an arrangement, the choice of partners and the level of trust between them both have to be high, as in the obvious case of the family partnership in which ties of natural love and affection reinforce the business arrangements. It is not an accident that a lawsuit between partners counts as the end of the partnership: the element of trust cannot survive the ensuing litigation. It is for this reason that the law never imposes partnership obligations on two or more individuals whose property and labor have been accidentally commingled. Instead it assigns ownership to one party subject to a lien to the other in order to avoid the difficulties of a forced marriage between strangers.\textsuperscript{22} The moral is clear: high levels of cooperation are only likely to succeed (and then not always) in voluntary transactions, in which each side picks its trading partner.

B. Takings

A parallel analysis needs to be undertaken with the use of takings, backed by government force, to reassign property rights between ordinary individuals. Here it is useful to note at the outset that the basic takings clause, like the basic theory of contract, does not differentiate much among different types of property or different types of persons in articulating its general proposition. Thus the operative provision in the U.S. Constitution states: "nor shall private property be taken for public use, without just compensation."\textsuperscript{23} The first point to note is that this provision is written in terms as broad as those found in the pure theory of contract. There is no effort to differentiate among the different types of property that are the possible targets of condemnation. As drafted, the provision applies to everything from a toy doll to land, from intellectual property to public utilities. Nor does the clause offer any hint as to the kinds of occasions on which the use of the takings power makes sense, relative to those in which it does not. Thus, the government could condemn anything from a candy bar to

\textsuperscript{21} One instance of this position is the good faith obligation that insurers have to settle large claims within policy limits. In essence, the insurer should act as though it bore all the risk for either settlement or litigation and settle on terms that reduce the expected costs. That obligation is important because the insurer has a tendency to avoid settlement from which it bears all (or at least a larger fraction of) the risk, while some portion of the adverse verdict is born by the insurer. For a clear articulation of this sentiment, see \textit{Merritt v. Reserve Ins. Co.}, 110 Cal. Rptr. 511, 519-520 (Cal. Ct. App. 1973).


\textsuperscript{23} U.S. CONST. amend. V. For my general views on this subject, see \textit{Richard A. Epstein, Takings: Private Property and the Power of Eminent Domain} (1985) [hereinafter \textit{Takings}].
a copyrighted work, so long as it pays the proper levels of compensation and turns the asset to some public use.

In practice, however, the use of the condemnation power is not coterminous with its stated constitutional scope. I am aware of no case in which any government official has ever sought to condemn a fungible product when an exact copy was available for purchase in ordinary competitive markets. In practice, the explicit use of the condemnation power is confined to interests in land, with a few interesting applications for intellectual property, say, trade secrets that are needed to determine whether pesticides or prescription drugs are safe for general licensing. The reason for this limitation is reasonably clear. Some land is unique by location and function, so the government gravitates toward the use of the condemnation power in order to eliminate the landowner's holdout potential. That position is most evident in those cases in which separate plots of land are needed to assemble some larger plot of land that is worth far less in an unassembled condition. Land for highway acquisition is one obvious illustration: roads are long and thin because the networks for communication and transportation are configured like strands. In contrast, the land used for productive activities, such as factories and stores, are usually configured in more compact shapes. Any single owner of land along the network route has the ability to block its completion to obtain economic rent above his subjective value. This holdout problem is overcome by offering the landowner compensation for the land in its best alternative use, wholly without regard to any increment in value attributable to the proposed road. The same principles apply with respect to condemnation needed for fortification and, perhaps, for the much more dubious and controversial purposes of slum clearance or beautification.

These examples demonstrate that the use of the eminent domain power works best in clean-deal type situations in which the state takes only a small number of large parcels with few distinctive characteristics. Those restraints make it most likely that the use of the power will conform to the basic theory of eminent domain, which should be invoked only for those social projects that generate a social benefit in excess of the costs of their operation. That condition is more likely to be satisfied if each owner who is required to

26 See, e.g., Olson v. United States, 292 U.S. 246, 255 (1934) (noting that the owner should be placed "in as good a position pecuniarily as if his property had not been taken").
contribute an input to the joint venture is treated as the individual whose bronze has been taken for a statue. He is given a "lien" against the project (which is then discharged by cash payment), such that the amount received in compensation places him on the same level of utility that he enjoyed before the project was undertaken. If the state can discharge all such liens on its property, the social surplus so generated is left for the citizenry as a whole, net of administrative costs, and is not taken by those who hold out. The net social result is positive if the proposed project is worth more than the subjective value of the property contributed to the venture plus the administrative costs, as incurred by all parties, in order to bring it about. In principle, the stronger the holdout potential of a single owner, the more likely an invocation of the takings power will produce the desired social benefit.

The success of this system depends on two critical elements: scope and valuation. Scope addresses the purposes for which the condemnation can be undertaken, and valuation addresses the required level of compensation. These two points interact. In principle, a broad, even infinite, class of takings should be allowed if they satisfy the above test for net social gain even if the property was not taken for public use as the Constitution now requires. But the chances that the desired outcome will be reached are sharply reduced when the takings in question are diverted to private uses. At this point, any error in the choice of the compensation formula will be magnified by allowing a too-generous set of forced exchanges to march through the legal system. What seems clear is that focusing on a small class of valuable but homogenous properties, like undeveloped farmland for roads, is most likely to reduce the strains on the valuation system.

All systems of takings require that some valuation be made to determine the amount of compensation due for the property taken. That question of valuation is troublesome even under the best of circumstances, but the costs needed to fuel the operation will depend largely on the targets of the condemnation effort. The simplest assumption for valuation is that the process always has a fixed cost that is independent of the size and value of the parcel, which is augmented by a variable cost that responds to the difficulties in the individual case. Where the number of properties taken is small, these fixed minimum costs need to be incurred in only a few cases. Where the properties are substantial in value, the variable costs are likely to be a smaller fraction of the whole. Where the properties are uniform in type, the process is simplified still further because fewer complex and subjective elements have to be added back into the valuation process, so that market values become a more reliable benchmark for state compensation.

