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### **UNIVERSAL SERVICE: VAIL'S ANSWER TO DUAL SERVICE**

BY THE MIDDLE OF THE DECADE, both the telephone and competition had spread through American society widely enough to spark policy debates that transcended a particular locality. Discussions of telephone competition began to seep into national forums, much as the issue of railroad regulation had done twenty years earlier. In order to shape the debate to their advantage, Bell and the organized, commercial independents mounted nationwide public relations campaigns and found outlets for their views in magazine articles, advertisements, speeches, and books.

It was at that juncture that Theodore Vail, newly re-installed as President of AT&T, began to promulgate the policy of “universal service.” The term never appeared explicitly before that time. Nor had anyone inside or outside of the Bell system publicly defined such a comprehensive vision of the telephone industry and the respective roles of Bell, the independents, and the government. That being said, it is important to resist the temptation to approach Vail’s universal service doctrine anachronistically. Universal service did not mean rate subsidies to make telephone service more affordable. It meant the elimination of fragmentation and the unification of telephone service under regulated local exchange monopolies. As such, it was first and foremost a response to the situation created by access competition, a response that provided the Bell system with a critique of dual service and an appealing alternative. This chapter explores Vail’s elaboration of the doctrine and the context from which it emerged.

#### ***Dual service: The public debate***

Fragmentation of telephone users, particularly business users, had played a critical role in political defeats suffered by independents in large cities. In June 1905 the Merchants Association of New York issued a report to the city franchising authority expressing adamant opposition to franchising any independent telephone company. “The effect of two rival telephone systems in one

city is to divide the population into two parts, without means of telephone communication with each other except at excessive cost.” Dual service “compels a choice of two evils: either half service or a double price.”<sup>215</sup> The New Orleans Board of Trade came to almost identical conclusions in its report of 1908.<sup>216</sup> Similarly, an assortment of user groups in Chicago had opposed the franchising of a competing telephone company in 1907 because of the inconveniences of dual service. The Telephone Users Protective League, which described itself as a federation of “28 of the largest and most important business and commercial associations in Chicago,” sent a resolution opposing dual service to the Chicago City Council.<sup>217</sup> The Chicago Federation of Labor, claiming to represent “large numbers of telephone users,” declared that “duplicate telephone systems in this city would be a calamity to all users.”<sup>218</sup>

The independent trade press affirmed that business users in the top and middle of the communications hierarchy often opposed the introduction of dual service. “It is the merchants and business men of a community, newspapers, and other personal and impersonal leaders of public thought that are generally found in the forefront of the opposition to the ‘nuisance of two systems’ in towns where competition is first suggested,” noted the *American Telephone Journal*.<sup>219</sup>

The Bell organization did everything it could to reinforce those complaints about fragmentation. One of the earliest entries in the national debate was an article in *The Atlantic* in 1905 entitled “Telephone Development in the United States,” by F.W. Coburn.<sup>220</sup> Although no direct proof that Coburn was Bell-funded is available, the magazine was published in Cambridge, Massachusetts, near American Bell headquarters, and took an unambiguously pro-Bell stance. The author began by recounting the extraordinary growth of telephone usage and long-distance interconnection. Engineers, to whom he referred in tones approaching reverence, were projecting a telephone penetration rate of one telephone for every five households in the near future. In the not too distant future, Coburn claimed, the telephone would be within the reach of everyone and a “great national system” would “enable everybody to reach practically everybody else anywhere in the United States.”

What Coburn refused to admit, or did not understand, was that the goal of universal telephone coverage had only been brought within reach because of access competition. Prior to the stunning progress in telephone penetration and the geographic scope of the network in the preceding ten years, an article such as his could never have been written. In the author’s presentation, however, those impressive advances were attributed to *expert engineers*, not to business rivalry. Indeed, the very existence of independent companies was denounced as an obstacle to “that orderly development of the telephone utility upon which the engineering experts are basing their estimates.”

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<sup>215</sup> DELOS F. WILCOX, MUNICIPAL FRANCHISES Vol. I 240 (The Gervaise Press 1910).

<sup>216</sup> *Id.* at 241.

<sup>217</sup> “The greatest possible inconvenience and unnecessary expense to telephone subscribers would result from the existence of two competing telephone systems in Chicago.” Chicago City Council, Committee on Gas, Oil and Electric Light, Communications, etc., 2023-24 (Nov. 4, 1907). AT&T-L&R.

