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bandwidth

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Broadband Ballet: The FCC – State *Pas de Deux*

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In 1902, the father of global trans-oceanic cable communications, Sandford Fleming (also the father of standard time based upon the Greenwich Prime Meridian in 1884), sent twin telegraph cable messages to Australia, one via London and the other via Vancouver, with intermediate stops in India, Egypt, Malta and Gibraltar. This "all-red" British Empire message routing took eight hours each way.[1] A trans-oceanic "Internet handshake" last fall took milliseconds.

In our own era timelines still vary strikingly. The coalition military forces dismantled Saddam's regime in twenty-two days; it took the Federal Communications Commission (FCC) more than eight times as long to issue a final order following its February outline for a new broadband regulatory policy.

Part of the explanation lies in its sheer mass. The majority's order is a 520-page monstrosity (485 pages of text plus 35 pages of amendments to existing rules, plus 2,447 footnotes[2]), rivaling Tolstoy in length, if not in storytelling virtues. The draft outline adopted February 20 was held in abeyance pending what the agency's jargon terms "final edits"—*de facto* revisions. A trifle too long? Perhaps not for an agency in which a staffer, queried as to why FCC orders can run hundreds of pages while the Federal Reserve produces monetary policy documents only 25 pages long, once told a Beltway telecom maven that at the FCC, policy matters were more complicated than at the Fed. The original 1996 FCC order creating the post-1996 Telecom Act rules ran 932 pages of single-spaced text—1,854 paragraphs plus 4,062 footnotes. It weighed 4 pounds, 12.8 ounces (double-sided) and cost $47.38 to Xerox (1996 dollars). Perhaps, in addition to the shorter-than-last-time order, we should be grateful that the FCC is not running monetary policy.

Undue Process: A Rogue Agency

Over the past seven years, the FCC has been a law unto its own, trampling on the rights of targeted firms it regulates. Numbingly complex rules, manipulating its way around several major federal court rulings, and the certitude of litigation without end; this is now a case study in abuse of regulatory power. This is an important story, both astonishing and chilling, in showing the power of a federal agency convinced that its policies are right, and determined to get its way. There are numerous twists and turns in the tale, so only highlights can be presented. The vast economic carnage universally called the "telecom meltdown" was in significant measure the product of the FCC (and state public utility commissions, too) running amok, at the expense of the goals of the 1996 law that restructured telecom policy regulation.

The story begins with passage of the Telecom Act, signed into law by President Clinton February 8, 1996. That law gave the FCC six months to issue rules governing telecom market opening, and they took the entire six months.[3] The rules established a national framework, with detailed guidance for state commissions for tasks they were to perform.

First, the Act required incumbent local exchange carriers to supply "unbundled network elements" ("UNEs") requested by competing carriers. For carriers to obtain access to local exchange networks[4], the FCC was to consider two factors: (a) whether it was "necessary" for competing carriers to have access to proprietary equipment; (b) whether, as to non-proprietary equipment, lack of carrier access would "impair" their ability to compete.[5] Second, the Act empowered state commissions to set "just and reasonable" rates for network elements offered to connecting carriers.[6]

The FCC took what Congress had enacted and adopted two bedrock rules: (1) unbundling of the entire local loop, in any combination desired

by requesting carriers, without regard to actual marketplace availability; (2) a nationally set pricing standard, so-called TELRIC (Total Element Long Run Incremental Cost), which set rates at the cost of a hypothetical, most-efficient network built with today's technology (using existing wire centers)—far lower than the cost of any actual in-place network. The Bells—and the state public utility commissions—were concerned that the FCC was taking for itself power granted them per the Act; and they appealed.

In 1999, the Supreme Court settled the unbundling and jurisdictional issues, holding: (1) the FCC had failed to consider market availability of UNEs in applying the "necessary" and "impair" standards for ordering local carriers to unbundle UNEs for competitor access; (2) the FCC's TELRIC formula guided the states, despite language in the law apparently granting primacy to the states.[7] The FCC's unbundling rules were vacated and remanded to the Commission for recasting, in light of the High Court's opinion.