It should not be supposed that even these simple cases are without difficulty, for when less than the entire plot of land is taken, it becomes necessary to inquire into a possible reduction in the compensation offered, depending on the increase (or decrease) in the value of the retained parcel. But these cases are easy in comparison with those where the state takes, for
example, a fractional interest in developed land in current use for commercial purposes. Just that happens when the state condemns a business for a short period of time, leaving overhangs on two margins: what happens to the value of the remainder of the establishment during the lease, and what happens to its value at the expiration of the lease, perhaps at some unknown future time. In these cases, the appraisal and legal fees increase, the valuation should (but in fact does not) take into account the full range of consequential damages, including the loss of good will, relocation costs, and the reduction in value of site-specific personal property that is moved to a different location. The modern insistence that the compensation in question cover only the value of “the property taken,” and not the full extent of the loss to the owner, does not just produce residual unfairness. Rather, it also spurs the state to take too much property because it is allowed to pay too little in cash for what it has taken. The upshot is that the condemnation process becomes ever more inefficient as the state migrates from a few easy targets, to a large number of complex ones.

The force of this general observation is confirmed when we look, for example, at the stout resistance against various forms of compulsory licensing schemes in the intellectual property area. There is no doubt that there exist serious blockade problems in the worlds of both patents and copyrights. A person who wants to put together a new invention may need to make use of inputs from many other IP holders. The preparation of a movie could involve the need to acquire all sorts of clearances from previous rights-holders of text, music, or image. The basic argument is that some form of a takings system in the form of compulsory licensing can overcome the holdout problem while allowing the assembly of the needed IP constituents for some scientific or artistic adventure. This concern with the possibility of multiple vetoes has been described as the anticommons problem, which has received much attention, both generally, and in the area of intellectual property. But the proposal for compulsory licensing ignores the major advantages of the current property rights regime, which allows the owner absolute discretion on whether

29 See, e.g., Kimball Laundry Co. v. United States, 338 U.S. 1 (1949) (allowing compensation only for transferable property values).
31 See generally Epstein, Takings, supra note 23.
to contribute or hold back his property from some independent venture. Indeed, one careful study of IP development in the pharmaceutical industry could not identify a single promising therapy that had been halted by the widespread distribution of intellectual property rights. In light of what was said above, any legal regime that contemplates the partial condemnation of small fractions of complex constellations of interests is just asking for trouble.

The need for resorting to a compulsory licensing system is, moreover, often overestimated. First, the holders of these other forms of intellectual property are not state bureaucrats who increase either income or psychic satisfaction by withholding permits from private applications. Rather, they are owners of IP, who can only make income to the extent that others are willing to use their products. It therefore follows that they will display a certain ingenuity in negotiating for the appropriate rights packages if the ability to obtain compulsory licenses is denied. The creation of patent and copyright pools is one sign of the private ingenuity that helps overcome these difficulties. The use of these pools or licenses has collateral advantages in working out a comprehensive deal, and illustrates how private ingenuity can often solve the transaction costs problem without resorting to government coercion. One of the greatest dangers of a compulsory licensing system is that it will misprice the value of certain components to the common pool. If the compulsory licenses are set too high, the entire operation comes to a grinding halt unless voluntary means are developed to circumvent the external standard. If the licenses are set too low, a land rush takes place, which undervalues the initial set of IP rights. That valuation mistake results in short-term inequities and in a long-term reduction in the level of needed invention when the original owner finds his return reduced by forced licensing arrangements.

In addition, the use of compulsory licensing is necessarily primitive in its treatment of the covered invention. A voluntary licensing agreement is a complex affair that makes explicit contractual provisions on a wide set of terms outside of royalties, and typically has complex fee structures, inspection provisions, sharing arrangements, and the like. The net effect in the short run

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37 For discussion, see Richard A. Epstein & Bruce N. Kuhlik, Is There a Biomedical Anticommons?, REGULATION, Summer 2004, at 54.
is to displace sensible agreements with state-arrangements that misprice the underlying assets and develop an inferior set of collateral terms. That problem is magnified in the long run. People become less skilled in working out private arrangements, and as a result there will be a vicious cycle in which they become more dependent on government for cooperation. Further, the pace of invention slows so that substitutes that might have otherwise become available are not invented in the first place or are pulled from the market. The choice of property regimes always involves a trade-off between the core problems of holdout and valuation. Once we leave the domain of the clean deal, the condemnation solution usually comes in second place—a lesson that should not be lost in dealing with communications policy.

C. The Commons

A third possible property rights configuration involves the creation of some commons. For these purposes, it is important to distinguish among various kinds of commons. First, there are commons that are created by contract, or voluntary commons. Second, there are commons created by law, or open commons. This Section will describe the various types and analyze the advantages and disadvantages of each in turn.

1. The Voluntary Commons

Many types of commons are created by consensual means. A group of individuals can decide to pool their land together to form a large field for grazing cattle in the winter. They can then agree on a formula that first determines the carrying capacity of the commons and next allocates the number of each individual’s cattle that are brought into the field in proportion, say, to that individual’s contribution (acreage or value) to the commons. There is nothing exceptional about this complex venture, for it satisfies the desirable condition that each of the owners gets greater value out of the commons than he contributes to it, just as in any other kind of joint venture. The one point of note in this situation is the nature of the uses involved when private owners pool their land. The common pattern is one in which each of the contributions is identical in kind, so that the property in question is dedicated to a single use (e.g., grazing) during the period in which it is held in common. The use of identical assets means that the allocations in question can be made by knowing the relative amounts contributed by each, even if no one knows the actual value.

of any parcel of land contributed to the pool. In the end, the only coordination among co-owners is to determine the number of head of cattle that each owner is allowed to introduce into the field. There are no complex coordination problems such as those that are found in running the firm, in which it is necessary to integrate the sharply differentiated activities of large numbers of individuals, who (as noted above) could assume the relationship of partners, employers or employees. Nor with the simple commons must anyone make any major investments to acquire or develop the highly specific assets of the sort that are involved in complex manufacturing or business processes. Expenditures can be pro-rated across the group in proportion to their entry rights.

The private commons, therefore, is a relatively simple affair.

