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Cleaning Kevin's Clock: The White House Wakes Up, Telecom Shakes Up

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June 9, 2004 could well go down in telecom history alongside January 1, 1984 and February 8, 1996 as a regulatory watershed. 1984 saw the sundering of the largest telephone system in the world; 1996 saw Congress pass a massive act that re-cast telecommunications law after 62 years. The June 9 decision of the Bush White House not to appeal February 28's federal appellate court decision, which tossed most of the Federal Communications Commission (FCC)'s third attempt at writing lawful rules for local competition, marks abandonment of the Clinton FCC's local competition policy, the federal and state policy lodestar for over eight years. (At this writing AT&T and others have filed a new appeal with the High Court, but without the Administration's concurrence rejection is likely.)

Renegade FCC Commissioner Kevin Martin, accepting the White House decision and rejoining his two Republican colleagues, ended hyper-federalism in telecom policy. The "Potemkin competition" rules that encouraged local entrants to use Bell company local network facilities at a discount, rather than build their own facilities, are now cast on history's ash heap.

In its February 28 decision the U.S. Court of Appeals, D. C. Circuit, largely vacated the FCC's August 2003 Triennial Review Order (TRO) that had (a) forced the Incumbent Local Exchange Carriers (ILECs) to provide deeply discounted access to long distance firms and Competitive Local Exchange Carriers (CLECs) who use ILEC local networks to serve their customers, and (b) delegated vast powers to state commissions to guide possible phase-out of the access rules.¹

In vacating the FCC's rules, the Court used unusually sharp language: (1) it branded the TRO's limits on FCC delegation to the states

"fictitious";² (2) it admonished the FCC, as to forcing below-cost network access, that "[I]n competitive markets, an ILEC can't be used as a piñata";³ (3) it stated that "robust intermodal competition from cable providers... means that even if all CLECs were driven from the broadband market, mass market consumers will still have the benefits of competition between cable providers and ILECs";⁴ and (4) in language rarely used in polite judicial circles, it lambasted the FCC "in light of the Commission's failure, after eight years, to develop lawful [ILEC network] unbundling rules, and its apparent unwillingness to adhere to prior judicial rulings."⁵

Perhaps the strongest reason why the White House declined to pursue an appeal was the language of the appeals court noting that the FCC did not follow prior court rulings. And the White House probably calculates that scare talk about big 2005 rate increases will not be a campaign issue of consequence this fall. In the event, the decision could not be more timely, coming just as the FCC released the latest figures, current to the end of 2003, on deployment of what the agency terms "broadband"—as little as four times dial-up access speed (*i.e.*, 200 kilobits-per second—kb/s), a data rate far below the multi-megabit broadband access speeds now offered in top-tier Asian countries.

28.2 Million is a Big Number; 400,000 Isn't

The end-2003 figures released by the FCC for broadband service show: (1) high-speed access increased 42%, from 19.9 to 28.2 million households (the U.S. has roughly 290 million population, with 110 million households); (2) residential plus small business, at 26 million, 92 percent of the total, increased 50 percent; (3) DSL grew 47 percent in 2003, slightly more than the 45 percent growth in

cable modems, but cable modem households increased by nearly twice as much, from 5 million (from 11.4 million to 16.4 million), versus 3 million (from 6.5 to 9.5 million) for DSL; (4) 72 percent of high-speed lines (20.3 of 28.2 million) were “advanced services” broadband (at least 200 kb/s in both directions); (5) advanced service cable lines increased 84 percent, versus 39 percent for advanced service DSL. However, only 400,000 homes had access at two-way speeds above 2 megabits per second (Mb/s).⁶

Four-year figures, from end-1999 to end-2003, show ten- to seventeen-fold growth: (1) high-speed lines grew 1,025 percent, from 2.75 million to 28.2 million; (2) residential/small business high-speed lines grew 1,449 percent, from 1.79 million to 25.98 million; (3) advanced services lines grew 1,023 percent, from 1.99 million to 20.3 million; (4) residential/small business advanced services lines grew 1,734 percent, from 1.04 million to 18.1 million.⁷ Overall, the Bell companies have 30.9 percent of high-speed lines, versus 4.5 percent for non-Bell incumbent local exchange carriers and 64.6 percent for non-ILECs.⁸

But these figures must be put in perspective: *Except for the 400,000 lines above two-way 2 Mb/s connectivity, nothing in the US even remotely compares to the turbo-broadband in leading Asian countries, where broadband access speeds range from 8 to 40 Mb/s.* Put another way, we have fast web page download and Netflix (one of several online movie rental services that ship DVDs via “snail-mail,” with a business reply envelope for return). Meanwhile, info-consumers in Asia’s “Flying Telecom Tigers” enjoy new services and full-motion video.

