

# CSI: IT (Information Technology) Following the Evidence of Measurement Value: 25 Years of Measures, Models, and Results or Measuring the Value of Measures



## Howard Rubin, Ph.D.

Professor Emeritus, City University of New York

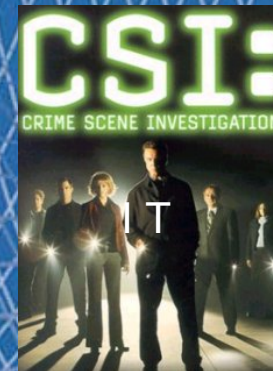
Senior Gartner Advisor

MIT Research Associate

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[Howard\\_rubin@compuserve.com](mailto:Howard_rubin@compuserve.com)

1.914.420.8568



# Today's Topics

- **Introduction: Measurement and Value**
- **Situation**
  - Measurement and Business/IT Economics
  - Today's Benchmarks
- **Evidence of Value**
  - The Evidence: Industry Data, Context, and Observed Phenomena
  - Performance of Measurement Focused Companies Vs Non Measurement Focused
- **Conclusion(s)**
  - The Value of Measurement



# Introduction: Measurement and Value

## ■ Background

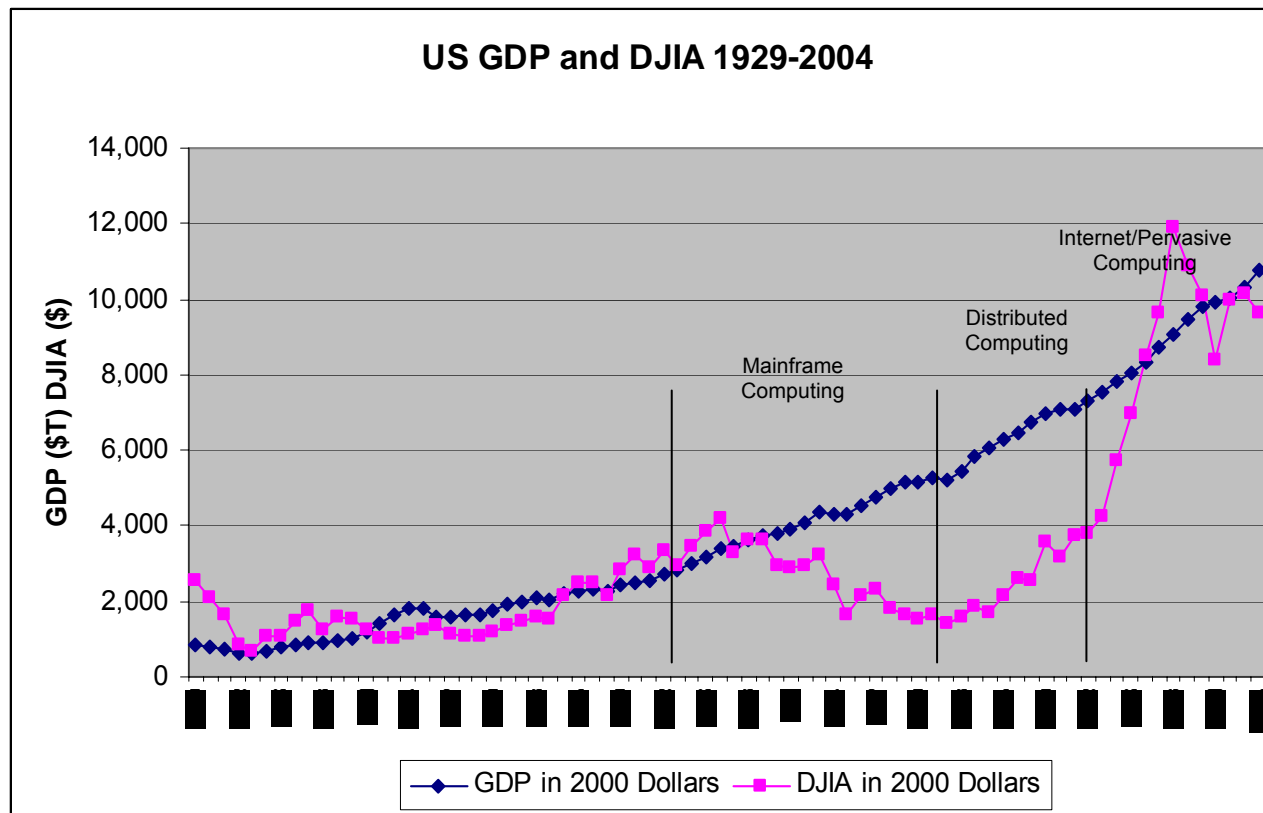
- In the search for the “Holy Grail” of the relationship between Information Technology investment and business performance, most researchers (and consulting firms) have concentrated on the relationship of two variables that are too simplistic to explore this phenomena – Measures of IT spending and revenue
- It is time to go beyond such basic models and explore this space in new ways to both explain this new (and intensive) aspect of business and economic dynamicism and to provide a sound basis for understanding the performance of companies that employ measures versus those that do not – in essence the value of measurement

## ■ Research Agenda

- To map trends and business-IT performance results using a dataset encompassing a 20-year history on over 2,000 companies
- To expand the scope of this research to assess performance differences in companies that employ IT measures rigorously and those that do not.

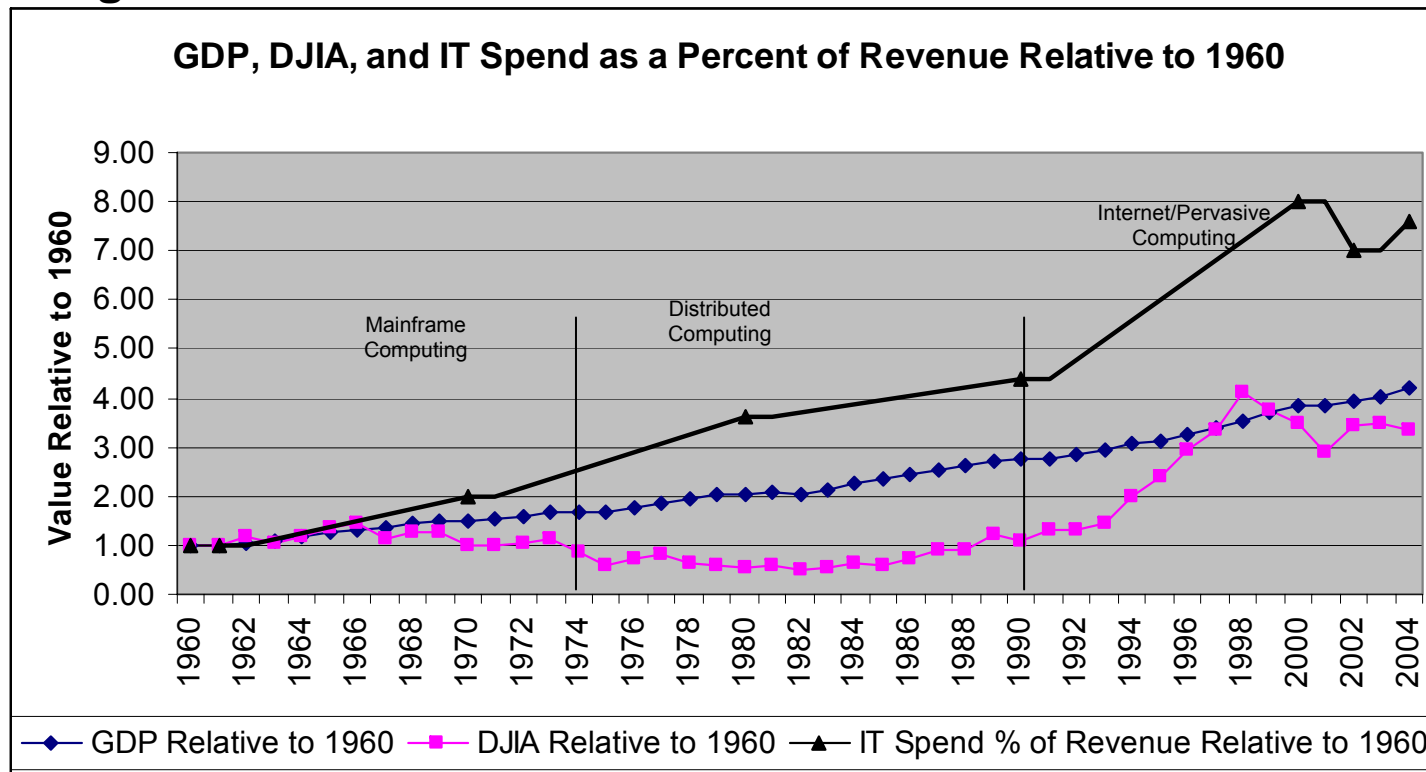
# Situation: Basic Economics

- It is quite interesting to overlay recent computing “eras” with US economic data