<sup>218</sup> *Id.* at 2024-25. The Labor Federation also objected to the Bell policy of refusing to interconnect with independent exchanges outside of the city.

<sup>219</sup> AMERICAN TEL. J. 238 (1906).

<sup>220</sup> *Telephone Development in the U.S.*, 96 THE ATLANTIC 644 (Nov. 1905).

The only “proper reason” for the independents’ existence was to occupy territories which no Bell company had ever preempted, and even then their presence was justifiable only when they agreed to restrict themselves to local service and rely exclusively on Bell to provide the long-distance connections.<sup>221</sup> The author condemned dual service as the cause of “manifold inconveniences” and “protracted irritation on the part of citizens:”

If one is a user of the Bell telephone, while one’s correspondent is a user only of the service of an independent company, the two people are still as far apart as if Mr. Bell had not invented the telephone. The only remedy in such circumstances is expensive and cumbersome; each man must use the service of both companies.

The *Atlantic* received so many outraged letters responding to the Coburn piece that it decided to give an independent spokesman equal time. The response, however, was poorly conceived.<sup>222</sup> It devoted most of its argument to a plodding discussion of other inventors besides Bell who had, allegedly, devised a telephone—an irrelevant issue by 1905.

A year later, the *Bulletin* of the League of American Municipalities began to carry articles by one H. J. Gondon condemning telephone competition.<sup>223</sup> The League was an association of reform city officials based in Des Moines, Iowa. Its pages explored and advocated the new managerial techniques pioneered by the progressive movement: city government by commission, municipal ownership or regulation of public utilities, the elimination of bribery and corruption, etc. Its strongest ties were to city governments in Kansas, Nebraska, and Iowa.

The independent trade publication *Telephony* responded vigorously to the charges in the *Bulletin*, denouncing its author as a “Bell hireling.”<sup>224</sup> Bowing to the pressure of the organized independents, the League’s *Bulletin* ceased its criticism of telephone competition and reprinted a speech by Francis Dagger, a Canadian advocate of competition, in the August 1906 issue. Dagger pointed out how competition had advanced the development of telephony, lowered rates, and improved service. The conflict probably made the midwestern urban reformers uncomfortable. All of their instincts led them toward expert planning: competition in utility services was wasteful and chaotic, regulated monopoly was the ideal. But they were also critical of big corporations and in favor of locally responsive government, which tended to make them sympathetic to independent, local companies.

The independents did not have Bell’s nationwide public relations organization, but they did not do badly. They relied on the trade press to monitor the public dialogue and used spokesmen

