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The Telecoms Mess

Forget Alan Greenspan. Whether U.S. profit growth resumes depends upon one thing: cleaning up the telecom sector.

BY CRITON M. ZOAKOS

The present bear market is driven by uncertainty over future profit growth. It is therefore timely to point out that a resumption of profit growth in the U.S. economy depends upon getting past the mess in the telecoms sector—far more than it depends on Fed policy. Profit growth will resume if the monopoly grip of the Regional Bell Operating Companies (RBOCs) is broken. If, however, their grip is consolidated, then profit stagnation will settle in for good, and the U.S. economy will relapse into mediocrity.

The reason for this is the role that telecom investment plays in boosting the American economy's overall return on investment. Without telecom investment, the productivity growth of the 1990s will not be sustained. The RBOCs are what blocks telecom investment.

Today, the rate of return on investment for the U.S. economy as a whole and for each corporation within it depends upon growth in telecom investment (see *Fig. 1* above and further discussion). This was established during the period that began in the first quarter of 1991, when investment in information technology rose above the level of 40 percent of all investment in equipment and software. It has remained above that 40 percent level ever since.

Because it constitutes such a great part of IT investment, the collapse of telecom investment could drag overall IT investment to its pre-1991 level of below 40 percent and in this way throw the U.S. economy back to an earlier stage of technological evolution. During the year 2000, telecom investment was 60 percent of all IT investment, but in Q2 2002 it had dropped to 44 percent, which had the spinoff effect of dragging down with it all types of equipment investment.

The collapse of telecom investment, in turn, was triggered by the decimation of competitive local exchange carriers (CLECs) in the hands of the RBOCs and their congressional allies—not by a preceding alleged "overinvestment." The Telecoms Act of 1996 was intended to stimulate competition against the RBOC monopolies, but instead provided such minimal penalties that it practically invited the RBOCs to systematically violate the law and kill the competition. The result has been greater monopoly concentration and less competition in domestic telecom services.

Today, there are only four RBOCs (Verizon, SBC Communications, Bellsouth, and Qwest), compared with eight in 1996. They control the same 92 percent of all telephone wirelines in the country that they controlled in 1996. Collectively, from that year to date, the four RBOCs have paid about $2.2 billion in fines for violations of the law that was meant to help competition

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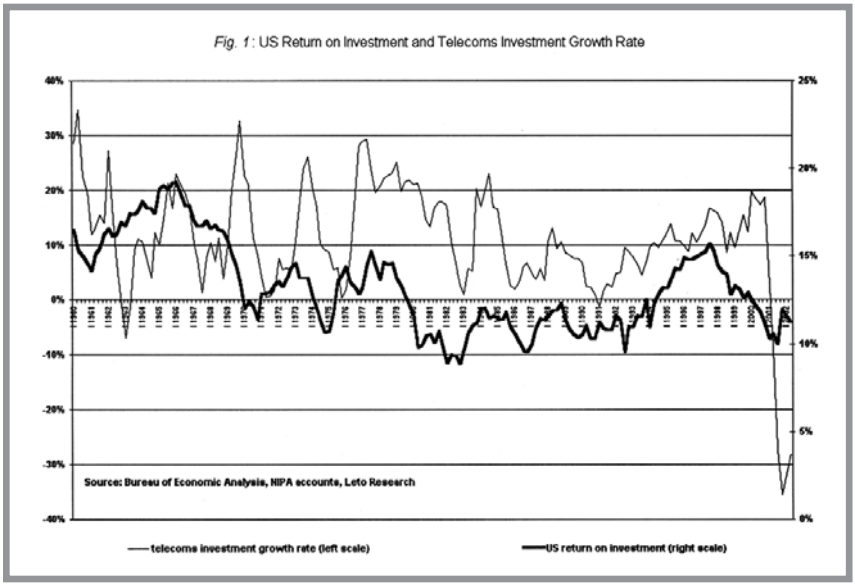


and customer service. These fines and legal penalties constitute 3.6 percent of the RBOCs' cumulative net income from 1996 onward. In the process, they have accumulated a "rap sheet" longer than that of Don Vito Corleone.

The effect of this systematic, low-cost law breaking was the exclusion of the competitive local exchange carriers (CLECs) from access to consumers and small and medium businesses, and hence the CLECs' bankruptcy, dissolution, and general retreat. Over $160 billion of CLEC market capitalization and another $50 billion of CLEC investments in plant and equipment was wiped out at the cost of only $2.2 billion in fines paid by the RBOCs.