# Situation: Basic Economics

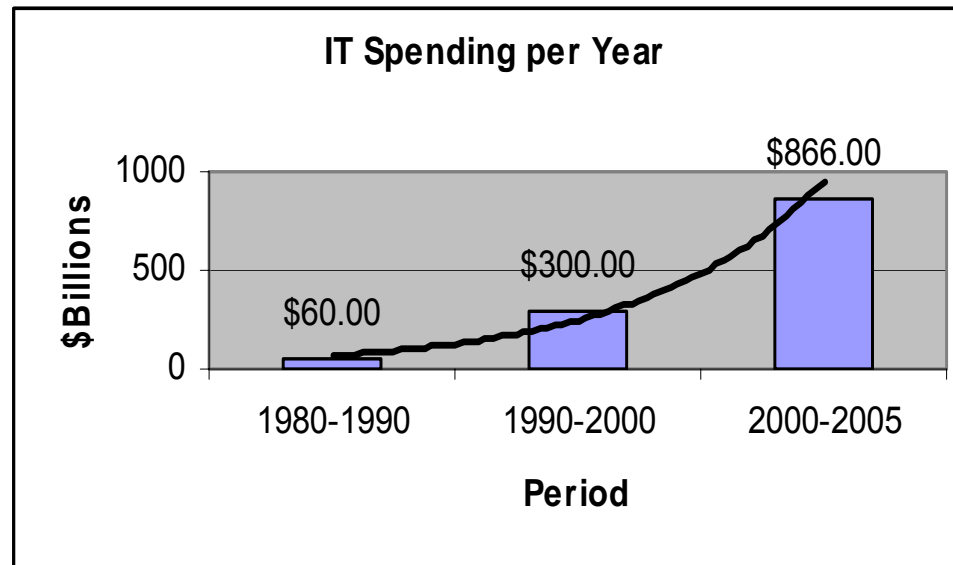
- As information technology evolved, business costs and investment in technology increased and added a new component to the cost of doing business – return on this investment – value is critical!



# Situation: Basic Economics

- As information technology evolved, business costs and investment in technology increased and added a new component to the cost of doing business – this component accelerated! Did value accelerate?

- IT Spending 1980-1990
  - **\$600B**
- IT Spending 1990-2000 (neglecting Y2K impacts)
  - **\$3,000B or \$3T**
- IT Spending 2000-2005
  - **\$4,300B or \$4.3T**



# Situation: Basic Economics

- The magnitude of IT investment is astounding for some companies
  - There are 94 countries/territories (of 231) with GDP's less than Citibank's IT budget of approximately \$10B annually.

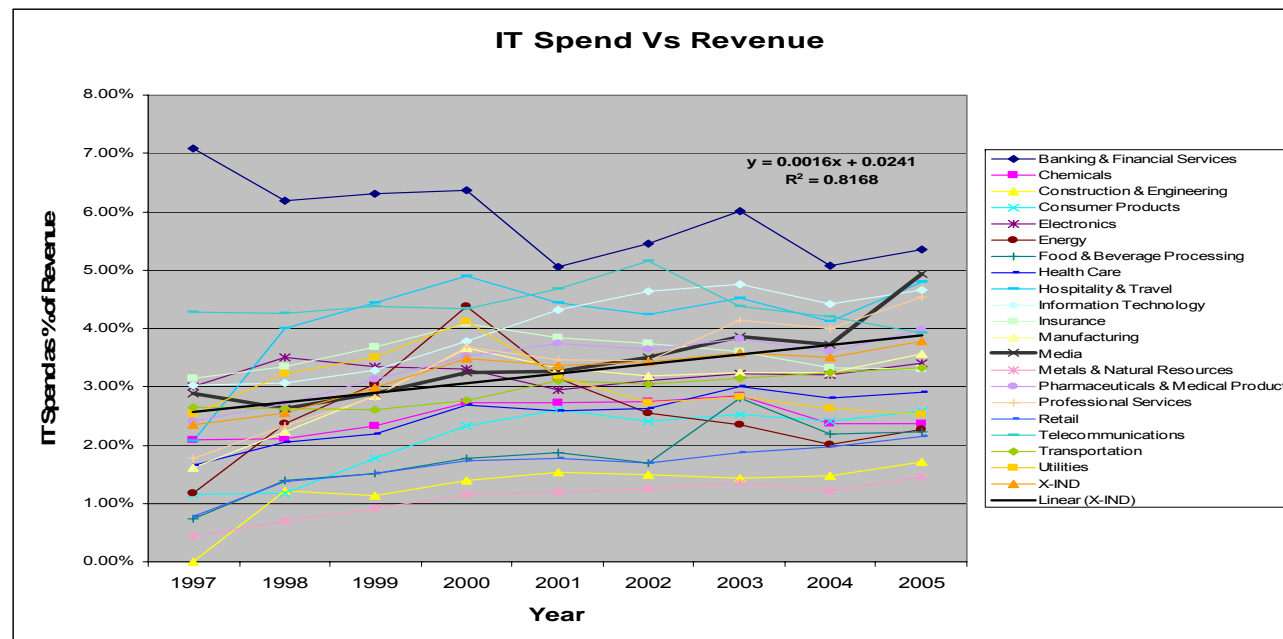
136	Rwanda	\$10,430,000,000
137	Niger	\$9,716,000,000
138	Zambia	\$9,409,000,000
139	Iceland	\$9,373,000,000
140	Macau	\$9,100,000,000
141	Togo	\$8,684,000,000
142	Moldova	\$8,581,000,000
143	Kyrgyzstan	\$8,495,000,000
144	Benin	\$8,338,000,000
145	Gabon	\$7,966,000,000
146	Tajikistan	\$7,950,000,000
147	Malawi	\$7,410,000,000
148	Malta	\$7,223,000,000
149	Brunei	\$6,842,000,000
150	Martinique	\$6,117,000,000
151	Swaziland	\$6,018,000,000
152	Lesotho	\$5,892,000,000
153	Mauritania	\$5,534,000,000
154	Mongolia	\$5,332,000,000
155	Bahamas, The	\$5,295,000,000
156	Fiji	\$5,173,000,000

187	Cayman Islands	\$1,391,000,000
188	Equatorial Guinea	\$1,270,000,000
189	Maldives	\$1,250,000,000
190	Greenland	\$1,100,000,000
191	Guinea-Bissau	\$1,008,000,000
192	Faroe Islands	\$1,000,000,000
192	Samoa	\$1,000,000,000
193	San Marino	\$940,000,000
194	Northern Mariana Islands	\$900,000,000
195	Monaco	\$870,000,000
196	Saint Lucia	\$866,000,000
197	Liechtenstein	\$825,000,000
198	Solomon Islands	\$800,000,000
199	Gibraltar	\$769,000,000
200	Gaza Strip	\$768,000,000
201	Antigua and Barbuda	\$750,000,000
202	Seychelles	\$626,000,000
203	Djibouti	\$619,000,000
204	Cape Verde	\$600,000,000
205	Vanuatu	\$580,000,000
206	American Samoa	\$500,000,000
207	Mayotte	\$466,800,000
208	Comoros	\$441,000,000
209	Grenada	\$440,000,000
210	Dominica	\$384,000,000
211	East Timor	\$370,000,000
212	Saint Vincent and the Grenadines	\$342,000,000
213	Saint Kitts and Nevis	\$339,000,000
214	Micronesia, Federated States of	\$277,000,000
215	Tonga	\$244,000,000
216	Turks and Caicos Islands	\$216,000,000
217	Sao Tome and Principe	\$214,000,000
218	Palau	\$174,000,000
219	Marshall Islands	\$115,000,000
220	Anguilla	\$112,000,000