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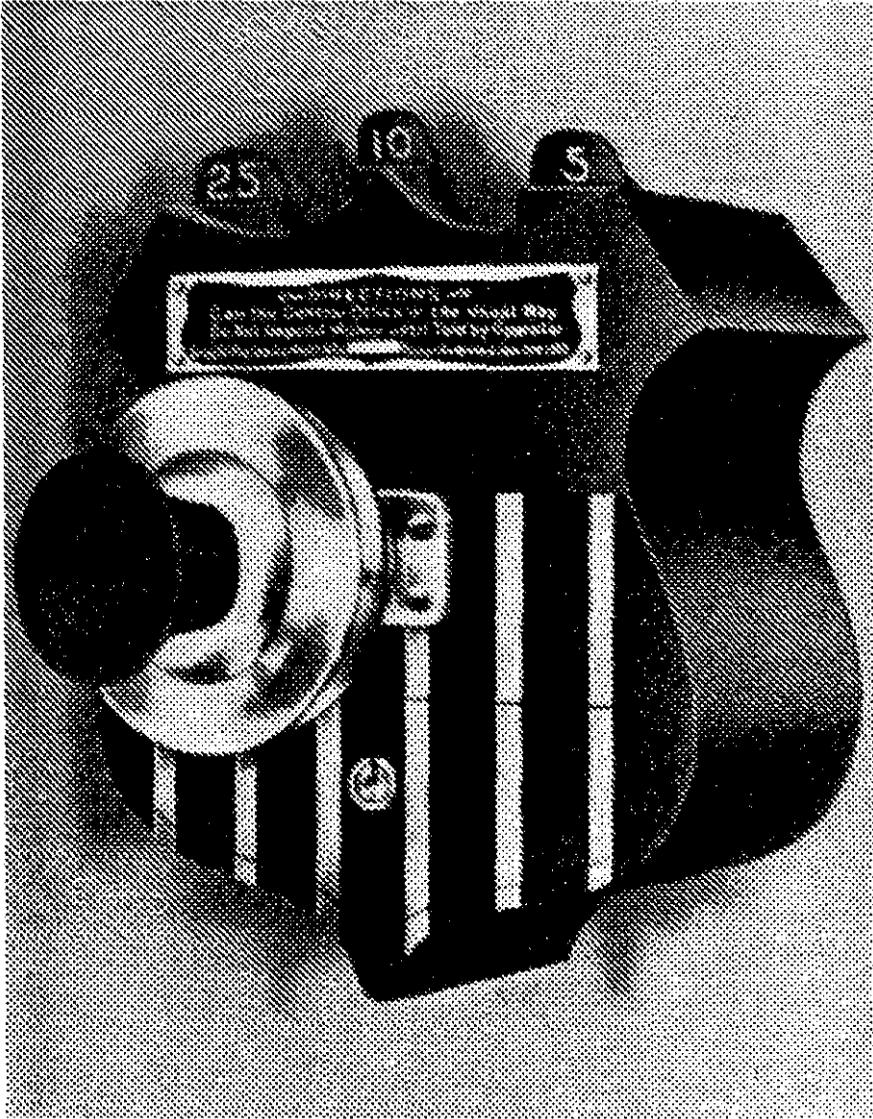
<sup>221</sup> That conception of the independents’ role in the industry mirrors so closely that of the Bell system itself that Coburn almost has to be viewed as a Bell propagandist.

<sup>222</sup> 97 *THE ATLANTIC* 236 (Mar. 1906).

<sup>223</sup> *BULLETIN OF THE LEAGUE OF AMERICAN MUNICIPALITIES* (Sept. 1904-July 1906). New York Public Library, Room 228. Group 10 document file Misc. #5. For *TELEPHONY’S* attack on the *BULLETIN* see 12 *TELEPHONY* 130 (Aug. 1906) and 12 *TELEPHONY* 186 (Sept. 1906).

<sup>224</sup> 12 *TELEPHONY* 130 (Aug. 1906).

FIGURE 8-1



from state and national associations to air their case in public hearings. Their national organization adopted a common symbol, “the shield,” to mark independent telephones and exhorted all its members to use it (see figure 8-1). In 1906, *Telephony* magazine published a propaganda book to present the independents’ side of the controversy. *A Fight With an Octopus* was written by Paul Latzke, author of popular magazine articles romanticizing industrial success. The essays making up *Octopus* first appeared in serial form in *Success* magazine. The book extolled the independent movement as a story of the triumph of honest, enterprising Americans over a greedy, distant trust. The publishers of *Telephony* took care to make the book “high-grade, dignified and attractive” but also inexpensive enough to reach a mass audience.<sup>225</sup> It was sold in lots of 1,000 for thirteen and a half cents each.

Initially, the independent movement was put on the defensive by attacks on subscriber fragmentation. By 1907, however, it had developed a plausible and interesting set of counterarguments. Fragmentation notwithstanding, the rivalry for new subscribers had resulted in a net increase in telephone access for most users. Business users may have had to pay more in absolute terms for two subscriptions, but they were getting access to five to ten times as many subscribers for a price that was only a little higher than the rates of the monopoly period.<sup>226</sup> In Indianapolis, a business subscriber paid \$72 per year for access to 2,286 other users in 1898. Following the entry of the New Company, a business user who subscribed to both systems paid \$94 for access to 21,000 subscribers. The independents also cited indisputable evidence that competition had improved the service offered by the Bell companies.<sup>227</sup> Those benefits, they argued, were well worth the price of some fragmentation. Some independent spokesman responded that the very redundancy of which the business-people complained was of great value.<sup>228</sup> The availability of more than one channel into the office promoted safety and reliability.

