

As Broadband Expands The Economy Benefits



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Summary:

Use of broadband connections for Internet access has long been a mainstay in offices throughout the US economy. However, use of high speed connections to access the Internet at home has only begun to gain significant market penetration during the past few years. At the end of 2003, the Federal Communications Commission estimated that the number of high speed Internet connections in the US stood at slightly more than 28.2 million, more than 10 times the number only four years earlier. As the availability of these connections has increased, so have the uses for the Internet, contributing to healthy economic growth and productivity now and well into the future.

Critical Action Items:

- ✓ **Although the dot com bubble of the late 1990s has burst, it is important to remember that a lot of good, profitable companies and ideas were created in that era. The Internet is still in its infancy and as it grows, so will the opportunities for investors.**
- ✓ **The battle for connecting households to the Internet is currently being waged between the traditional phone companies, cable companies and others. The winner will dominate this space for years to come.**



Other Critical Action Items:

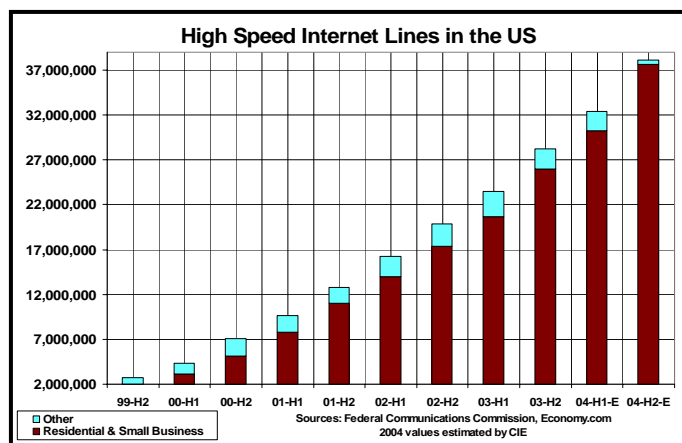
- As with many new technologies, when they are first introduced the most important battles are over the hardware, in this case who provides the connection. But as we have seen over and over again, from television to videotape to DVDs, the biggest profits in the long run are in the software side of the business, providing the content that the hardware drives to end consumers. Once broadband is well established (in the not to distant future) the battle for profits will be fought over content. Service providers who are able to provide content that consumers and households want will be the big winners in the battle over the Internet.

Overview:

The real battle over the Internet has begun. The dot com bubble of the late 1990s was an over reaction to a new technology that was just in the very early stages of being implemented. Today it is being implemented much more broadly as a result of the adoption by more and more businesses and households of broadband Internet connections. Because high speed connections are so much faster, as these connections have become more numerous, Internet users have been able to view a much richer and varied content on their computers, downloading larger files more rapidly than ever before.

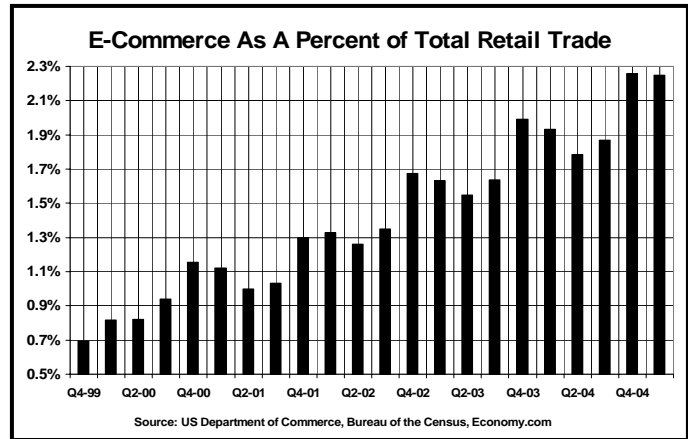
The first application to truly use this new high bandwidth world has been the music industry, where business models are being changed by the Internet. If you go to colleges today, music is no longer played on a stereo using a CD (or, to date myself, an LP). Instead, students connect their mp3 music players (usually an Ipod) to a compatible player and choose the songs they want to hear. Most of the songs were downloaded individually, not as CDs. My daughter, who used to live at the music store, hasn't bought a CD in months. Today she downloads music over the Internet and gets just the songs she wants. This new behavior will change how music is delivered to the consuming public. New methods of paying performers will have to be worked out and this new delivery mechanism will drastically alter the retail music space.