# Situation: Basic Economics

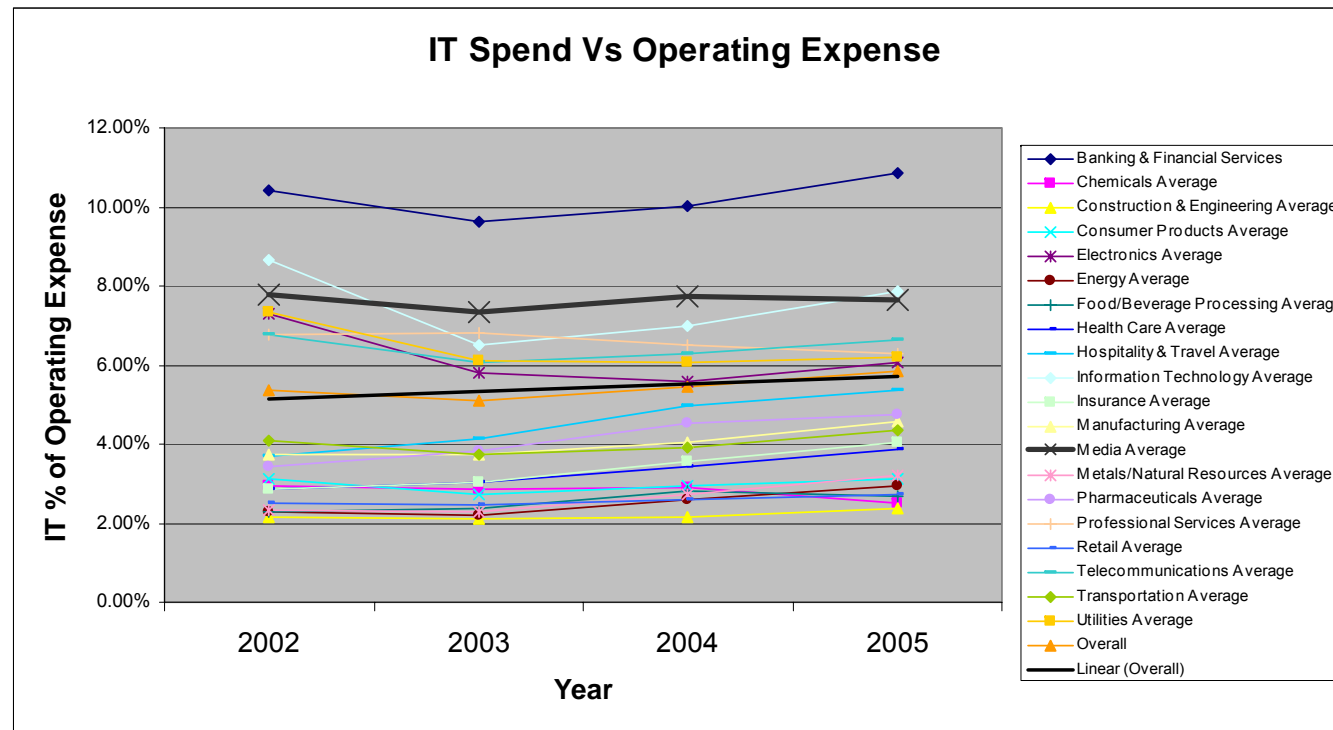
- The trend continues today and despite economic changes, year over year IT spending is taking an ever increasing “chunk” of business revenue
- This in turn drives the need to generate value from technology as a multiple of the investment level





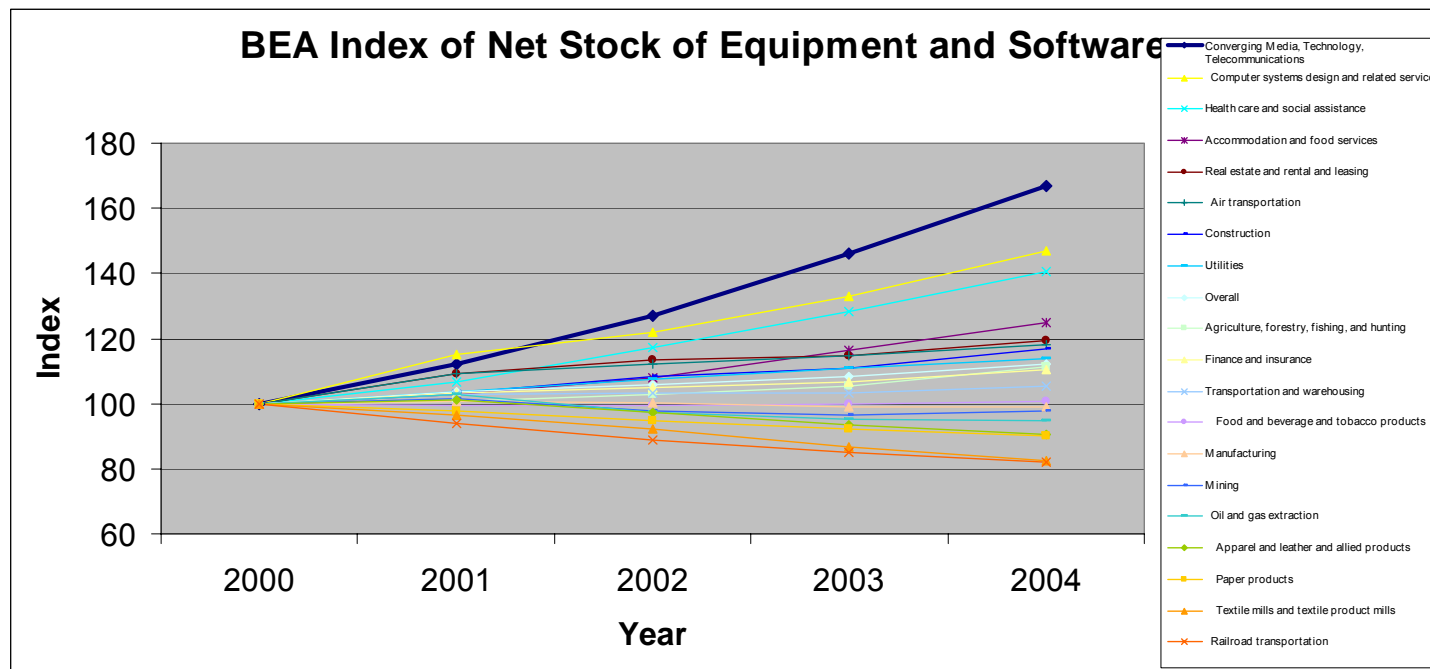
# Situation: Basic Economics

- Year over year IT costs continue to be an increasing cost of the cost of doing business