A more thought-provoking argument pointed out that businessmen accepted fragmentation and duplication as a normal and unobjectionable product of competition in other communications-related areas. An analogy was drawn between telephones and newspapers as channels for gaining access to the public. At that time most cities had many competing daily newspapers. “What forces the business man to take two telephones?” asked Col. Powers of the Louisville Home Telephone Co. “The same thing that forces him to advertise his goods in two newspapers in a town instead of one-in order that he may reach the people.”<sup>229</sup> In theory, a newspaper monopoly would relieve the advertiser of the need to place duplicate ads in two or three

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<sup>225</sup> 12 TELEPHONY 155 (Aug. 1906).

<sup>226</sup> Independent Telephone Association, *Some Comments on the 1907 Annual Report of the AT&T*, cited in Wilcox, *supra* note 1, at 18.

<sup>227</sup> New York City Bureau of Franchises, *Result of Investigation of the Operation of a Dual System of Telephones in Various Cities* 8 (Nov. 21, 1906) Cited in Wilcox, *supra* note 1.

<sup>228</sup> “When a subscriber says that two telephones are a nuisance, he means that the two instruments sitting on his desk are an inconvenience, they are irritating to his vision. He objects to two bells ringing simultaneously, maybe once a month or so. But two telephones on a man’s desk, reaching two different companies in active competition with each other...are vastly beneficial to that man. His ability to reach everyone in two different manners through different sources is of immeasurable value, as is the ability to have everyone in the community reach him over two different ways.” Burt Hubbell, quoted in *Chicago Hearings in Government-Bell Trust Suit*, 65 TELEPHONY 21 (Nov. 29, 1913).

<sup>229</sup> 11 TELEPHONY (June, 1906).

different papers and would relieve the reading public of the inconvenience of buying and reading two or more newspapers. In actual practice, the competition between papers increased circulation, lowered advertising rates, and delivered to the business a larger audience at a savings. Thus, while the independents recognized the advantages of universal interconnection, they did not think that it made the telephone industry exceptional.

The independents also supported competition as the best way to control rates. Eliminating fragmentation was usually associated with returning to monopoly. (The debate over physical connection will be taken up in the next chapter.) That was, in fact, the most popular argument of the independents. To many users, the inconvenience of fragmentation seemed less worrisome than being subjected to rates set by a monopoly. Unification of the systems seemed like a fine idea in the abstract, but if it would result in a rate increase, many preferred to stick with dual service.

The material above makes it abundantly clear that as competition reached its zenith in 1907, fragmentation of the service had become the primary topic of telephone policy debate along with rates. That context is indispensable in any valid interpretation of Vail's concept of universal service.

### ***Vail's doctrine of universal service***

The biggest salvo in the debate was fired in AT&T's 1907 Annual Report, written by Theodore Vail himself upon his return to the presidency. In it, Vail articulated for the first time the triad "One System, One Policy, Universal Service" and the philosophy underlying it. The themes struck up in 1907 were repeated with variations in every succeeding *Annual Report* until 1914. The *Annual Reports* were as much political pamphlet as business reports; they were sent to thousands of newspapers and opinion leaders as well as the company's stockholders. In them, Vail hammered away at the theme that only an integrated monopoly offering connections among all subscribers in all locations could realize the telephone's potential.

Vail's doctrine of universal service is well documented.<sup>230</sup> Once placed in the context of the ongoing public debate about access competition, its meaning is clear. Universal service meant forsaking the fragmentation and heterogeneous management fostered by access competition and choosing instead to develop the telephone as a unified, integrated monopoly. The following statement from the 1910 Annual Report contains the essence of Vail's conception of universal service:

[The Bell System] believes that the telephone system should be universal, interdependent and intercommunicating, affording opportunity for any subscriber to any exchange to communicate with any other subscriber of any other exchange within the limits of speaking distance.<sup>231</sup>

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<sup>230</sup> Vail worked out the ideas promoted in the Annual Reports in a lengthy paper entitled Policy of the Bell System, Box 1080, AT&T-BLA.

<sup>231</sup> 1910 AT&T ANNUAL REPORT 43.

In other words, all users of the telephone should be interconnected. As the preceding passage makes clear, Vail's rhetorical style relied on alliterative triads, the elements of which were overlapping but not entirely redundant. "One system, one policy" meant a single physical network, centrally managed and coordinated to achieve compatibility. "Universal service" meant the interconnection of all telephone exchanges and users. It also had some connotations of geographic ubiquity, but Vail's sublicensing policy made it clear that geographic coverage of remote areas was to be achieved by interconnecting with noncompeting independents, not by extending the Bell system everywhere.