286 Million and 220 Billion Are Even Bigger Numbers

At end-2003 the U.S had 158.7 million wireless users⁹ and 128 million users online.¹⁰ Already, China has 286 million mobile phone users and 80 million online users, thus ranking first and second in the world, respectively. China’s more than 220 billion text messages last year represented more than half the world total; a 40-plus percent increase is projected for 2004.¹¹ By 2006, Piper Jaffray estimates China will have 153 million online users, and will lead the world in both online and broadband access.¹² However, Chinese broadband will surely be the Broadband Lite version we have in the US, rather than the “Turbo” Asian Tiger variety, and at total market capitalization of under \$10 billion Chinese Internet companies are far smaller than Yahoo or eBay standing alone.¹³

Wireless is passing wireline as the leading revenue-producer for telecom companies. There are now some 1.5 billion wireless phones worldwide, more than three times the total number of PCs.¹⁴ Ericsson estimates that by 2008 there will be 2 billion wireless users.¹⁵ Nokia predicts that magic number by 2007, with 300 million new phones in Asia alone; Nokia sees global wireless data revenues doubling, from 15 to 30 percent of the total.¹⁶ In Japan, broadband already serves 20 percent of cell users; 45 percent of broadband users having access to VoIP (Voice over Internet Protocol) services; and 11 percent of households.¹⁷

Digital camera phones have taken off. In 2004 sales of “cam-phones” are expected to double to 169 million, representing 25 percent of total mobile phone sales; by 2006 sales may more than double, to 380 million. In Japan 10 percent of cam-phone images are printed.¹⁸

Marketplace Musical Chairs: Who Will Be Left Standing?

With MCI back in the long distance (LD) market and the four Bells now fully approved to provide nationwide service, per a 1950s popular song title, “something’s gotta give.” In 2002 AT&T had 32.3 percent of an \$83.7 billion market. LD voice revenues have declined steadily since 1997.¹⁹ While AT&T’s business Internet revenues are projected to rise 5.9 percent this year, MCI registered a 27.8 percent drop in that market for 1Q04, with an 18 percent decline projected for the full year. And MCI, which as recently as 2001 invested \$6.5 billion in network upgrades (part of a six-year program), invested \$803 million in 2003.²⁰

For the local Bell companies, who dedicate 52 percent of total expense and 68 percent of capital expense to wireline operations, relief came none too soon.²¹ Buoyed by winning the TRO case, they may win back 4 million of the 15 million residential and business customers they lost to competitors, yielding as much as \$3 billion in revenues over three years, according to Lehman Brothers. If they succeed in getting the states to raise network access lease rates from today’s average \$19 to \$28, they will present AT&T, which estimates that it already costs \$29 per local/LD customer, with a losing competitive proposition.²² This, of course, proves that AT&T relied on artificially-subsidized entry as its local market business strategy. Indeed, AT&T is already exiting “Potemkin markets.”

In 2004 domestic wireless revenues are expected to pass the figures for local and long distance; wireless revenues already are tops in Europe.²³ Gartner Group estimates that 7.5 million Americans—roughly five percent—have “cut the cord” entirely, *i.e.*, use wireless as their “last resort” access device.²⁴ Yankee

Group concurs, and sees wireless cord-cutters tripling to 15 percent by 2008.²⁵ New wireless technologies are beginning to take hold, but wireless data applications were used by only 23 percent of wireless customers by end-2003.²⁶

Internet telephony (IP telephony, *i.e.*, data plus voice and ultimately, video too) is finally taking off, after getting a slower start in the States than in Asia. Yankee Group sees 17.4 million VoIP users by 2008, up from 100,000 in 2003.²⁷ Another consultant predicts 11 million residences and 4 million small businesses using VoIP by 2008.²⁸ Comcast plans to serve 20 million residents with VoIP by end-2005 (95 percent of its 21 million total customer base).²⁹

Wireless consolidation began with the recent consummation of Cingular’s acquisition of AT&T Wireless. More consolidation is inevitable, albeit the timing is highly uncertain, in no small measure due to the continuing regulatory preference for a larger number of weaker competitors, versus a smaller number of stronger ones. (That policy, with respect to the now-nearly defunct CLEC industry, led to the recent declaration of bankruptcy by facilities-based CLEC pioneer RCN; RCN’s market potential was curtailed by entrants—including AT&T and MCI—relying on Bell network access, instead of building new facilities.)