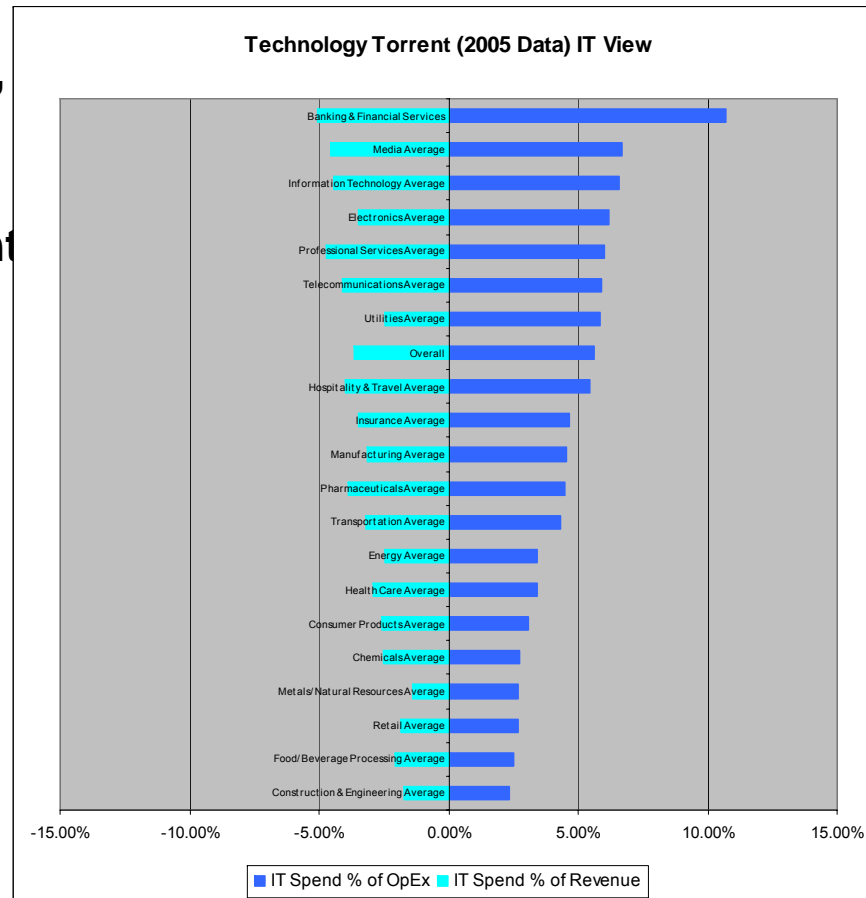
# Situation: Basic Economics

- The IT inventory is the “hidden inventory” growing in the majority of sectors

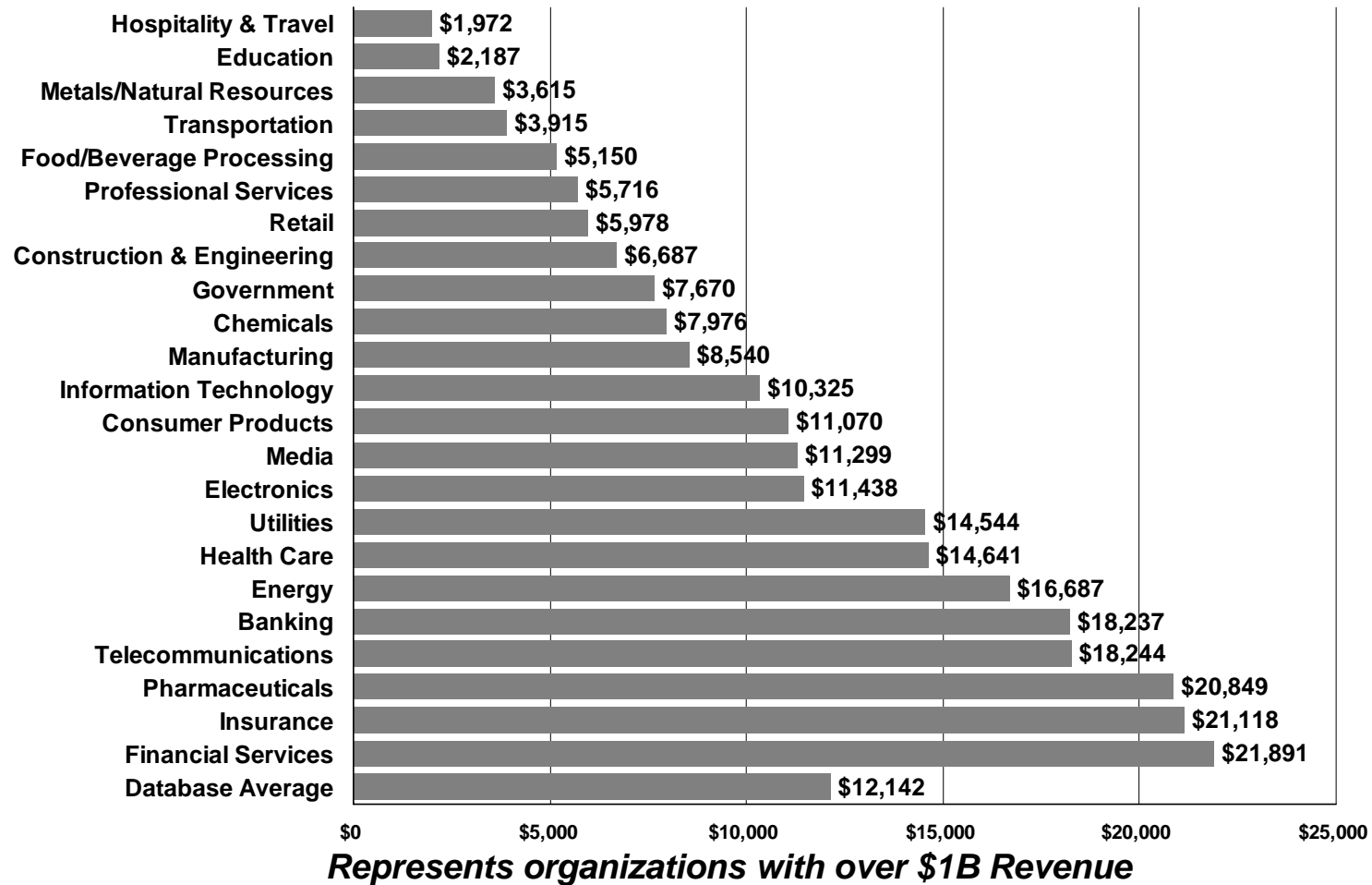


# Situation: Basic Economics

- In Banking, Financial Services, Media, Information Processing, Electronics, and Telecommunications, IT intensity has companies caught up in a “torrent” of rapidly rising investment
- But this is only part of the picture.....