Implementing that vision required eliminating access competition. Indeed, it is impossible to understand the thrust of Vail's arguments unless it is seen as a critique of, and alternative to, access competition. The power of Vail's ideas came from their comprehensiveness and consistency. Universal service was not a ploy cooked up for Bell's momentary advantage but a coherent set of principles regarding the telephone's role in society and the proper way to develop the business. Vail's rationale for universal service had four basic components, enumerated below.

### *The "Network Externality"*

The first element was that the value of telephone service grew as the number of subscribers grew:

"A telephone without a connection at the other end of the line is not even a toy or a scientific instrument. It is one of the most useless things in the world. Its value depends on the connection with other telephones-and increases with the number of connections."<sup>232</sup>

Vail's acute recognition of the network externality provided the basis for his critique of access competition. Competing exchanges fragmented the telephone calling universe, thus diminishing the value of the service. Those who subscribed to one system, he said, received "a partial value [which] cannot be satisfactory," while "important users" were forced to take out duplicate subscriptions.<sup>233</sup> To that unwelcome predicament Vail contrasted his alternative:

The fundamental idea of the Bell System is that the telephone service should be universal, intercommunicating, and interdependent; that there are *certain people* with whom *one communicates frequently and regularly*; there are a *certain few* with whom one *communicates occasionally*, while there are *times* when it is *most necessary to get communication with some other one*, who, until the *particular necessity arose, might have been unknown and unthought of. It is this necessity, impossible to predetermine, which makes the universal service the only perfect service.*<sup>234</sup> (italics in original)

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<sup>232</sup> 1908 AT&T ANNUAL REPORT 21.

<sup>233</sup> 1907 AT&T ANNUAL REPORT 17.

<sup>234</sup> 1910 AT&T ANNUAL REPORT 39.

Vail's clear reference here to "the universal service" as a service that provides access to "unknown and unthought of" parties makes it undeniable that universality referred to the unification of service. Indeed, his emphasis on the value of unfragmented telephone access reveals a profound understanding of the growing interdependence and impersonality of industrial society. Dual service was less burdensome when parties could be reasonably sure of who and where their communication partners would be. But a modern urban society, with an increasingly specialized economy adapted to the capabilities of communication and transportation between remote points, required forms of coordination and cooperation that could not be predicted in advance. That was the strongest of his arguments for integration of the telephone system.

Clearly, the network externality implies that a continuous broadening of telephone penetration would be beneficial to users. But just as clearly, Vail's reference to "the universal service" in that context was not a commitment to extend service everywhere and to everyone regardless of cost. It simply meant that those who did have telephone service should be accessible to each other and not fragmented into competing exchanges. If the growth of penetration per se had been the primary issue, Vail's argument against competition would have lacked any force, for no one disputed the rapid increases in telephone diffusion that had occurred because of competition. Moreover, everyone knew at the time that Bell's prices were higher than its opponents'.

### *Centralization of Control*

The second pillar of Vail's argument was the claim that universal intercommunication required centralized control and coordination. Service should be provided by, or under the control of, a single firm:

The Bell system was founded on the broad lines of "One System," "One Policy," "Universal Service," on the idea that no aggregation of isolated independent systems not under common control, however well built or equipped, could give the public the service that the interdependent, intercommunicating, universal system could give.<sup>235</sup>

Here again connectivity, not social ubiquity, is the basic issue being addressed. Unless the network developed under the guidance of a single firm, Vail contended, telephone users' ability to make connections with exchanges in other locations would be thwarted by uncoordination and technical incompatibility. Although compatibility is a precondition of social ubiquity, the two cannot be equated.

