

# **The Market, Technology, and Investing**

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**October, 2008**

**SILVERLAKE**

# The Very Big Picture

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## Fundamentals

- Slowing worldwide growth 4+% → ~0%
  - U.S. economy already in recession
  - European economy sputtering
  - Financial services sector blighted
- Broad based consolidation continuing across most tech sectors
- Commoditization, disintermediation and price pressure are undermining traditional business models in:
  - Hardware (Outsourcing)
  - Software (SaaS, PaaS)
  - Services (Specialization)

## Financials

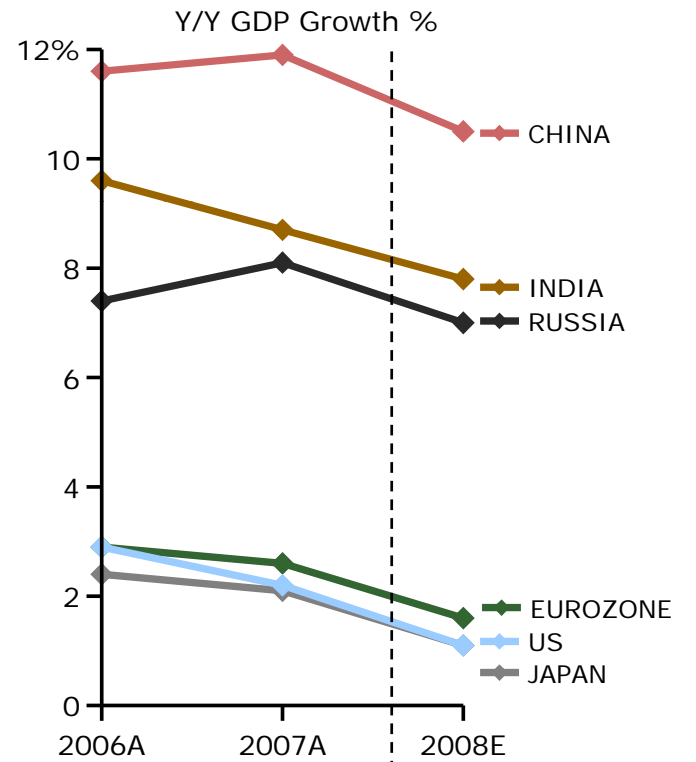
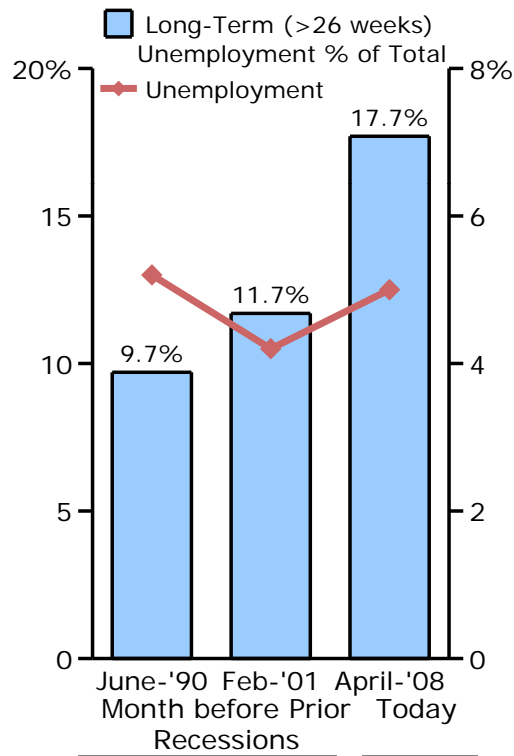
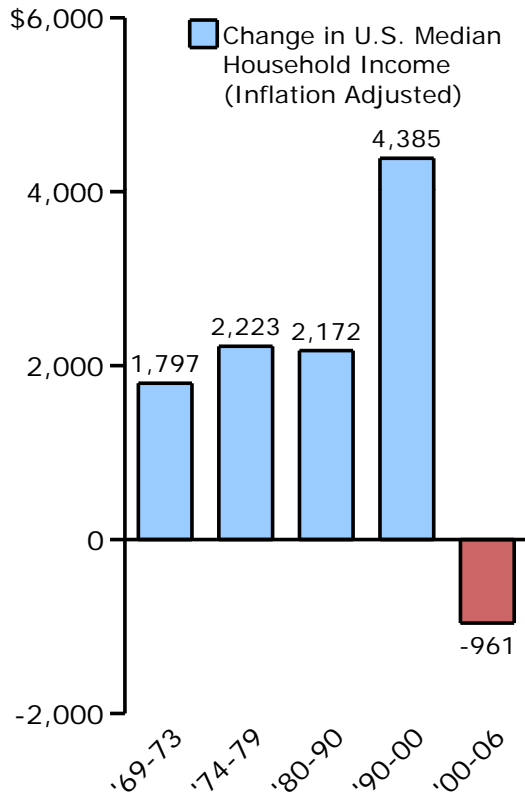
- Liquidity crisis ongoing; credit remains extremely tight
- LBO price floor for public companies effectively removed
- Volatile trading for public entities
- Strategic dialogue increasing
- Industry multiples down significantly from '07 peaks
  - Software (down 42%)
  - Services (down 35%)
  - Networking (down 60%)
  - Semiconductors (down 48%)