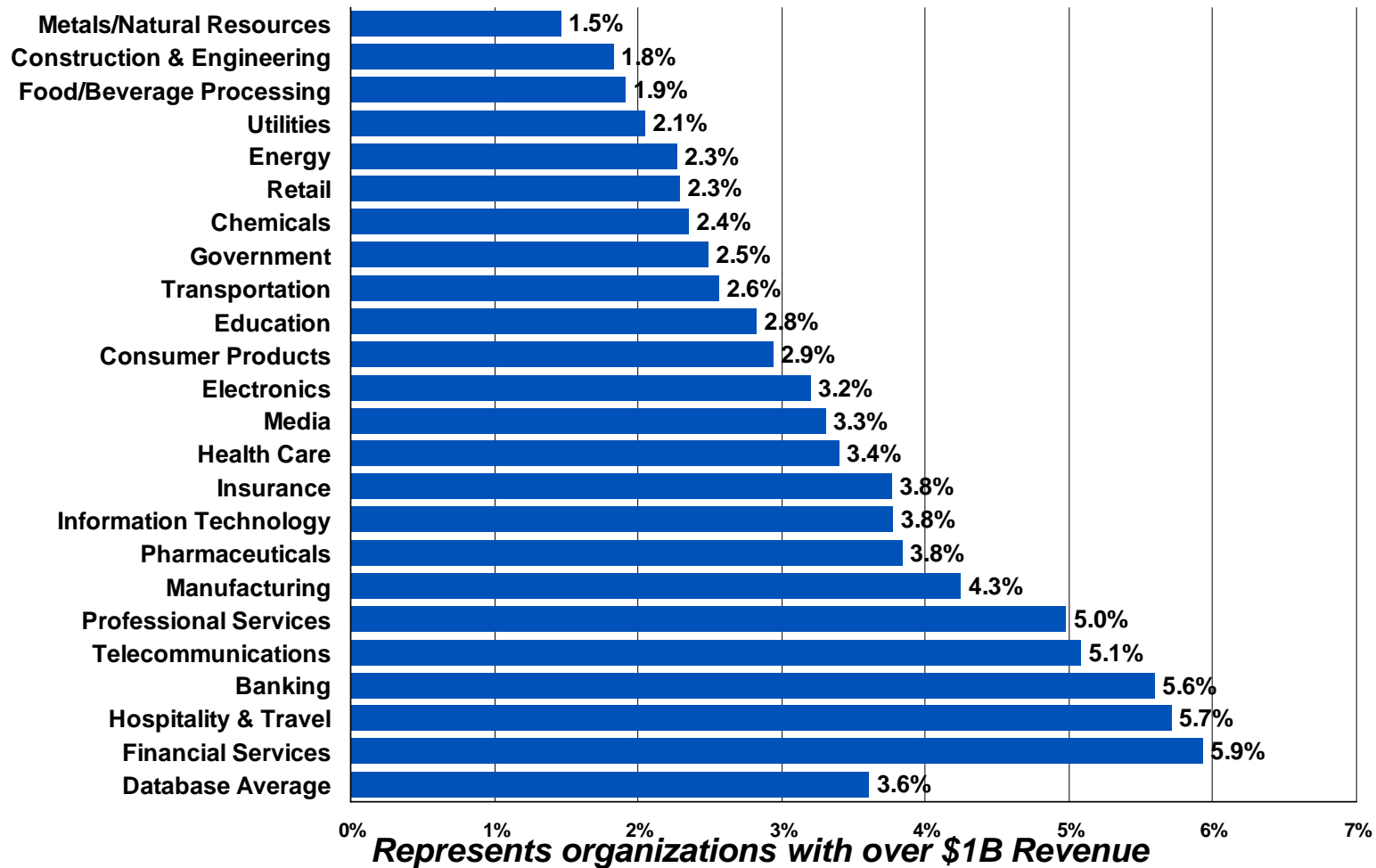


# Benchmarks: IT Spending per Company Employee

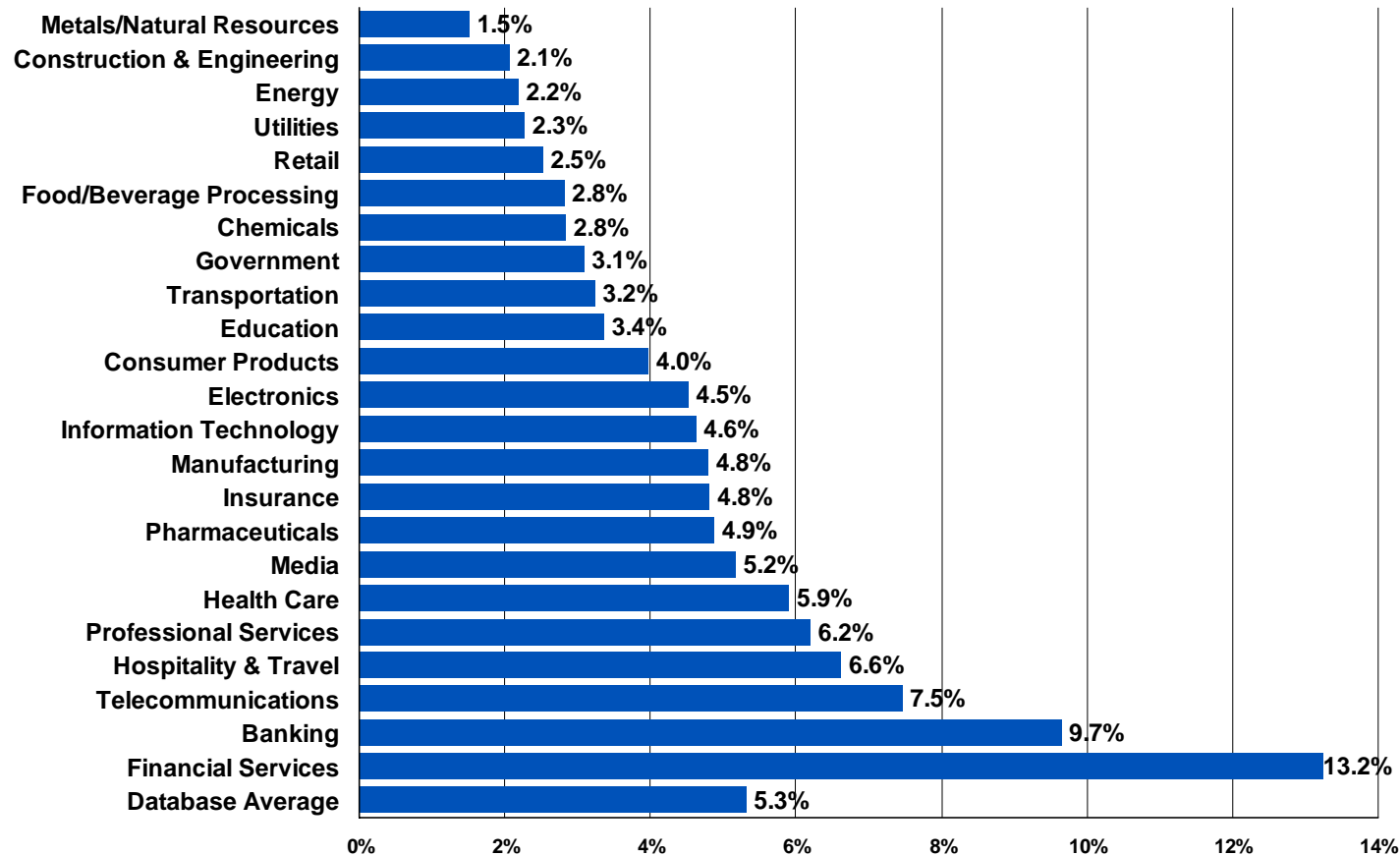




# Benchmarks : IT Spending as a % of Gross Revenue

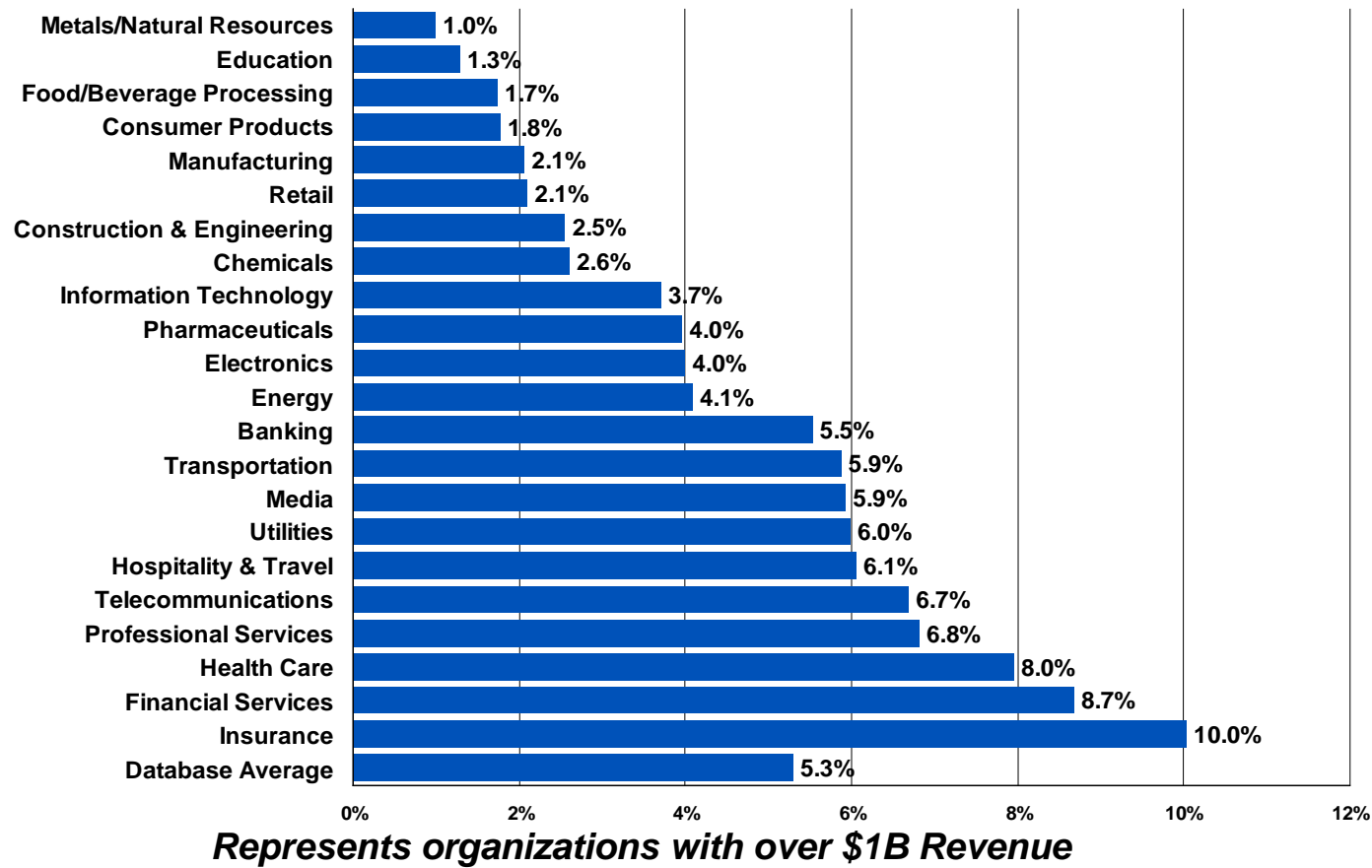


# Benchmarks: IT Spending as a % of Company Operating Expense



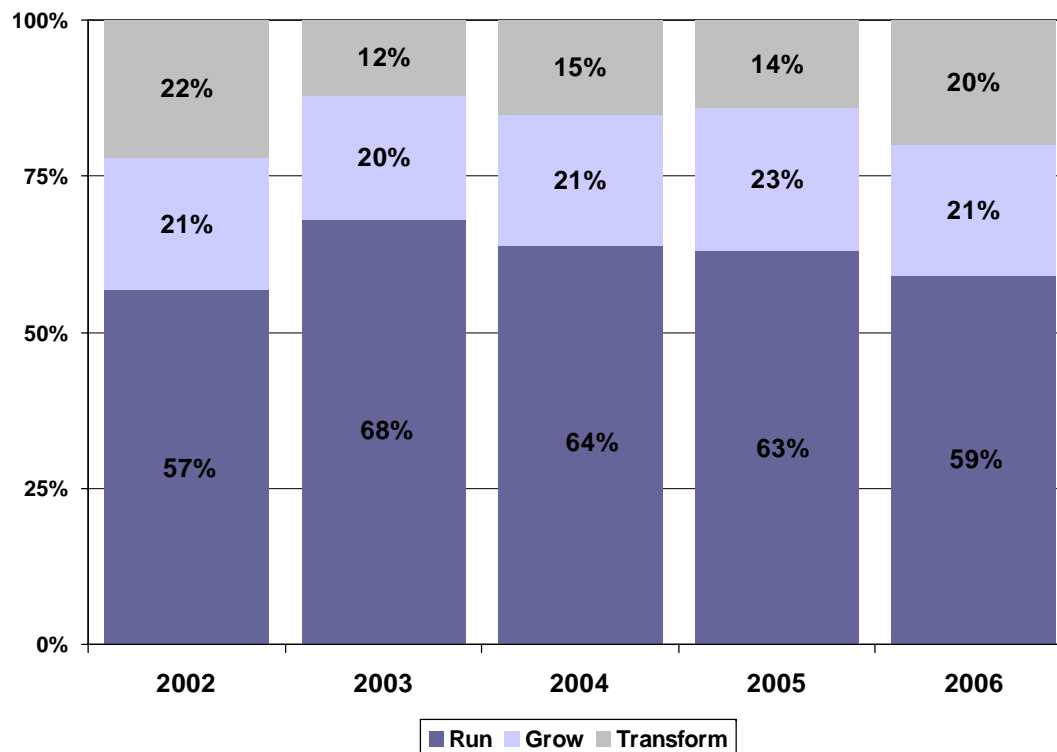
*Represents organizations with over \$1B Revenue*

# Benchmarks: IT Employees as a % of Company Employees



# Evidence of Value: IT Strategic