The FCC issued its second try at unbundling rules in 1999.[8] It did pare some circuit switches, plus operator and directory assistance, from the original list of UNEs, but added more elements than it had subtracted: high-capacity loops, "subloops" (equipment on the customer's premises but on the network side, most commonly found in multi-unit buildings), packet switches and dark (unlit) fiber. The Bells appealed again, and the case was heard by the U.S. Court of Appeals, D.C. Circuit, the prime judicial forum for hearing appeals of federal agency orders, and the most competent court for such matters as well. In May 2002 the appeals court struck down these new rules, noting that the Supremes called for a slimmer list, not a thicker one, and that the FCC defined "impair" too broadly again, counting ordinary start-up costs such as initial high "churn" rates—things common to all entrants in all industries.[9]

In other words, directed by the Supreme Court of the United States to shrink network elements to be unbundled, the FCC had actually expanded the list, and included factors common to all market entry, rather than limiting relevant factors to those special to telecom network access. (One reason it had taken so long for the FCC's rules to make it to the appeals court was that when the companies appealed the new FCC rules, the agency told the court that it intended to issue "expeditiously" a reconsideration decision. Upon its failure to do so, after more than a year, the court stepped in and allowed the appeal to go forward.)

That same month (May 2002) the TELRIC case was decided by the Supremes.[10] Without endorsing the method chosen by the FCC, the Justices held that the FCC had acted within the broad legal discretion the law gives administrative agencies, presumed "expert" and to whose judgment courts generally defer.

The FCC still faced a January 2, 2003 deadline set by the D.C. Circuit appeals court, to issue the third round of network unbundling rules, later reset at the agency's request to February 20, 2003. Had the FCC failed to act by that date the unbundling rules would have expired. To meet this deadline the FCC issued a short draft outline of its proposed rules on the last day. On August 21, six months later, it released the new rules.

Amazingly, having in its first cut assumed so much federal authority that the states appealed the ruling (and lost, as noted above), and having in its second cut expanded rather than shrunk the scope of the unbundling rules, the third time the Commission has rediscovered the virtues of federalism. Besides delegating virtually everything to the states (more on this below), the new rules offer illusory rights by which aggrieved carriers supposedly can appeal state rulings to the commission. Carriers are limited to using a provision of the old 1934 Act that expressly

limits complaints to those arising out of actions by carriers,[11] or else petitioning the FCC to issue a declaratory ruling, which the agency is never obligated to grant. Thus, having sharply curtailed state power the first time, now the FCC virtually abdicates its own.

For reasons set forth below, these new rules do not square with either the 1999 Supreme Court case or the 2002 D.C. appeals court decision. In effect, the FCC has yet, more than three quarters of a decade after passage of the 1996 Act, to issue lawful rules. Instead, by serially revamping its rules the agency has repeatedly circumvented contrary judicial mandates. *There is a moral to this tale: A regulatory agency can, if it desires, do almost anything it wishes, even in the face of apparently clear court directives to act otherwise, and there is little private parties can do to stop the harm until years have passed*. Meanwhile immense, avoidable economic damage was inflicted on the industry. The new rules will greatly compound the harm already done.

Markets and the FCC's "Mad Matrix Reloaded"

Now the new rules. A coalition of two infrastructure-socialist Democrats (Michael Copps and John Adelstein) and a Republican political opportunist (Kevin Martin) cobbled together a complex web of rules that govern those parts of their network incumbent local exchange carriers (LECs) must make available to competitors, and under what terms and conditions.

The FCC's new scheme, like the earlier two, is premised upon a static model of gradually evolving, orderly, segmented telecom markets. Its guiding principles are to deregulate pure new technology investment, while continuing to regulate old investment (copper) and the old components of hybrid networks (*i.e.*, the copper parts of HFC—hybrid fiber/coaxial cable). The agency claims to provide for a carefully monitored and managed transition, market segment by market segment, to eventual full market competition. But as economic sage John Rutledge explains, markets are in reality chaotic, complex and dynamic, with myriad potential unpredictable, often destabilizing cascade effects. Telecom markets feature numerous technology alternatives. No one can confidently predict which technology will prove most economic for a given service to a given set of customers—save the FCC majority.