# Outlook is Weak

**The U.S. Consumer is getting hit from all sides...**

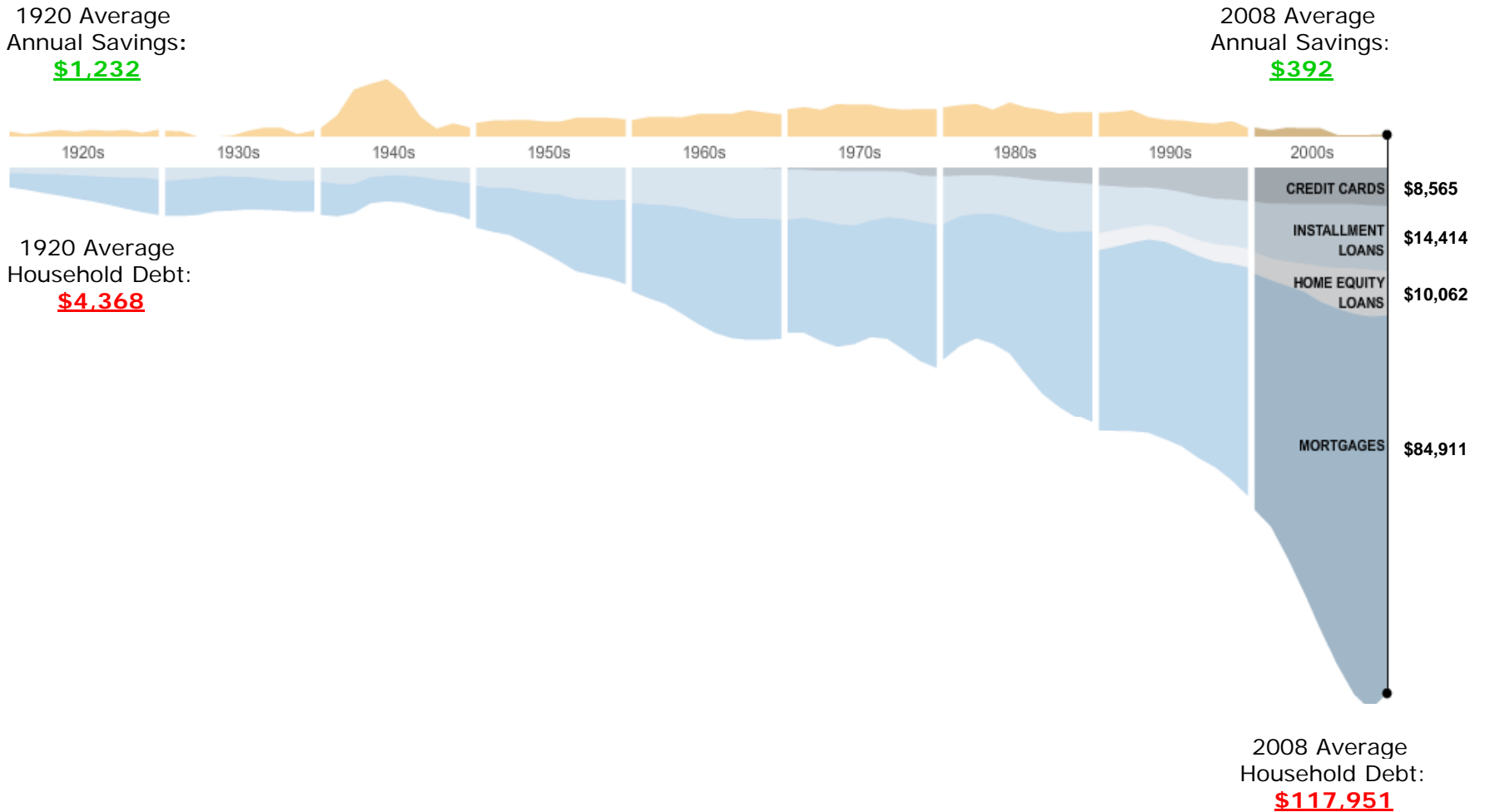
**...current unemployment is structurally weak...**