2. The Open Commons

The voluntary commons offers a useful template against which to evaluate systems of common property created by operation of law. Here one common mistake is to assume that all such commons are unstable and should be hastily converted to a form of private property in order to create a better alignment of risk and return. But that position overlooks the numerous situations in which the durable commons has proved its worth, both historically and today.\(^41\) It is no accident that the discussion of property in Justinian begins with an account of those forms of property that are held in common: the water, the air and (consequently) the beach.\(^42\) The argument against the privatization of these various forms of property is that the system-wide value of the network in question will be necessarily lost by the balkanization caused by tollbooths along the river or fences on the open range.\(^43\) That is, as the old saying goes, the whole is greater than the sum of its parts. But here again it is important to recognize the limited condition under which, for example, an open range (in which each landowner is under a duty to fence out cattle owned by others) is likely to prove superior to a closed range (where the owner has the duty to keep the cattle off the land). Thus, if the land in question is of little value, and every landowner uses it for cattle, the open range system (with branded cattle) is likely to make optimal use of the land. The common nature of the use spares the need for anyone to build a fence, so all of the landowners are better off by participating in the overall pool than by remaining outside of it. The system will work well if in winter each owner has to house his own cattle, for that


\(^{42}\) J. Inst. 2.1 (Leslie B. Adams ed., Gryphon Editions 1985). This beach could have private as well as common uses. The typical use was to erect huts for shelter in storms. The huts had to be removed when the peril passed or otherwise, the commons could be privatized by degrees, thereby removing the use of the beach for transportation and refuge.

necessity will put some limit on the number of cattle set out to graze. But the moment a more intensive use of some land becomes desired, as for agriculture or permanent structures, the open range system will fail. The costs of suitable fences were often prohibitive, and the assignment of the right to graze to the cattle owner could not be avoided by any private negotiations.  

So long as a single owner of cattle held out, the landowner had to fence in his property, because an effective renegotiation of rights was not possible. But under a closed range regime, the owner had legal protection against incursion by all ranchers, but could, if he chose, lease land to a single tenant while excluding all others. The open commons cannot survive the increased variations in patterns of land use that bring in their wake increased levels of investment.

The success of a physical commons starts with rights of universal access, but it certainly does not end there. At least two further problems have to be faced. The first of these is the question of the rules of the road. The task in this setting is to find ways in which large numbers of people are able to coordinate their activities with each other. But coordination in this sense does not mean deep collaboration on a common task, such as found within the firm. It simply means that all users have to obey the rules of the road, as set by its owner, so as to maximize utility by minimizing the risks of collision. These rules must organize interactions for a huge array of shifting, random pairs of individuals, who are utterly unknown to each other. The only way to accomplish that task is by establishing rules that allow people to pass by each other undisturbed without having any deep knowledge of the purposes for which others have entered the transportation grid. The upshot is that we have bright lines down the middle of the road, on- and off-ramps, speed limits, and stop lights and stop signs. Finally, we require all individuals to act in strict compliance with the rules of the road and bear responsibility, either in whole or in part, in those cases that they deviate from them. This form of minimum cooperation between drivers of two different vehicles is far different in kind than the cooperation that takes place when one person drives an automobile and the other gives direction. The only way in which it is possible to coordinate mass activities is through simple rules that make it easy to observe, both before and after any accident, who is in compliance with the rules of the road. The governance structure for this network is more complex than that which sets boundaries between ordinary plots of land. But it is a far cry from the specific and deep arrangements that characterize ordinary partnerships and other voluntary arrangements.

The failure to observe this difference has strong consequences for the operation of the overall system. One trenchant observation in Hayek's *The


45 FRIEDRICH HAYEK, THE ROAD TO SERFDOM 74 (1944).

Takings, Commons, and Associations

Road to Serfdom was that the highway system was a sensible paradigm of government action because it was content to determine the rules of the road and not the composition of the traffic. Writing at the same time, but with a very different vision, Justice Felix Frankfurter authorized extensive comparative hearings for the allocation of broadcast frequencies on the ground that the test of "public interest and convenience" required the government to go beyond the rules of the road in order to determine the composition of the traffic. Yet in the sixty years since that decision has come down, no one has developed any coherent metric to decide which applicant should obtain what frequencies for what use. As a result, political struggles have ensued in which large elements of spectrum value are dissipated with pointless comparative hearings—which often result in a resale by the winner one year after the original license has been granted.

The problem of creating this form of commons becomes more complicated once the full realization of the asset value depends on additional investment. The traditional rules of the road, among users, could apply to a deer path or more often, to rivers and streams that allow for transportation or navigation in their natural state. The only additional rules needed were those that prevented blockage of free passage by abutting landowners, including riparians or third parties. But once paths have to be paved, and rivers have to be dredged, sound rules of the road will not suffice. In addition, leaving the resource as a public commons makes it difficult to raise the needed capital. Some private rights (such as those to erect mills along a river) have to be carved out of the commons to create a mixed system. Alternatively, a system of taxation or tolls has to be developed in order to finance a process that in all likelihood needs

47 HAYEK, supra note 45.
48 Id. at 74. Hayek notes: The distinction we have just used between formal law or justice and substantive rules is very important and at the same time most difficult to draw precisely in practice. Yet the general principle involved is simple enough. The difference between the two kinds of rules is the same as that between laying down a Rule of the Road, as in the Highway Code, and ordering people where to go; or, better still, between providing signposts and commanding people which road to take. The formal rules tell people in advance what action the state will take in certain types of situation, defined in general terms, without reference to time and place or particular people.

49 See NBC v. United States, 319 U.S. 190, 215-16 (1943). The Act itself establishes that the Commission's powers are not limited to the engineering and technical aspects of regulation of radio communication. Yet we are asked to regard the Commission as a kind of traffic officer, policing the wave lengths to prevent stations from interfering with each other. But the Act does not restrict the Commission merely to supervision of the traffic. It puts upon the Commission the burden of determining the composition of that traffic. The facilities of radio are not large enough to accommodate all who wish to use them. Methods must be devised for choosing from among the many who apply. And since Congress itself could not do this, it committed the task to the Commission.

some degree of centralization in its operation. Here is not the place to go into the many difficulties that were incurred in seeking the ideal rules for developing dams and bridges during the nineteenth century. Suffice it to say that the creation of these early network industries raises many of the problems that are found in connection with the telecommunications industry. How is it possible to meld together disparate elements, some of which fall under private ownership, into a comprehensive whole?

The same question applies with equal force to the area of intellectual property noted above. The entire system of IP rights has two key components that fall squarely into the public domain. First, certain elements are not subject to reduction to private ownership but remain part of the overall commons. The best illustrations of this IP limitation are ideas, which are expressly exempt from the patent law (covering inventions), the copyright law (covering writings), and trademark and trade name law (providing protection only for the nonsemantic components of language). Ideas are the single most essential component of any communications network, so that it becomes quite impossible to think of how social life could take place if a royalty were owed each time two words were combined in a sentence or two numbers into a total. The blockade potential from the privatization of ideas is enormous. Further, the additional incentive to produce new words or ideas is minimal, given the other incentives and reward structures, such as prizes, that are in place. There is more precision than platitude in the observation that it is language that allows us to forge a common identity.

