

# Technology Paradise Lost: The New Future of Spending

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Both buyers and sellers continue to seek clues for a turnabout in the technology market though a few clear signs have emerged. A new PC hardware replacement cycle appears to have started and companies are slightly more confident in 2004 than they were in 2003. Growth is sputtering with corporate returns inconsistent. There may be, however, something different in the works that portends to change the way IT buying and spending occurs in the future. Buyers have more power than ever before and are using it to the detriment of sellers. In addition, new labor pools combined with open source software are poised to create a new dynamic that will permit buyers to spend less and get more from their IT buying. A new model of spending is emerging.

Client Notes:

Conclusion:

**IT buying and selling is at a major inflection point.**

My Action Item:

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# Some ideas to consider

**Overall spending glass: Half-full, Half-empty, Half-cracked?**

**The Curse of Moore's Law**

**Technology Paradise Lost: The New Future of Spending**



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The phenomenal spending growth of the 1990s in IT made IT the largest capital goods purchase companies would make. The growth has taken a breather for the past few years but continues to remain high from a historical perspective. At the same time, the same type of price-performance gains that have been part of the hardware world have come to its software and services counterparts with the emergence of Microsoft, open source and inexpensive, high-quality offshoring providers. These providers are cutting the costs of services for both buyers and sellers but offer a double-edged sword for sellers depending upon business model and customer base. As all of these factors combine, the future of technology spending in the next decade will be very different than that of the past.

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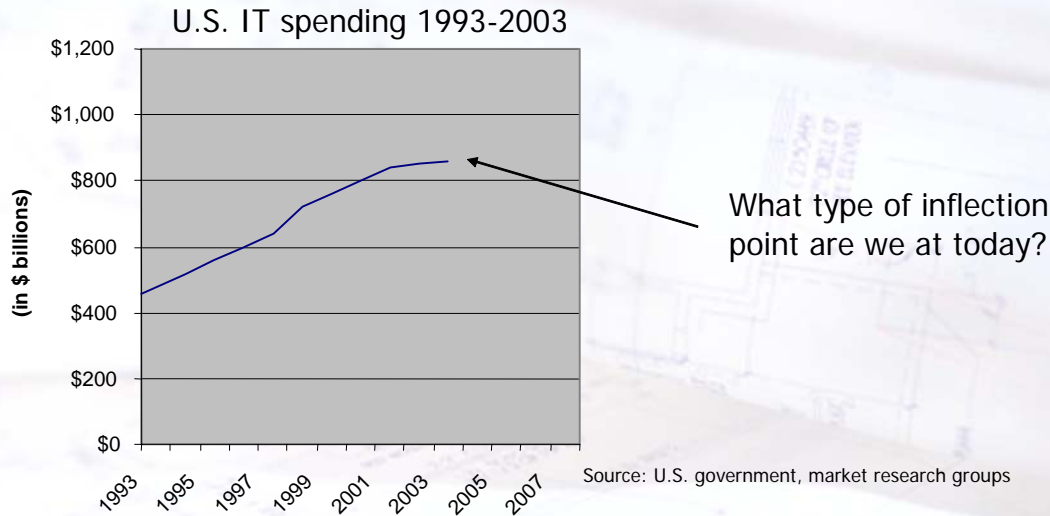
Conclusion:

**It is time to reexamine status quo assumptions for IT growth and spending.**

My Action Item:

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# Overall spending glass: Half-full, Half-empty, Half-cracked?



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Total IT spending has grown at a double digit clip during much of the 1990s well in excess of GDP growth. With the burst of the Internet bubble, it took a sharp stop and there is increasing belief that 2004 will be the year that the industry re-starts. Few are stating that the growth of the past will re-emerge, but the question remains what will be the nature of the recovery? Conventional wisdom states that it will track and exceed the GDP for U.S. markets. There are a number of factors that challenge conventional wisdom.