**...both working to drag down U.S. and Global GDP.**



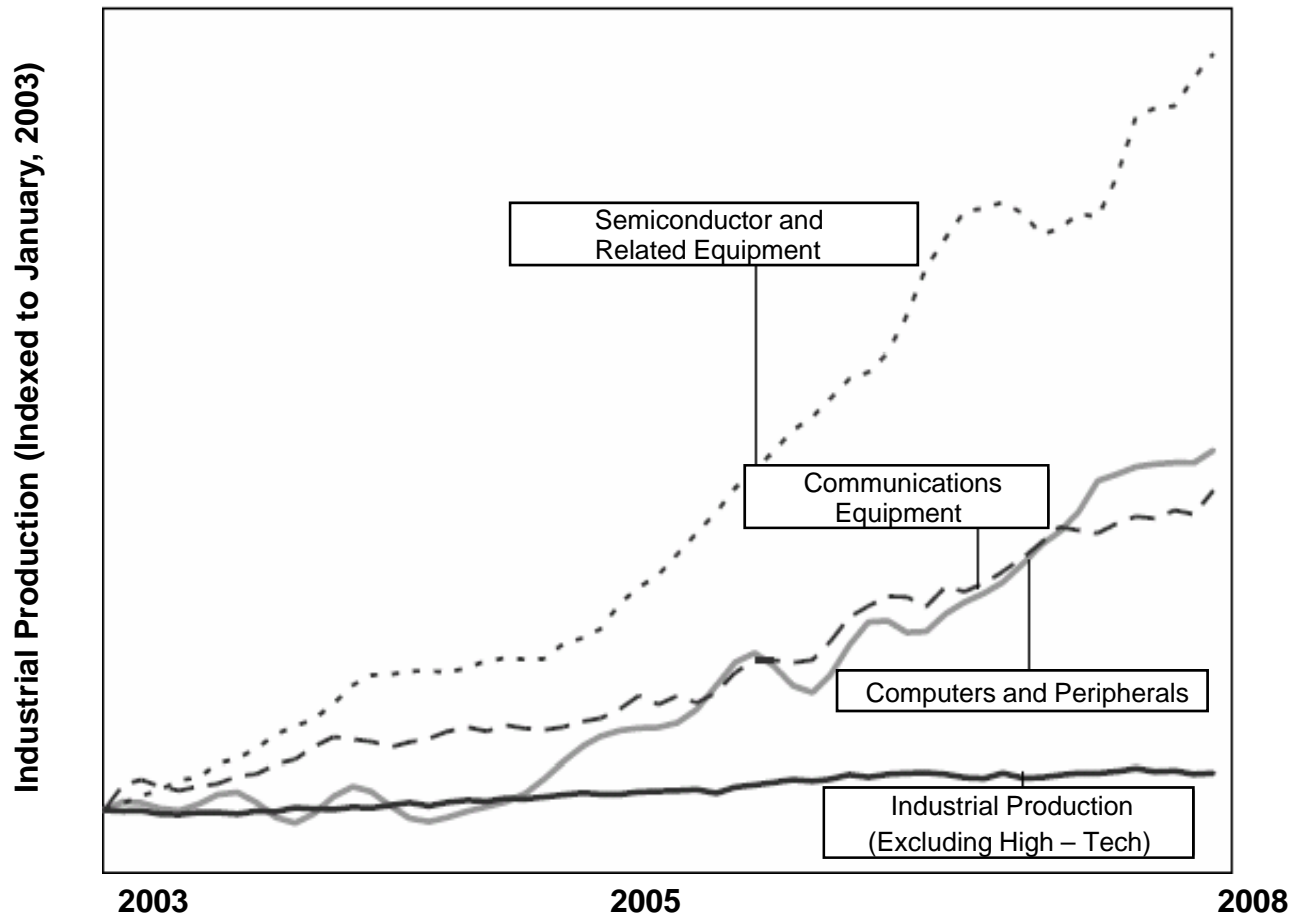
# US Consumer Spending Unlikely to be a Growth Engine