The second element of the public domain arises when writings and inventions that were once private property fall into the commons on the expiration of the legal protection. Thus, all individuals may use the now unprotected material at zero price, so that the burdens of licensing agreements are effectively eliminated. In turn, all public domain property becomes part of an intellectual platform on which the next generation of competition among private firms can take place. The creation of rules that allow for the rapid creation of IP rights, therefore, not only produces benefits during the period that they are privately owned, but also speeds up the time at which these items will fall into the public domain. Further, the public domain is not like the fishery that can only be preserved by limitations placed on access. Rather, it is

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51 For the procedures in dealing with mills, see, for example, Head v. Amoskeog Manufacturing, 113 U.S. 9 (1885); for discussion of these issues in the context of mills, see Epstein, A Clear View of The Cathedral, supra note 38, at 2113-15.
53 See, e.g., Int'l News Serv. v. Associated Press, 248 U.S. 215, 234 (1918) ("The news element—the information respecting current events contained in the literary production—is not the creation of the writer, but is a report of matters that ordinarily are publici juris: it is the history of the day.").
54 For an exhaustive discussion of the public domain, see the symposium on such in the Journal of Law and Contemporary Problems, 66 LAW & CONTEMP. PROBS. 1-483 (2003).
inexhaustible in the sense that the nonrivalrous consumption of public domain ideas by one person does not preclude or diminish the opportunities for their use by another. The marginal cost of the next person using the work is zero.

That said, however, it is important not to romanticize the functions of the public domain. The public domain does not encourage any high level of cooperation among individuals, who have unlimited access to its contents. It only facilitates voluntary cooperation; it is not a substitute for it. There is a deep sense in which the idea of a "creative commons" is an oxymoron. The commons is a source of supply at zero price for all those who want to partake of it. The creation takes place only through the actions of individuals and firms after the removal from the commons by conventional means, at which point they can receive a return on any investment.

D. Summary

At this juncture it is useful to take stock of the overall situation. No comprehensive social system can depend on the use of a single type of property regime for all occasions. In equilibrium, three types of systems are needed. Voluntary cooperation via contract is the first type. The right to exclude is critical, for deep cooperation is only possible if a small, self-selected subset of the total population is involved in a common venture. It is critical, therefore, that all parties be allowed to choose with whom they work and to set up the mixture of legal and social sanctions that will determine how much each will contribute to and withdraw from the common arrangements. The second of these systems involves the use of forced exchanges in which property is taken from one person for use by the state or another individual. These forced exchanges will work best to overcome holdout problems that block the formation of common networks. The eminent domain process, however, tends to break down when it must be frequently invoked over assets with small values and distinctive characteristics. Likewise, it breaks down when some measure of continued cooperation is required between those individuals whom the state has brought in privity with each other by the use of public force. Last, in many cases the coordination difficulties created by a system of private property are so massive that resort must be had to a commons.

Some commons (e.g., language) are so easy to create and have a virtually infinite capacity that we scarcely think of them as a commons, which is why they work so well. Other physical commons (for example, running water) may be created by nature, for which man-made rules of the road are needed. These commons can allow for some private uses. Some removal of water in greater or lesser amount is allowed under different schemes of water rights. Still other types of commons require human intervention and investment for their creation, as with highways, railroads, and telecommunications networks. These commons require a higher level of integration and cooperation than is required between neighbors on privately owned property. However, they will work best...
when simple anonymous rules allow for the free flow of traffic back and forth across the network, without the creation of deep and specific relationships characteristic of voluntary associations.

Seen in this light, the central blunder of the 1996 Act should now be obvious. It uses state force to try to form deep and specific arrangements that are only likely to succeed when voluntarily formed. The network structure will only work when the government's eminent domain power is limited to forging connections between independent facilities. The government must stop decreeing ersatz cooperation at the barrel of a gun wielded by the FCC and the state public utility commissions, especially under regimes that do not reflect historical costs. The choice of the wrong paradigm offers the most powerful explanation for the recurrent failures of the 1996 Act. The next Part explains these points in greater detail.

II. The Structural Flaws of Telecom Regulation

As is well understood by the drafters of the 1996 Act, telecommunications is the quintessential network industry so that competition between firms cannot take place without some measure of cooperation. In turn, this cooperation requires some measure of government regulation. The only question worth asking is which form of regulation minimizes the distortions attributable to private opportunism and government overreaching. Here the nub of the difficulty rests in the decision to require the forced sale of UNEs and, by administrative interpretation, UNE-Platforms. UNE-Platforms are best understood as "bundled unbundled network elements." (They might better be called BUNE rather than UNE-Platform or UNE-P, but I will let the point pass.) The level of microdivision here should be evident from the list of the seven separate elements contained in each circuit: the local loop, the network interface device, switching capability, interoffice transmission facilities, signaling networks and call-related databases, operations support systems functions, and operator services and directory assistance. Further, additional elements are available on a case-by-case basis. It should be noted that the definitions were not limited to elements that were necessary to overcome the interconnection problem that characterizes a network industry—which would exclude such matters as operator services and directory assistance. However, in light of the broadness of the statutory definition, the Supreme Court treated each of these elements as, in principle, fair game for a regime of forced sale subject to government valuations. In addition, it concluded that the new entrant could rely exclusively on elements so acquired from the incumbents under the so-called "all elements" rule, "which allows competitors to provide

57 Id.
local phone service relying solely on the elements in an incumbent’s network.”

The regime in question violates all three conditions for the successful application of a regime of forced takings. First, the number of separate transactions is uncommonly large, in that any application by any CLEC may apply to any particular UNE. Under this definition, even components of any given local loop could be subdivided, and each of them subject to a separate and distinct legal regime. The administrative costs of keeping track of the various items alone are high, and the questions of valuation associated with the sale of these elements is difficult even under the best of circumstances. Part of the cost of running this system is organizing the transfers of the UNE-P or UNE. However, there is a much larger question as to whether these valuations can measure the true cost of compliance, especially when this cost varies with the nature and the number of requests for the transfer of these elements.