A corollary of that element of the universal service doctrine was the proposition that *monopoly*, not interchange of traffic among the competing systems, was the best way to achieve universal intercommunication. From 1907 to 1914, compulsory interconnection became an increasingly common demand among utility regulators. Vail condemned interconnection of competitors as unfair, because it allowed smaller competitors to share in the benefits of the Bell system's larger access universe. Such competition would parasitize the larger system and amounted

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<sup>235</sup> 1909 AT&T ANNUAL REPORT 18.

to legalized confiscation of its property.<sup>236</sup> Interconnection also would create a messy, heterogeneous telephone system which would lack the technical integrity and coordination of a single system.<sup>237</sup>

### *The imperfection of competition in telephony*

Third, Vail contended that competition between telephone networks is always imperfect competition. His argument was based on a clear grasp of the inherent nonhomogeneity of separate networks. Rival telephone services are never perfect substitutes for each other because both will offer access to different subscribers:

Competition means that the same thing, or a satisfactory substitute, is offered. In this sense there can be no competing exchanges unless each exchange has the same list of subscribers, which is in itself inconceivable.<sup>238</sup>

Consequently, competition requires either a duplicate subscription, which Vail considered wasteful, or restricted access.<sup>239</sup> It is clear from this that in Vail's mind, competition was synonymous with *access competition*, and that his doctrine of universal service was in essence a critique of and alternative to it.

### *Regulation as the alternative to competition*

Having made the case for monopoly, Vail indicated that he was willing to accept the consequences of removing his industry from competitive pressures: government regulation of rates and service.<sup>240</sup> In the annual reports and in an article in the *Atlantic* published in 1913, Vail argued for a private monopoly monitored by an expert commission, a view that dovetailed with developments in other utility services.<sup>241</sup> That was an essential ingredient of the universal service doctrine because dual service retained a strong core of support among users who feared monopoly pricing if it were eliminated. But the role of government involvement, in that conception, did not go beyond substituting for the rate and service controls of a competitive marketplace. There is not a hint of the notion that Bell and the government were joining in a partnership to extend service to everyone.

Contemporary readers can easily misinterpret Vail's references to "universality" as a commitment to social ubiquity. By 1907, after fifteen years of independent competition, Vail did in fact make rhetorical jabs in that direction, although they were notable for their vagueness. In the 1910 Annual Report he wrote: "[the Bell system] believes that some sort of a connection with the telephone system should be within the reach of all."<sup>242</sup> Just what "sort of a connection" and the meaning of "within the reach of" are left unspecified. In all his pronouncements about universal

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<sup>236</sup> 1910 AT&T ANNUAL REPORT 44-46.

<sup>237</sup> *Id.*, at 46-47.

<sup>238</sup> 1910 AT&T ANNUAL REPORT 37.

<sup>239</sup> 1907 AT&T ANNUAL REPORT 17-18; 1909 AT&T ANNUAL REPORT 22-23; 1910 AT&T ANNUAL REPORT 37.

<sup>240</sup> 1907 AT&T ANNUAL REPORT 18-19.

<sup>241</sup> 111 THE ATLANTIC 311 (Mar. 1913).

<sup>242</sup> 1910 AT&T ANNUAL REPORT 43.

service, that is the closest Vail ever comes to enunciating a commitment to geographic ubiquity. There is a perfectly logical reason for the peripheral, passing way in which Vail handled that issue. Such statements represent a concession to the independent movement and to the pressures of access competition. Writing in 1910, Vail had, just two years earlier, drastically liberalized the company's sublicensing policies to encourage interconnection with independent exchanges in remote, "unremunerative" areas so that the Bell system would not have to build and maintain its system there. The Bell system's willingness to recognize independent systems as a permanent part of the country's telephone network represented a major retreat from its earlier belief that Bell and Bell alone should control the entire industry. The breakneck expansion of the Bell system after 1900 to develop more exchanges and short-haul toll lines, another policy change forced upon it by access competition also represented a sharp departure from its earlier vision of an exclusively urban, business-oriented national network. If Vail was now forced to admit that "some sort of a connection to the telephone system should be within the reach of all," the grudging character of that statement should not surprise us.

The uniqueness of Vail's vision lay not in AT&T's alleged commitment to extend service everywhere and to everyone. At that juncture, no one disputed either the desirability or the inevitability of the telephone's rapid diffusion. Indeed, the independents far outstripped the Bell system in their commitment to extend telephone service to previously unserved areas. The growth of penetration and the affordability of service were not really the points at issue at that time. What set the Bell policy apart was its commitment to interconnect all telephone users into one big, centrally managed, nationally integrated system. The real debate was between competition and monopoly, between unification and fragmentation. Vail's doctrine of universal service represented the most powerful case for the latter that could be imagined.