*Since 1920, US household debt has increased dramatically*



# The Technology Economy

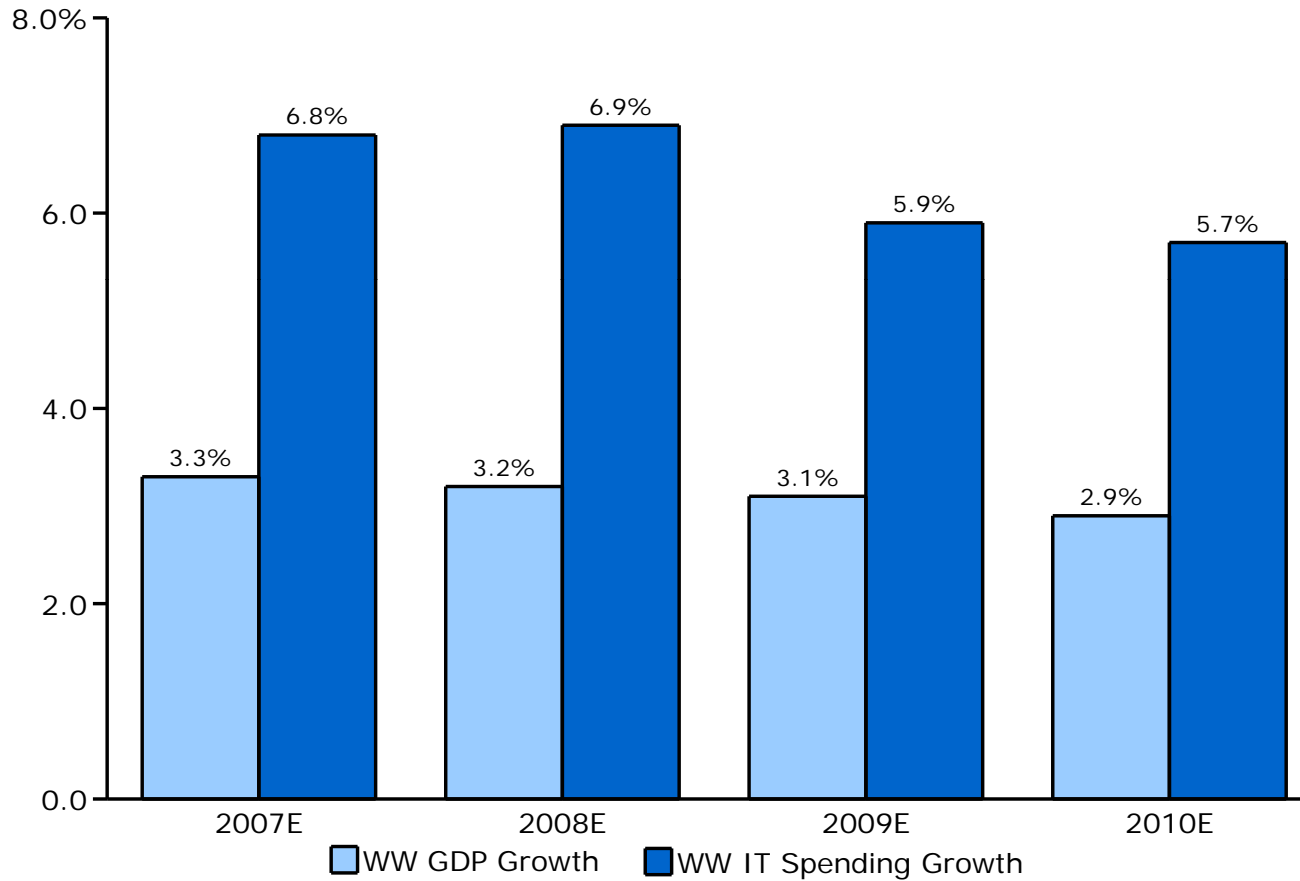
Technology spending has outpaced the rest of the economy



