SMARTsourcing Conference and Exposition

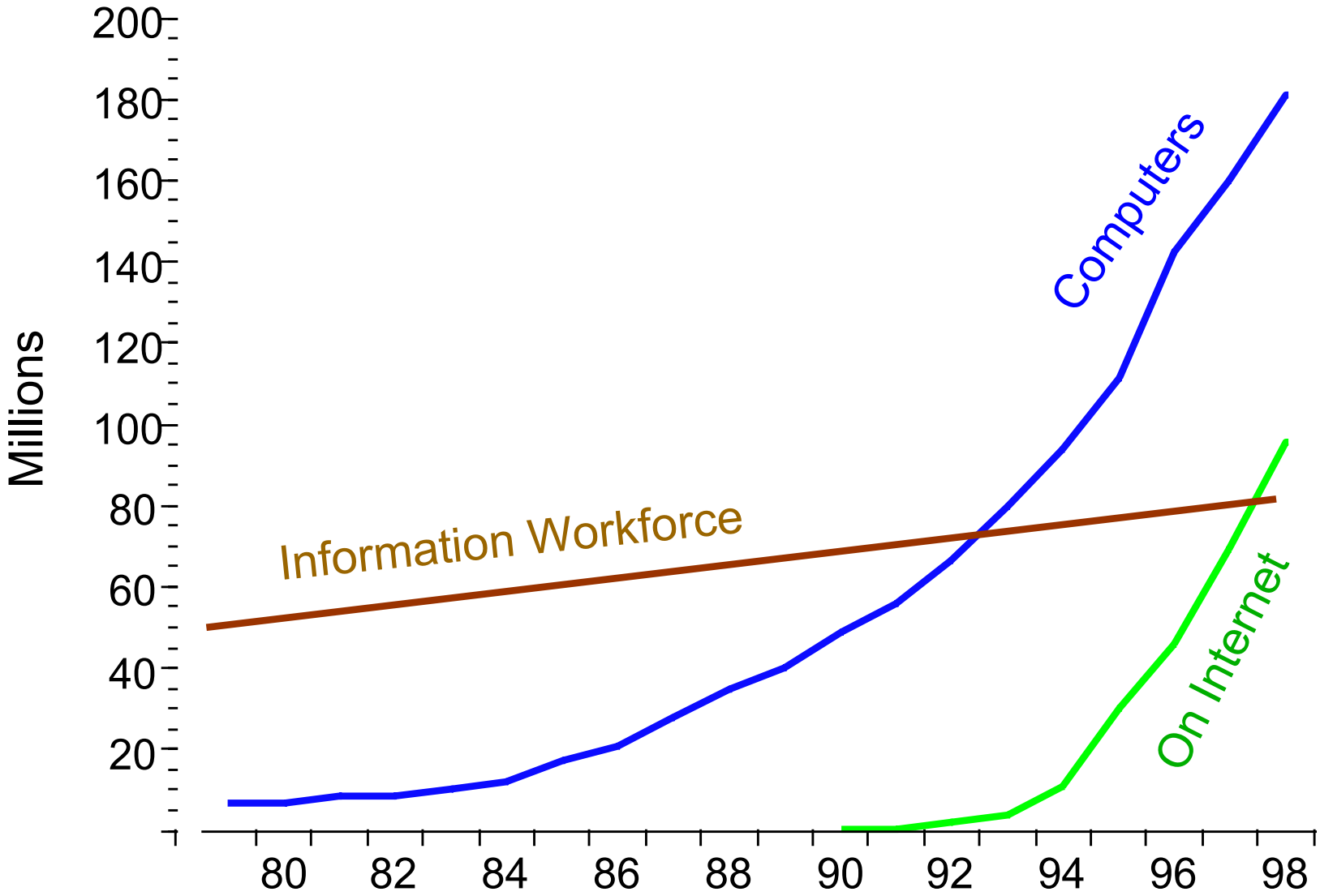
SMARTSOURCING FOR INNOVATION

Paul A. Strassmann
CEO, The Information Economics Press
June 28, 1999

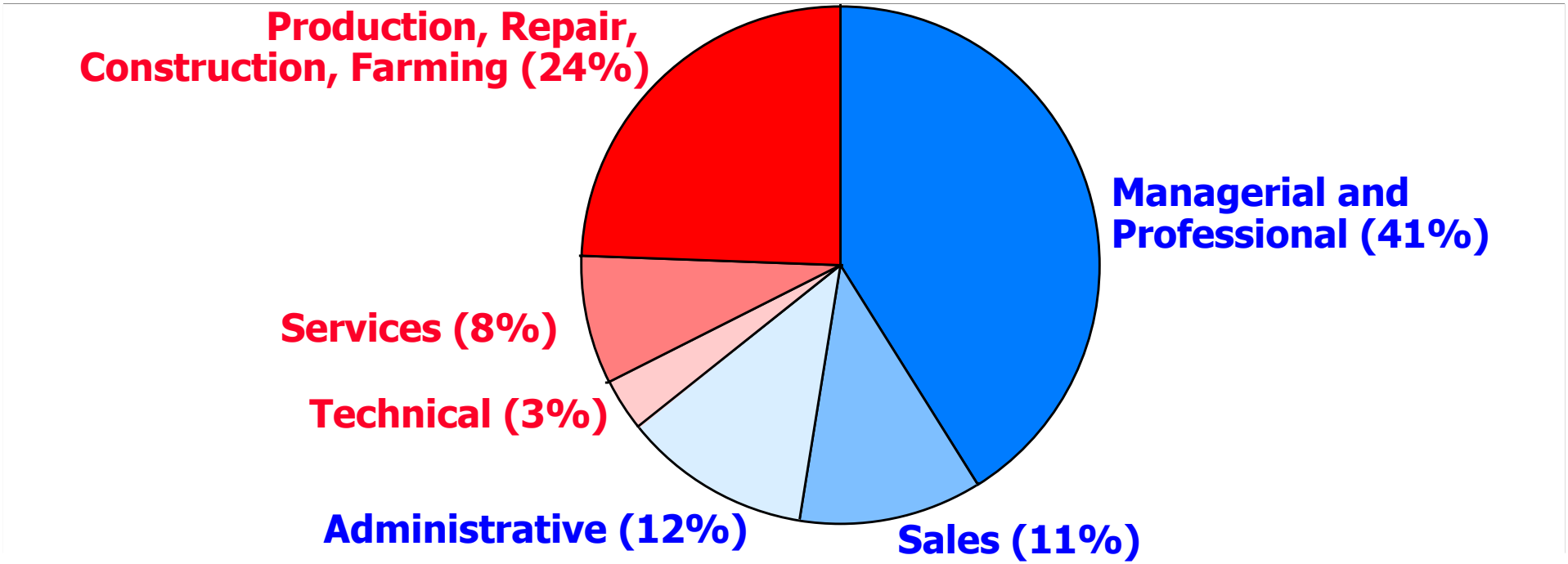
Part I

Conditions Ripe for SMARTsourcing