All of this has become possible because the speed at which files can be downloaded has increased dramatically. While it has long been the case that offices had high speed Internet connections, those connections are becoming more prevalent in the home market. According to the Federal Communications Commission, in the second half of 1999 there were 2.7 million high speed internet lines in the US and about 65% of them (1.8 million) were residential and small business users. By the second half of 2003 (latest data) there were 26 million high speed connections to residential and small business users alone, a 14-fold increase in four years. Today, just judging by the number of advertisements I hear and see for high speed Internet connections, that number is probably significantly higher. If growth continued at the trend of previous years, there were probably in excess of 37 million high speed residential and small business users at the end of 2004.



This rapid growth in the penetration of high speed Internet connections into households is already having a major impact on the way people and businesses behave. E-commerce is becoming a reality. More and more businesses are using the Internet to manage their purchasing and to interface with their customers. In the

retail sector, e-commerce is the fastest growing sector of the industry. According to just-released data for the first quarter of 2005, e-commerce retail sales were 24% above the level of a year earlier. Over the past four years the average 12-month increase has been 29.4%. Over the same time period, total retail sales increased an average of 3.8%. That growth has brought e-commerce sales from 0.8% of all retail sales in early 2000 to 2.3% in the first quarter of 2005 (see chart).



In the manufacturing and distribution sectors of the economy, e-commerce has long been an integral part of business operations. As broadband has become more pervasive, the use of e-commerce has expanded further. In 2003, the Census Bureau estimates that slightly more than 21% of all manufacturers' shipments were made via e-commerce, up from 18% in 1999. In the wholesale sector, e-commerce accounted for 4.7% of all sales in 1998, but in 2003 its share of all transactions had jumped to 13.1%. More and more companies are automating, as much as possible, the purchasing and distribution process.

The rapid and substantial penetration of broadband and e-commerce into the manufacturing sector has played an important role in keeping down costs and maintaining competitiveness in the sector. Worker productivity in manufacturing, which averaged 3.7% per year from 1995 through 2001 accelerated to 6.0% per year in 2002 through 2004. In wholesale trade, productivity has increased an average of 4.2% per year since 1997, compared with 3.0% in the preceding decade.

The broadband revolution is just beginning. Currently, broadband connections are in an estimated 33% of all households and small businesses, as this penetration continues to climb, the available market for services through the Internet will be a powerful incentive to the providers of equipment and content. In the first quarter of 2005, business spending on telecommunications equipment increased 12% from the pervious year and was at the fourth highest level ever, exceeded only by the 2000-2001 period. The first quarter level of spending was 31% above the level of just two years ago. This recovery in telecom spending reflects the strong growth in demand for high speed services, which is likely to continue for several more years.

With the full power of the Internet now beginning to reach households in large numbers, demand for services via the net will increase dramatically. Music downloading is one such service. Purchasing books and other goods is another. Over the next several years, I expect to see a significant increase in companies seeking to use the Internet to open up markets that may not even exist today. The increasing availability of high speed access opens up whole new groups of users that did not exist just a few years ago and those the needs of those users will be satisfied. The bubble years taught us that not every business plan or product will be successful. But with a bigger potential market than ever, I expect this sector to accelerate in the next several years.

Over the past few years, Internet related employment has fallen. In April 2005, employment in Internet-related industries was 140,000 below the June 2000 peak. I expect this trend to reverse as the need to provide content to this rapidly growing market will stimulate new activity, new businesses and new products.

The broadband revolution is just beginning. It is likely to bring a new wave of innovation and growth for the US economy.