- LTM Total Industrial Production growth: **-1.5%**
- LTM Industrial Production growth, excluding Technology<sup>(a)</sup>: **-3.5%**

# The Technology Economy

*Technology growth expected to continue*



# Technology Phases

*The Internet has already helped drive efficiencies in the economy;  
New technologies are poised to deliver additional gains*

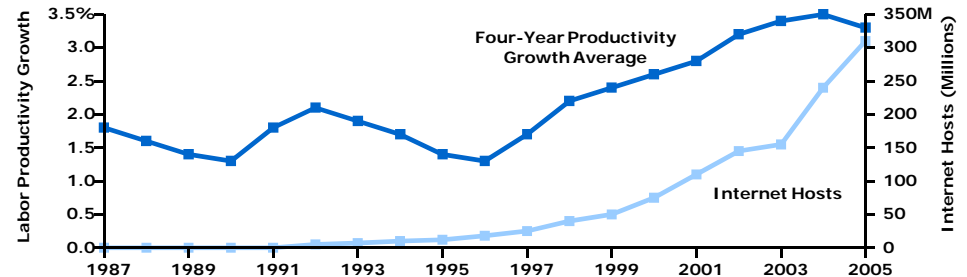
**Phase I: Personal Computers and Software**

*PC and software growth represented the first phase of the new tech economy*



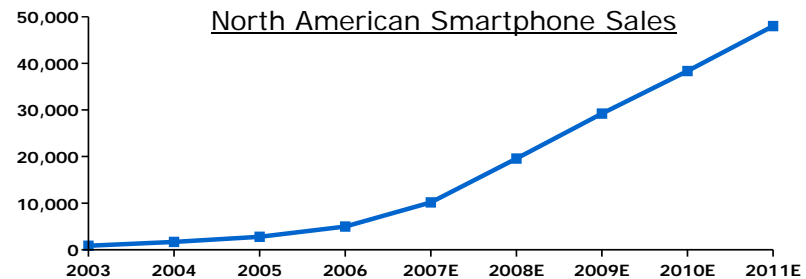
**Phase II: The Emergence of the Internet**

*Most recently, significant value has been extracted from the proliferation of the internet*



**Phase III: Mobility and Broadband**

*Mobility and broadband will deliver the next wave of IT-induced productivity growth*