U.S. Computers Now the Engines of U.S. Productivity

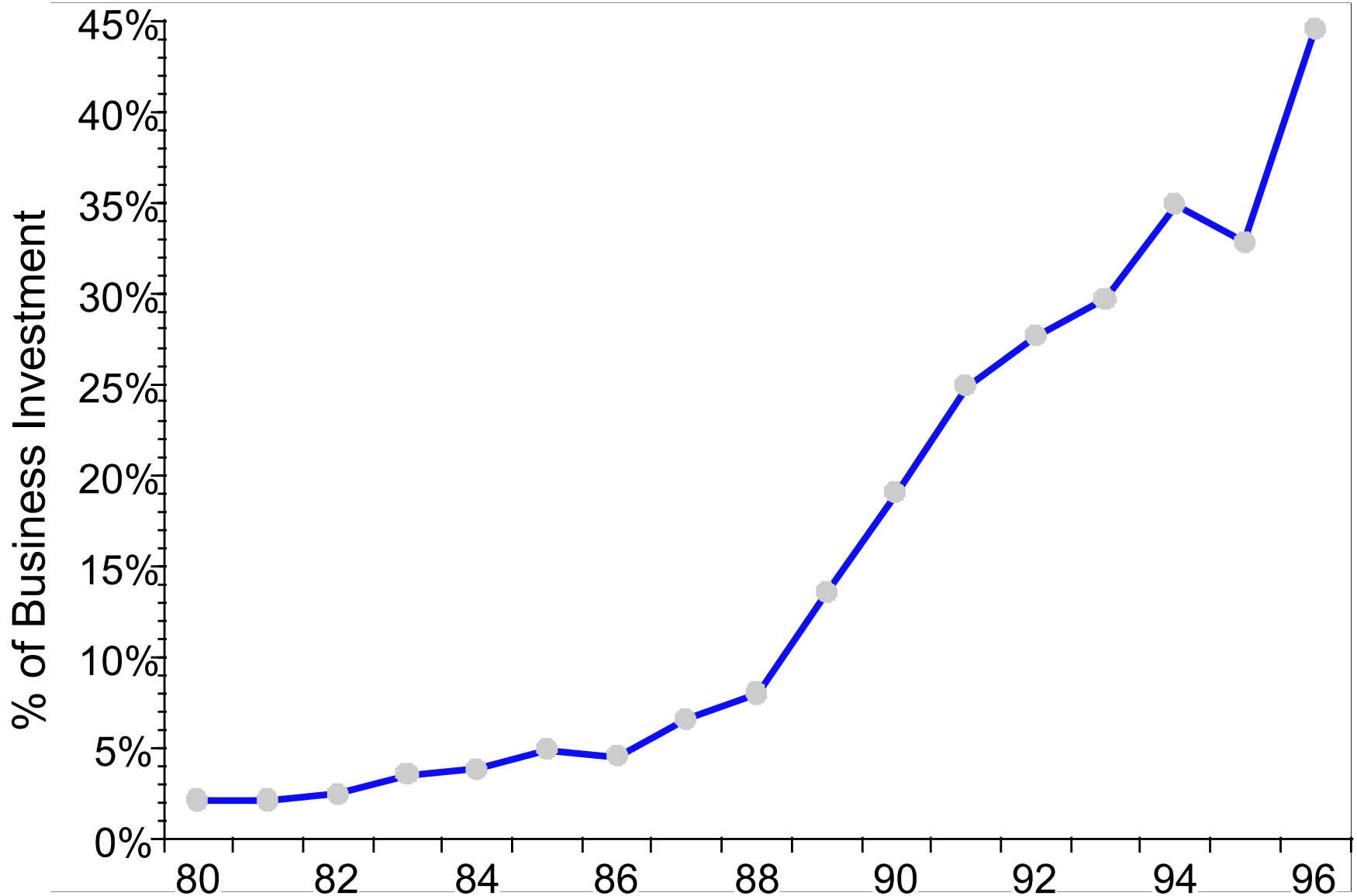


Economy Now Depends on I.T. Equipped Workers

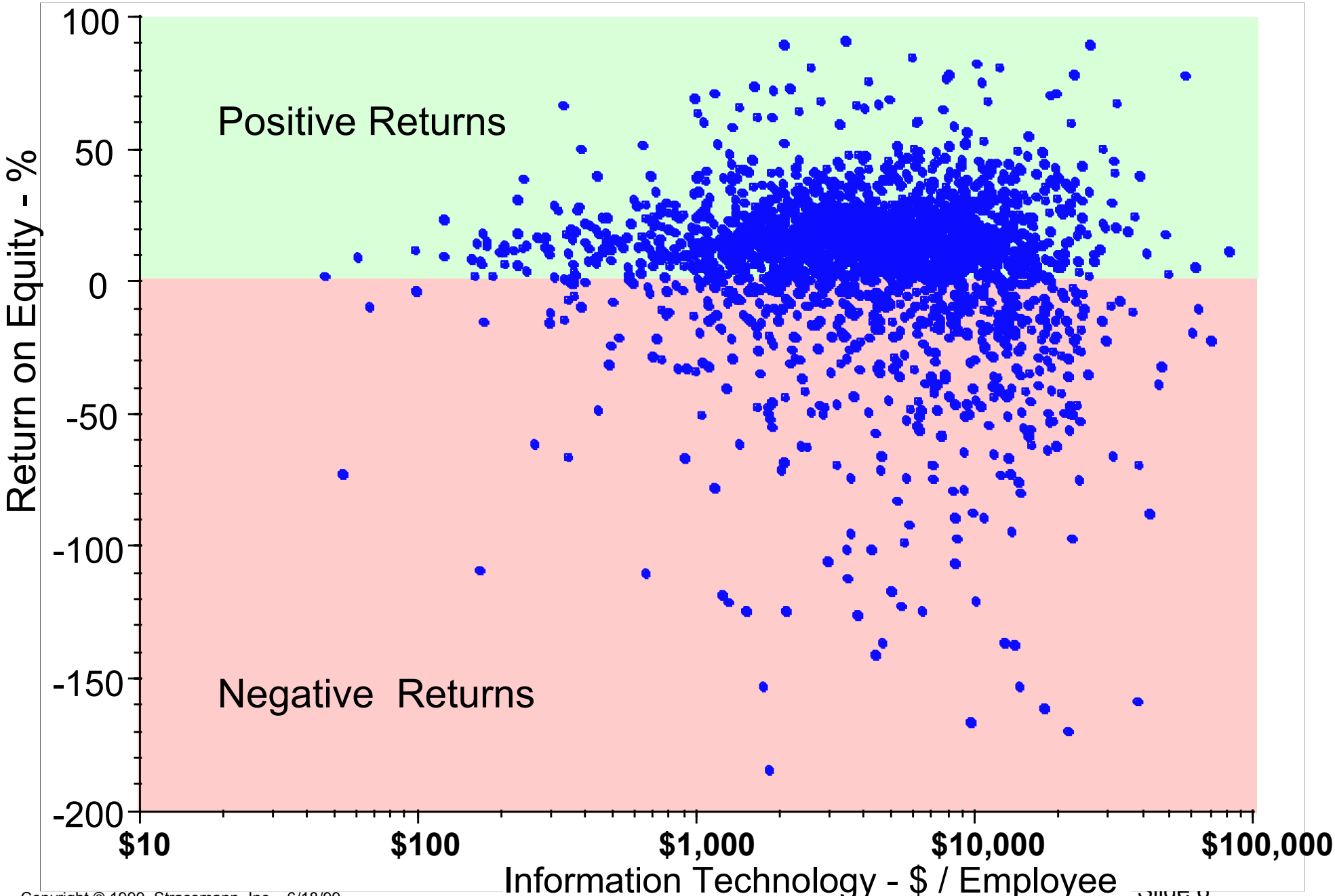


Information Occupations Earned 64% of Salaries & Wages in 1996

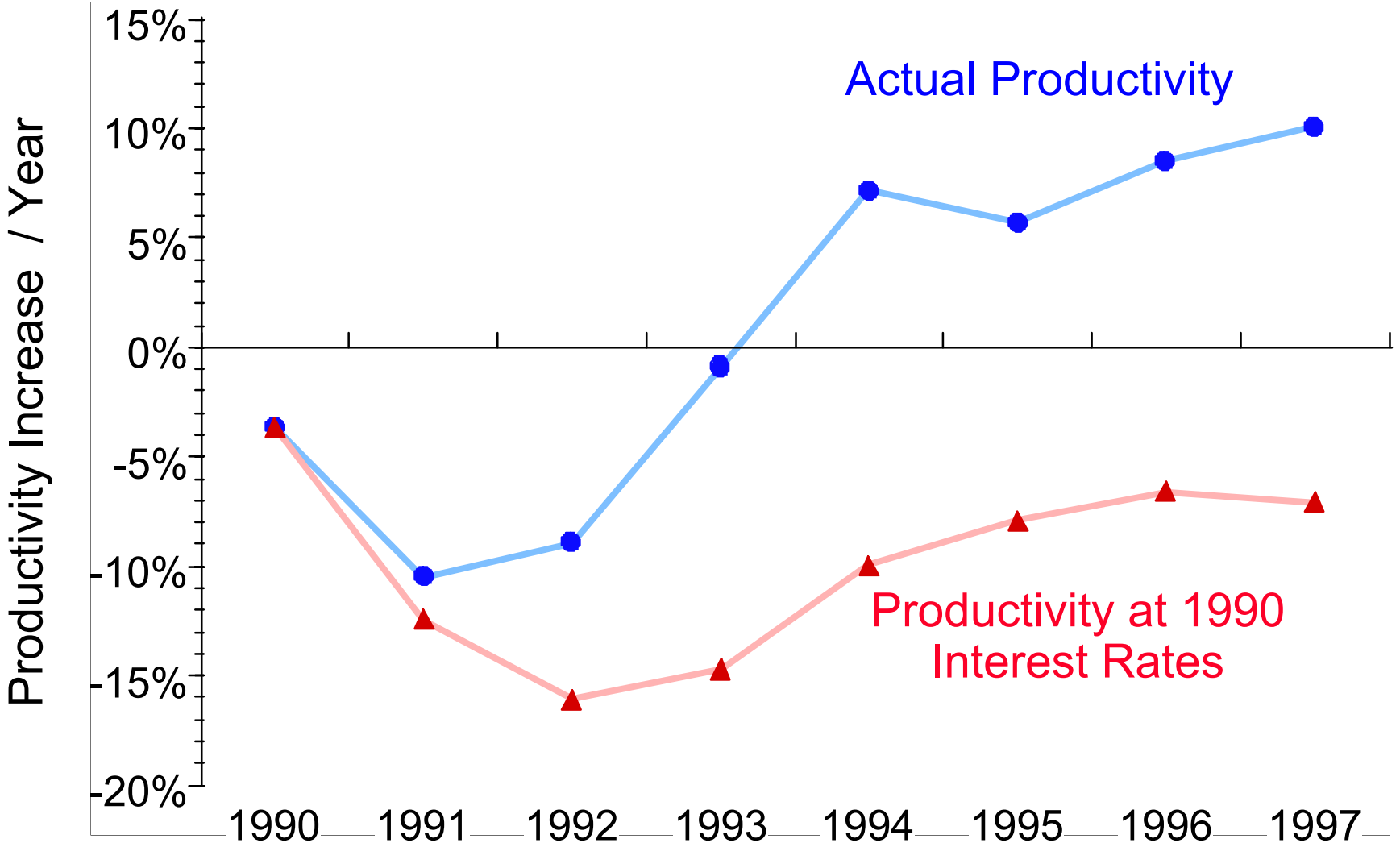
I.T. Now Preferred Business Investment