The White House Wakes: Telecom Networks Are Indeed Changing

On April 26, 2004 President Bush proposed several measures to stimulate broadband deployment: (1) banning taxation of broadband access; (2) opening federal lands for fiber-optic deployment; (3) spurring wireless broadband deployment; and (4) pushing further broadband

deregulation.³⁰ The June 9 no-appeal decision provides evidence of President Bush's commitment. The White House was no doubt motivated in significant measure by the continuing poor performance of the telecom sector, lagging despite a robust economic expansion. A preliminary estimate by consultant firm Decision Economics sees broadband deregulation yielding \$15 billion real GDP gains in 2007 and 2008, \$7 billion annual cap-ex increase, and an average 90,000 jobs gained per year for 2004 through 2007 (with 130,000 in 2007).³¹

And how will the Bell companies fit in? Verizon has announced plans to spend \$1 billion to deploy fiber-to-the-home (FTTH) to 1 million customers by end-2004, an ambitious target. Verizon now derives only 32 percent of its revenues from traditional telephone voice service (the figure dropped below 50 percent in 2002).³² One Wall Street estimate is that given 25 percent penetration FTTH will need a \$45 cash flow payoff per home to prove in financially.³³ A factor that may aid Bell company competition against cable broadband providers: DSL accounts for only 3 percent of Bell-firm revenues, while cable modem service represents 15 to 20 percent of cable company revenues; this makes Bell company inroads into cable's high-speed Internet access customer base more financially injurious to cable than cable siphoning off Bell customers.³⁴

The Heritage Foundation has noted that the incumbent local exchange carriers (ILECs) invested \$236 billion from 1996 through 2002, equivalent to 77 percent of 1996's \$307 billion in gross (PP&E—property, plant and equipment) spending, and 175 percent of net 1996 ILEC PP&E spending. Much of that investment went to shore up existing service. *As this ILEC investment came after passage of the 1996 Telecom Act, it was not made under monopoly/guaranteed rate-of-return regula-*

*tion.*³⁵ Underscoring the competitive impact of removing monopoly franchise protection is that by end-2002 ILEC access lines had fallen from 188 million to 157 million, a 16.5 percent drop-off.³⁶ Wireless users (158.7 million) now exceed the number of wireline access lines (albeit wireline access lines households have multiple users, so the number of wireless users does not exceed the number of wireline users).

With wireless users now topping wireline access lines, with voice service now accounting for less than half of ILEC revenues, with access lines down one-sixth from their peak, with wireless and e-mail siphoning off much wireline voice traffic, and with VoIP beginning to take off this is not mom's network. The White House, to its credit, finally understands this.

The upcoming election, however, could see John Kerry replace George Bush. On June 21, Kerry called for "universal access to broadband, a technology that can transform our country and create jobs."³⁷ He then credited cable tv, satellite and telecommunications with reducing state unemployment during Colorado's 1990s economic boom.³⁸

President Bush addressed telecom three days after Kerry spoke. While re-affirming his April 26 remarks on broadband (see text above), he offered some numbers that reveal more about the White House is thinking. First, he defined broadband as access speeds four to 100 times faster than dial-up; this means a range of 200 kb/s to 5 Mb/s. Then he cited the 28 million end-2003 figure for American broadband access. But as noted above only 400,000 Americans have access at or above 2 Mb/s; the remaining 99 percent are relegated to real-world access speeds four to ten times dial-up, not 100.³⁹

In accepting the FCC's numbers for what is in reality speeds from Narrowband Deluxe to Broadband Lite, the President apparently does not fully grasp just how far behind Asia's Turbo-Broadband the United States really is. (John Kerry, to date, has given no indication that he understands this reality, either.) The White House's decision to let the D.C. Circuit's TRO decision stand, freeing the Bells, is welcome, but is only a first step in catching Asia's Flying Telecom Tigers.

Asia Takes Telecom Olympic Gold

While the White House's decision, however belated, to reject continued subsidy of artificial low-cost local network entry is welcome, it will not change the global equation overnight. Asia's lead in high-speed broadband and wireless deployment will persist at least a decade. Even then, the sheer number of Asian consumers will drive market demand. China's current cell phone total is roughly equal to, and soon will exceed, the total population of the US; its Internet user total could eventually also surpass America's population. Expect India's customer base to follow suit.