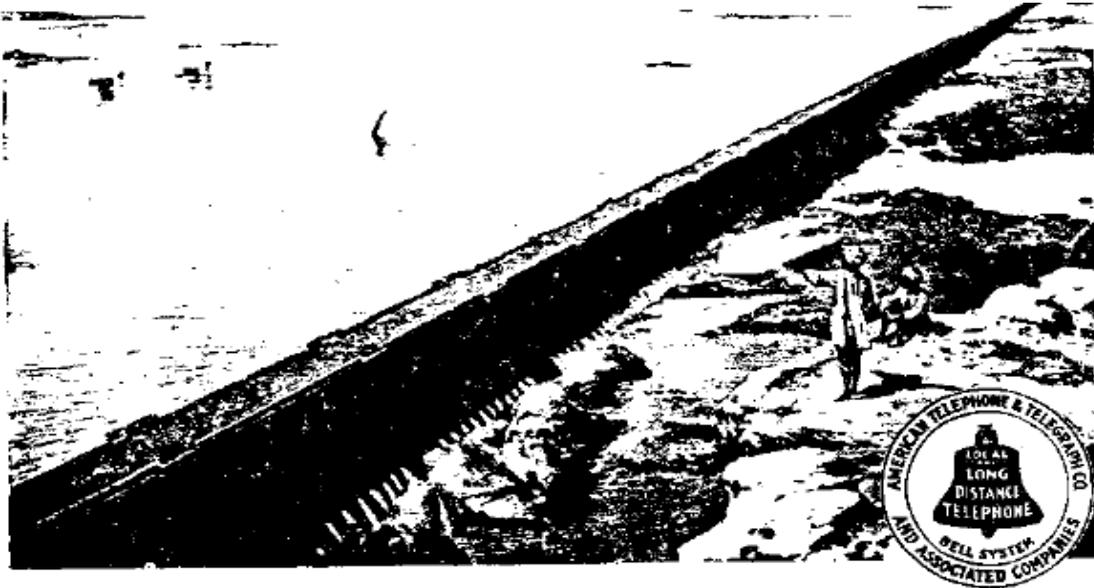
Vail's vision infused the Bell system with a new coherence. "Universal service" became a competitive strategy, a political slogan, and a catchy advertising term rolled into one. In a series of full page ads which began to appear in 1912, Bell presented itself as a nationwide system linking every community in the United States, even though it was years away from achieving that goal (see figure 8-2). "To one who has a Bell telephone at his lips," one ad declaimed, "the whole nation is within speaking distance." Another ad contrasted "Telephone Service: Universal or Limited" (see figure 8-3) and compared independent telephone systems to medieval walled cities because of their alleged lack of connections to the outside world.

Placed in historical context, Bell's commitment to universal service emerges as a coherent response to the pressures of access competition. Bell's ability to offer connections to more locations than its rival independent exchanges was its greatest competitive advantage. Instead of fighting to eliminate all independents, it would absorb them into the "universal" system by making them noncompetitive feeders through sublicensing. Above all else, universal service was the spearhead of Vail's drive to achieve political support for the elimination of competition.<sup>243</sup> It provided an appealing rationale for the consolidation of competing exchanges that could be used to

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<sup>243</sup> Bell's positioning of itself as the universal system successfully concealed its own refusal to eliminate fragmentation by interconnecting with its independent competitors. Bell strategically withheld the benefits of a unified service from the public and the independents until it had succeeded in winning support for regulated monopoly as the industry structure.

FIGURE 8-2



## The Nile System—The Bell System

For thousands of years Egypt wrestled with the problem of making the Nile a dependable source of material prosperity.

But only in the last decade was the Nile's flood stored up and a reservoir established from which all the people of the Nile region may draw the life-giving water all the time.

Primitive makeshifts have been superseded by intelligent engineering methods. Success has been the result of a comprehensive plan and a definite policy, dealing with the problem as a whole and adapting the Nile to the needs of all the people.

To provide efficient telephone service in this country, the same fundamental principle has to be recognized. The entire country must be considered within the scope of one system, intelligently guided by one policy.

It is the aim of the Bell System to afford universal service in the interest of all the people and amply sufficient for their business and social needs.