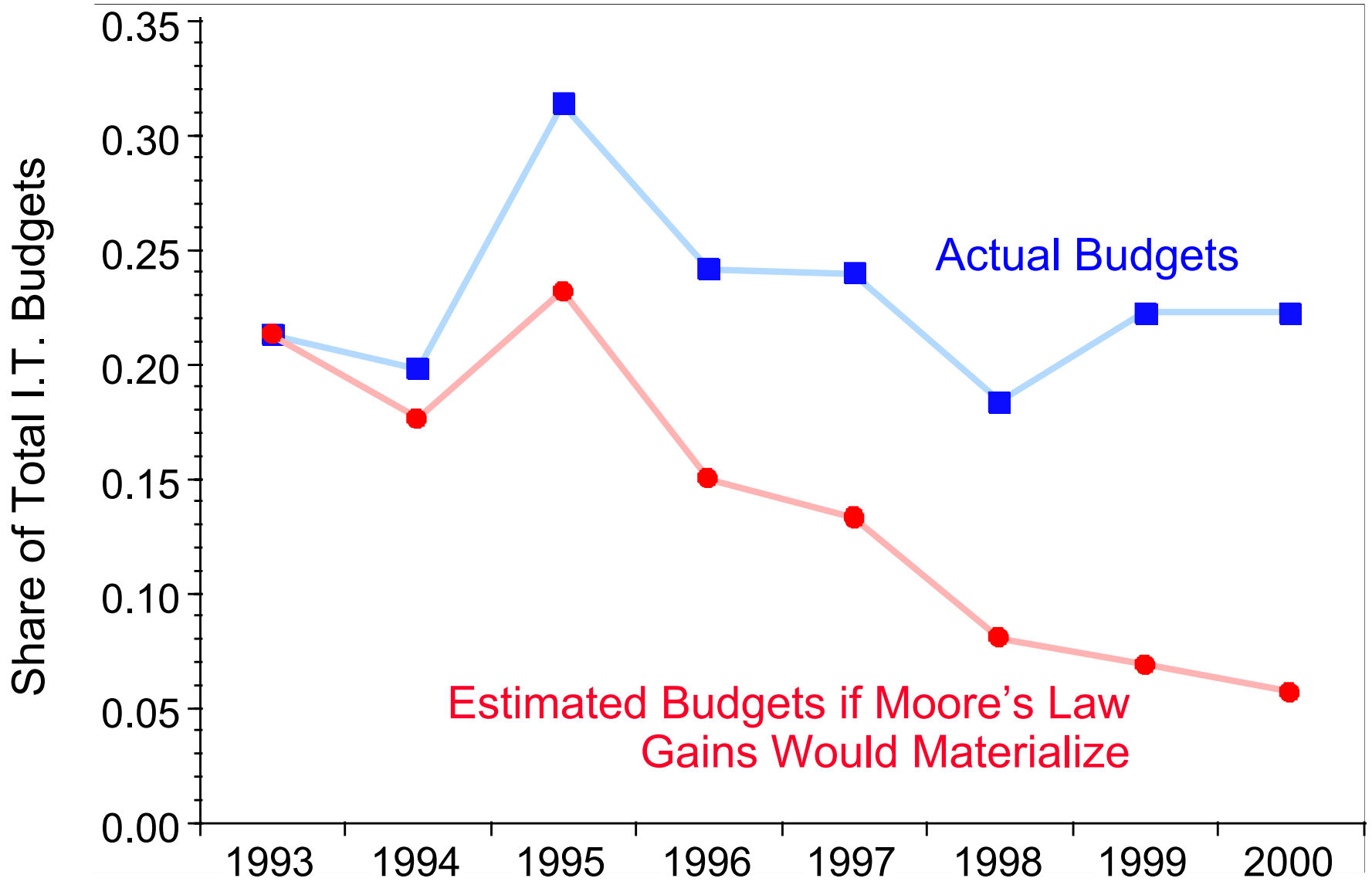
Profits and I.T.Spending Remain Unrelated



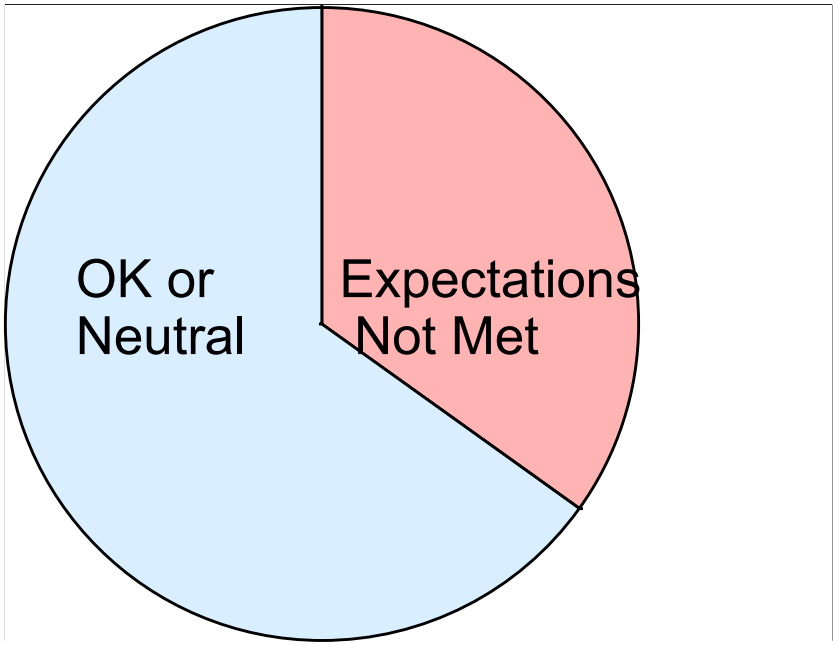
Recent Productivity Gains Come from Monetary Policies



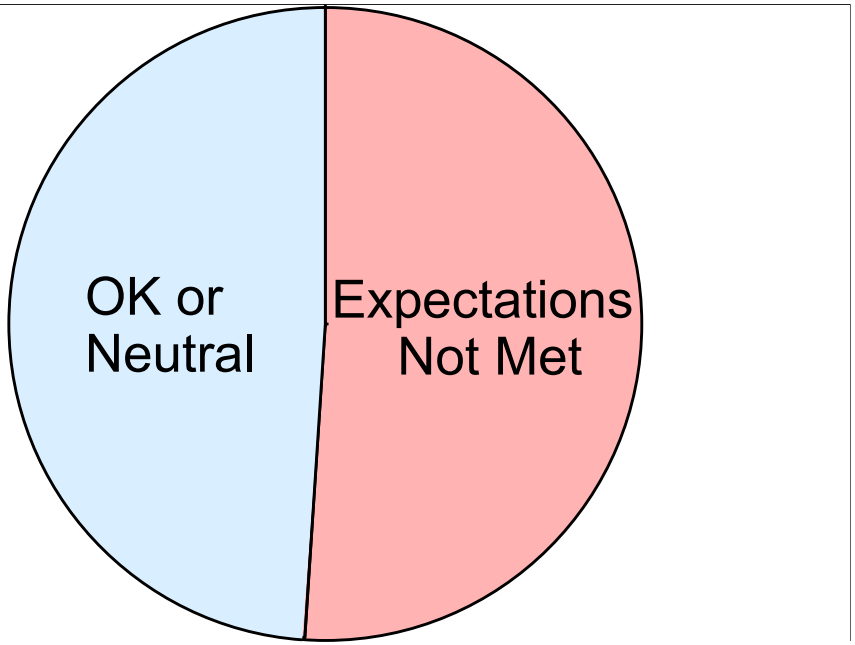
Moore's Law Does Not Show in Hardware Budgets