*Capital spending represents about one-half of total IT spending, while expensed spending is the other half. Labor (internal, purchased, bundled) represents about two-thirds of total spending.*

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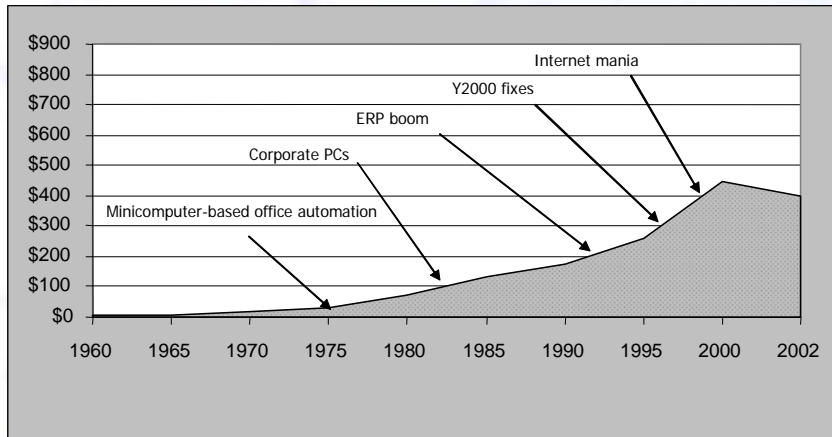
Conclusion:

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# IT capital spending has been fueled by a cascading array of technology initiatives

**U.S. Capital Spending in IT Equipment and Software**  
(in \$ billions)



Source: U.S. Bureau of Economic Analysis



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IT-based capital spending has grown in leaps and bounds triggered by a variety of technology driving initiatives over the past 30 years. Today, IT represents nearly 50 percent of all capital goods spending up from less than 15 percent during that time frame. With each successive initiative comes another wave of spending. This investment hit a wall in 2000 as an economic downturn forced spending down. Software spending, however, did not decline to the degree as the overall market and actually has eked out slight growth every year. The broader question for many buyers and sellers is what will it take to re-invigorate technology (in particular software) spending?

Client Notes:

Conclusion:

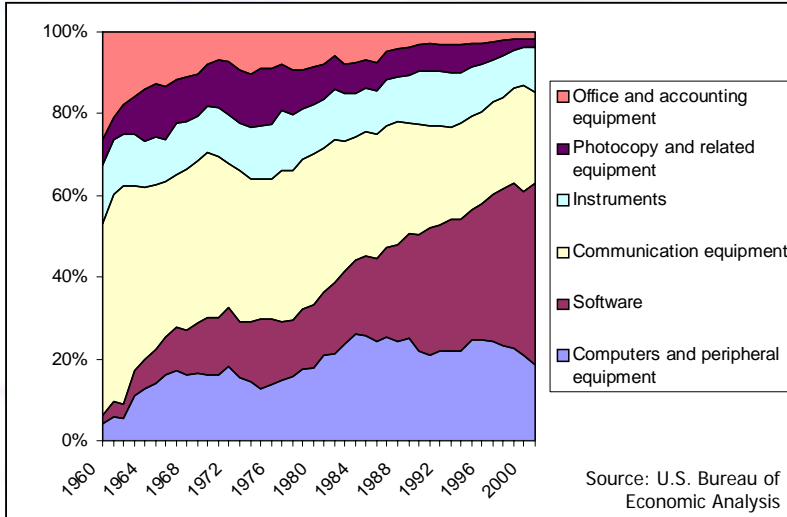
**In less than 30 years, IT has gone from a minor to the dominant corporate capital investment.**

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# Software has increased share dramatically

IT Capital Spending by Type



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When capital spending numbers are broken down it can be seen that software spending has grown from being an insignificant portion of the pie to the dominant slice. Almost 50 percent of all capital spending is on software and continues to grow in share as percent of the total spend. Nearly two-thirds of this spending is for either the creation of new or customization of purchased software: only one-third is for packaged solutions. The movement from custom build to packaged solutions has been the major factor in the explosive growth in the software industry.