Profile

***Measurement focused companies can target more investment to Grow and Transform***



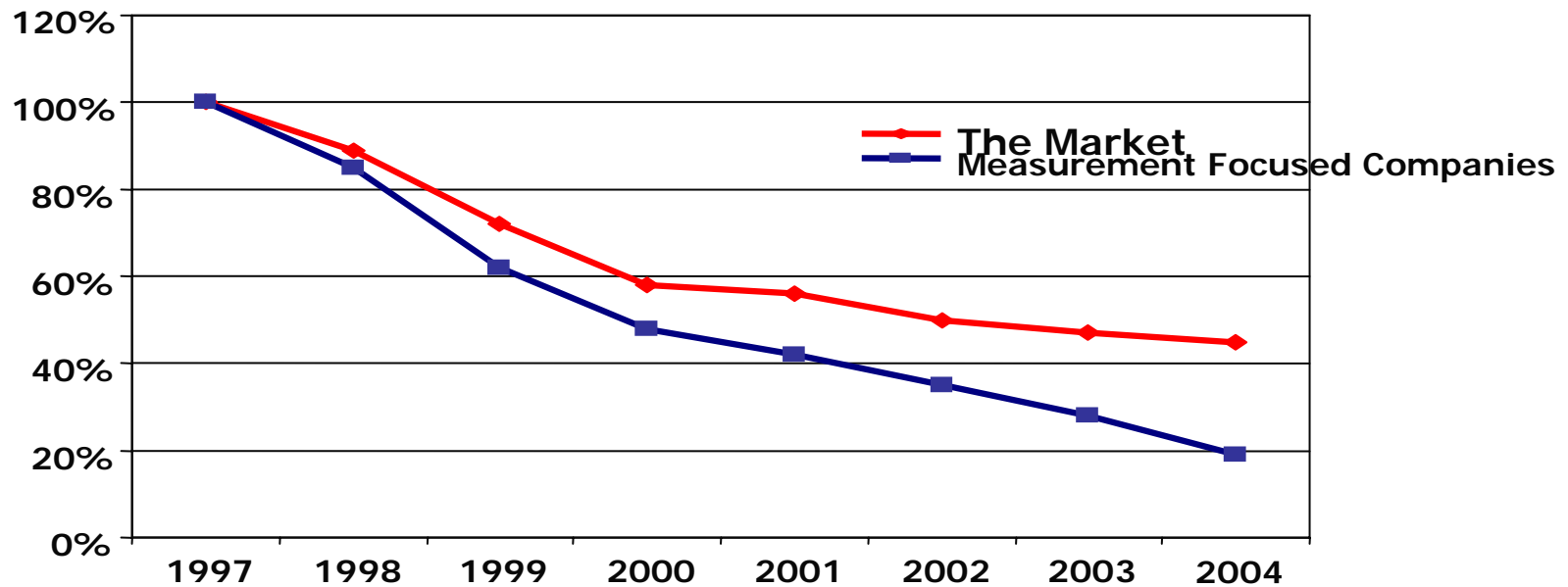
**Companies that have been using measurement (especially software measure) have a profile of <50% Run the Business and >50% Grow and Transform the Business**



# Evidence of Value: The Infrastructure Cost Structure

**The Market Basket Cost for IT infrastructure declined 58% between 1997 and 2004 – Measurement focused companies declined 80%!**