I.T. Expectations and I.T. Results



Cost Management



Competitive Advantage

SOURCE: World IT Strategy Census, Survey of CEO and CFO Opinions, 1998

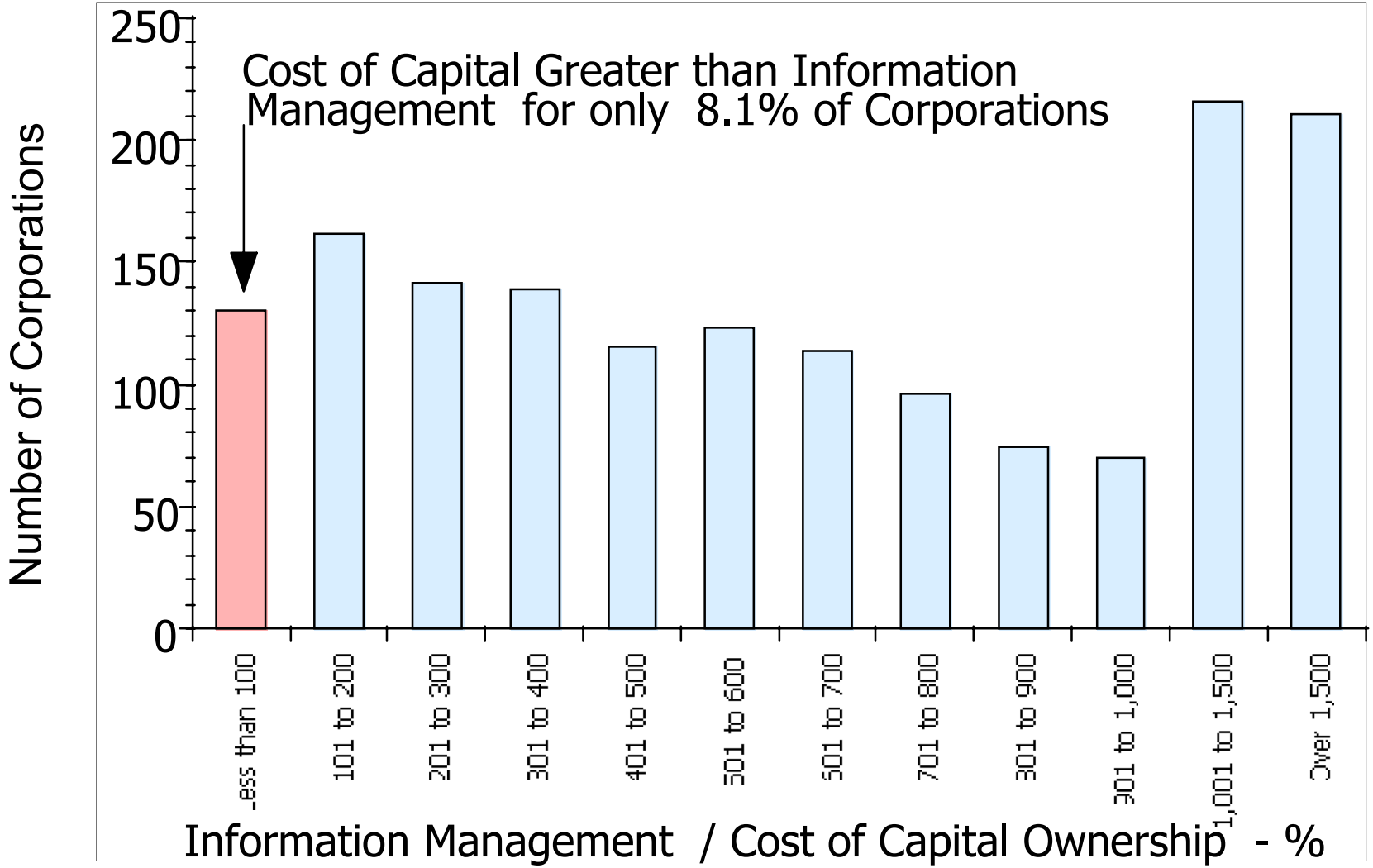
What CEOs and CFOs Do not Like

- **X Excessive *Total Costs of Ownership* of PC's.**
- **X Short life of Client/Server cycle.**
- **X Budget over-runs and schedule misses.**
- **X Year 2000 fix costs of $300 billion demonstrate neglect.**
- **X ERP projects show negative payback.**
- **X Internet solutions originate outside of I.T.**
- **X Rising outsourcing shows disappointment with CIOs.**
- **X 25%+ turnover rate among CIOs diminishes confidence.**
- **X Compensation of software personnel rising too rapidly.**