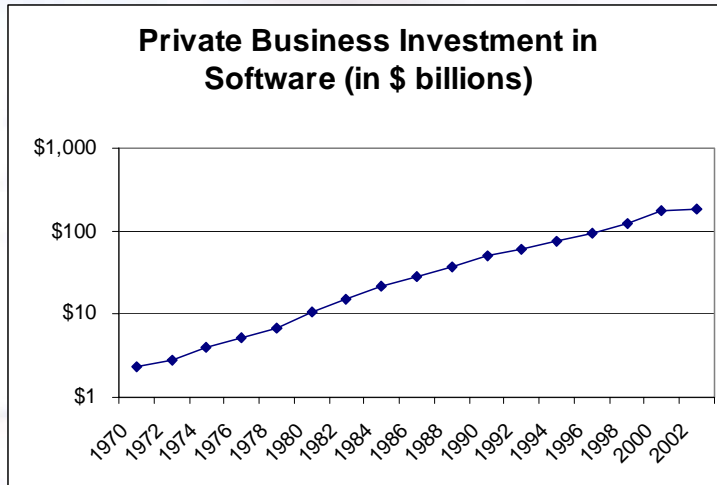
Client Notes:

Conclusion:  
**Enterprise software is the dominant technology corporations have invested in.**

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# Can this type of growth continue?



Source: U.S. Bureau of Economic Analysis



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The law of large numbers begins to conspire against historical growth patterns continuing in the future. With technology investments representing nearly 50 percent of total capital spending, it is unlikely that they can increase their share unless a systemic change in capital-labor economics occurs. If IT were to continue along the path of its prior growth trend, it would represent over two-thirds of all capital goods investment by 2010. The growth trends for software are even less compelling; software sales would need to hit over \$1 trillion between 2010 and 2012 if historical growth patterns were to continue.

Client Notes:

Conclusion:

**Natural laws of economics and spending conspire against past growth patterns continuing for IT.**

My Action Item:

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## The Curse of Moore's Law

**"Anything that can affect industries whose total revenue base is many hundreds of billions of dollars is a big deal,"** Andrew Grove, CEO, Intel Corp.  
*Only the Paranoid Survive.*

**"Under NO circumstances lose against Linux,"**  
Orlando Ayala, Senior Vice President, Microsoft, *New York Times*, March 2003

**Question: Can Moore's Law be realized in software and services as it has in hardware?**



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Moore's Law is great when you are buying a PC for your child but crummy when it starts to impact your business and hurt margins and opportunity for growth. For software and service companies, there are a number of factors emerging that will transform Moore's Law to Moore's Curse. These areas include the deployment of new technologies, open source, Microsoft, and offshoring. These trends will combine to offer buyers unprecedented functionality and capabilities so that it will be very possible to slash IT budgets while increasing the capability of the IT organization. At the very least they will redefine the pricing floor in many markets.