Any telecom turnaround domestically will be more like an aircraft carrier turn than one by an F-16, given that telecom lags not only domestically but also in many countries abroad. Global telecom market cap-ex now runs \$100 billion below its 2000 peak.⁴⁰ Any telecom turnaround is, of course, contingent on continued economic growth, likely for some time but never a "given." Just as Europe took the mobile phone deployment lead a quarter-century ago, and America took the lead in narrowband Internet access in the mid-1990s, so Asia now takes the lead in wireline and wireless broadband. Thus, Asia takes the marketplace gold for the next several telecom Olympiads. The West (at last) wakes, but the broadband wireline and wireless suns now rise in the increasingly energetic East.

[ET CETERA]

Reagan Telecom Years Remembered. With the laying to rest of America's fortieth president, communications policies during his term merit remembrance. President Reagan nominated a radio broadcaster, Mark Fowler, as FCC Chairman, and Fowler proved a staunch advocate of broadcast and telecom deregulation across the board (as was Dennis Patrick, his Reagan-era successor). In championing equipment deregulation Fowler once famously likened telephones to toasters. Fowler gradually phased in access charges (Congress blocked a "flash-cut"), relieving long distance subscribers of some, but not all, financial responsibility for subsidizing local telephone service.

Local and long distance markets were segmented by the AT&T divestiture consent decree. This was the telecom policy brainchild of Nixon-era Justice Department trustbusters, pursued by their Ford and Carter Administration successors, and finally embraced by Judge Harold H. Greene (randomly selected after the first trial judge died). President Reagan's top advisers were split. Defense Secretary Caspar Weinberger strongly resisted divestiture, fearing that national security communications would be put at risk. Upon losing the debate Weinberger established a White House telecom task force, the National Security Telecommunications Advisory Committee (NSTAC), to smooth the transition and provide a multi-company venue for addressing national security telecom issues, a mission that has been generally successful.

The President's view echoed that of Carter's first budget director, Bert Lance, whose widely-quoted maxim was "If it ain't broke, don't fix it." In a 1979 radio broadcast Reagan (at the time not an announced candidate for 1980, though it was clear he would run) lambasted "the nerve" of the government in suing Ma Bell:

What with busy signals, wrong numbers, etc., it's easy to have a grudge against "Ma Bell." Truth is the old girl deserves a big thank you from all of us. For one thing there is a major service none of us feel we can do without, yet in the age of continual inflation that service keeps dropping in cost.⁴¹

Reagan then compared 1930s versus 1970s costs for a long distance phone call with that of sending a first-class letter. A typical 1930s LD call cost 300 times first-class postage; in the 1970s it cost only 9 times as much, and a one-minute 1970s LD call was one-third the cost of a first-class letter. He then noted that unlike the Post Office, a government monopoly, Ma Bell made money, while lowering costs through increased productivity and offering "fantastic improvements."⁴² Reagan, who endured party-line service in his youth, concluded:

Today the miracles we already have are going to be topped by video phone; there are recorder gadgets to take phone calls & [*sic*] messages when you are absent and now they talk of electronic mail. If the cost differential continues at the present rate, it is possible the phone company may put the post office [*sic*] out of business within the next 10 to 20 years. Do you suppose that's why the gov't. [*sic*] is suing the phone company?⁴³

In two other broadcasts Reagan discussed telephony. He cited the telephone system as an example of the superiority of private investment over central economic planning.⁴⁴ And he noted how badly the two major communist powers (the former USSR and China) trailed US telephony—quipping: "It makes you wonder what teenagers over there do in their spare time."⁴⁵

But his political advisers persuaded the President that killing both the IBM and AT&T antitrust cases would be politically very risky. The ability of Presidents to intervene in antitrust cases had been seriously eroded in the wake of a 1972 antitrust political influence scandal, in which an International Telephone & Telegraph (IT&T) lob-

byist spent \$400,000 in a vain attempt to induce the government to drop its antitrust suit against the company. The Reagan Administration killed the IBM case (filed the last day of the Johnson Administration, and run by a notoriously anti-IBM judge, David Edelstein), and left resolution of the AT&T litigation to the Justice Department. Reagan's first Attorney-General, William French Smith, owned stock in Pacific Telephone, and thus felt obligated to recuse himself.