Because they are connected and working together, each of the 7,000,000 telephones in the Bell System is an integral part of the service which provides the most efficient means of instantaneous communication.

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES**

*One Policy*

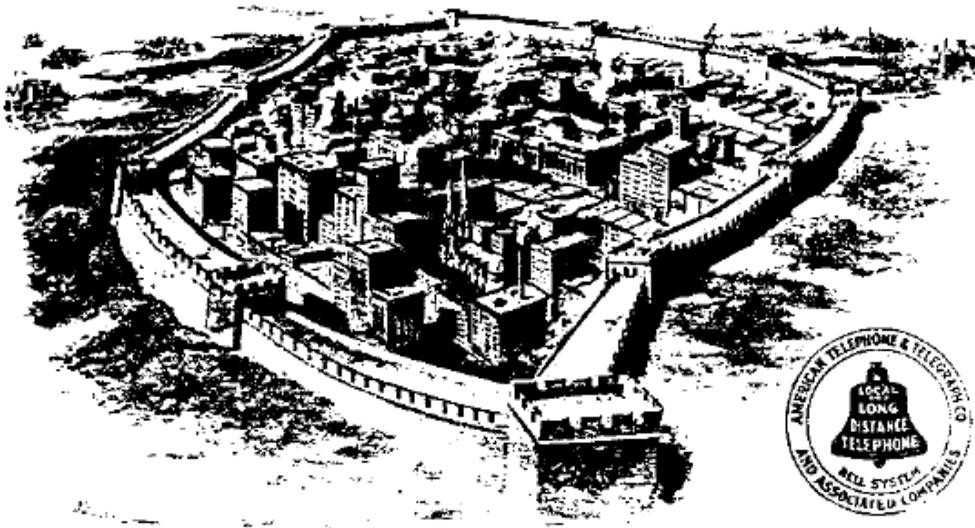
*One System*

*Universal Service*

49

*Sept. 1912*

FIGURE 8-3



*A MEDIAEVAL CONDITION*

# Telephone Service— Universal or Limited?

TELEPHONE users make more local than long distance calls yet to each user comes the vital demand for distant communication.

No individual can escape this necessity. It comes to all and cannot be foreseen.

No community can afford to surround itself with a sound-proof Chinese Wall and risk telephone isolation.

No American State would be willing to make its boundary line

an impenetrable barrier, to prevent telephone communication with the world outside.

Each telephone subscriber, each community, each State demands to be the center of a talking circle which shall be large enough to include all possible needs of inter-communication.

In response to this universal demand the Bell Telephone System is clearing the way for universal service.

*Every Bell Telephone is the Center of the System*

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES**

32

*April 1911*

counter growing antitrust challenges to Bell's dominance. Far from being a benevolent gift of Bell management or government regulators, the universal service concept was a deadly competitive weapon and a very effective business strategy.

The early debate over universal service did conceive of telephone penetration in broader terms. Trade journals and the popular press at the turn of the century marveled at its rapid penetration of farm areas and residences and interpreted that as a sign of the inexorable progress of the industrial age.<sup>244</sup> Where the 1880s and early 1890s saw the telephone as a specialized commercial device, few observers in the 1900s or 1910s would have disagreed with the assertion that eventually there would be or should be a telephone in every home. But that progress was seen as something that would occur naturally as industrialism increased wealth, lowered prices, and improved technology. Universalism in that sense posed no special policy issue and required no government action. The real policy issue was whether the telephone would develop under the guise of separate, competing systems or as a unified monopoly.

In 1907, public opinion was almost evenly divided, with dual service probably commanding more support because of its intrinsic constraints on rates. But the events of the next ten years would bring about a profound shift in public attitudes.

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<sup>244</sup> Commenting on the growth of residential subscribership in New York city, the ELECTRICAL REVIEW wrote, "it will not be long before no moderately well appointed residence will be considered completely equipped if it is not connected to the telephone system," 31 ELEC. REV. 180 (Oct. 13, 1897). For similar expressions of confidence in the inevitability of the spread of the telephone, see *The fanner and the telephone*, 31 ELEC. REV. 126 (Sept. 15, 1897), and *Making [Social] Calls by Telephone*, 30 ELEC. REV. 146 (Mar. 31, 1897).