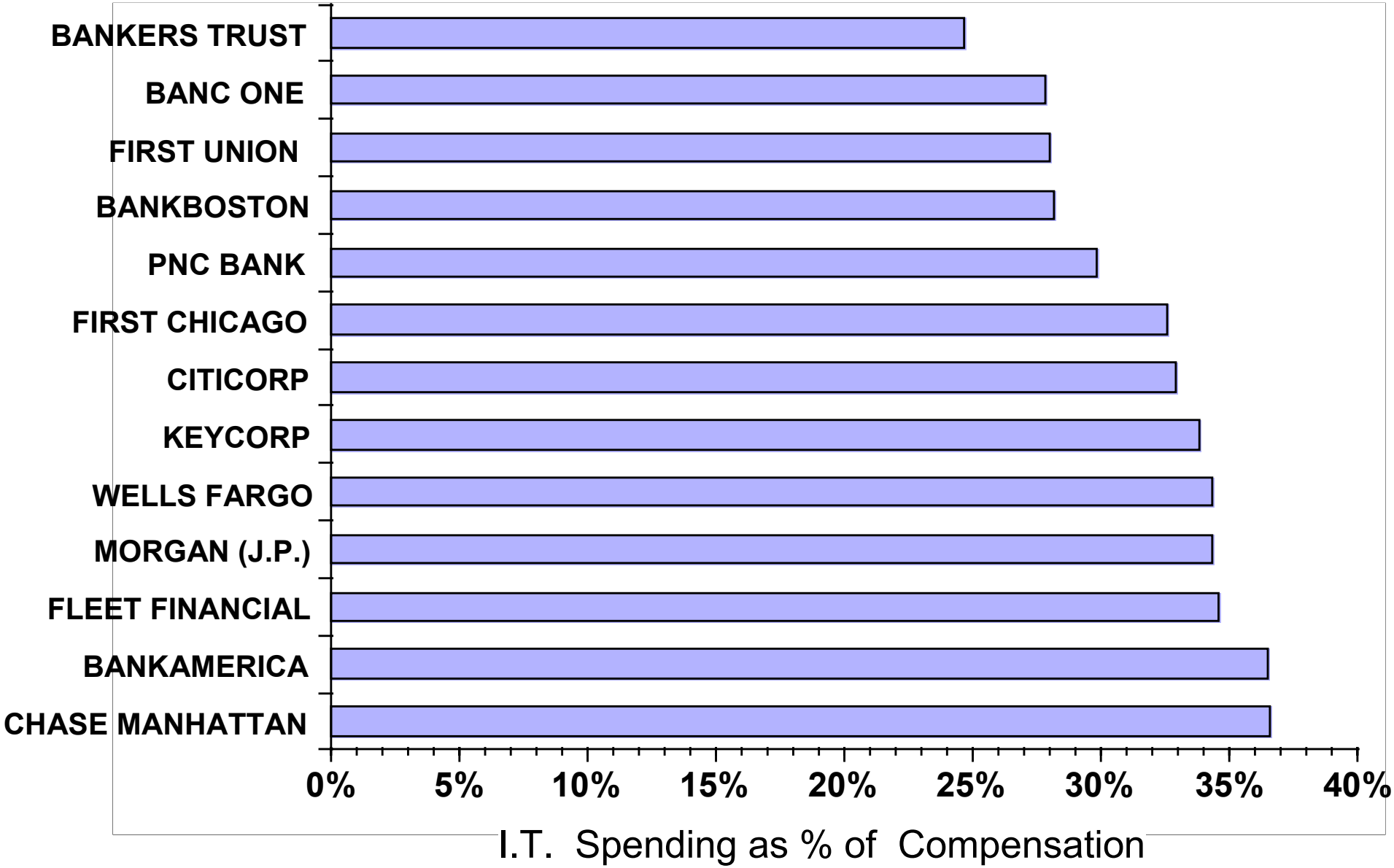
Part II

Why Expectations Exceeded Results

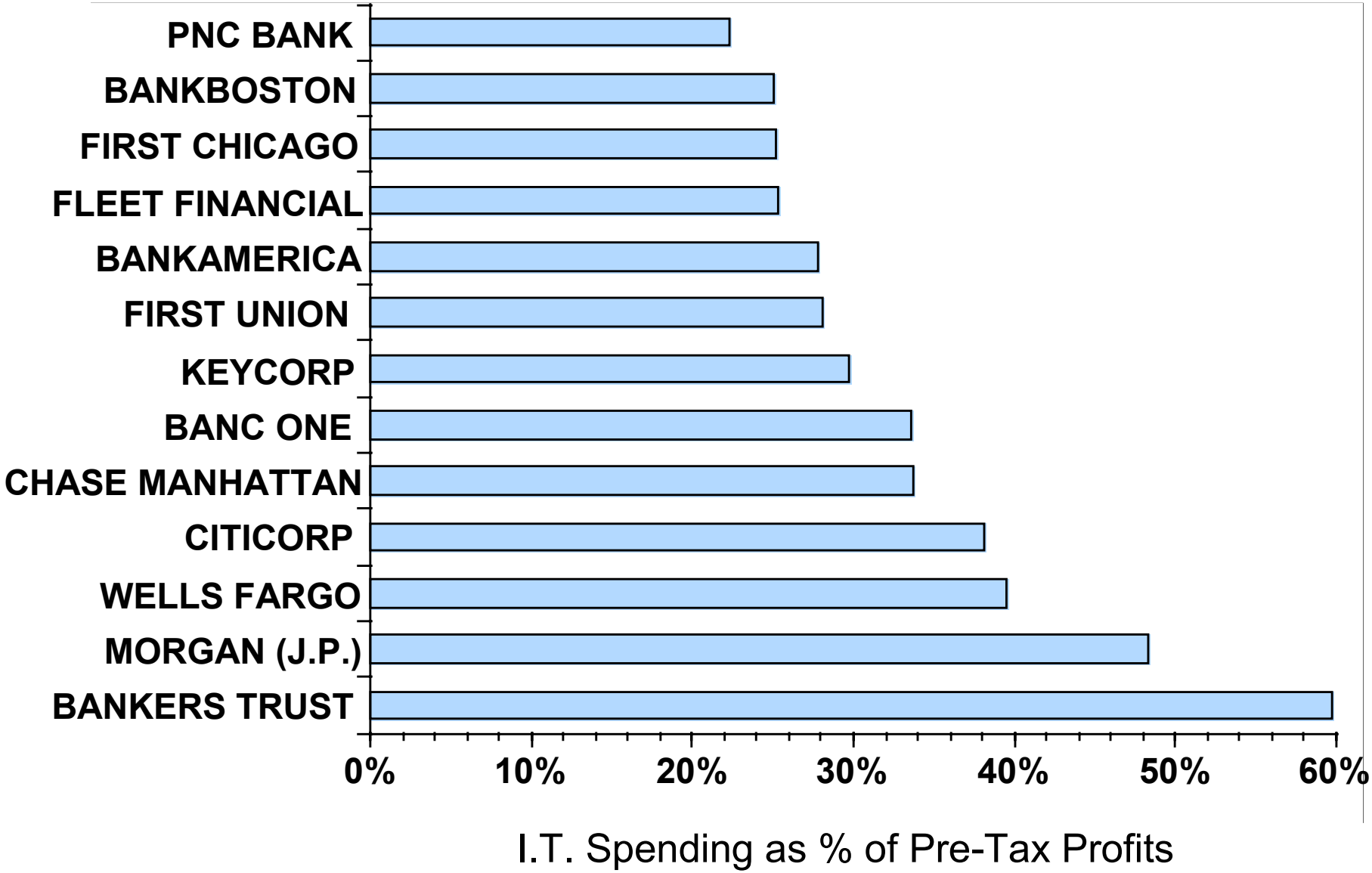
Information Management More Important than Capital



Case Study: I.T. Spending and Employee Compensation



Case Study: I.T. Spending and Profits



I.T. Has Potential of Delivering Gains

Service Channel	Cost per Transaction
Branch office visit	$5.30
E-Mail	$4.78
Call center	$2.12
Drive-in teller	$1.56
Automatic voice	$0.32
Automatic teller	$0.26
Standard Internet	$0.09

Part III

Why Mismatch of Capabilities vs. Results?

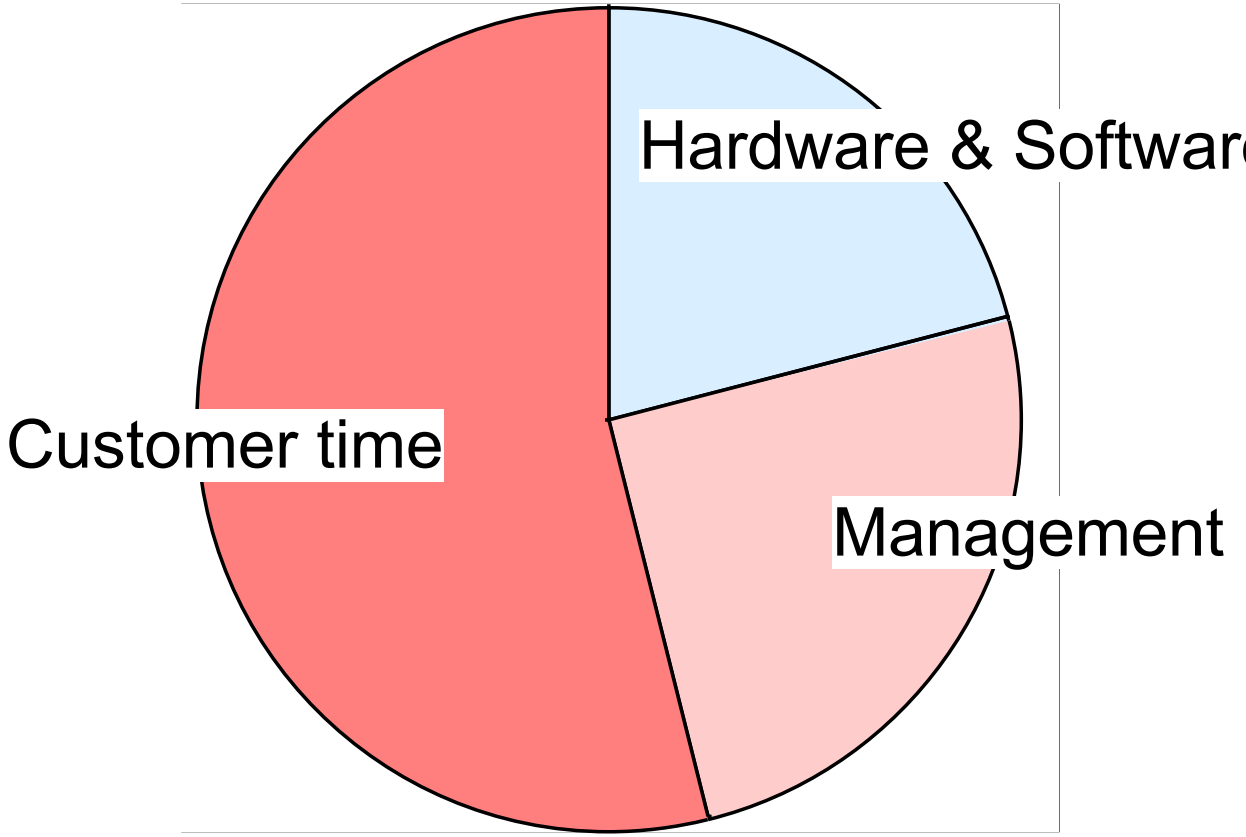
The Rising Costs of Build and Junk Cycles

Started	Investment Cycle	Cycle Cost
1956	Accounting Automation	$ 100 million
1963	Data Centers	$ 1 billion
1969	Time Sharing	$ 5 billion
1975	Minicomputers	$ 25 billion
1981	Microcomputers	$ 150 billion
1988	Client/Server	$ 650 billion
1998	Internet	$ 3 trillion ?
2010?	Network Utilities	?

