

# US WEEKLY ECONOMIC UPDATE



April 29, 2005

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# US Economic and Investment Perspectives

## Another Fast Technology Spending Cycle Is Underway

Over the past 20 years, the technology sector has enjoyed phenomenal growth, fueled by innovation and heavy business and consumer spending. Many technologies have been instrumental in boosting productivity growth, which has led to higher profits and real wages for the US economy.

In the year ended this first quarter, total spending on technology products and services increased 8.5%, a little more than one percentage point faster than gross domestic spending. And the outlook is bright. US companies are increasingly spending on a variety of technology products. The need to remain globally competitive, coupled with strong gains in free cash flow, suggests this spending will continue.

These initial findings prompted us to look more closely at sector-spending trends over the past twenty years to gain a better perspective on what might be ahead. What we discovered is while technology spending has been a relatively strong grower, it has not been the consistent double-digit grower that many people thought it was.

Based on our calculations, total domestic spending on technology final goods and services totaled \$760 billion in 2004. Importantly, this market has roughly doubled in size in each of the past two decades, implying an annual growth of 7%. During the 20-year period from 1985 to 2004, gross domestic purchases grew at a 5.8% growth rate, so spending on technology products and services outpaced spending in other parts of the economy by a little more than 1% per year.

We derived our analysis of total domestic spending on final technology products and services from the consumer, business and government purchases of computer hardware, software, and telecommunication equipment and services. Also, the spending figures are based on nominal dollar purchases of technology products and services.

Another interesting finding in our study was that most of the out-performance in technology spending was concentrated in the early-to-late 1990s. Display 2 shows the annual gains in technology spending with that of the annual gains in overall spending in the economy. Technology spending expanded relatively fast from 1993 to 2000, growing 4% faster than other parts of the economy. This tech spending boom was driven by a number of revolutionary new technologies. For example, the World Wide Web was created in 1991, and the first browser appeared in 1993. Digital cellular service was introduced in 1993, and the number of subscribers grew fourfold to 40 million by 1996. In 1995, Microsoft introduced Windows 95 and this software development led to a spurt in PCs sales over the next several years. Another software upgrade cycle in 1997 and a more general technology upgrade cycle along with a broader use of the Internet drove strong increases in technology spending through the rest of the decade and into 2000 as well.

Importantly, except for this seven-year period, technology spending was just average, rising no more or no less than other parts of the economy. The exception was the sharp plunge during 2001 and 2002, which coincided with the media- and technology-driven market correction. Some would argue that this sharp decline was a natural correction following a long period of robust gains. Yet we think the 2001 and 2002 performance indicates that technology spending has become much more cyclical in nature, especially since it has matured into a much bigger and broader industry. If we are correct, the industry up and down cycles will be more volatile than they were in the past. That's the bad news. The good news is that it appears another up cycle has begun.

## Spending Outlook Is Improving

Business spending on technology is by far the biggest market segment, accounting for almost 65% of total spending. Its growth rate over the past 20 years has also been slightly faster—7.5% per year—

than the overall market. The hardware market accounts for about 57% of total spending, but its long-term growth rate of 6% per year is half that of the 12% growth per annum in software.

In the past two years, business spending on technology has been the strongest market segment, growing about 1.5 percentage points faster than the overall market. Importantly, in the past year it has been the hardware part of the business market that has shown the greatest strength over this period. To be sure, in 2003 and 2004 business spending on computers and peripheral equipment has increased 21% per year, while spending on software and other areas of technology are up about 11% on average. Given the historical growth rates in each of the business-market segments, one should expect the large gap between hardware and software spending to narrow somewhat in the coming year, but both will remain strong given the firms' needs to improve productivity.

On the consumer side, nominal spending on technology has been less fast, rising about 6% on average for the past two years. But future growth prospects look even brighter. Our analysts have predicted that broadband will expand in two ways. "The first will be the widened pipe to the home: Cable and telecom companies will supply increased bandwidth to consumers as competition intensifies. The second is within the home. Using broadband home-networking technology, consumer electronic firms will link traditionally autonomous audio, video

and gaming devices. New digital products, including TVs, cameras, DVDs, video consoles, PCs, MP3 players and cell phones will increasingly be able to communicate with one another and enable consumers to move digital content from one device to another. As connectivity increases and seemingly disparate functions are combined in novel formats, broadband within the home will launch a home entertainment upgrade cycle as consumers migrate to digital and networked devices." (Broadband: The Revolution Underway; Alliance Bernstein January 2004)

Eventually, broadband will bring about a whole new generation of appliances driving technology spending higher for a number of years. While it is too early to say if consumer spending on technology products and services will rival the fast growth rates of the mid-to-late 1990s (when they grew between 8% and 10% per year), the odds are clearly increasing that consumer spending on technology will accelerate in the years immediately ahead as a number of these new technologies become available at the retail level.

