

## I-495 Technology Corridor Initiative Annual Regional Conference

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It's a pleasure to be here with you this morning. Actually, this talk was originally scheduled for April 2002. So much has happened since then, but the bottom line remains the same. The past couple of years have not been good ones for those of you in this room involved in technology related businesses, and at this point the future remains uncertain. But this uncertainty follows a period of almost unbridled optimism. I want to focus my comments on the answers to three questions: (1) What went wrong? (2) What's happening now? And (3) What does all of this mean for us?

### What Went Wrong?

I don't have to tell anyone in this room about the slow down in spending on technology that started in late 1999. For most of you, the last couple of years must have felt a bit like running into a brick wall doing 70 miles an hour--a sharp, sudden, damaging halt to what had been very vibrant business growth.

Just look at the numbers for the five years from 1995-99. Real investment in computers and software grew at a compound annual rate of growth of 45 percent. Some of this calculation reflects falling prices, but even in nominal terms the percent of GDP represented by information processing, including both computers and software, grew from 3.5 percent to 4.3 percent. By the end of the period, real private fixed investments in these categories totaled \$600 billion a year. And even in the past two years, while that level of spending has declined, it still totals about \$500 billion, or about twice as much as such spending in 1995.

Similarly, spending on telecommunications gear grew rapidly as well, expanding at an annual pace of 15 percent over the 95-99 period. By the end of the period, real investment in telecom was \$132 billion. As with computers, that spending level has fallen, but still remains about twice what it was in 1995.

Obviously, this spending did not take place in a vacuum. The demand--real and perceived--for new technology and additional band width seemed to be limitless. According to a recent article in *USA Today*, the U.S. Commerce Department issued a press release in April, 1998 saying that a study of usage on the Internet showed that the Net was doubling every 100 days. But this finding was based on data from the early, initial burst of excitement about the Net. Since then, usage has doubled about every year, not every 100 days. With compounding, this suggests that data used by an entire industry to aid in forecasting Internet demand was off by a factor of about 6. So it's no wonder that prospective demand seemed unquenchable.

Anything seemed possible in those days, and optimism about the impact new Internet-based technologies could have on revenues and cost control was high, to say the least. Recall that firms without net revenues, and with no history of profits could command eye-popping stock prices. The sky seemed to be the limit.

But "trees don't grow to the sky" as the saying goes. Some time in 1999 reality began to bite. The miscalculation in the growth of demand was not the only problem facing the industry. Across the corporate sector, profit margins began to erode in part because rising labor costs and oil prices ate into revenues. In the highly competitive environment of U.S. business, raising prices was difficult, if not impossible. So, something had to be done about the flow of cash out the door for new technology. And the degree to which excess capacity had accumulated, especially in telecommunications, only aggravated the situation.

By late 1999, and into the spring of 2000, technology spending hit the wall. In 2001, the growth of real GDP fell to zero. At the same time, real spending on information equipment and software fell by almost 11 percent, while spending on telecommunications fell 20 percent. Reflecting this, profits since 2000 for technology companies--that is, for many of you in this room--collapsed. Software and service companies and manufacturers of peripheral equipment have seen some marginal improvement--and even some black ink in 2002, but manufacturers of computers and telecommunications equipment remain in the red.

Looking back on it, this process seems inevitable--kind of like that old Greek myth in which the boy named Daedalus flew so close to the sun that his artificial wings melted, and he plummeted to earth. What goes up too high seems to have the tendency to come down too hard. But I must say here that recognizing what is too high in an environment of technological change and optimism is difficult, if not impossible.

Moreover, in some ways what happened was unique. No other recession in post-war history followed the pattern of the 2001 recession. All other recessionary periods started as a result of a spurt in inflation caused by either oil shocks or a tightening of resource constraints at the end of a business cycle. The Federal Reserve would tighten monetary policy to curb inflation, and the interest sensitive sectors, including consumer durables and housing would contract. Although investment tends to slow down before most recessions, it normally does so after the contraction of these other two sectors.

In the 2001 slow down, the proximate cause of the recession was the contraction in capital spending. The consumer has stayed the course throughout, even through the tragedy of 9/11. Indeed, private consumption has grown at an 2.8 percent annual pace for the five quarters since the recession began and housing demand remains extremely strong--actually, it's likely in the fullness of time that the end of the recession will be deemed by now to have already occurred.

The question now is - will investment and particularly technology spending recover while consumers keep spending? My best guess is yes, but let's see what we have to back that up.

### What's Happening Now?

After what we now know were three quarters of negative economic growth last year, 2002 began with an inventory correction and a surge of growth. Things slowed in second quarter but the first half pace was relatively solid nonetheless - 3 percent at an annual rate. Since then, however, growth has not been what would have been expected only 3-6 months earlier, and certainly is not at the pace usually associated with economic recoveries. Why is this the case?

- For one, the recession was mild by historical norms, and likely relatively short despite what some in this room may have experienced. Not much pent-up demand resulted, especially given the pace of consumer spending through the downturn, so there simply isn't much "oomph" to growth from such spending now.
- The economies of our major trading partners have slowed as well, creating less external demand for U.S. goods, though the moderating value of the dollar may be helpful here.
- Volatile, and sliding equity markets and widening credit risk spreads have increased the cost and reduced the availability of financing to all but the most credit-worthy. Such financial turmoil is hardly surprising in the face of the scandals involving corporate governance and accounting practices, which call into question the legitimacy of corporate profits.
- And finally, rising geopolitical risk cannot be discounted as a source of general uncertainty.