THE FCC'S REGULATORY "MAD MATRIX RELOADED"

Customer Class	Enterprise (large bus.)	Residential/small bus.
Geography	51 jurisdictions (incl. DC)	Minimum 2 markets/jur.
Service Type	Transport: FTTH, HFC, DSL, DS0/1/3, OCn	Switching: circuit/ packet, databases
Network Elements	9 Individual UNEs	2 Combined UNEs
Proprietary Equipment	"Necessary"	Not "necessary"
Non-Prop. Equipment	"Impairment"	"Non-Impairment"

Already deregulated are "green fields" FTTH *(i.e.*, new builds, fiber to the home), OCn transport (high-speed optical carrier digital transport), enterprise markets, most packet switches and databases (but not 911 and E911), and mass market DS1s and DS3s. (OCn levels begin at 51 Mb/s; DS3 runs at 45 Mb/s; and DS1, at 1.5 Mb/s.) But FTTH overbuilds of existing copper remain subject to access rights for entrants using the copper. Even if the local carrier retires the copper plant it must transfer existing copper com-

petitors to the fiber. High-capacity mass-market loops are to be deregulated on a building-specific, route-specific basis, regardless of general market conditions. Nor does the FCC make clear whether optical circuit-switches will be deregulated as optical devices, or regulated as circuit-switched devices.

As Always, the Devil Is in the Details (Plus a Few Vampires)

The existence of actual market competition does not conclude the FCC's inquiry into whether legacy network elements should be deregulated—that is, freed from the UNE unbundling regime. Such competition is given "substantial weight," but only if at least three non-LEC self-providers (two in the case of high-capacity loops not yet deregulated) or two non-LEC wholesalers have entered, will the FCC consider deregulating. And then the state commissions must consider many operational and economic factors before reaching a final decision. Meantime, existing providers using LEC digital subscriber line services will be grandfathered for three years before any change in their regulatory status can be made. And even where a finding of "no impairment" is made—*i.e.*, a given market is deemed competitive—the order gives entrants three years of grandfathered discount access.[12]

Worse, the FCC did this although 13 to 20 million customers are currently served by entrant switches, with more than 200 competitors deploying 1,300 circuit switches covering 86 percent of the Bell regions.[13] In all, between 26 and 33 percent of all business lines in the country are served by non-Bell entrants. *Ironically, the prime beneficiaries of the UNE-P platform—access to the entire local carrier network—have been poor little infant entrants AT&T and WorldCom*. Those two carriers, for example, have taken 60 percent of UNE-P service in SBC's region.[14]

To illustrate the economic impact on SBC's voice service revenues and profits: *The top 50 percent of SBC's customers provide 66 percent of revenues and 155 percent of profits; the top quarter alone provides 40 percent of revenues and 122 percent of profits*. In other words, SBC *loses money* on more than 75 percent of its voice customers. SBC's rate-averaged residential retail voice line yields per month $32 in revenues on $28 of expense, leaving a $4 profit; a UNE-P line costs the same $28 to provide, but, courtesy of the TELRIC cost standard, yields only $17 in weighted average revenue, an $11 loss. The UNE-P discount is 47 percent. In Chicago, a CLEC can purchase a UNE-P line for $5.50 per month that ordinarily retails for $50. Attesting to the centrality of UNE-P is that as of end-2002 the switching UNE was included in 69 percent of network element offerings.[15]

Since its inception, UNE-P has cost the Bells 13 million customers and $2.6 billion in revenue losses; losing $15 - $20 per customer per month; thus every month the regime remains in place will cost the four Bells $215 - $260 million. In the nine months alone that the state commissions are scheduled to review UNEs, the Bells would lose $1.9 to $2.3 billion—never mind several years of court appeals that inevitably will follow state findings. And these figures do *not* include added losses should more customers defect to UNE-P, a certain prospect given steep UNE-P discounts.[16]

The FCC gets around these access competition metrics by requiring that the states, in applying the self-provision and wholesale triggers, count as qualifying competitors only those entrants who *actually* serve the *entire* market. Even a market where full service is economic would not be deregulated unless carriers elected to serve everyone. Entrants, who are no dummies, target high-end users—surprise, they prefer landing Citibank to serving what telecom folks call LOLITAs (Little Old Ladies In Tennis Apparel).