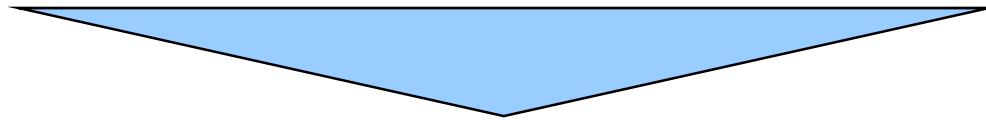


# Major Industry Trends – Software

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*We've reached the end of modern software history*

- Traditional Desktop software development is reaching the end of its life...the center of development has shifted to web-based paradigms
- “Open Source” may increasingly become the model for many companies delivering traditional software development environments and infrastructure components
- SaaS, and now PaaS offerings, will accelerate price deflation

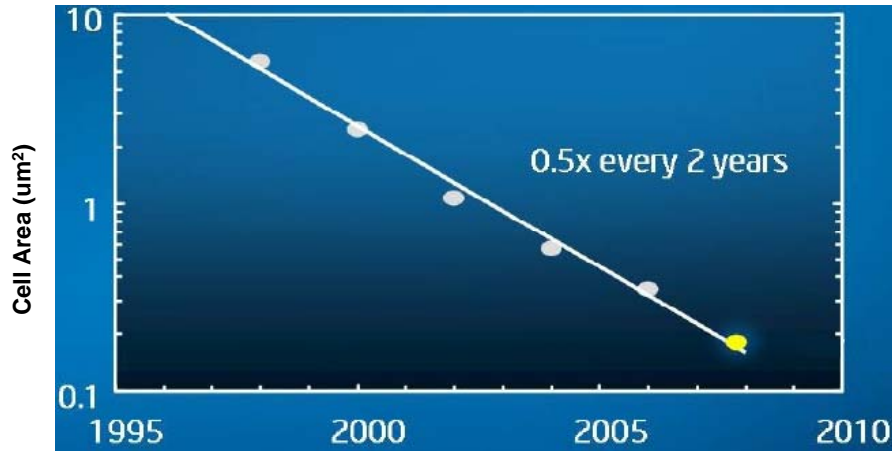


*The future will not look like the past*

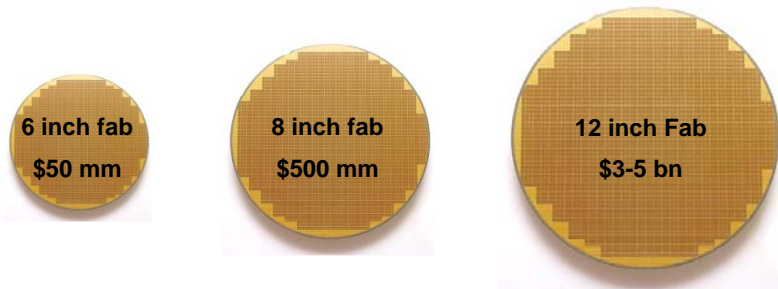


# Major Industry Trends – Hardware

## Asian supply chains rule



- Moore's law remains unbroken but more expensive than ever
- Return of vertical integration for hardware market leaders (HP, IBM, Samsung)