But the carnage did not end there. With the demise of the CLECs, migration to broadband was aborted and the rest of the telecoms supply chain that had prepared, planned, and invested for this migration collapsed. Telecom equipment manufacturers, systems suppliers, long-haul network providers, and software developers saw their collective annual net losses grow to $60–70 billion, losing over $2 trillion of their market capitalization. Another $2.5–$3 trillion loss of market capitalization occurred in the non-telecom high-tech sectors such as semiconductors and applications software. (The remainder of the total $7 trillion loss in market cap occurred in the non-high-tech sectors, caused by declines in their profitability due to the nosedive of the high-tech sectors).

This, however, is not where it ends. The regional Bells may have crushed their competitors for the time being, but their own financial position has become far worse than it was in 1996. Though their sales have tripled, their combined net income and earnings per share have collapsed while their indebtedness has skyrocketed. The collective financial situation of the four regional baby Bells plus AT&T, the original mother Bell, evolved as follows between 1996 and now:

BELL SYSTEM'S FINANCIAL DECLINE SINCE 1996

millions of Dollars

	1996	2001
Sales	$98,434.4	$209,473.0
Net Income	$12,304.4	(-$380)
EPS	$7.4	$0.0
Long-term debt	$27,573.5	$138,528.0
Short-term debt	$1,883.2	$36,545.0

This represents a financial catastrophe for the entire Bell system and is the result of a flawed business plan that

1. Depends upon voice traffic revenue;
2. Is unable to make money from data traffic; and
3. Views the consumer as a fool whose money can be coaxed with shiny toys.

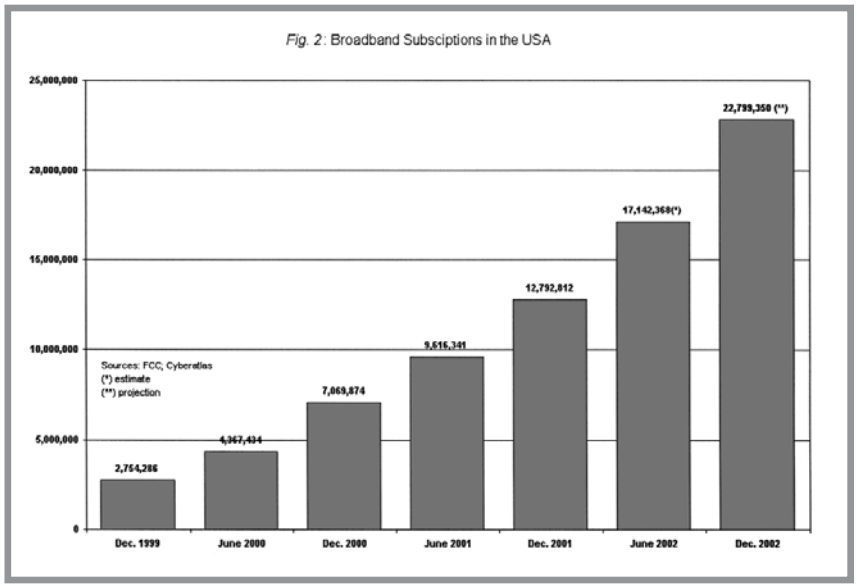
These three notions gave rise to a telecom service price structure that requires high rates for voice, low traffic for data, and a PR hype for useless wireless toys as the only opportunity for profit.

As a result, the Bell system is drifting toward raising voice rates, is refusing to provide the infrastructure needed to accommodate the 260–300 percent annual growth in data traffic, and is trying to cram mobile telephone sets with gismos like Multi-Media Short Messaging (MSM), movie listings, and horoscopes in the hope of raising revenue from novelty-crazed teens. The Bell system is thus getting deeper into the red with each passing month.

This makes the Bell system increasingly vulnerable. It also invites predators.

In the months ahead, the RBOCs will be facing two problems: (1) the return of competitors emerging from bankruptcy reorganization lean, mean, debt free, and ready for price wars; and (2) accelerating demand for broadband that, technically, the RBOCs are not in a position to meet.