The call thus fell to Reagan's first antitrust chief, William Baxter. Baxter was prepared, he had famously once said, to "litigate the case to the eyeballs." He passionately believed that scale economy gains from divestiture would exceed scope economy losses (*i.e.*, due to vertical integration foregone). He had no proof of such, but was prepared to sunder the world's greatest corporation to find out, and sunder it he did. No other country forced a comparable marketplace split on its telecom network.

Alas for Ma Bell, she found herself stuck with the most anti-Bell judge imaginable and the worst imaginable antitrust chief, whose Reagan-era successors likely would not have pressed the case, or else would have limited it to equipment divestiture, leaving local and long distance intact. And so, the Bell System divestiture went forward. President Eisenhower's Attorney-General, Herbert Brownell, had settled the 1956 consent decree, which barred AT&T from the computer business, on the golf course—but those were simpler times.

Wimbledon's Wireless Winner. Teen tennis sensation Maria Sharapova showed that she is a true "telecom teen" too. Upon winning the women's single's title she bounded into the stand to hug her father. Then, while the Duke of Kent waited on court to hand the Russian victor her trophy, Maria used a cell phone to call her mother at a Florida airport. After several dropped calls—not unknown with wireless—Maria resorted to alternate communications channel not available to most of us, worldwide broadcast from Centre Court, to thank her mother.⁴⁶ Earlier

Wimbledon conquerors would have called mom from the locker room, after the ceremony—partly a tribute to the social primacy of physical presence. *But to today's teens, communication over vast geographic distance is virtually equivalent to personal interaction—physical and tele-presence have merged.*

Supremes to FCC: Leave Muni-Nets to the States. In March the Supreme Court held that the FCC could not pre-empt the states on municipal network regulation. State legislatures may enact statutes prohibiting municipalities from competing with companies they regulate. But the feds must stay out.⁴⁷

Return of the Trans-Oceanic Cable Cartel? One telecom expert foresees immense demand growth that will re-create a capacity shortage in trans-oceanic traffic, even with all the fiber sitting on the ocean floor. Regular broadband users consume as much as 230 times the bandwidth narrowband users consume. With 85 percent of international cable traffic Internet and data, should 50 percent of users switch to broadband access, which might happen in five years, there would be a 100-fold jump in demand for trans-oceanic capacity. The result might be a restoration of the traditional consortium arrangement for managing international telecom traffic.⁴⁸

Seattle Soars. Seattle's new public library sports 400 PCs, near-ubiquitous Wi-Fi access, four terabytes of storage (equal to 1 million books or 1,000 two-hour compressed-video movies) and a one-gigabit-per-second fiber optic network.⁴⁹

UHDTV, Anyone? Japanese researchers are working on a successor high-resolution digital video format, Ultra-High-Definition TV. UHDTV would display 7,680 x 4,320 pixels—33,177,600 pixels, a resolution 16 times that of HDTV; the system refresh rate would be 60 frames per second, twice that for traditional tv but less than top-rated PC monitors. A test 18-minute film on a 450-inch (yes, 450) screen generated 3.5 terabytes of data—nearly equal to the

entire Seattle Library storage capacity. The test used a 24 gigabit-per-second fiber link.⁵⁰

Iraq Telecom at US Handover. Telephone penetration is up 47.5 percent over the Saddam era, and 442,000 Iraqis enjoy mobile phone use (none did under Saddam). Versus only 3,000 Iraqi *users* with pre-war Internet access there are now thousands of Internet *cafes*.⁵¹

Fantastic Flops. “FLOPs” is computer-speak for Floating-Point Operations Per Second, and refers to complex mathematical calculations employed by workstations and supercomputers. Japan has built the fastest supercomputers to date, with the top speed recorded at 78 teraflops—78 trillion flops. Yet for the highest-end computing applications—so-called “Grand Challenge” problems, this is not enough. Aerodynamic applications might need anywhere from one petaflop (1,000 teraflops) to one exaflop (1,000 petaflops); some chemistry problems could consume one zettaflop (1,000 exaflops). Think of it this way: There are about 31.5 million seconds per year. The universe is some 14 billion years old—roughly 440 quadrillion seconds. To solve a problem requiring one zettaflop worth of computations— 10^{21} flops—would require 2,300 calculations per second over the universe’s current lifetime. Supercomputers, anyone?⁵²

(Endnotes)

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