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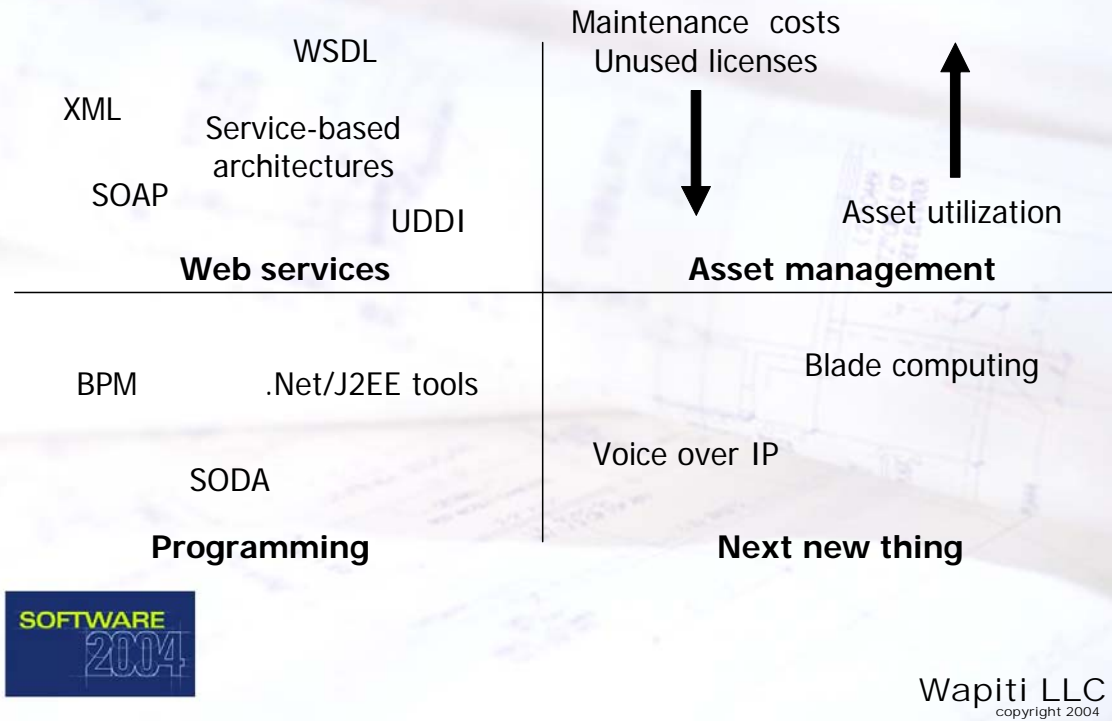
Conclusion:

**New pricing price points in IT are about to be established. The trend is downward.**

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# New technology as function of Moore's Law



Technology has historically been the key factor that has driven Moore's Law in hardware. Software, too, is beginning to experience the type of price-performance gains that hardware buyers have become used to for years. Ranging from the productivity returns of web services to new service oriented programming techniques to new asset management packages, buyers are being presented with a vast array of technology that helps them accomplish more with less spending than ever before. The hot new areas that are attracting attention – blade computing, asset management, etc. – all have in common a simple value proposition and the ability to easily show buyers how to spend less money on IT and obtain more value.

Client Notes:

Conclusion:

**Moore's Law applies to more than just hardware.**

My Action Item:

# Microsoft as function of Moore's Law

Microsoft technology feature	2003	2007
Scalability	2,500+ OLTP user references emerge	Non-differentiator
Availability	99.6% or more application, availability references	Non-differentiator
Manageability	Blade management software improves	Competitive market, much improved
Skills availability	Experienced skills gap closing	Non-differentiator
High-end operating system (Datacenter) applications	Less than 200	More than 1,000
Price	Price leader at 16-way processors and below	Price leader up to 32-way processors.
Market acceptance	1,000 enterprises using Datacenter in production.	6,000+ enterprises using Datacenter in production

Source: Gartner Inc.

How will this impact pricing?  
 How will this impact the desire of companies to become Microsoft shops?

Microsoft has very deep hooks into the enterprise. In 2002, not including desktop sales, nearly 25 percent of Microsoft's revenues were derived from products that fulfill corporate IT needs. When CIO budgets are reviewed, Microsoft-specific technology typically captures two or three of the top ten slots. Over the last decade, Microsoft has slowly and steadily added capabilities, features and functions that make an exclusive Microsoft environment an obvious choice for many. Ironically, after decades of trying to escape the proprietary clutches of IBM's mainframe technology, companies appear to be comfortably settling into the proprietary, exclusive clutches of Microsoft's PC-based technology.