To understand the nature of the problem, it is useful to recall the two distinct methodologies that have been developed over the years to determine prices of regulated public utilities. The object in both cases is to set prices for an industry that has received some monopoly protection. The task itself involves the delicate negotiation between two obstacles. When the rates are set too high, the firm continues to enjoy monopoly profits, with the deadweight losses associated with such. Conversely, if the rates are set too low, the firm is subject to a confiscation of its invested capital, a taking in and of itself. That prospect takes place because of the usual high fixed cost, low variable cost configuration in these industries. It requires the regulated firm to make large expenditures of capital up front, before it can recoup any fraction of its initial cost in the rates that it charges to its customers. The invocation of the takings clause is designed to prevent the state from doing a “double-take” whereby a firm is lured into making substantial investments at time one only to be told at time two that it will receive rates that will allow it to only cover its variable costs. Thus, it does not pay for the firm to withdraw from the business (it will lose more by withdrawing than by remaining in business even though it still loses by continuing to operate), but the rates will not be sufficient to allow the recovery of its fixed costs. The integrity of the rate structure depends on keeping at the back-end the promise that was made at the front-end.

The next question concerns the way in which the rate of return is calculated. Traditionally, two different ways have been used to determine the rate base. One, which is associated with Federal Power Commission v. Hope


Natural Gas, is to take all capital that is invested in the business and to assume that it earns a return regardless of how it is deployed. The firm is in effect spared exclusions from the rate base for expenditures that provide no benefit to customers, but receives in exchange a lower rate of return because the risk of mistaken investment falls on the rate payers. In effect, the returns in question are judged by the simple issue of whether the “bottom line” is sufficient to cover costs plus a reasonable rate of return on the full investment. The intermediate steps used to establish that return are ignored. The advantage of this system is that it offers a clear delineation of the rate base and a relatively simple means to calculate the permissible rate of return. Its disadvantage is that it does not offer strong incentives to economize on initial costs. The converse (and earlier) system announced in Smyth v. Ames is one that incurs greater costs. It determines which fraction of the initial investment is used and usable in the business, but then allows the firm a higher rate of return because it bears the risk that some capital will be excluded from the rate. The short and simple truth is that the balance of advantage between these two systems is sufficiently close that the current constitutional strictures of the Supreme Court allow the regulator to adopt either of these strategies or some combination thereof.

The problems of determining this rate base do not disappear under the new competitive regime when forced sales at UNE or UNE-P rates are allowed to competitors and not customers. In principle, the question of confiscation could still arise, as would be the case if the regulator dictated that all rates should be set at $0.01. The shift in regulatory context so that rates are now set for transfers to competitors instead of consumers does not, therefore, change the basic problem: determining how the ILEC could recover its costs, without reaping a monopoly profit, if each and every UNE were acquired by a potential CLEC. The constitutional standard should allow the regulated firm to recover its cost of capital plus a reasonable rate of return, as adjusted for who bears the risk. On this question, the ILECs argued in Verizon Communications v. FCC that the only way in which this result could be achieved is by computing the rate base on the historical costs of their networks. Only this system would allow the recovery of full costs on the assumption that each element were disposed of by a forced sale to the CLEC so that the incumbent remained a shell of its former self. Yet the moment the question is put in this way, the same issue that bedevils ordinary ratemaking must be revisited. Who takes the risk of investments that did not turn out to be profitable? That issue is of special importance in this context because the rapid level of technological improvement in the industry implies that, for any given network, economic depreciation is more rapid than the physical deterioration. In dealing with this

61 320 U.S. 591 (1944).
62 169 U.S. 466 (1898).
64 535 U.S. 467, 495 (2002).
question, the FCC, in its effort to “jump-start” competition, opted for the TELRIC, which essentially calculated the cost base on the most efficient network possible at the time of the initial transaction. The effect of this rule was to treat the rate base as though, in the spirit of Smyth v. Ames, only used and usable expenditures were included. However, this calculation is unfortunately married to the low rate of return that would be appropriate if the CLEC, and not the ILEC, bore the risk of capital depreciation under Hope Natural Gas.

In my view, the TELRIC system wrongfully saddles the incumbents with the unsatisfactory element of each of the two basic systems of rate regulation. The narrow rate base of Smyth receives the low rate of return of Hope Natural Gas. It is the worst of both rates for the ILEC. The TELRIC methodology was unsuccessfully challenged in the Verizon case on administrative law grounds, namely, that the method in question was inconsistent with the statute whose language authorized a recovery based on “cost,” which the incumbents claimed had to refer to the “historical” costs that were actually incurred to create the network. The rejection of that position was reached on the grounds of Chevron deference to the decisions of administrative authority. In essence, the Court held that the term cost could mean either historical or forward looking, so that the agency was given full discretion to decide which definition better served to implement the purposes of the Act. The Court further noted that there was enough slippage in the TELRIC system that the regulated firms could do a bit better than they supposed. Yet it is supremely odd to say that a system makes sense because it is incapable of achieving its own stated objectives. Nonetheless, the constitutional issue was not addressed because the potential uncertainties in the application of the TELRIC system in individual cases precluded a facial challenge of the ruling. The upshot is that the constitutional challenge was decided de facto, for the same forces that led to the adoption of Chevron deference on the statutory issues point to the acceptance of the rational basis methodology under which it will be concluded that the FCC is entitled to full deference in the implementation of a complex scheme.

The impact of that decision, however, undercuts any possibility that cooperation could take place between the two sides. The ILECs regard the pricing scheme as confiscatory and the arguments made on the scheme’s behalf