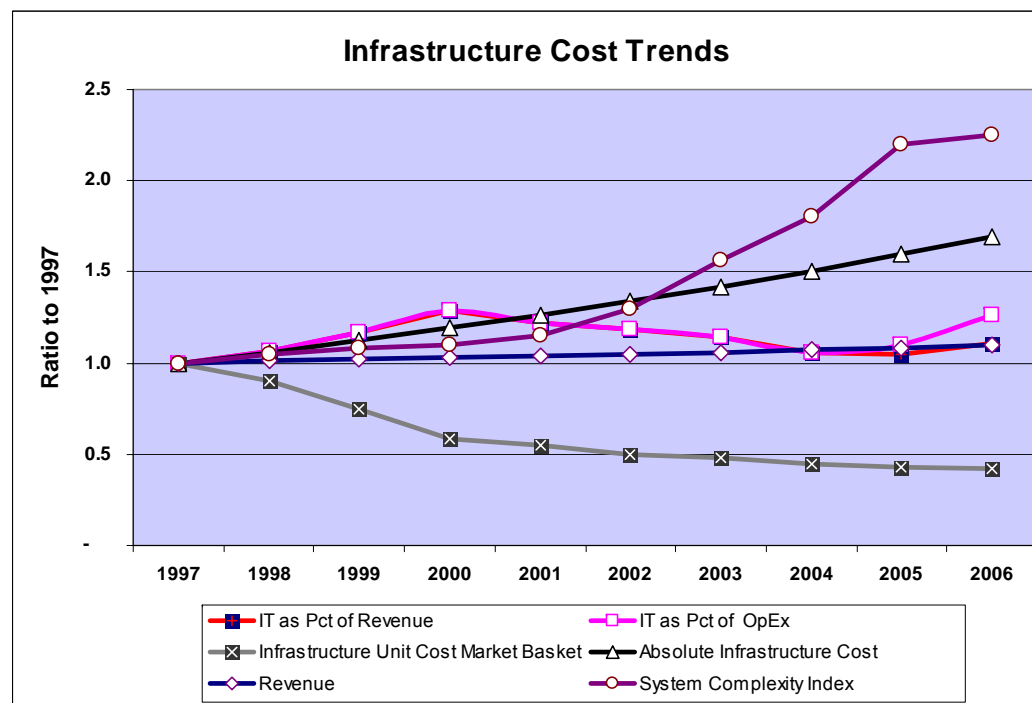
### Market Basket Index



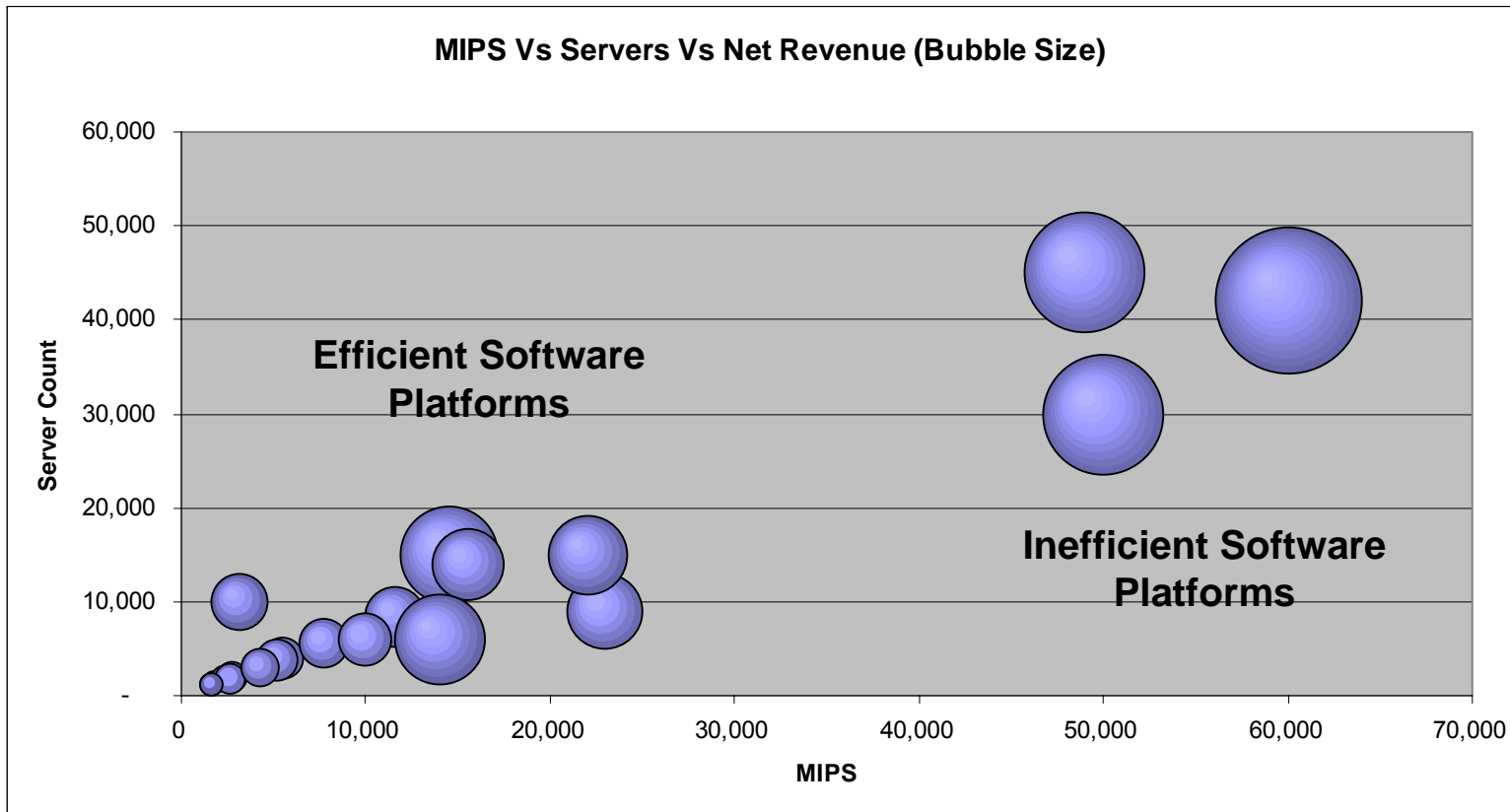
Cost of 1 MIPS, 1 GB Mainframe Storage, 1GB Open Storage, 1 UNIX Server, 1 Intel Server, 1 Desktop, 1 Laptop, etc.

## Evidence of Value: Beating Moore's Flaw (and realizing Moore's Law)

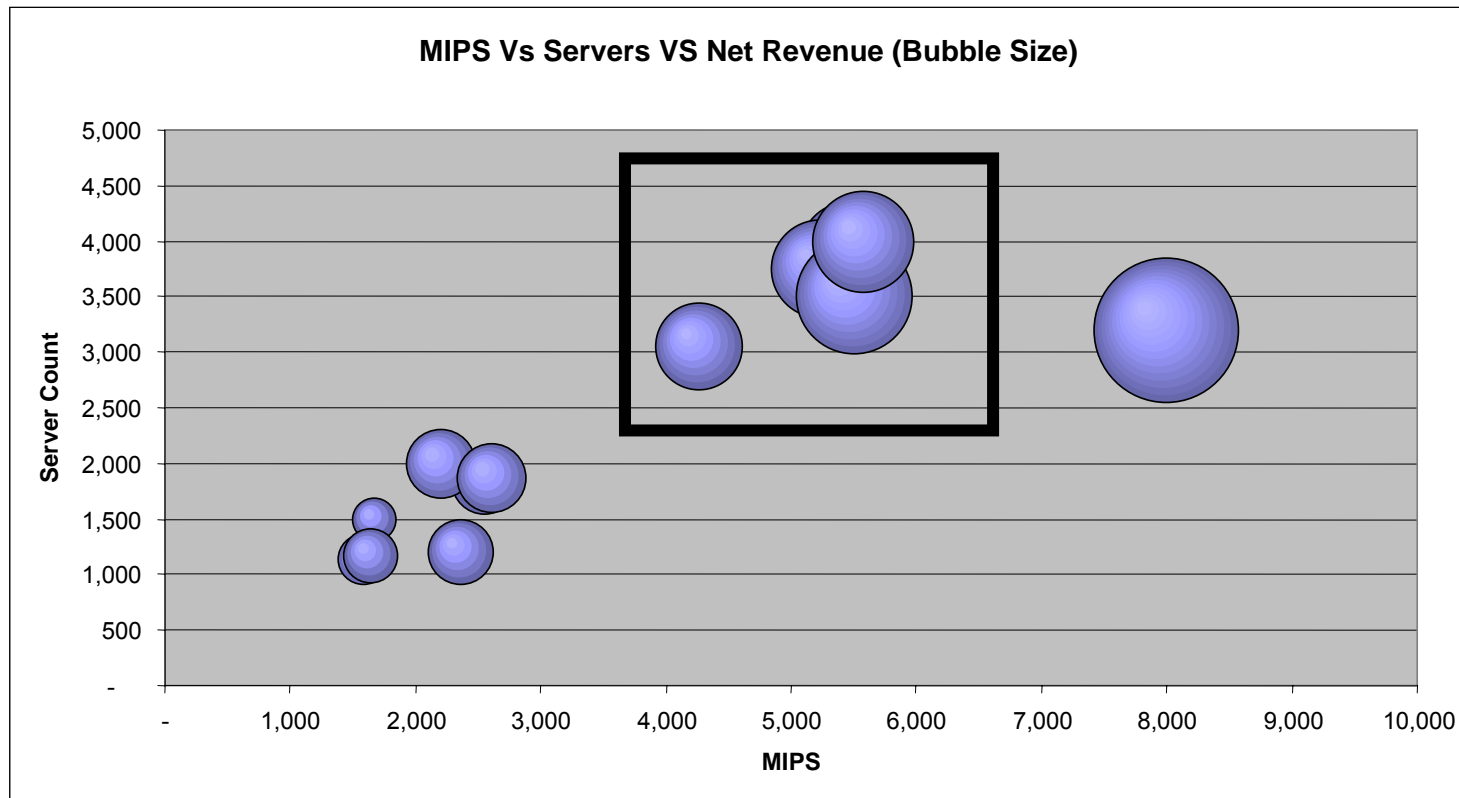
The primary driver of infrastructure cost increase is the increased demand for system resources and capacity resulting from rising system complexity supporting CRM, product variations, across-LOB customer views, and transaction spawning rates. Measurement focused companies have controlled complexity.