Corporate Politics, Economics and Technologies Interact

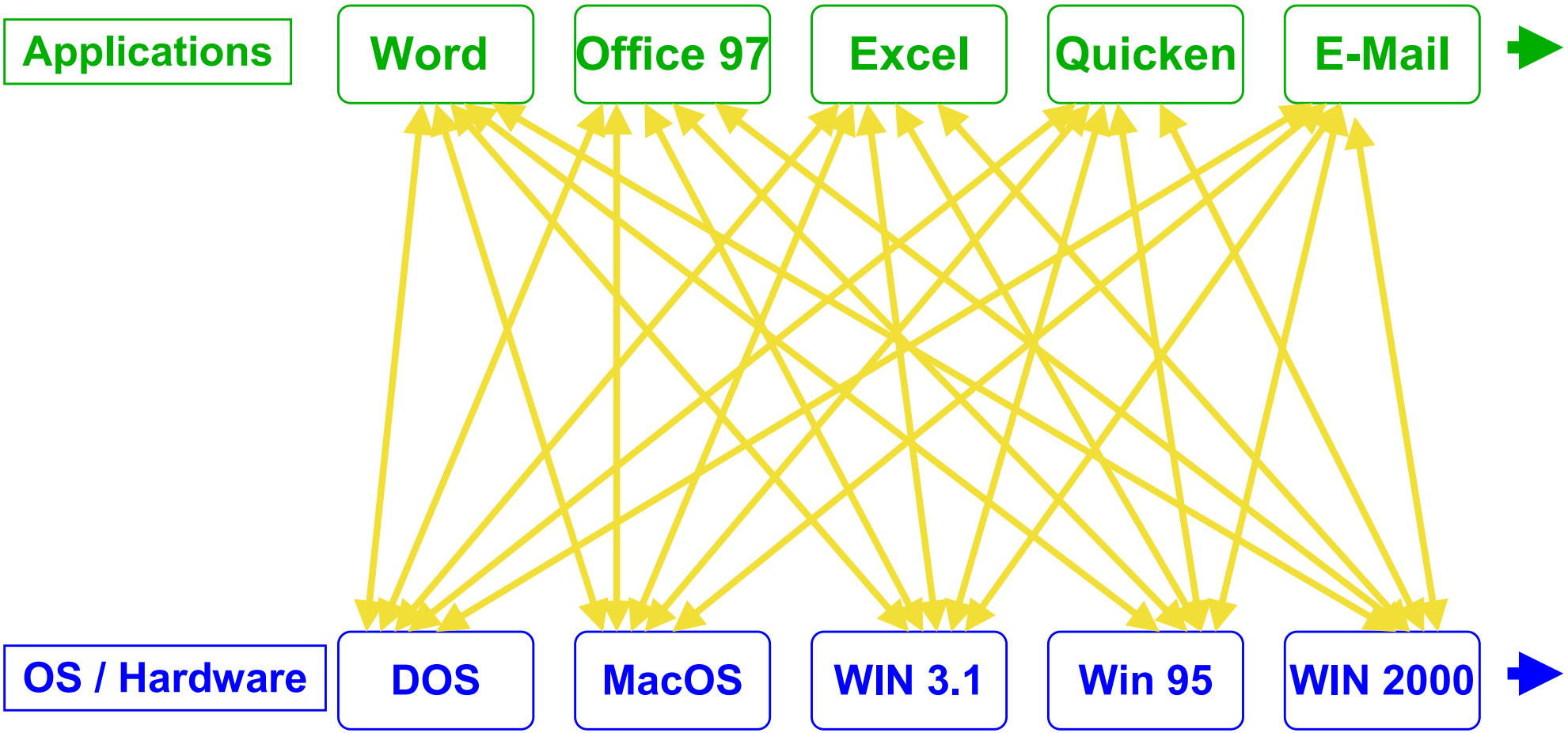
Investment Cycle	Control
Accounting Automation	Decentralized
Data Center Introduction	Centralized
Time Sharing Available	Decentralized
Minicomputer Installations	Centralized
Spreading Microcomputers	Decentralized
Introducing Client/Server	Centralized
Internet Demand Materializes	Decentralized
Network Utility Computing	Centralized

Source of Technology Liability: PC TOC = $8,594/year

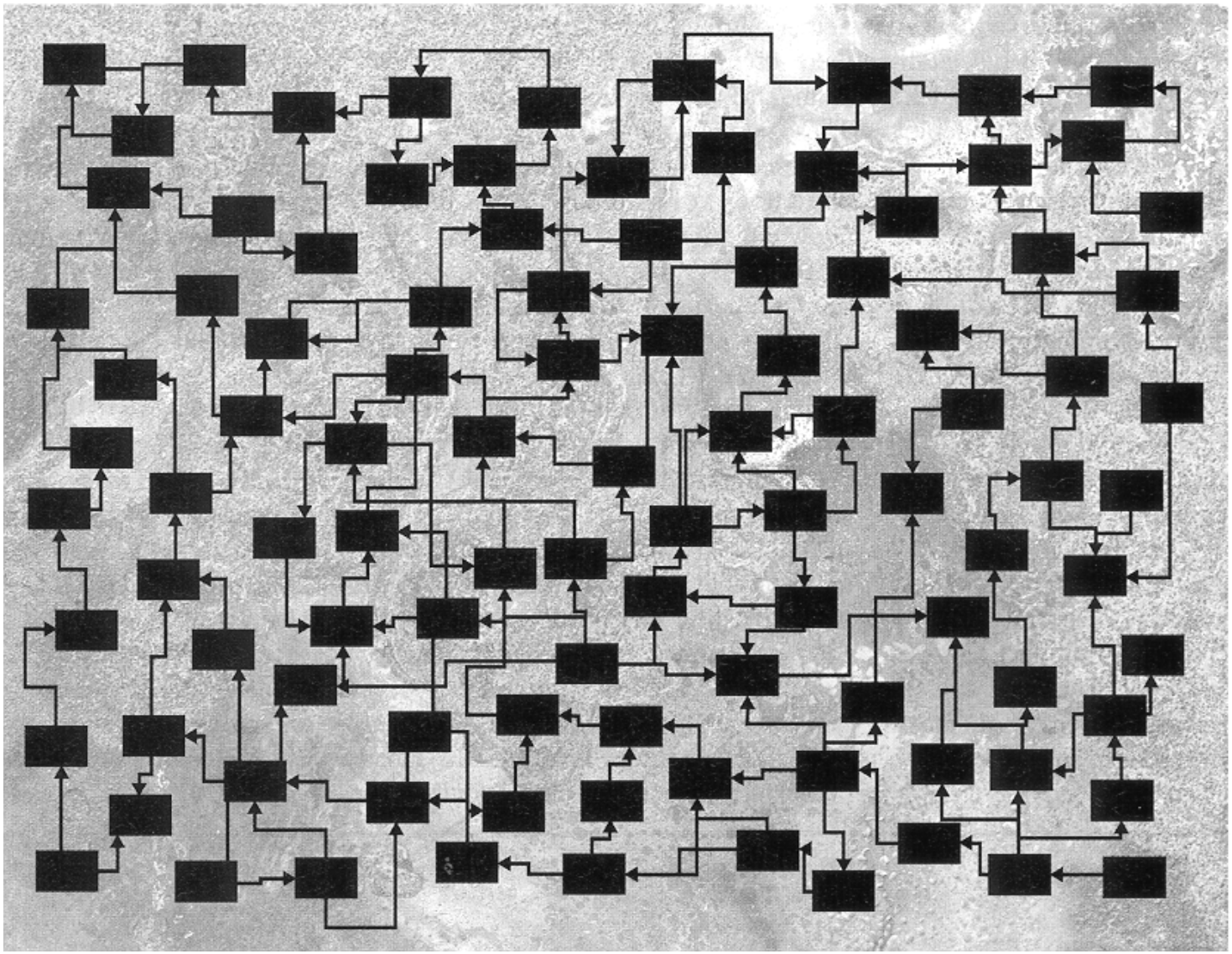


Potential Savings = 100M PCs @ $2,500 = $250 Billion

Maintaining Interoperability is Costly



Network Complexity Increases Interoperability Costs



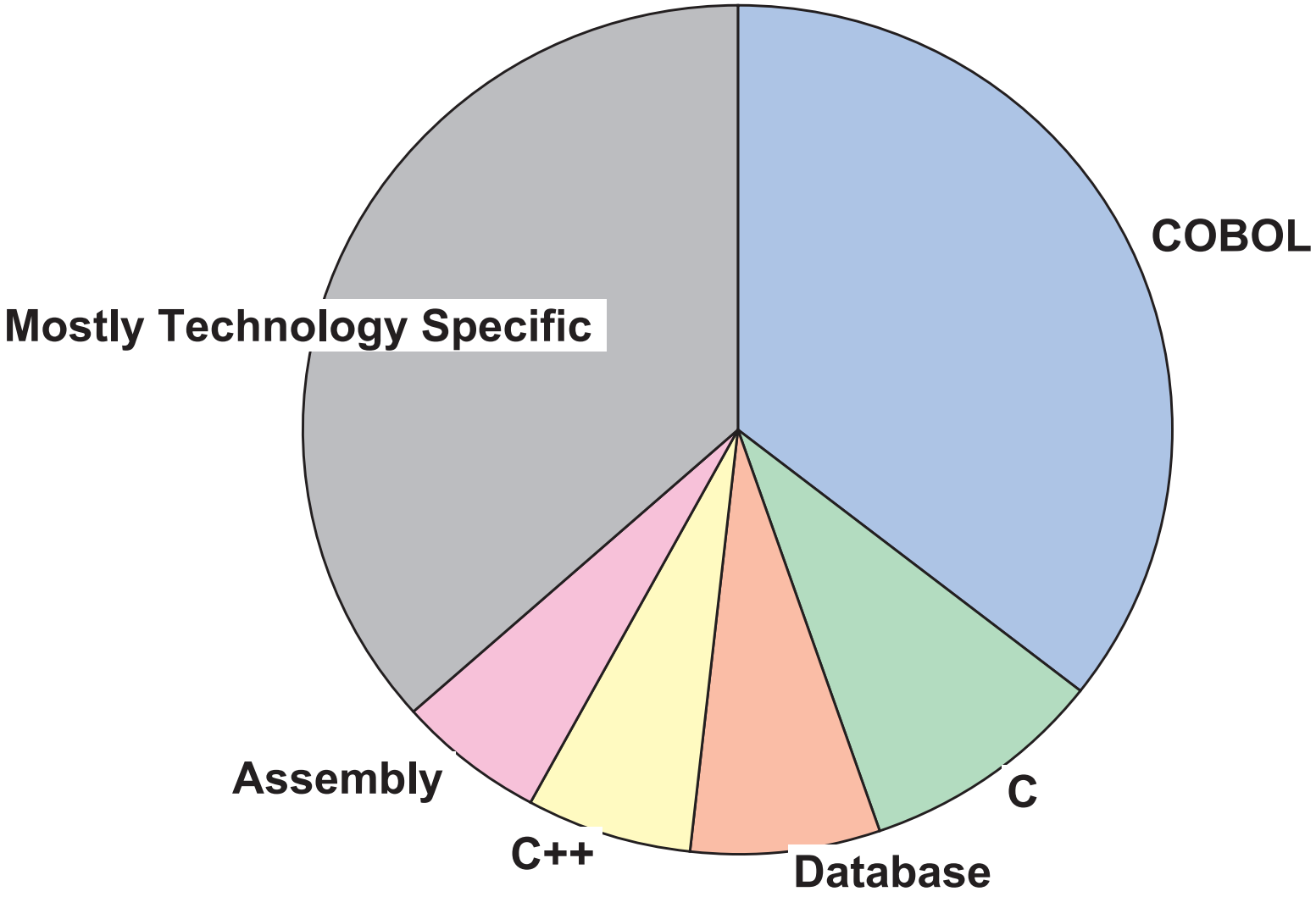
Why are Software Assets Important?