The bottom line: The FCC's rule guarantees perpetuation of the UNE regime indefinitely—precisely what the FCC majority intends and the states enthusiastically endorse (and precisely what two federal courts forbade). Further proof: Competitors have been shifting lines from self-provision to UNE-P, to take advantage of cheap access rates. In the first half of 2002 UNE-P lines increased from 5.8 to 7.5 million, while (non-cable) entrant facilities lines fell by 500,000.[17]

Compounding the FCC's felony is the fact that an agency may not lawfully delegate its decision-making powers to another entity. *Here the effective power to decide if competition exists has been delegated not to the state commissions, but to private parties—rivals of the Bells*. Simply by declining to serve every customer, the entrants can keep the Bells under the unbundling regime, and thus preserve their access advantage. Does anyone believe that revenues from Granny will offset the economic loss of deep discounted network access? *Put another way, the FCC's rules would hold the Bells hostage to full UNE-P unless their competitors make an economically insane decision to forfeit UNE-P in pursuit of customers who might be profitable to serve only if UNE-P discounts are retained*.

The majority relied strongly on alleged problems in "hot cuts"—connecting competitors to incumbent networks upon request—and proposed that a "batch cut" process (multiple simultaneous hot-cuts) be adopted to ease the transition.[18] *Incredibly, the majority considers a $50 non-recurring hot-cut cost a major economic barrier to entry*.[19] Further, the rules call for "rolling access" to UNEs of up to 90 days to aid entrants in reducing churn; such a "temporally limited"[20] condition is an economic factor that the D.C. Circuit expressly ruled out. Another factor, also ruled out by the D.C. Circuit, is retail rates, some 40 percent of which are set below the true cost of providing service.

Litigation Lotto

The Republican dissenters, Commissioner Kathleen Abernathy and Chairman Michael Powell, warn the majority that the ruling runs afoul of both the 1999 Supreme Court and 2002 D.C. Circuit holdings, as well as creating a regulatory morass from which the incumbent local exchange carriers may never emerge. Powell's dissent puts matters starkly: 51 states decide initially; 51 federal district courts hear first appeals; losers appeal to 12 federal appellate (circuit) courts; if there are conflicting decisions, the Supreme Court hears an appeal to resolve the conflict. In his words: "It is a model that only works if hundreds of stars align perfectly and stay that way….[t]he regulatory arbitrage bubble expands ever more perilously and is sure to eventually pop…if government policy does not diligently steer the balloon to stable ground."[21]

The timeline is even more depressing. The states must render their decisions in nine months. Parties appealing state rulings may file petitions, which the states must review within six months. FCC proceedings will add indefinite time periods—the agency took six months to finalize the draft outline it released February 20 into a final order. Federal court appeals typically add one year for each level reached. As noted earlier, the original 1996 order was released in August 1996, and led to the first of two Supreme Court rulings in January 1999, and a second one in May 2002. Yet that process was less intrusive and multi-layered than the latest one.

More to Come

In parallel, the FCC plans a follow-up rulemaking to examine its TELRIC pricing standard, which yields network element access discounts for competitors averaging close to 50 percent nationwide, with the District of Columbia at a stratospheric 88 percent. It also plans to examine depreciation schedules, an effort long overdue. It will re-

evaluate the "pick-and-choose" rule of the 1996 law, entitling carriers negotiating interconnection accords with the Bells to pick any provision out of any prior contract and obtain the same benefit.

Conclusion

More than three quarters of a decade have passed since President Clinton signed the 1996 Act. During that time, some of the telecom sector's most vital companies have found themselves in the cross-hairs of an agency dedicated not to promoting competition, but rather to protecting favored competitors—the so-called "competitor-welfare" standard. The wreckage has been immense, and even were the agency's latest abuse undone it will take years for the industry to recover. The FCC should—or the courts should order—flash-cut deregulation effective January 1, 2005, and end the UNE regime, as well as TELRIC pricing.