# Evidence of Value: Software Driving of Infrastructure Sizing



# Evidence of Value: Infrastructure Size Footprint for a \$6B Bank





# Evidence of Value: A Summary

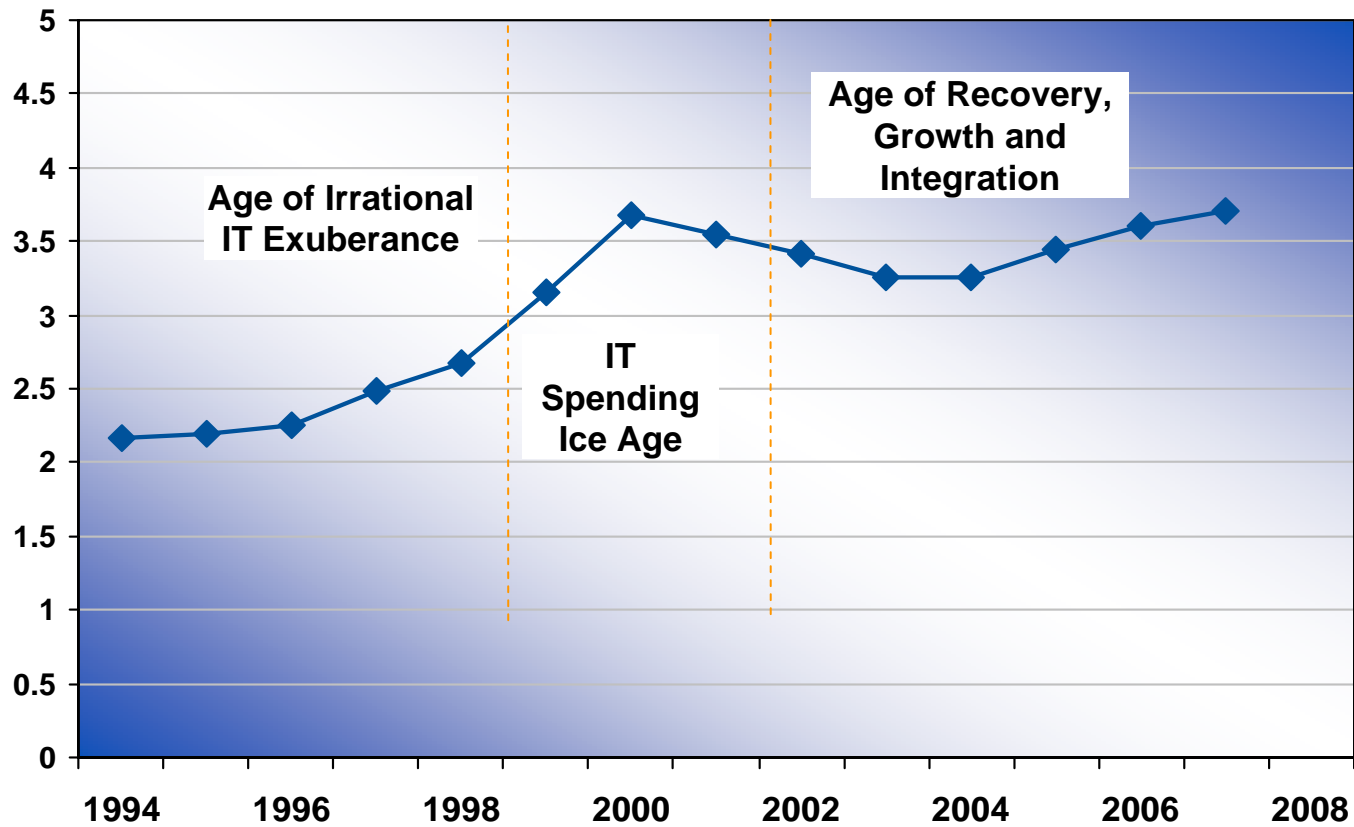
## **Companies that have embarked on rigorous measurement**

- **Are able to focus more investment on activities that Grow and Transform their businesses**
- **Have superior IT economics**
- **Drive performance change faster than the “market”**

# Conclusion: IT Spending Trends 1994 to 2006 and Beyond

The demand for value will continue and increase

## IT Spending as % of Revenue



## Conclusions: Value Pressure Will Increase

- **The roller coaster of IT spending is a manifestation of the distribution of the true technology spending in an enterprise “Total Technology Spend”**
  - **When IT spend is directed to decrease by business financial pressures, line of business technology spending increases**
- **Total Technology Spend is far greater than IT Spend**
  - **In Financial Services typically for every \$1.00 of IT Spend there is \$.30 to \$.54 of LOB technology spending**
  - **In telecommunications, LOB technology spending is as high as 4x IT Spend**
  - **In media, LOB Technology spend is as high as 10x IT spend**
- **The distinction between IT spending and “technology spending” is a blur**
- **Governance and process might have more influence than the investment levels themselves**
- **The need for measurement will increase**

# Conclusions:

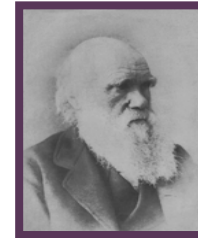
## New Issues will Drive the Measurement Agenda

- **The new pivotal issue is “managing technology as a business” – not just IT**
  - What is the relationship between business and technology sizing? How can this be measured?
  - How does software quality drive the total technology cost? What are the right measures?
  - As more products become technology themselves, how can effective measurement be used as a differentiator?
  - In a world where time to market and customer delivered quality are key – what measures will provide competitive differentiation?



# Conclusions: Measurement and Value

- ▲ **It is really all about:**
  - ▶ **Opportunity and innovation**
  - ▶ **Adaptation and responsiveness**
  - ▶ **Sound economic models**
  - ▶ **Enterprise balance, agility, resiliency**
  - ▶ **Governance and process**
  - ▶ **Delivery and architecture**
  - ▶ **A Total Technology and Business View**



**It is not the strongest of the species that survives,  
nor the most intelligent, but the one that is  
most responsive to change**

— *Charles Darwin*



■ ■ ■ ■ Thank You!