In some of the now ongoing proceedings of Chapter 11 reorganizations (WorldCom, XO Communications, McLeodUSA), bondholders and bank creditors are seeing the wisdom of swapping debt for equity—freeing the enterprises of debt altogether to enable them to sustain price wars that debt-laden RBOCs cannot afford. This could result in serious drops in telecom service prices and give rise to new types of telecom business models that are contrary to the RBOCs' present models. That is, they would depend upon sharp declines in the price of bandwidth and sharp increases in traffic volume—the exact opposite of the RBOCs' model.



While this is beginning to happen in corporate boardrooms, demand for broadband is growing faster than previously anticipated (see *Fig. 2*). Last week, the Federal Communications Commission reported that the number of U.S. broadband subscribers was 12,792,812 as of Dec. 31, 2001. This is far higher than the provisional industry estimate of 10.7 million. Moreover, the latest FCC report implies a quarterly growth rate of 16.5 percent instead of the previously estimated 15.8 percent. If these growth rates hold up, the number of U.S. broadband subscriptions will pass the 22 million mark at the end of 2002. This is higher than 20 percent of the active subscriber population and beyond the "critical mass" level at which demand for new technologies generally moves beyond the "early adapters" and explodes into the ranks of the general population.

In the six to nine months ahead, this rise in broadband demand and the post-bankruptcy resurrection of CLECs will bring about the next crisis in U.S. financial markets, that of the RBOCs.

In Fig. 1, the U.S. economy's return on investment (ROI) is calculated by dividing all corporations' profits (as reported to the IRS) by the sum of working and fixed capital expenditures of all corporations. The figures refer to all U.S. corporations, private and public, that file tax returns. These figures are extracted from the National Income and Product Accounts (NIPA) provided by the Bureau of Economic Analysis on a quarterly basis. The figures for telecoms investment are also derived from the same NIPA tables. Tests to correlate ROI and telecom investment growth show that there is no correlation prior to 1991 (the statistical correlation coefficient is –0.082). Between Q1 1991 and Q3 1997, however, there is a strong forward correlation (a coefficient of +0.804) between growth in telecom investment and growth in ROI four quarters later. Increases in telecom investment invariably led to increases in ROI within four quarters. After Q3 1997, this correlation breaks down completely—the correlation coefficient averages about -0.16.

Even though there was acceleration in the growth of telecom investments between Q3 1998 and Q1 2000, it did not lead to increases in ROI. To the contrary, it was accompanied and followed by serious declines in ROI. The most common argument as to why this happened is that there had been overinvestment in telecoms. The problem with this reasoning is that it fails to explain how enormous growth in demand for broadband telecom services—both effective and pent-up demand—can exist side-by-side with overinvestment.

It is, therefore, more reasonable to assume that the nationwide decline in ROI was the result of deliberate RBOC policies, described above, to prevent their competitors from obtaining any return whatsoever from their investments. Nationwide, ROI was cut in two ways. First, competitive telecom investments were artificially (and illegally) prevented from realizing any returns whatsoever. Second, the non-telecom sectors of the economy saw a decline of their own profitability spinning off the telecoms' collapse.

Broadband supply and demand are misaligned because of the RBOC-dictated, flawed pricing model of the telecom service industry. To be profitable, RBOCs depend on expensive bandwidth and slow rates of traffic growth. The alternative pricing model of rapidly growing data traffic and collapsing bandwidth prices is not suitable for their existing technological infrastructure. The cheap bandwidth high-traffic pricing model depends upon high capital spending that the RBOCs' present indebtedness does not allow.

The alternative pricing model for telecoms is better appreciated by using the example provided by the experience of the semiconductor industry. The price of one unit of bandwidth

needs to undergo a collapse similar to that of one transistor in order for telecom services to become as profitable as the semiconductor industry became after the 1960s. The price of one transistor went from $150 in the early 1960s to $0.00002 today. Had it not done so, we would not be putting transistors into our $40 coffee makers, our $5 wristwatches, and into all sorts of trivial uses that enable the industry to sell trillions of transistors each year. For bandwidth to become as ubiquitous as the transistor, its price to the consumer (and its cost to the provider) must collapse correspondingly. Once it does, the extremely high price-elasticity of broadband demand will provide the levels of demand at which telecom service providers can make a profit.

The massive increase in the consumption of bandwidth (in the consumption of *transmitted* information) implied in this pricing model suggests a radically revamped technological base for the entire economy—one that depends upon *transmitted* information rather than merely on *embedded* information per se, as is the case today. In today's information economy, the price we pay for tangible goods and services is mostly the price of information these goods and services contain. For example, some experts estimate that as much as 65 percent of the price of a box of cereal covers the resident information-content *embedded* in the product (R&D and marketing costs), and the rest covers storage, transportation, and administration costs with a tiny amount (less than 2 percent) going for the cost of coaxing the grain from mother nature.