This, needless to say, will never happen. By giving plenary discretion to define markets to the states, whose predilection for perpetuating discounts is universally known, the FCC ensures UNE-P's eternal life. Chairman Powell, a former high official in the Justice Department's Antitrust Division, states in his dissent: "Every antitrust lawyer knows that the outcome of a case is generally won or lost over how the market is defined."[22] Barring judicial intervention, we will have a regulatory (dare we say?) quagmire, a veritable regulatory Viet Nam. No less than the dean of American regulatory economists, Alfred Kahn (himself a former New York state top utility regulator), condemned the draft outline rules as "an abomination, purely political in the worst sense of the term and grounded in neither good economics nor honorable regulatory practice."[23]

The appeals of the FCC's latest order filed by the Bells seek extraordinary action by the D.C. Circuit Court. They rightly accuse the agency of deliberately violating the prior order issued by the court. But the standard for granting the relief requested is a forbidding one: The court must find (a) that the agency disobeyed the court's order and (b) that the normal process of appellate judicial review would be "clearly inadequate." While it is rare that courts grant such petitions, the FCC's brazen persistence gives the Bells an unusually good chance at obtaining the requested judicial relief. The judges should do so this time. The prison erected for the Bells by the FCC will otherwise keep them locked up for years. Only what amounts a judicial *deux ex machina* can rescue the telecom marketplace from infrastructure socialism. The petition to the court states valid grounds for court intervention. Judges: The ball—*i.e.*, the future of telecom industry recovery—is in *your* court.[24]