- Knowledge Assets now 200%+ of Financial Assets.
- Software Assets are now 15% - 25%
  of Knowledge Assets of Industrial firms.
- Software Costs are 15-30% of the costs of salaries.
- Projected 10 year software expenses >$2 trillion

Estimated 1998 U.S. Software Inventory = $1,700 Billion

Sector	Software Support Staff	Function Points	% of Total FP's
Military	200,000	300,000,000	10.4%
Manufacturing	250,000	200,000,000	6.9%
Finance	150,000	135,000,000	4.7%
Services	125,000	100,000,000	3.5%
Communications	100,000	90,000,000	3.1%
Insurance	90,000	81,000,000	2.8%
Wholesale	100,000	80,000,000	2.8%
Other National Security	100,000	80,000,000	2.8%
Federal	75,000	60,000,000	2.1%
Retail	75,000	60,000,000	2.1%
Subtotal	1,265,000	1,186,000,000	41.1%

Estimated 1998 U.S. Software Language Inventory

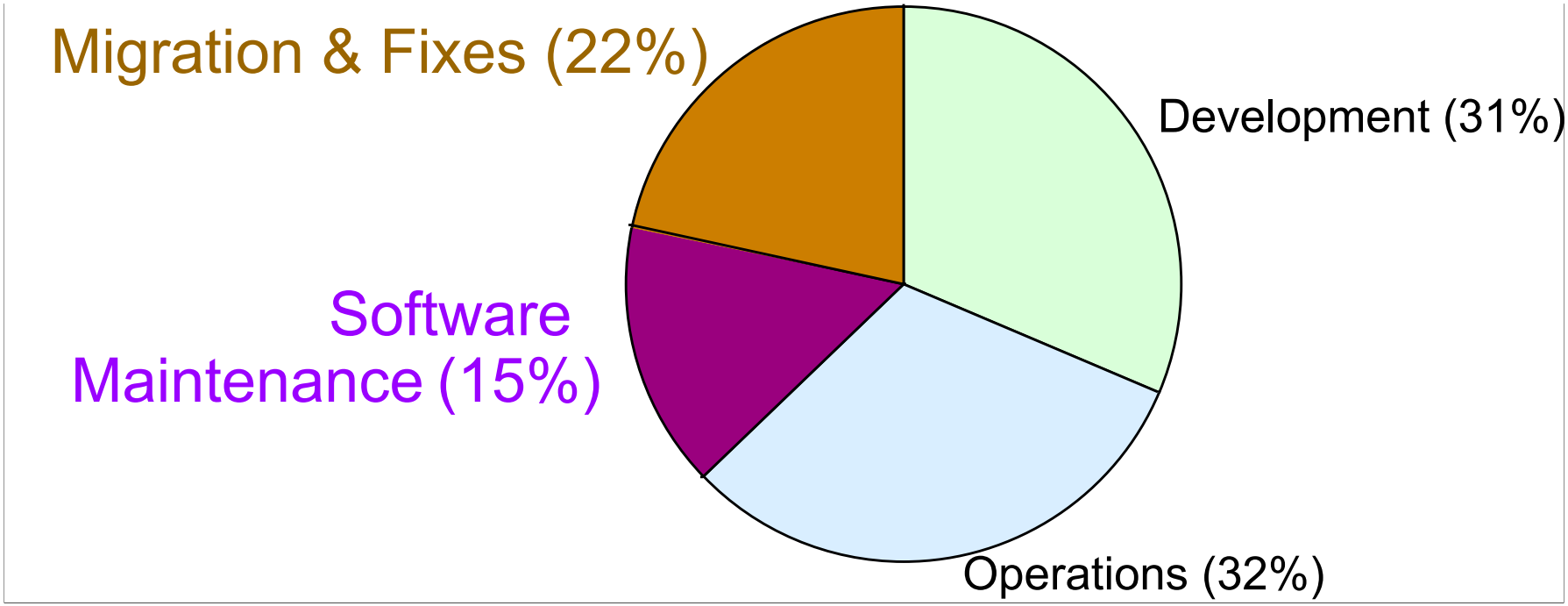


Asset Rot = The Liability of Information Technology

Change in Information Technology Assets™=

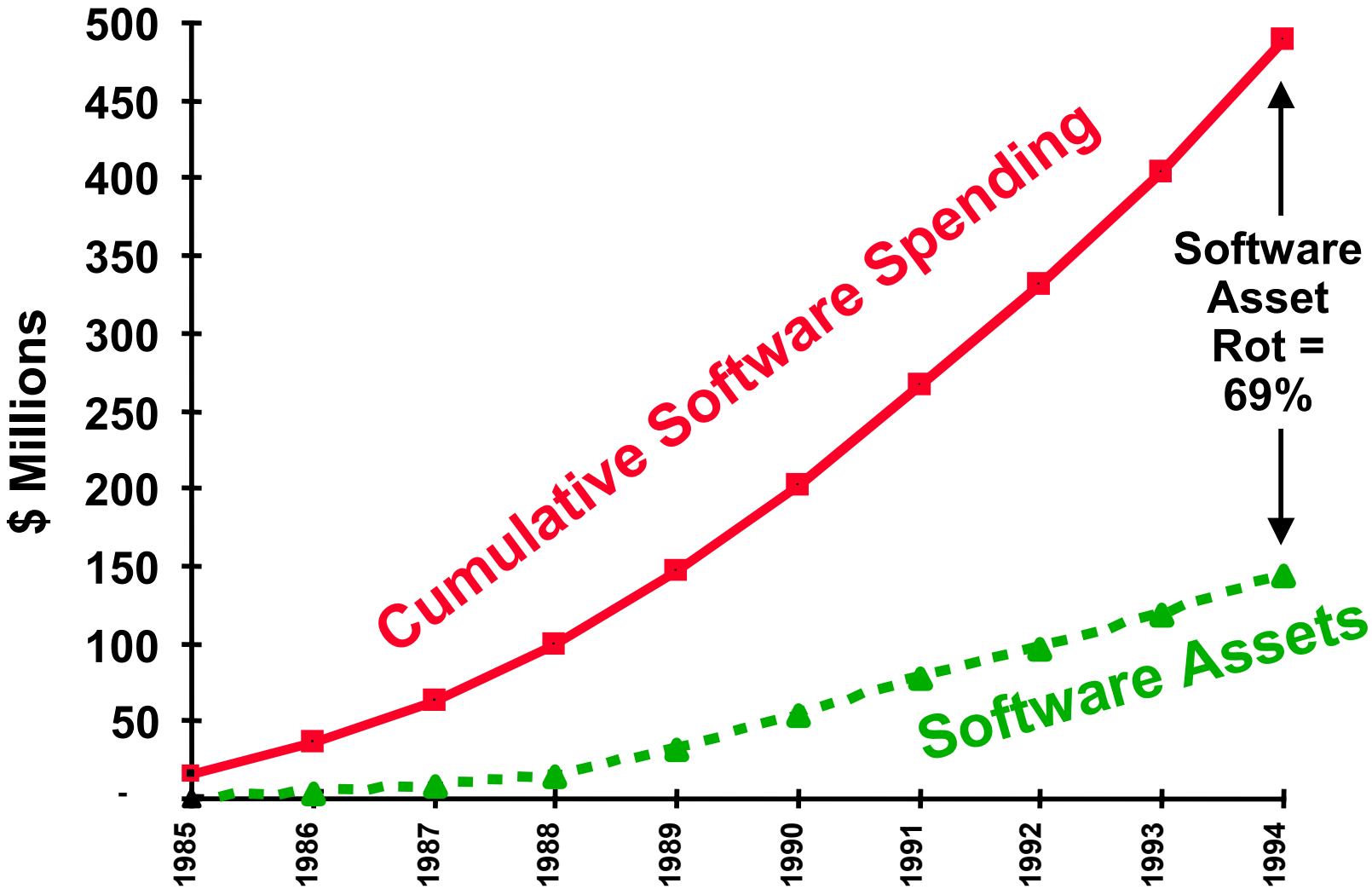
+ Equipment Acquisition
+ Development Acquisition
+ Software Acquisition
+ Training Acquisition
– Equipment Depreciation
– Development Depreciation
– Software Depreciation
– Training Depreciation