In reaction to some of these factors, the pace of capital investment and especially technology spending has been disappointing. Companies have become more risk-averse, cost focused and possibly diverted for a time by the range of new corporate governance and accounting rules to which they must react. Productivity growth, the hallmark of the late 90's, remains relatively strong, even after data revisions, but it does not appear to be driven by increased capital deepening. Instead, companies are cutting costs to maintain margins. They continue to spend on technology as I noted earlier, but only as necessary to meet profit goals. And they are putting holds on new hiring plans as well. Clearly, the recovery has hit a few bumps in the road.

But not all the news is gloomy. Both monetary policy and fiscal policy remain stimulative. The Federal Reserve eased

policy eleven times in 2001 and 2002, taking interbank rates to a 40 year low. On the fiscal side, tax cuts and increased federal government spending continue to spur growth.

Consumers remain resilient. Labor markets are relatively soft, especially compared with the late 90's. But a larger share of the labor force remained employed through 2001 than in most recessions, and these workers are being paid well for their contributions to corporate productivity. Their levels of confidence about the future remain solid, as evidenced by their willingness to spend on homes, cars and other big ticket items at rates that continue to surprise. Even with low interest rates, and big discounts on automobiles, it is hard to imagine consumers buying such long-lived assets without having some confidence in the future.

Now one can wonder how many more houses and cars consumers really need and how much mortgage and other debt they are willing to assume. In fact, I've been asking this question for at least two years now, but I keep getting surprised. Recently, auto sales were estimated at an 18.7 million unit annual pace in August, up solidly from a strong July reading. But how long can this last, particularly as at least some of the demand has been spurred by aggressive pricing and financing deals that are eating into auto makers' profits? Indeed, if a further slide in equity markets were to occur, or if unemployment rises, on the heels of poor profit pictures, consumer confidence, spending and borrowing patterns would clearly be at risk.

On the manufacturing side, industrial production has grown for 7 months now, suggesting that excess capacity may be diminishing. The first half of the year saw the first outright growth in spending on computers and software since the end of 2000. Other data suggest a more sluggish picture right now, but not that a contraction is in the works. So there is some foundation to a forecast that technology spending will grow, albeit more slowly than we might like, and that as uncertainty wanes a bit, spending will pick up.

Again, there is some downside risk to this assessment. Capital investment clearly is linked to business opportunity. With demand outside of housing and auto sales sluggish in the U.S., and foreign economies moving slowly as well, it is hard to see what the driver for more spending will be. Anecdotes I hear from technology executives and lenders to the technology sector are all pretty downbeat, to say the least. But it also may be true that those industries at the heart of an economic slowdown may have some trouble seeing the light at the end of the tunnel, just as it is hard to see the end of the boom when you are in the midst of it.

To sum up where we are--my own sense is that the recovery will proceed at the slow pace we're seeing for a while, with a gradual pickup in capital spending, and employment growth through the end of the year. In 2003, I would expect growth rates of 3 percent or better through first half. But as they say, there are risks to this forecast and many of them are on the downside.

### What Does This Mean?

As a policymaker, I believe one must view the stance of monetary policy from the perspective of both the longer run functioning of the U.S. economy and the short-run needs of the business cycle. At present, the economy is in the process of a slow recovery from recession. Monetary policy is in an accommodative stance, helping to stimulate interest sensitive sectors and maintain consumer spending. There are risks and uncertainties facing us, and policy needs to be sensitive to these issues. Given the weakness in demand here and abroad, remaining excess capacity in labor and other markets, and still solid productivity growth, inflation remains quiescent. But as growth strengthens, and excess capacity is reduced, the stance of policy will need to be more consistent with stable inflationary growth over time.

What does the forecast of slow growth ahead mean for you here in the I-495 area? During the '90s, this region solidified its position as a high-tech mecca. It is home to some of the state's largest computer storage and networking companies, biotech firms and software developers, not to mention several large retailers as well. But the 90's also witnessed significant population expansion, dramatic increases in median income levels, and rapidly rising housing prices.

The boom also saw the rise of serious concerns over issues related to inadequate public transportation, a lack of affordable housing and, the potential for a declining "quality of life" and environmental degradation. During the recession, joblessness rose in high-tech areas of the state like the I-495 corridor at a pace several times faster than the rest of the state. Office vacancies more than doubled, and rental rates have come down as well. Yet developers continue

to buy land along the corridor for its long-term value, and housing prices remain high. Thus, at least some of the issues raised by growth don't seem to be receding in the face of the slowdown.

Now, I don't have solutions to these issues. All of you involved in the I-495 initiative will have to sort out the right ways to meet those challenges, and I applaud you for this effort. But clearly, to you here in the I-495 area, to Massachusetts more broadly, and to the New England region as a whole, solid national growth is a necessary precondition to your efforts. Given that, my assessment that a full recovery lies further off cannot be good news.

But what I do think is good news is the fact that U.S. businesses remain focused like lasers on being ever more productive and competitive in national and world markets. Inevitably, this drive to increase productivity, reduce costs and produce even more innovative products will cause technology spending to increase. It may be that this focus on productivity, and profit margins is likely having a slowing effect on the recovery. But, over time, this focus is key to my confidence that this recovery will stay the course, however bumpy that might be right now.

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