The relevant point of this is that since our economy today is so overwhelmingly embedded information-dependent, what happens when the cost of transmitted information (or bandwidth) collapses? The obvious answer is that an unimaginable number of applications using cheap bandwidth will emerge, in the same way that an unimaginable number of transistor applications emerged when the cost of transistors collapsed.

It is transitions of this type—from one technological base of the economy to the next—that lift an economy's return on investment. *Fig. 3* shows graphically the evolution of ROI for the postwar American economy. Any economy's ROI generally trends downward under conditions of fixed technology. This is what the theory of diminishing returns says should happen, and the empirical evidence backs it up.

In a competitive economy, new entrants will crowd the market of a given technological base until the marginal rate of profit becomes zero. At zero profit, however, the economy will collapse—unless a brand-new technological base begins a new increase of ROI. Or, alternately, if there is no brand-new technological base in sight, the economy can continue to function if monopoly-trust arrangements eliminate competition, thereby keeping the marginal profit rate above zero. This is what J.P. Morgan did to the U.S. economy in the aftermath of the "railroad bubble."

In the post-World War II U.S. economy, there were two great eras of rising ROI. One was the era of the space program (Q1 1961 to Q1 1966), during which the U.S. economy underwent a revolution in materials and processes, and the second was the IT revolution of Q3 1992 to Q3 1997. The first lifted ROI by 36 percent (from an ROI of 14.1 percent to 19.2 percent) and the second by 65 percent (from an ROI of 9.5 percent to 15.7 percent). By contrast, from 1966 to 1980 ROI dropped from 19.2 percent to 10.1 percent. Lack of technological innovation kept driving ROI down and the presence of anti-competitive regulation kept it above zero—producing the sociopolitical phenomenon we remember as "the Sixties."

When President Reagan came into office, two new countervailing forces went into operation: pro-competitive deregulation tended to lower the marginal rate of profit and ROI as a whole, while an intensive, growing wave of technological innovation, launched with the first mass production of the PC in 1981, tended to raise ROI. The result of these countervailing forces was a stabilization of ROI at the 10 percent level in the 1980s. Then came the 1990s and the IT revolution.

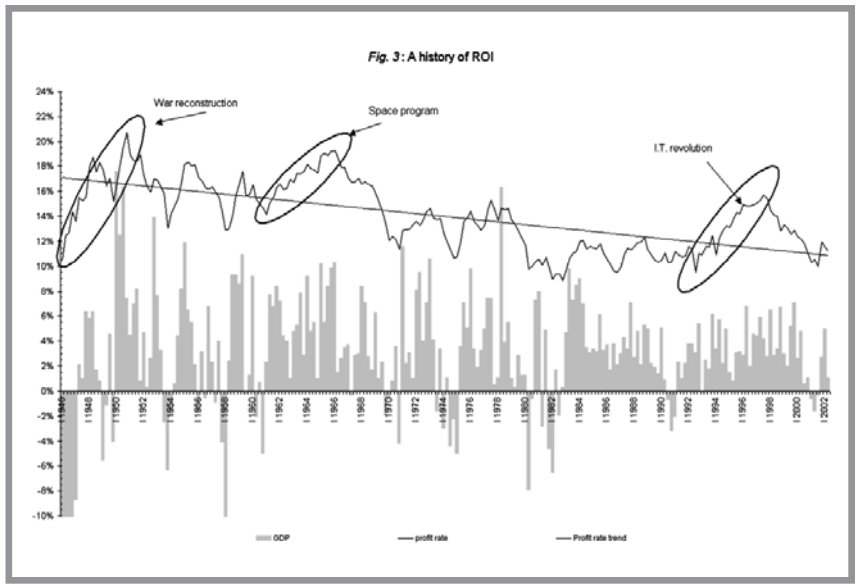


***Fig. 3*: A history of ROI**

What happens fnext depends upon telecom investment. If it remains sluggish, there will be no transition to the next technological base of the economy. ROI will keep declining until monopolistic-trust arrangements prevent it from falling to zero. If telecom investment begins to pick up aggressively to meet rocketing broadband demand, then we are heading for the next leg of the technological revolution and higher ROI for the rest of this decade. ◆