[1] Blaise, Clark, *Time Lord*, p. 179 (Pantheon Books 2000).
[2] *Report and Order, Order on Remand and Further Notice of Proposed Rulemaking*, CC Docket Nos. 01-338, 96-98 & 98-147, released Aug. 21, 2003.
[3] *First Report and Order*, CC Docket 96-98, 11 FCC Rcd 2d 15499 (1996).
[4] Telecommunications Act of 1996, sec. 251(c)(3).
[5] *Id.*, sec. 251(d)(1).
[6] *Id.*, sec. 252(d)(1).
[7] *AT&T v. Iowa Public Utilities Board*, 525 U.S. 366 (1999). Section 252(d)(1) of the 1996 Act begins with "Determinations by a State commission (*sic*) of the just and reasonable rate for the interconnection of facilities and equipment…."
[8] *Third Report and Order and Fourth Further Notice of Proposed Rulemaking*, 15 FCC Rcd 2d 3696 (1999).
[9] *USTA v. FCC*, 290 F.3d 415 (D.C. Cir. 2002).
[10] *Verizon v. FCC*, 535 U.S. 467 (2002).
[11] Communications Act of 1934, sec. 208.
[12] *Separate Statement of Chairman Michael K. Powell, Approving in Part and Dissenting in Part*, *Report and Order, Order on Remand and Further Notice of Proposed Rulemaking*, note 2 *supra*, p. 13 (Aug. 21, 2003).
[13] Powell, note 13 *supra*, p. 15 (Aug. 21, 2003).
[14] *Petition for a Writ of Mandamus to Enforce the Mandate of This Court*, filed by BellSouth Corporation, Qwest Communications International, SBC Communications and United States Telecom Association, filed with the U.S. Court of Appeals, D.C. Circuit (Aug. 28, 2003).
[15] *Id.*.
[16] *Id.*, and *Petition for a Writ of Mandamus to Enforce the Mandate of This Court, filed by Verizon Communications and the United States Telecom Association*, filed with the U.S. Court of Appeals, D.C. Circuit (Aug. 28, 2003).
[17] Powell, note 13 *supra*.
[18] *Order*, note 2 *supra*, paras. 464-476.
[19] *Id.*, para. 470.
[20] *Separate Statement of Commissioner Kathleen Q. Abernathy*, Approving in Part and Dissenting in Part, *Order*, note 2 *supra*, p. 8.
[21] Powell, note 13 *supra*, p. 17 (Aug. 21, 2003).
[22] Powell, note 13 supra, p. 7.
[23] Kahn, Alfred, E., *Regulatory Politics As Usual*, Policy Matters 03-3 (Mar. 2003). Kahn has been consulting for the Bells, but earlier did so for AT&T, and in the event applies views he has consistently held for decades.
[24] The Bells have asked the D.C. Circuit for a writ of *mandamus*—a request that the court order a party—the FCC in this case—to perform a specified act—*i.e.*, adopt new rules here. This is per the All-Writs Act, 28 U.S.C. sec. 1651. Normally, parties appealing administrative agency rules file per 28 U.S.C. sec. 2348, but that process takes longer.
[25] *Net Gives Parents Peek Into Classes*, DenverPost.com (8/14/03).
[26] *As Digital Vandals Disrupt the Internet, A Call for Oversight*, New York Times, p. A1 (Sept. 1, 2003). < http://www.aei.brookings.org/policy/page.php?id=127 >
[27] *US to Test Expat Cybervoting*, The IHT (International Herald Tribune) Online, 7/25/03.
< http://www.iht.com/cgi-bin/generic.cgi?template=articleprint.tmplh&ArticleId=104098 >
[28] *Watch It, Then Bin It*, smh.com.au, 7/26/03.
< http://www.smh.com.au/articles/2003/07/25/1059084205467.html >
[29] *Spammers Make Profits Without Making a Sale*, Washington Times, p. A1 (Aug. 4, 2003).
[30] *No Slap on the Wrist for Spam in South Korea*, washtimes.com, 9/2/03.
< http://www.washtimes.com/business/20030901-102352-8411r.htm >
[31] *Tyson's Bankruptcy is a Lesson in Ways to Squander a Fortune*, nytimes.com, 8/5/03.
< http://www.nytimes.com/2003/08/05/sports/othersports/05TYSO.html?ex=1060660800&en=9caf62bc51a1ced0&ei=5062&partner=GOOGLE >
[32] *Net Link to Warn of Bio-Terror,* Washington Times, p. C8 (Aug. 8, 2003).
[33] *Military Has High Hopes for New Eye in the Sky*, Washington Post, p. B1 (Aug. 8, 2003).
[34] *Mom Aids in Hunting Terrorists Over Web*, Washington Times, p. A3 (Aug. 9, 2003).
[35] *We're All Just an E-Mail Away*, smh.com.au, 8/9/03.
< http://www.smh.com.au/articles/2003/08/08/1060145868869.html >
[36] *With E-Mail, It is Not Easy to Navigate 6 Degrees of Separation*, New York Times, p. D3 (Aug. 12, 2003).
[37] *Huge Consumer Database Cracked*, smh.com.au (8/11/03).
< http://www.smh.com.au/articles/2003/08/11/1060454123127.html >

[ET CETERA]

Net Nanny. Colorado high and middle school students in several counties are finding out that their parents can monitor class attendance via the state's new Internet Student Information system. No results have been tallied yet.[25]

Adult Supervision Needed? The Blaster worm has stimulated new expression of concern over commercial software security. Michael Vatis, former director of the national Infrastructure Protection Center, called for more government involvement in pressing private industry to develop more secure software. Security ace Bruce Schneier, chief technical office at Counterpane Internet Security, put it succinctly: "There's a reason this kind of thing doesn't happen with automobiles. When Firestone produces a tire with a systemic flaw, they're liable. When Microsoft produces an operating system with two systemic flaws per week, they're not liable."[26]

Electro-Voting Emerges? In the 2004 primary and general election, 100,000 overseas military personnel and civilians may be able to vote via the Internet. The Pentagon will spend $22 million as part of its Secure Registration and Voting Experiment. While this number tops the 100 overseas voters who cast their ballots electronically in 2000, it is far short of the 7.4 million expatriate population. States must decide to participate, and so far ten have indicated interest. Voters will have to use a Microsoft Windows-based PC, and must sign votes with a digital signature. Security will have to be tight. In January 2003 a Toronto city council electronic election was disrupted by a hacker who flooded the vote website with unwanted messages.[27]