All of this suggests that there are a number of plus factors in place today and on the horizon, which indicate a relatively strong and possibly long tech spending cycle.

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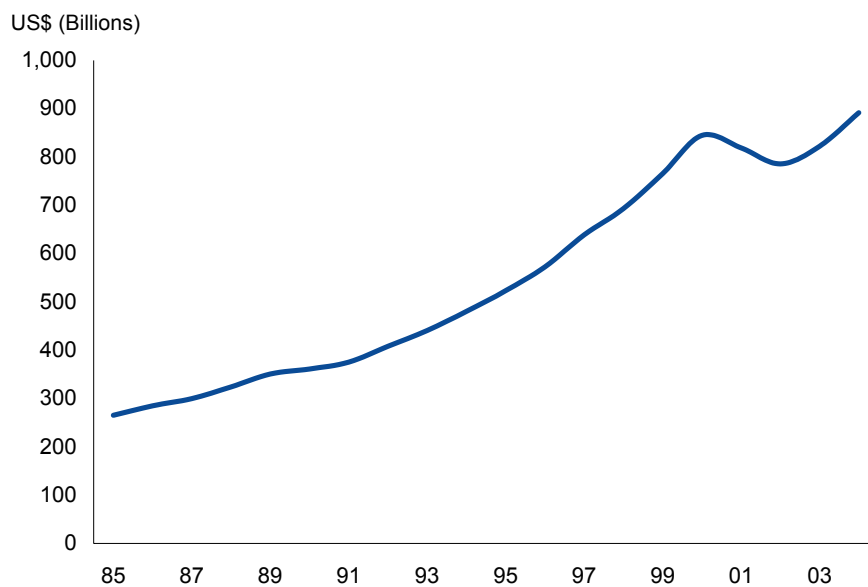
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## Display 1: Technology Market Doubles Every Decade

### Total Spending on Technology in the US

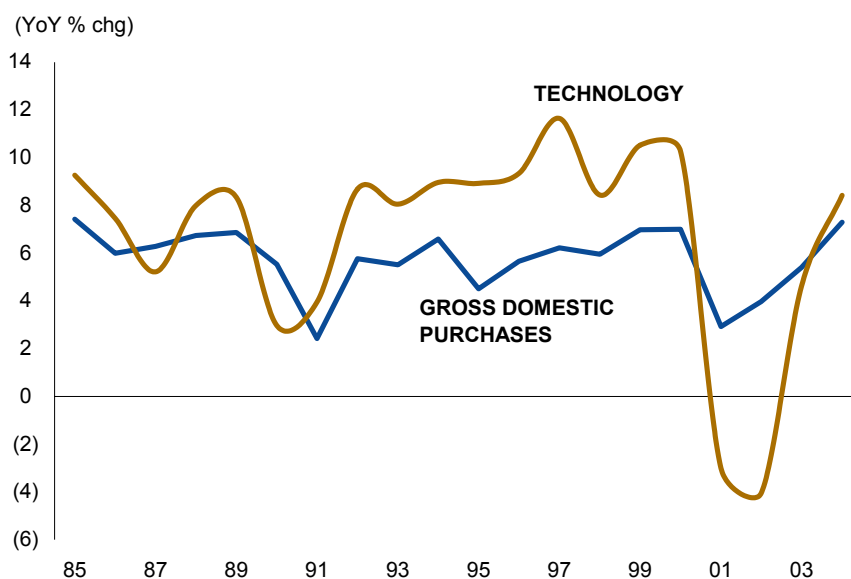


Source: Bureau of Economic Analysis and Haver Analytics, April 29, 2005

***Based on our calculations, final purchases of technology products and services (nominal dollars) have increased 7% per year over the past 20 years.***