65 Id. at 497-98.
66 Id. at 501-03 (citing Chevron, U.S.A., Inc. v. NRDC 467 U.S. 837 (1984)).
67 Verizon, 535 U.S. at 504-05. One gap in the system was that the TELRIC requirement did not allow one to reconfigure the location of the defendant’s wire centers, thereby removing one potential degree of freedom under the TELRIC standard. Id. at 505. The second was that the incumbents would benefit from the “lags in price adjustments” owing to the fact that this market is not perfectly competitive, given that rates are set through arbitration agreements for three to four-year terms and prices cannot immediately adjust in response to more efficient entrants. Id. at 505-06. And finally, the new entrants could not react quickly enough to demand the instantaneous price reductions. Id. at 506.
68 Id. at 523-28.
69 For a straw in the wind in this direction, see Eldred v. Ashcroft, 537 U.S. 186 (2003).
as an elaborate procedural smokescreen. The CLECs regard the question of price as settled, and treat noncooperation as a deviation from the required legislative standard. There is no question that the full historical cost of the system could not be recovered over the life of the asset if all UNE-Ps were taken over. The previous depreciation allowed and the subsequent payments were less than the original cost. However, the implicit mandated subsidy for all new entrants under the TELRIC rules does not create any windfall profits to the CLECs, which receive it in the name of competition. That is, the benefits in question are open to any CLEC, so that none is able to use the below-cost system of prices to procure a competitive advantage over rival CLECs. All receive the same implicit subsidy. But by the same token, the system of transfer eliminates the incentive that any new entrant has to engage in facilities-based competition. The creator of the facilities could not compete with their competitors, who are allowed to use it at the lower prices that are made available by the generous pricing of UNE-P—the gist of the economists' letter to the President. The upshot is that this regime of cross-subsidies led to major distortions in the investment decisions of all parties. The ILECs will think long and hard before making any investment in infrastructure if they know that it can be condemned at below historical cost by any new entrant. The system of conscious subsidy, therefore, retards the emergence of any sustainable competitive equilibrium. The situation is but a rerun of that which happens in many takings contexts. The usual rules of compensation for the "property taken" result in systematic undercompensation of the property owner. The owner is denied any compensation for consequential damages and is thus left worse off after receiving compensation than it would have been if no taking had occurred. Government mispricing produces long-term allocative mischief.

The situation is complicated when we look, however, at the question of which UNEs are subject to acquisition. The problem here is identical to that associated with the public use problem under the takings clause. No matter what the compensation formula, the state cannot take property unless it is for a "public use." The judicial interpretation of that phrase has a long and storied history, but the bottom line is that the Supreme Court has proved reluctant to treat it as a strong barrier against the exercise of the takings power. Rather, it prefers to allow the takings to go forward under a rational basis test whenever some "conceivable" public use may be presented. The interaction of the below-market compensation formula with the liberal public use requirement expands the class of takings by systematically insulating the government officials from some portion of the costs associated with the taking. The more frequent the takings, the greater the allocative distortion. This sad truth is

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70 For discussion, see RICHARD A. EPSTEIN, PRINCIPLES FOR A FREE SOCIETY: RECONCILING INDIVIDUAL LIBERTY WITH THE COMMON GOOD 297-318 (1998).
71 See Economists' Letter, supra note 9.
72 For discussion, see EPSTEIN, TAKINGS, supra note 23, at 50-56.
precisely what happens when the Court’s liberal public use rules are combined with its illiberal valuation rules.

The FCC faced the identical problem in its effort to draft the impairment regulations. Here the language of section 251(d) does not speak with magnificent clarity. The only clear point in the analysis is that the requesting carrier must cross a higher threshold if it seeks to acquire UNEs that are “proprietary” in nature, that is, those for which there is, for example, some special intellectual property protection. The standard applicable in those cases is that access to that proprietary element be “necessary.” In contrast, those elements that are not proprietary can be acquired if “the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.”

The clear implication is that a higher standard is required to force the distribution of those assets for which an incumbent can claim proprietary protection than for those which are not so protected. But that differential standard gives no information as to the location of either benchmark. For its part, the term “necessary” has a storied constitutional history, most notably in connection with the Necessary and Proper Clause of Article I of the Constitution. In McCulloch v. Maryland, necessary was held to mean (probably incorrectly) to refer only to the idea of “appropriate” for the occasion. This view was taken even though the ordinary meaning of “necessary and proper,” suggests dual conditions that are a good deal more stringent than those which Marshall embraced: namely, that the government action be both necessary and proper. Whatever the merits of the constitutional dispute, Marshall’s interpretation of “necessary” is not defensible in this context. It sets such a low bar for proprietary elements that the impairment standard of section 251(d)(2)(B) starts to read like the public use requirement in the Takings Clause. It is always satisfied regardless of the reasons for acquisition because there is some “conceivable” public benefit (even if there are also public inconveniences) that flows from jump-starting competition. At this point, however, the only clear sense that comes out of the endless judicial wrangles is that it is not possible to set either end point of the statute with precision. In principle, it looks as though every element that is included within network elements should be available to a CLEC under at least some

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75 § 251(d)(2)(B).
76 U.S. CONST. art. I, § 8, cl. 18. “To make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any Department or Officer thereof.” Id. For one recent originalist interpretation, see Randy E. Barnett, The Original Meaning of the Necessary and Proper Clause, 6 U. PA. J. CONST. L. 183 (2003).
77 17 U.S. 316 (1819).
78 Id. at 413-15.
circumstances, just as they should be excluded under others. But if the meaning of the term “necessary” or “impaired” is read in a coherent fashion, there is no reason for the ILEC ever to supply any element that could be competitively obtained. Quite simply, operator support, or directory assistance, for example, could always be separately provided, since they involve no question of interconnection. Therefore, neither could meet either the higher “necessary” or the lower “impaired” standard. But by the same token, it is beyond belief that these items should have been put on the list of network elements to be priced if they could never be subject to an FCC order. Courts should not read terms out of statutes or make them superfluous. As the Supreme Court noted in *AT&T Corp. v. Iowa Utilities Bd.*\(^8^0\), the first FCC Report tried to finesse this hopeless difficulty. The Court noted:

In the general statement of its methodology set forth in the First Report and Order, the Commission announced that it would regard the “necessary” standard as having been met regardless of whether “requesting carriers can obtain the requested proprietary element from a source other than the incumbent,” since “requiring new entrants to duplicate unnecessarily even a part of the incumbent’s network could generate delay and higher costs for new entrants, and thereby impede entry by competing local providers and delay competition, contrary to the goals of the 1996 Act.” First Report & Order § 283. And it announced that it would regard the “impairment” standard as having been met if “the failure of an incumbent to provide access to a network element would decrease the quality, or increase the financial or administrative cost of the service a requesting carrier seeks to offer, compared with providing that service over other unbundled elements in the incumbent LEC’s network.”\(^8^1\)

There are at least two difficulties with this effort. In the first place, it does nothing to guard against the real risk that the rates required under the Act will be below the cost to the incumbent. After all, the larger the subsidy, the more rapid the deployment of the network. But at this point, the FCC could be required to say that any positive charge for network elements counts as an impairment, which is an absurdity. Since the FCC also allowed the CLEC to pick and choose particular elements in putting its own network together, it necessarily gives a new entrant an advantage over the incumbent.\(^8^2\)

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81 Id. at 388-89 (citations omitted).