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Client Notes:

Conclusion:

**Microsoft's relentless march into the enterprise continues to erode the initial price paid for technology.**

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# Open source as function of Moore's Law

Technology	Proprietary	Open Source
<b>Operating System</b>	Sun (Solaris), Microsoft (Windows), IBM (MVS)	Red Hat, IBM, SuSe, Lindows.com (Linux)
<b>Database</b>	Oracle, IBM (DB2), Microsoft (SQLServer)	MySQL, PostgreSQL, SAP (SAP DB)
<b>Web Infrastructure</b>	BEA, CA, IBM, Microsoft	Apache Software Foundation, OpenLDAP Foundation, JBoss
<b>Development tools/languages</b>	Microsoft, IBM, CA, Oracle, Pegasystems, Ilog	IBM (Eclipse), Apache, ActiveState (Perl, others)
<b>Desktop applications</b>	Microsoft (Office, Explorer), IBM (Lotus), Corel (Word Perfect)	Sun (StarOffice), Mozilla (browser), OpenOffice, OSA Foundation
<b>Content management</b>	Documentum, Interwoven, Vignette	Zope, Red Hat, OpenCMS
<b>Enterprise applications</b>	SAP, Oracle, Microsoft, Siebel	Compiere (ERP and CRM), Ohioedge, Anteil (CRM)

How will this impact pricing?  
 How will this impact the buy vs. build decision?

There is another and perhaps more disruptive force in play than Microsoft and that is open source software. As the chart shows, open source software is moving well beyond a few specific technologies. It is a movement within the software community to share and develop a wide variety of code that historically has been tightly controlled by its sellers. The use of open source is not limited to a few companies that want to be on the edge. Users range from Google who claims to possess the world's largest Linux server cluster with over 10,000 servers to companies such as Merrill Lynch & Co. and Winnebago Industries. For software vendors it is somewhat insidious as it can both act as a weapon as Sun shows with its support of StarOffice as well as an enemy as IBM shows with its support of Linux.



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Client Notes:

Conclusion:

**Open source software will be one of the most disruptive technologies to IT sellers for the next decade.**

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# Labor as a function of Moore's Law

Labor pool	Per hour personnel cost (in \$U.S.)	
	2002	2006
High-end U.S. (IBM, Accenture, etc.)	\$175	\$110
Regional U.S. (Keane, Crowe Chizek, etc.)	\$125	\$90
Independent contractor	\$80	\$50
Internal IT staff (burdened cost)	\$45	\$45
On-site, Indian offshore (TCS, Infosys, etc.)	\$50	\$60
Off-site, Indian offshore	\$15	\$20
Emerging offshore (BridgeQuest (Russia), ASTI Shanghai (China), SPI Technologies (Philippines))	\$10	\$15

Source: Jetstream and Wapiti LLC



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Offshored labor will have a huge impact on wages paid to employees and contractors over the next few years. High-end U.S. based consultants will be forced to slash certain rates by one-third or more while U.S. employees will find raises limited. The impact of these offshore providers will be an equalization in pricing over the next three years as offshore companies find their cost models increasing due to the addition of foreign employees from the United States and Western Europe. In the meantime, large U.S. consulting companies and systems integrators are being forced to set up operations in India, China and Russia to create a pool of low cost labor. Accenture has announced that it will double its offshore consultants to total 10,000 by the end of 2004.

Client Notes:

Conclusion:

**Offshoring will result in IT wage stagnation in the U.S. as well as shifting of roles and responsibilities.**

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# Global labor arbitrage & build vs buy are by-products of offshoring

Let's do the math:

Gross margins = 20 to 60 percent at \$120/hour (U.S. average)

Take mature platform (India) add IT enabled connectivity plus Global visibility of prices/cost control and what do you get?

Opportunity for new companies problems for older ones

**Service margins under pressure**



Inexpensive labor	→	50% savings
+		
New tools, web services	→	2-5X faster
+		
Open source	→	Free
=		I don't want (or have to) to pay a lot for that software!