## Display 2: Technology Sector Is More Cyclical

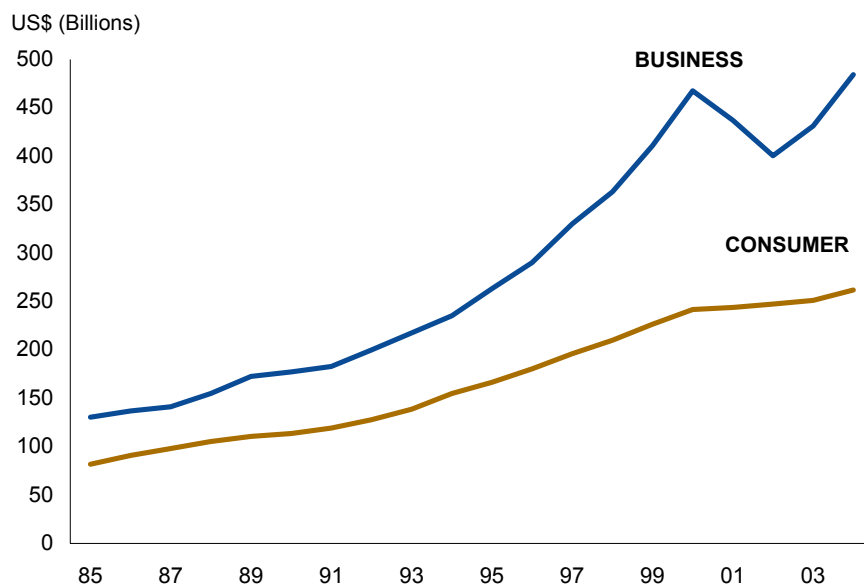
### Annual Growth in Gross Domestic Purchases and Technology Spending



Source: Bureau of Economic Analysis and Haver Analytics, April 29, 2005

***In the past 20 years, spending on technology products and services has outpaced spending in other parts of the economy by a little more than 1% per year. However, all of that out-performance occurred in the 1993 to 2000 period.***

### Display 3: Business is the Biggest Market Segment Technology Spending By Business and Consumers

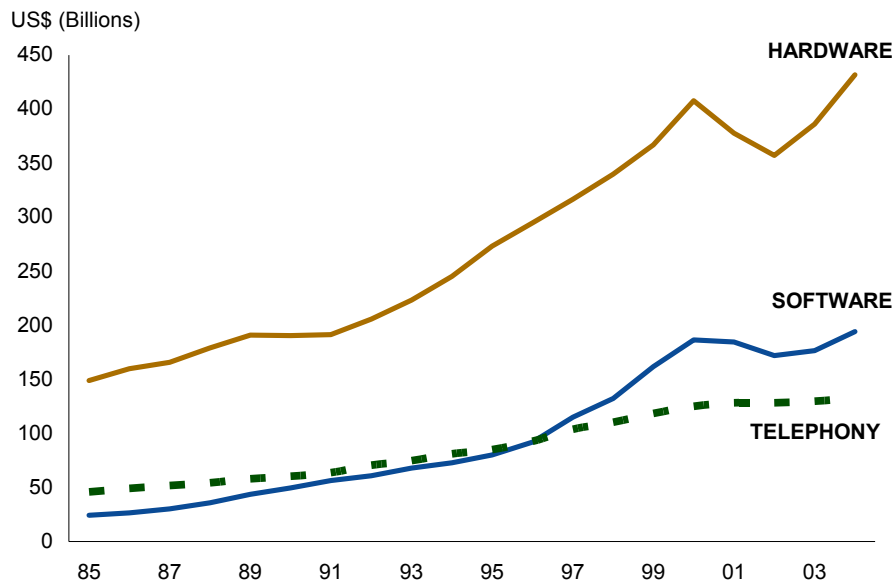


Source: Bureau of Economic Analysis and Haver Analytics, April 29, 2005

***Business spending on technology is by far the biggest market segment accounting for about 65% of total spending.***

#### Display 4: Hardware Dominates the Tech Spending

##### Technology Spending By Type



Source: Bureau of Economic Analysis and Haver Analytics, April 29, 2005

***According to the government data, the hardware market dominates overall tech spending, accounting for roughly 60% of all of the dollars spent.***