82 Id. at 395. The FCC rule reads: “An incumbent LEC shall make available without unreasonable delay to any requesting telecommunications carrier any agreement to which it is a party that is approved by a state commission pursuant to section 252 of the Act, upon the same rates, terms, and conditions as those provided in the agreement.” 47 C.F.R. § 51.809 (1997). In effect the rule allows the CLEC to get each element at the lowest price it has been supplied to anyone else, which means that no sensible price concessions could be made in any one deal lest that same concession be supplied to everyone else. As the ILECs pointed out, if the first concession is made in trade for some other advantage, the second player gets the *quid* without have to supply the *pro quo*. See id. at 396,
those elements from the ILEC that are priced below market, and go to the market for any ILEC element that is priced higher than it. The entire system, therefore, becomes a giant set of options for the new entrant, and a huge net drain for the incumbent. But however easy it is to criticize this definition, it is not possible to suggest any narrower tests that do everything required of them under the statute: the FCC has to design a regime that respects the difference between "necessary" and "impaired," places some limits on the CLEC's power to pick and choose, and has at least some circumstances in which all network elements are subject to the buying system. It is hard to be rational in the face of a scheme that makes no sense.

I can see no intelligent way to read the impairment language against the backdrop of TELRIC pricing. For it hardly makes any obvious sense to think that TELRIC pricing is required under section 252(c)(3) but that, at the same time, there are no cases in which that statutory option meets the impairment standard under section 252(d)(2)(B). The stakes are enormous for it now seems that either all, or no, ordinary UNEs are subject to the TELRIC regime. The effort to split the difference cannot be made operational. It is, therefore, appropriate to shed a tear for the FCC, for even if one does not think that it sought the best possible interpretation of the access language, the decision in USTA II does not quite deal with the point.\(^{83}\) It contains a long discussion on the question of whether the FCC is allowed to delegate the formation of the applicable standards to the state commissions. This delegation depends on a close reading of the applicable text, but raises no central issues of telecommunications policy. The key issue for long-term planning is whether anyone can articulate a set of standards that indicate which elements should be allowed to be coercively transferred. I have great doubts on finding such a set. At any rate, with the rise of intermodal competition from cable and Internet sources, it seems totally unwise to evaluate the question of entry on an element-by-element basis when a system wide intervention already in place is there to deal with the problem.

No one, of course, doubts that there will still be some obligations for interconnection with the new modalities or with new facilities conducted for traditional telephone lines. But note the key differences between the two approaches. The question of interconnection arose under the pre-1996 regime, for it was always necessary to transfer phone calls that were initiated from one of the Regional Bell Operating Companies (or RBOCs)\(^{84}\) and completed over

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83 United States Telecom Ass'n v. FCC, 359 F.3d 554 (D.C. Cir. 2004).
84 These were the seven local Bell phone companies that were created under the 1982 settlement. Originally these were NYNEX (New York and New England), Bell Atlantic, Bell South, Ameritech (the Midwest), Southwestern Bell, US West, and Pacific Telesis. Of these Bell Atlantic took over NYNEX in 1997 and then merged with GTE to become Verizon in 2000. Southwestern Bell first took over Pacific Telesis in 1997 and then Ameritech in 1999, renaming itself SBC in 2002. US West
long distance lines by a second. But a simple bill-and-keep regime provided a useful focal point because it allowed for connection at the system-wide level without the need to determine the cost structure of either party. The interconnection agreement has the enormous advantage of being perfectly symmetrical, as a formal matter, between incumbents and new entrants and between old and new modalities of transportation. To be sure, it does involve some element of subsidy insofar as a new start-up, for example, will have more to gain from access to the incumbent's subscribers than the converse. But as the number of new entrants increases, and as these entrants gain market share, the size of any implicit subsidy will necessarily shrink. The entire process, therefore, does not permit state actors to alter the size of the cross-subsidy in order to tilt the balance of advantage in favor of their preferred supplier. To be sure, different suppliers on the overall grid may have different costs, such that those systems with higher costs will collect higher revenues in the short run. But again the situation is self-correcting because these firms run the risk of losing business to competitors who operate from a more efficient facilities base. Hence, there is no reason to try to equalize revenues between the parties. The system will work well so long as the traffic moves in roughly equal proportions in both directions. The efficient movement will avoid the heavy imbalance that used to apply to wireless/land line interactions. The higher cost of cell-phone telephony meant that these phones were used largely to initiate, but not receive, calls (which is no longer the case now that the cost of a cell-phone minute, sans regulation, has dropped from $0.56 in 1996 to about $0.11 last year\textsuperscript{85}). But that slight hitch could be cured, if it were a problem, by allowing each carrier to charge its customers for all calls, whether sent or received, at which point the rates would adjust downward to reflect the larger cost base. The key point is that these interconnection agreements can expand to cover any number of carriers without any alteration in the basic way of doing business.

That pattern of behavior cannot exist when UNEs are for sale. At this point, all the transactions are asymmetrical so that the valuation issue remains an obstacle. The more skewed the prices, the greater the pressure on the access rules under the 1996 Act. In addition, the asymmetry creates a fundamental business problem when large numbers of CLECs enter the market. Normally, it is appropriate to think the more the merrier. But since these are forced interactions, open entry raises the costs to the incumbents to service huge numbers of involuntary trading partners. The proliferation of accounts increases the costs of compliance and the likelihood of error: most businesses seek to consolidate their supply chains, not to expand them indefinitely. The problems are only exacerbated because of the constant struggle over what is or is not

\footnote{was taken over by Qwest in 2000, and so renamed. Bell South is the only company that survives in its original form. See Ken Belson, \textit{Dial M for Merger}, \textsc{N.Y. Times}, Jan. 28, 2005, at C1.}

\textsuperscript{85} \textit{Id.}
included in the underlying agreement, in which the grievances can move sharply in both directions.

Here are a couple of examples of the basic problems that can arise. The basic agreements between the ILECs and the CLECs are complex affairs that have to deal with all sorts of service-related risks, the last kind of issue that is appropriate for a state-coerced interaction. The enforcement of these arrangements depends on the articulation of a Performance Assurance Plan (PAP), which contains a full range of terms that deal with every aspect of the service arrangement. These agreements are, by virtue of their complexity, a fertile ground for disputes over the performance standards for hookups—how quickly a party gets a dialtone—and the payment and penalty standards in question.