**Build vs. buy is back**

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Offshoring will be a disruptive trend that will have much more impact than the mere shifting of labor and IT chores from one geography to another. First it can become a competitive weapon for those companies that can take advantage of it (e.g. ones that had little consulting experience or content in the past). Such firms can reset the pricing and rules of market engagement to the detriment of large systems integrators and software vendors dependant on high-margin consulting revenue. A new dynamic also emerges when such inexpensive labor is combined with new tools (including web services technology) and open source code. That dynamic is very simple: building applications from scratch will be coming back to the technology market in a big way. At the very least, it will help buyers keep application spending down.

Client Notes:

Conclusion:

**Open source and cheap labor brings building applications back as a strong option for buyers.**

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# Technology Paradise Lost: The New Future of Spending

Offshoring/labor sourcing  
 Asset/inventory reduction  
 IT pricing  
 Open source  
 Standard technology  
 Microsoft  
 ROI focus

Spending driver ↓



New technologies  
 Legacy technology

↑  
 New business processes/initiatives  
 Government regs  
 Competition  
 Next New Thing

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Some may consider the idea of a contraction in total corporate technology spending to be ridiculous and naïve. But it is not. In hardware the rate of price declines has overtaken the ability to expand the equipment's usage in corporations. The potential for contraction in spending is not attributed to any single element but rather the culmination of multiple trends: offshoring, standard hardware, new technology approaches, open source, Microsoft and others. When all of the current technology trends are examined there are more drivers for users to decrease the amount they spend on IT than there are to increase spending. Most companies will be able to significantly reduce their IT budgets if they choose to do so.

Client Notes:

Conclusion:

**There are significant means by which users can decrease the amount they spend on IT without a decrease in service or capabilities.**

My Action Item:

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# Buyers can significantly decrease IT spending over the next 3 years

Technology	Factors driving costs down	Potential savings
Hardware	Microsoft, Linux, Intel-based processors, consolidation, increased utilization, better partitioning	10 to 40 percent
Software	Open source, Microsoft, subscription-based pricing, increased competition, build internally, renegotiate licenses based on use	20 to 35 percent
Labor/internal costs	Supply of technologists, offshoring, automating technologies (e.g. voice recognition).	30 to 50 percent
Services	Offshoring, strategic sourcing	30 to 50 percent

**What does this mean to you?**

No two IT budgets are alike. The main categories of spending are hardware, software, services and internal labor costs. Each of these categories includes different savings drivers that depend on the mix of technologies and different rationalization, consolidation and redeployment techniques. Depending upon their current spending profiles, companies can cut between 10 and 50 percent of their costs in different IT spending areas over a period of years. The wide ranges for each area is a function of how thrifty companies have or have not been with their IT investments.



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Client Notes:

Conclusion:

**The current trends in technology will decrease rather than increase IT budgets in key categories.**

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# New business and cost models will be needed

(as a % of revenues)	Software	Services	Hardware
<b>Cost of revenue</b>	5 to 20 percent	40 to 80 percent	60 to 85 percent
<b>Gross margins</b>	95 to 80 percent	60 to 20 percent	40 to 15 percent
<b>R&amp;D</b>	5 to 25 percent	0 to 0.5 percent	3 to 15 percent
<b>Sales/marketing</b>	30 to 40 percent	5 to 20 percent	3 to 15 percent
<b>Administration</b>	5 to 20 percent	5 to 15 percent	5 to 15 percent
<b>Pre-tax margins</b>	Up to 40 percent	Up to 30 percent	Up to 20 percent
<b>Leading example</b>	Microsoft	Wipro (India)	Dell

Software and service companies must be willing to change their cost models as the hardware companies did in the 1990s.