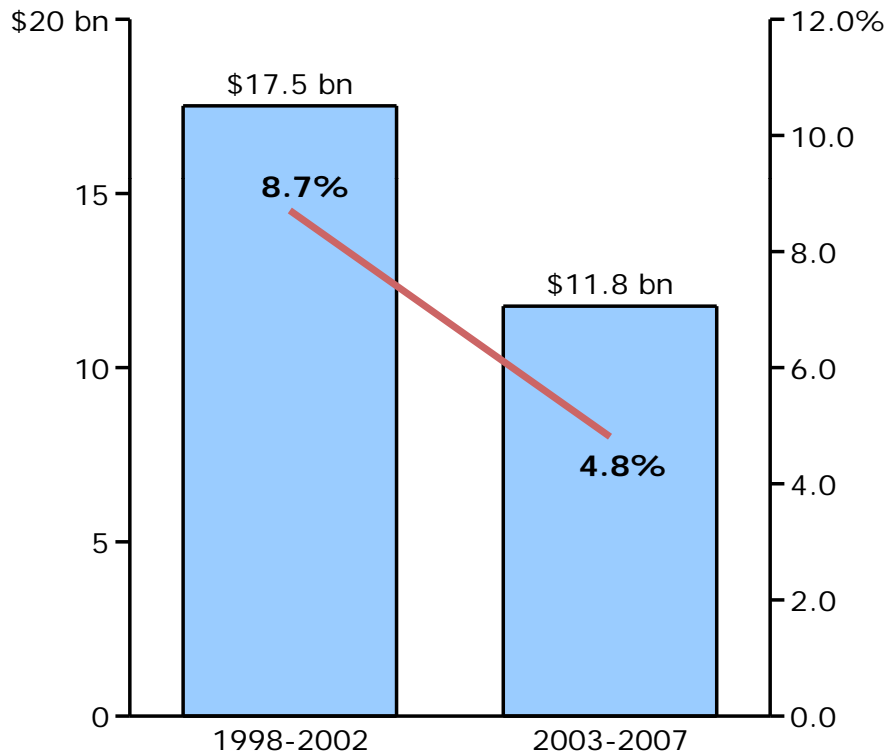


- Rise of NAND flash
- Emergence of national champions

# Major Industry Trends – Services

*IT systems don't install or maintain themselves*

Industry EBIT and EBIT Margin Since 1998  
(US Only)



- Largest single sector, over \$540 bn in revenues
- Experiencing uneven commoditization
- Standardized work continues moving to low-cost geographies
- Acceleration of M&A activity now inevitable

## Major Industry Trends – Networking / Communications

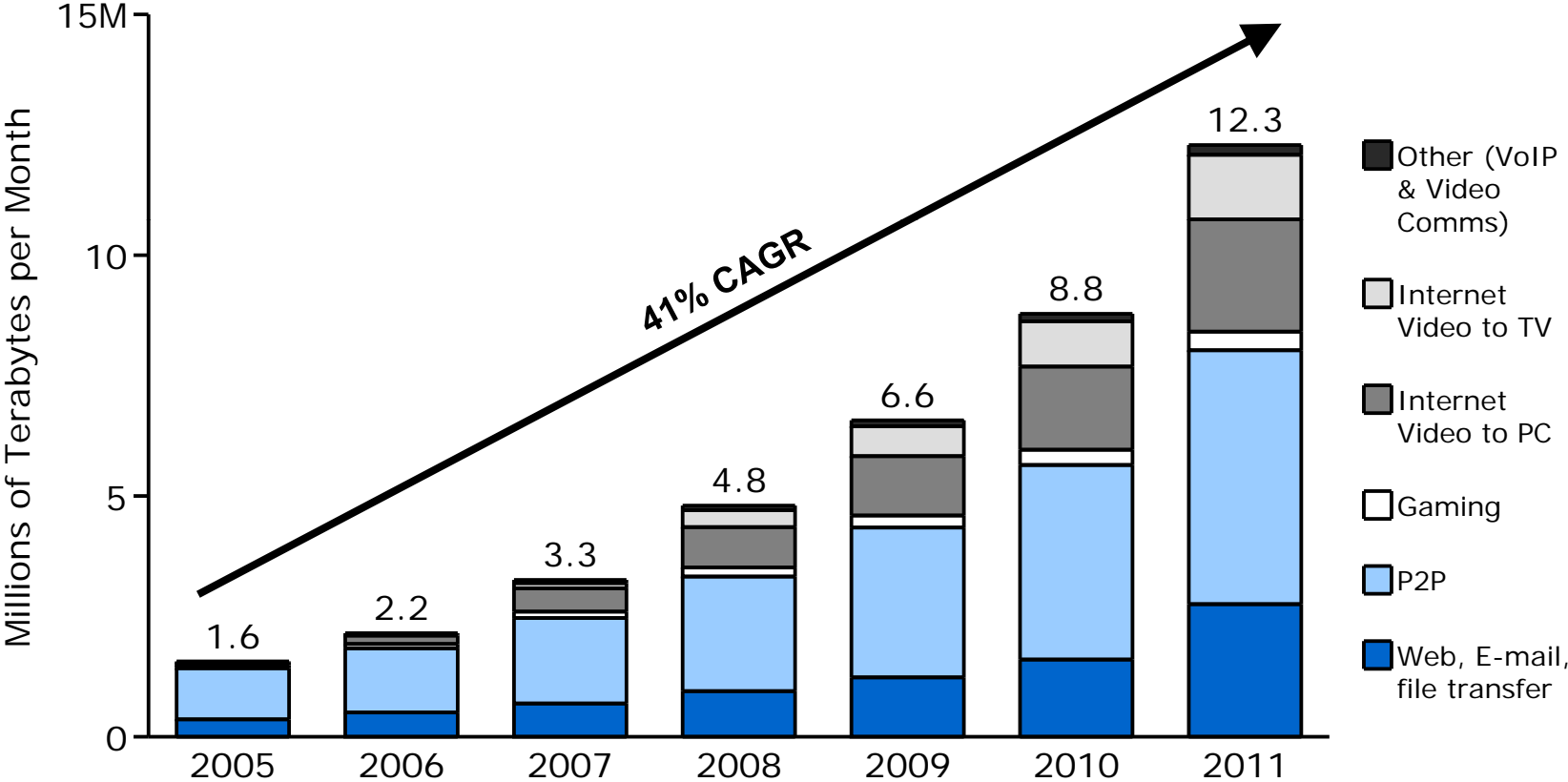
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### *Bandwidth boom driving the need for improved wireline infrastructure and next-gen wireless networks*