The New York Public Service Commission’s 2003 Report on Bell Atlantic’s (now Verizon) proposal for an Amendment to the basic PAP is a case in point.\(^6\) Virtually all the issues faced there are the sorts of negotiated matters that are now subject to external commands. Thus, one key debate concerns the statute-of-limitations periods during which the CLECs could challenge the Verizon bills.\(^7\) The billing issue is tied up with the performance issue, which is itself hotly disputed, so that any short statute of limitations does not give the CLECs the time needed to marshal the evidence about the inaccuracy of the bills. That issue is further complicated because the Public Service Commission establishes various penalty provisions for improper service calibrated with reference to anticipated profits, so the question arises whether penalties could be collected when there were still unpaid bills.\(^8\) The point is complicated because of the large risk of bankruptcy, at which point the late-paid bill becomes an unpaid bill that cannot be collected at all. But there is no provision that allows for service to be cut off if bills are late, or that requires payments in advance to control against the risk. In a voluntary market, there is no rule that requires these penalties for services to be provided, but the situation will likely resolve itself so long as both sides wish for the cooperative arrangement to continue. But in those situations, the providers of services could protect themselves by contract with an insistence on advance payments, guarantors or other forms of security, all of which are conspicuously missing from these mandated arrangements.

The New York Public Service Commission also addressed the question of what absolute performance standards should be used to see that there was performance parity. This parity depends on absolute scoring systems and some assessment of the seriousness of certain breaches that were involved in long-
term provision of services. This assessment required the need to trade off type one against type two errors, and to make sure that the penalties involved were tied to the likely frequency of breach. The obligations in question must deal with all aspects of ordering, installation, performance, and repair. Once again, it is just not possible to be confident that the arrangements in question do not contain some implicit subsidy one way or the other. But it is clear that the variation in performance works in the CLECs’ advantage because only they can pull out of the deal in whole or in part, if the terms run against their interests.

The Public Service Commission also had to face the question of how the interconnection obligations should be modified, if at all, to take into account strikes against Verizon by the telecommunications union. On the one side, Verizon wanted some excuse doctrine. On the other, the CLECs wanted rigorous enforcement of the nondiscrimination provision, which, with hundreds of CLECs, could be difficult to perform in times of stress. But with the element of distrust, the parity requirements were maintained, even if some absolute standards were subject to possible modification in light of extreme circumstances. It is anyone’s guess whether these terms would have been incorporated into a voluntary agreement for the resale of UNE-Ps. But that is the entire point: once the sales of UNE-Ps are required, there can be no voluntary agreement, making it impossible to know whether the terms in question, and the allocation of risks stipulated, turn out to be efficient. These forced exchanges are no better than the compulsory licenses for intellectual property.\(^9\)

In the face of these and other complexities, the allegations that arise in litigation are just what one would expect to see. The situation in telecom is analogous to rent control in New York, in which the feuds between landlords and tenants are all driven by the simple fact that the statutory regime requires leases, including renewals, at prices that are below market value. Thus, there is no shared surplus that will help the two partners overcome the routine obstacles they face.\(^90\) The CLECs will argue that the services in question are provided slowly to stanch the flow of lost customers. The ILECs will argue that the CLECs are slow in paying bills. In response, the CLECs will stir up trouble by lodging inappropriate complaints against the ILECs. Around the vicious cycle goes. There is nothing that says that both sets of allegations cannot be true at the same time, and the resolution of particular disputes is not within my competence or knowledge. But the basic dynamic insures that these grievances will pile up without end. The transfer of UNE-Ps is a complex service arrangement, not a simple sale. These arrangements require large measures of cooperation from both sides. This cooperation is just not obtainable unless

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89 See text accompanying notes 33-40.

90 For discussion of these problems with rent control, see Richard A. Epstein, Rent Control and the Theory of Efficient Regulation, 54 BROOK. L. REV. 741 (1988). For other distortions created by the system, see Milton Friedman & George J. Stigler, Roofs or Ceilings: The Current Housing Problem, in RENT CONTROL: MYTHS AND REALITIES (The Fraser Inst. ed., 1981).
each side has the right to withdraw from a transaction that it does not like. The failure to grasp that one simple truth does more than any complex econometric model to explain how strong regulatory oversight in a regime of forced interactions has led to a meltdown of the telecommunications industry, a meltdown that shows no signs of abating.

III. Conclusion

The predictions of meltdown from forced interactions through the takings power have been borne out in the various lawsuits that have arisen between unwilling partners. Thus, one Verizon suit alleges that Covad had instructed its employees to file false trouble reports about Verizon services in order to aid its antitrust and regulatory activities. The alleged false reports included claims of incompetent training and deliberate subterfuge of the operation. However, an examination of the papers in support of that complaint tells a very different story. Verizon is charged with stonewalling the co-location of facilities, requiring Covad to build unnecessary facilities, overcharging for power, refusing to test loops or to furnish the correct loops, and generally abusing legal and regulatory processes to frustrate entry. In another suit, Verizon brought an action against ATX Communications for nonpayment of bills for wholesale services, which was met with an antitrust claim that it had received insufficient assistance in its activities. Verizon for its part claimed that the nonpayment was a conscious part of ATX's business strategy.

I refer to these cases not because I have any inside information of whose claims are true and in what proportion. The questions of fact are not for any academic (or consultant, as I have from time to time been for Verizon) to resolve. Rather, my sole point is that it is important to isolate the institutional setting in which this breakdown of trust has taken place. And for that there is one and only one diagnosis: forced associations, liked forced marriages, do not work. One side has a subsidy from which it will not easily back off. Another labors under a burden that it will take steps to remove. There is no front-end goodwill to ease the blow, and no way for any outsider to discover which allegations of foul play are true or false. One way in which to ease this pain is to change the pricing mechanism so that the implicit subsidy is eliminated, at which point the CLECs will peel off into facilities-based competition. Another is to take the firm position that the rise of Internet, cable and wireless technology means that we should concentrate solely on forging

networks not swapping UNEs. The latter results in a vast simplification of the overall structure and could be achieved by administrative decisions that use a high, but defensible, impairment standard under the current law. The better way to go is to undo the legislative decision that was doubtful in 1996, but clearly wrong today. Allow only interconnection, and kill the purchase or lease of any network elements. Here is yet again another case in which a simpler rule does better in a complex world.