Selling technology to corporations often requires a large, highly compensated sales and marketing force that spends much of its time selling a wide variety of high-priced wares. Complex customer requirements and lengthy bake-offs increase the cost structure of sellers. If prices are going to come down, so must the cost models of many technology vendors, particularly in the software and service area. Technology companies must re-examine and evaluate each cost area for cuts. The average company will need to remove between 20 and 40 percent from their cost base to survive in the future software and services buying environment.



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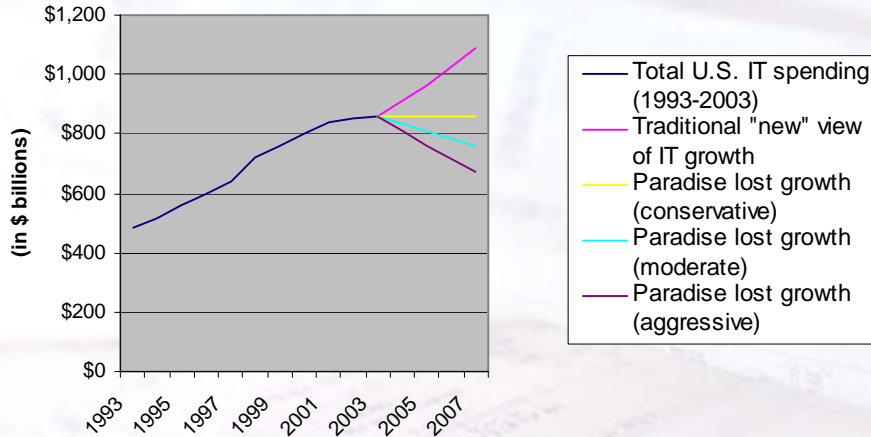
Client Notes:

Conclusion:  
**Operational excellence must complement innovation and product delivery for tech providers.**

My Action Item:

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# What is the most likely outcome?



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Conventional wisdom states that IT spending will rebound in 2004. There are a few hopeful signs, particularly for PC hardware replacement, where growth looks good. Many other areas, however, are less conclusive with users not spending more and more money on IT. The Next New Thing in IT could well be a spending sobriety that keeps increases to a minimum for years to come. If buyers aggressively look to slash IT waste from their companies, spending trends could easily turn downward for many years.

Client Notes:

Conclusion:

**Spending will not rebound as it has historically. The IT market is about to hit a major inflection point.**

My Action Item:

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## Summary

The good old days of free spending will never return. Buyers are smarter and tapped out.

All long-term trends point to lower pricing for most technologies and related services.

Sellers must change their business models to match the new business realities. Cuts required will range from 20 to 40 percent.

Growth opportunities exist but only for those companies who understand the future and change to accommodate it rather than fight the inevitable.



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After three years of lackluster performance, companies are ready to hear that good news is around the corner. A few companies are starting to make such noises. Perhaps companies will return to their extravagant spending practices of the past and facilitate an explosion of growth: but more than likely they won't. Smart companies have learned that increased IT spending is not the way to profitability; the excesses of the past decade will not be repeated. A new environment is emerging that will require smarts and economy for both buyers and sellers. Only those companies who understand the challenges ahead will be able to thrive in the new times to come.

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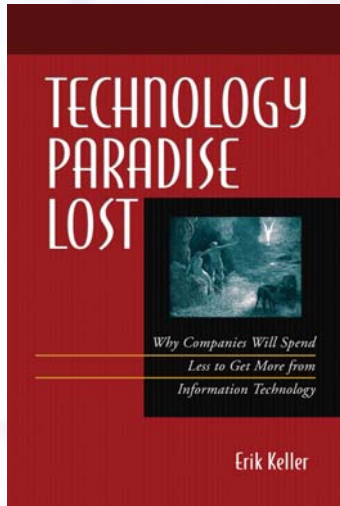
Conclusion:

**Market inflection point offers opportunities for those savvy enough to recognize and capitalize upon them.**

My Action Item:

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Thank you for your attention



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([www.manning.com/keller](http://www.manning.com/keller))



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