- Consumers are causing exponential growth in Internet traffic, driven by many new applications with more video content
- Business video use lags as bandwidth tariffing/pricing models differ from consumer; business use is expected to explode in the next 3 years
- Watch for dramatic increases in wireline and next-gen wireless network infrastructure spending as traditional carrier business models come under attack
- Scale vendors will benefit disproportionately from this new infrastructure investment
- Convergence at the enterprise is creating a new \$44 bn market for “Unified Communications” (including HD collaboration) and setting the stage for a competition between equipment providers, software incumbents, apps vendors and services providers

# Consumer Internet Traffic

**Internet traffic and bandwidth requirements are exploding – the Internet is expected to quadruple in size in the next four years, primarily driven by video**



## Question?

*Over the last 15 years which technology resource has improved most in terms of price/performance?*

Technology	1991	2006	Ratio
<b>MPU (Moore's Law)</b>	\$500 bought a 50-megahertz Intel 486 processor	\$500 bought a 3-gigahertz processor	<b>60X</b>
<b>Storage</b>	\$500 bought a 100-megabyte drive	\$500 bought a 750-gigabyte drive	<b>7,500X</b>
<b>LAN Bandwidth</b>	1Mbps	10 Gigabit per second	<b>10,000X</b>
<b>WAN Bandwidth</b>	45Mbps	1 Terabit per second	<b>20,000X</b>

## A Thought to End With...

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***In every era, the winning companies are those that waste what is abundant – as signaled by sharply declining prices – in order to save what is scarce***

- US auto companies profited through the 50s and 60s on the backs of abundant (and cheap) gasoline and road building
- Microsoft exploited the economics of the PC revolution as no other – engineering more and more functionality onto an ever improving price performance curve for processors and local storage
- Google, in turn, has been extravagant about using data storage and backbone bandwidth. Conversely, it has been economical with today's most precious resource, users' time & patience
- AVI-SPL...