Refrigerate—Do Not Freeze—Your DVDs. The immediate preceding issue of Bandwidth recounted the advent of DVDs that will self-destruct. The disks' interaction with air causes destructive oxidation within 48 hours. Now it seems that users can get a few extra hours of life out of their disposable DVDs by sealing them and placing them in the refrigerator.[28]

Spam Sham. Spammers have developed techniques for making money even if recipients do not buy the advertised product. Should the recipient visit an advertised website, the spammer will profit if a banner advertiser pays by the number of website hits. Other scams: (1) "free" porn offered via an overseas 900 number website, by which the caller is billed hundreds of dollars from which a commission is paid the spammer; (2) "pump and dump" stock sales, in which the spammer sells the recipient stock at inflated prices; (3) selling but not delivering items—which if X-rated are not likely to generate recipient complaints to consumer protection groups or any government agency; and (4) "phisher" sites that masquerade as legitimate company sites and ask callers to divulge personal information, such as credit card numbers which are then stolen and used. Spam e-mails may be forwarded to the Federal Trade Commission's spam database at uce@ftc.gov.[29]

Spam Slam—Seoul Music. South Korea, broadband paradise, has enacted tough anti-spam laws that seem to work, cutting spam 20 percent from the average 43.4 per day received by users this July. The law requires: (1) use of ADV on e-marketing mail; (2) use of ADLT on "adult" e-mails; (3) marketers may not scan web sites to harvest e-addresses; (4) e-mail sent to mobile devices is covered; (5) senders of obscene, graphically violent or drug-oriented content can receive two years in prison plus a fine of $8,000. Yo, Congress.[30]

Dream Wireless Network Customer. From 1995 to 1997, boxer Mike Tyson ran up $230,000 in cellphone and pager charges.[31]

DC Danger. The District of Columbia Department of Health will soon begin setting up the Washington Automated Disease Surveillance System, an early warning network to detect bio-terror agents. A centralized database will run software to detect signs, such as spikes in school absenteeism, or in drugs to treat certain symptoms.[32] And the Office of Naval Research is pushing the use of blimps equipped with advanced sensors to

provide long-duration surveillance, for detection of dangers ranging from submarines to chemical attacks. Blimps are less vulnerable than generally believed, as they have a low radar signature and use non-flammable helium; if punctured, the blimp descends slowly.[33]

Cyber-Honey-Trap. An American housewife, under the *nom de cyber* Mrs. Jonathan Galt (named for the protagonist in Ayn Rand's *The Fountainhead*), has been surfing the Net at night, seeking to engage terrorists in cyber-chat. Often flirtatious, to lure males hiding out in remote places where social life is non-existent, she has induced quite a few of them to reveal information—plans, photos, etc. Aided by a British private counter-intelligence expert, her results are shared with agencies worldwide, and have led to arrests.[34]

Six Degrees of Cyber-Separation. In what amounts to the equivalent of a cyberspace chain letter, researchers ran an experiment with 160,000 global cyber-participants, showing that users can, within the famous six degrees, find cyber-denizens unknown to them.[35] Actually, only 24,613 messages were originally sent, of which 6 reached one of the 18 target persons (located in 13 countries) immediately; 42 of 8,750 messages relayed reached a target in round two, 85 of 3,313 in round three, 131 of 1,237 in round four, 74 of 441 in round five and 26 of 145 in round six. Message relays continued, until in the tenth and final round 3 of 4 made it. Only 384, or under two percent, of the 24,613 e-mail chains hit paydirt. The most common reason for failing to forward was simple lack of interest, with no small number of folks viewing the unsolicited e-mails as spam.[36]

Hacker Heist. A hacker cracked security at a major consumer database provider, which services 14 of 15 top credit card issuers, 7 of 10 media entertainment and automotive manufacturers, plus corporate tykes like AT&T, IBM, GE, Microsoft, Sears Roebuck and Bank of America.[37]

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