Major Economic Indicators and Trends

Indicator	Latest Data (Date)	Change From Preceding Period	Change From Year Earlier	Interpretation
Payroll Employment (000 Persons)	133,293 (04/05)	274	2,170	Employment growth continues to support economic expansion.
Institute for Supply Management	53.2 (04/05)	N/A	N/A	High level of activity persists. Manufacturing is one of the strongest sectors.
Gross Domestic Product (Billions of Chained 2000)	\$11,078.2 (Q1/05)	3.1%	3.6%	After growing 4.4% in 2004, I expect a solid 3.5% to 4.0% in 2005.
Producer Price Index (1982=100)	154.5 (04/05)	0.6%	4.8%	Higher commodity prices are expected to keep PPI inflation above 3.0% in 2005.
Consumer Price Index (1982-84=100)	194.2 (04/05)	0.5%	3.5%	Inflation has risen with higher energy prices. Core rate remains below 2.5%.
Retail Sales (Billions of Dollars)	\$344.9 (04/05)	1.4%	7.2%	Consumer spending is expected to rise strongly in 2005.
Housing Starts (Thousands of Units)	2,038 (04/05)	11.0%	3.6%	Housing should slow as interest rates rise, but remain at healthy levels.
Industrial Production Index (1997=100)	118.3 (04/05)	-0.2%	3.1%	Manufacturing is strong, boosting overall growth.
Trade Balance (Billions of Dollars)	-\$55.0 (03/05)	\$5.6	-\$7.9	The trade deficit continues to increase. But small improvement is likely in 2005.
Durable Goods Orders (Billions of Dollars)	\$194,030 (03/05)	-2.8%	-1.7%	The trend is solidly upward as manufacturing is now growing strongly.
vFinance Entrepreneurial Confidence Index (2002=100)	207.8 (04/05)	10.4%	-5.9%	The number of entrepreneurs interested in starting a business has flattened out over the past year.
Personal Income (Billions of Dollars, Annual)	10,058.3 (03/05)	0.5%	6.0%	Healthy income growth will continue to support consumer-spending growth.
Federal Funds Rate Target (Percent)	3.00% (05/17/05)	0.00%	2.00%	The funds rate is expected to be 3.50% by mid-year and about 4.50% by year end.
10-Year Treasury Note (Percent)	4.12% (05/17/05)	-0.11%	-0.58%	Long-term rates are expected to top 4.75% by mid-year and 5.25% by year end.
Standard and Poors 500 Stock Index	1,173.8 (05/17/05)	0.6%	8.3%	Despite recent weakness, I expect solid gains in 2005.

Economic Releases for the Next Two Weeks

Date	Indicator	Previous Period	Consensus Forecast	Market Impact of Consensus
5/24/2005	Existing Home Sales (Apr) (Millions of Units)	6.89	6.88	Positive
5/25/2005	New Home Sales (Apr) (Thousands of Units)	1,431	1,330	Neutral
5/25/2005	Durable Goods Orders (Apr) (Percent Change)	-2.3%	1.50%	Neutral
5/26/2005	Gross Domestic Product (Q1-05-Preliminary) (Percent Change)	3.1%	3.60%	Positive
5/27/2005	Personal Income (Apr) (Percent Change)	0.5%	0.70%	Positive
5/27/2005	University of Michigan Consumer Attitudes Final, (May) (2/66=100)	85.3	85.6	Negative
5/31/2005	Conference Board Consumer Confidence Index (May) (1985=100)	97.7	NA	NA
6/1/2005	Institute for Supply Management Purchasing Managers' Index (May)	53.3	NA	NA
6/2/2005	Productivity (Q1-05-Revised) (Percent Change)	2.60%	NA	NA
6/3/2005	Payroll Employment (May) (Persons)	274,000	NA	NA
6/3/2005	Unemployment Rate (May) (Percent)	5.20%	NA	NA

Forecasts obtained from CBS MarketWatch.com

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