Liability: Asset "Rot" Consumes 37% of Total I.T. Spending

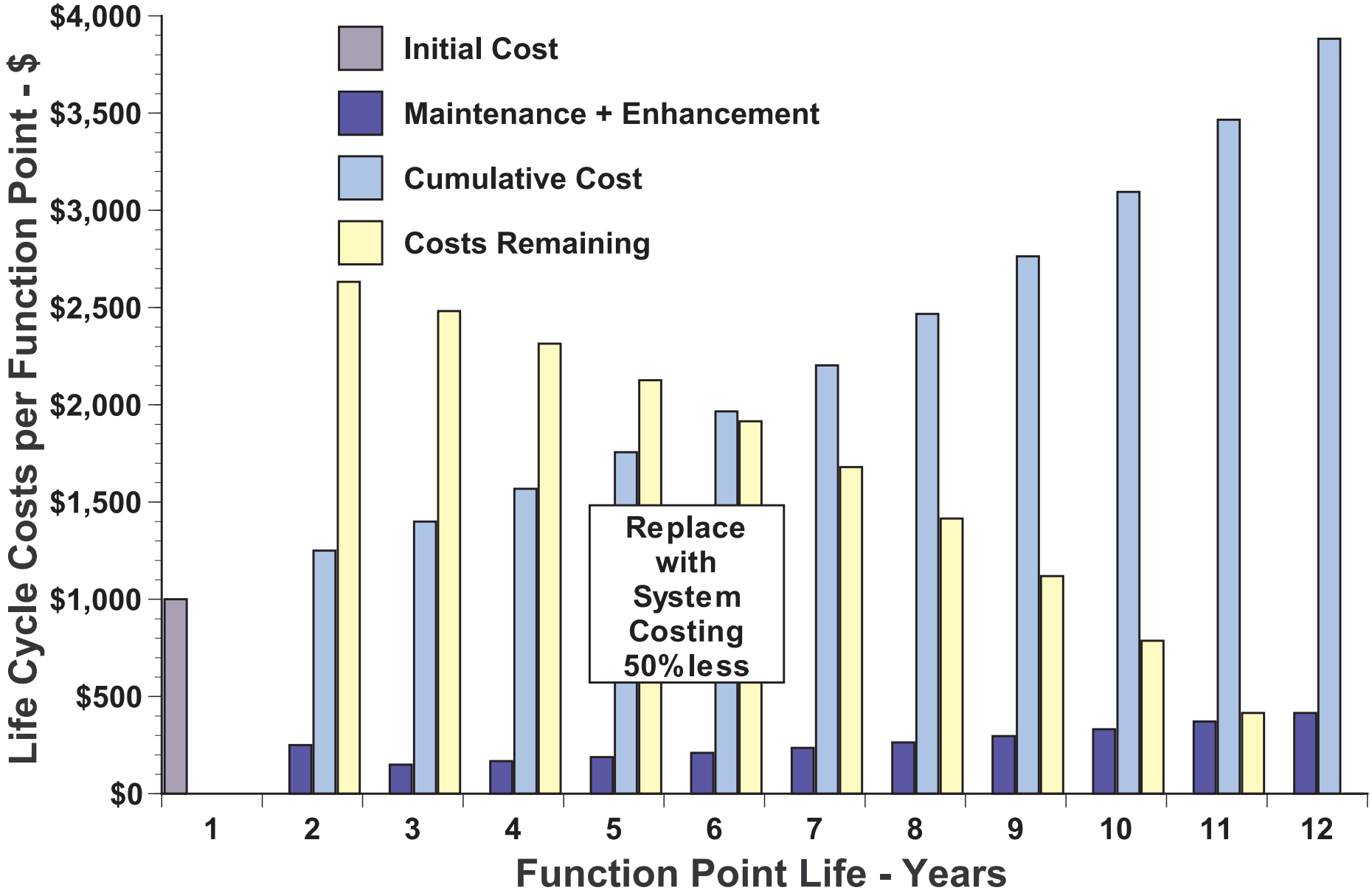


Shares of I.T. Budget

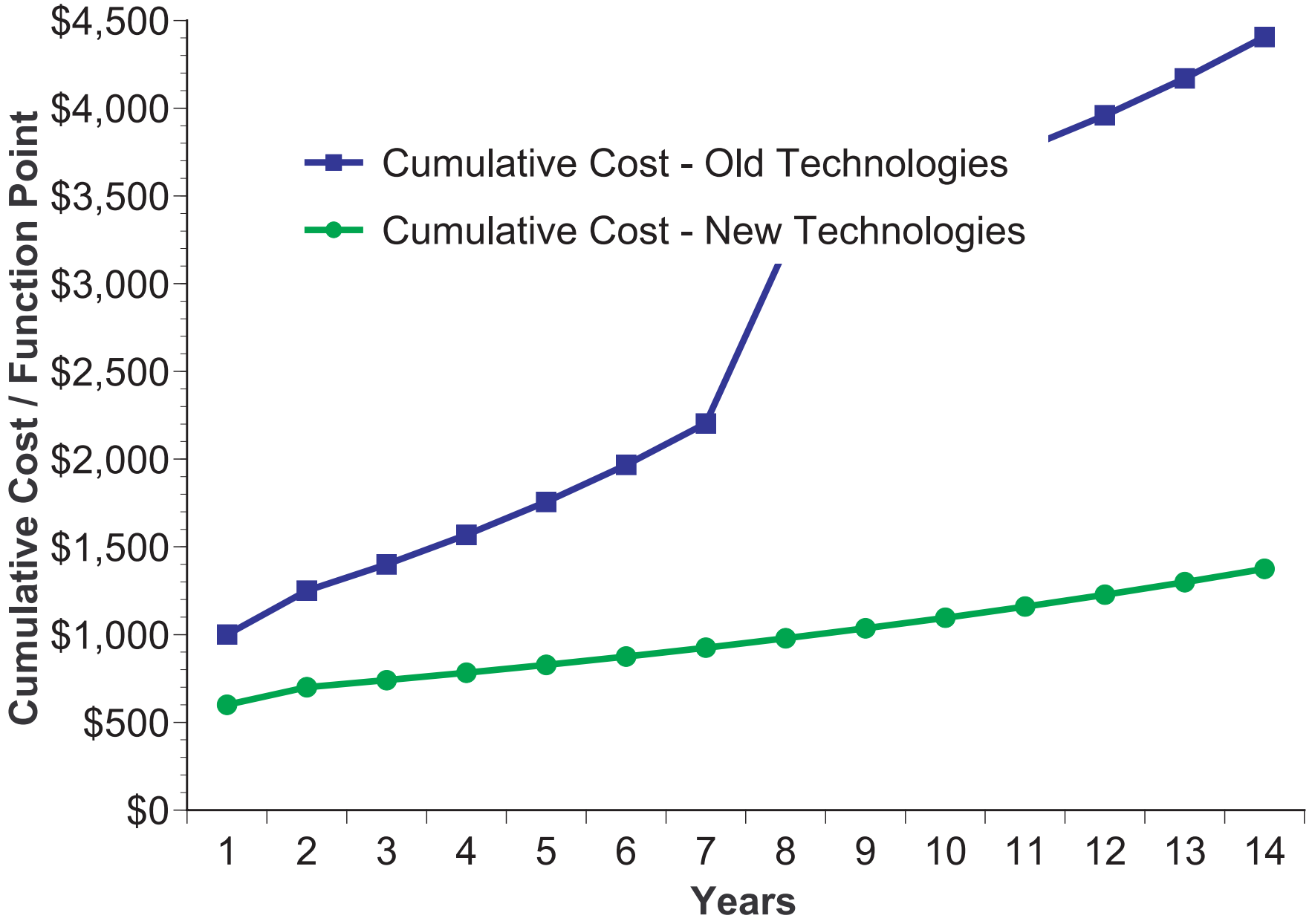
Case Study: Cumulative Software Spending and Assets



Life Cycle Costs per Function Point = 400% of Initial Cost



Modernization of Software is Profitable



Strategies for the Next Technology Cycle

- Junk:

Fat Client / Fat Server /Operating System / Microprocessor-Specific/Application Dedicated

high maintenance and upgrade cost architectures.

- Build

Thin Client / Mainframe / Data Warehouse/Browser Application/Processor Independent/Operating System Indifferent

lower cost maintenance and upgrade cost architectures.

Conclusions

Significance for SMARTsourcing?

Key SMARTsourcing Strategies

For Customers:

- Shop for outsourcing services in global services market.
- Expect quotations at marginal cost, not average cost.
- Outsource to accelerate innovation, keep “legacy” systems to preserve “Knowledge Capital.”

For Suppliers:

- Shift to architecture which leverage re-usable “Knowledge Capital.”
- Shift from “average pricing” to “transaction” pricing.
- Extract profits from innovation gains.
- Deliver architectural innovations priced for value delivered.