

# What are Your Employees Worth?

Paul A. Strassmann - (paul@strassmann.com)  
Information Economics Press  
September 12, 2001

## Ideas Emerging at End of 20<sup>th</sup> Century

- Knowledge Capital
- Knowledge Assets
- Knowledge Management
- Intellectual Capital
- Information Assets
- Information Warfare
- Information Security

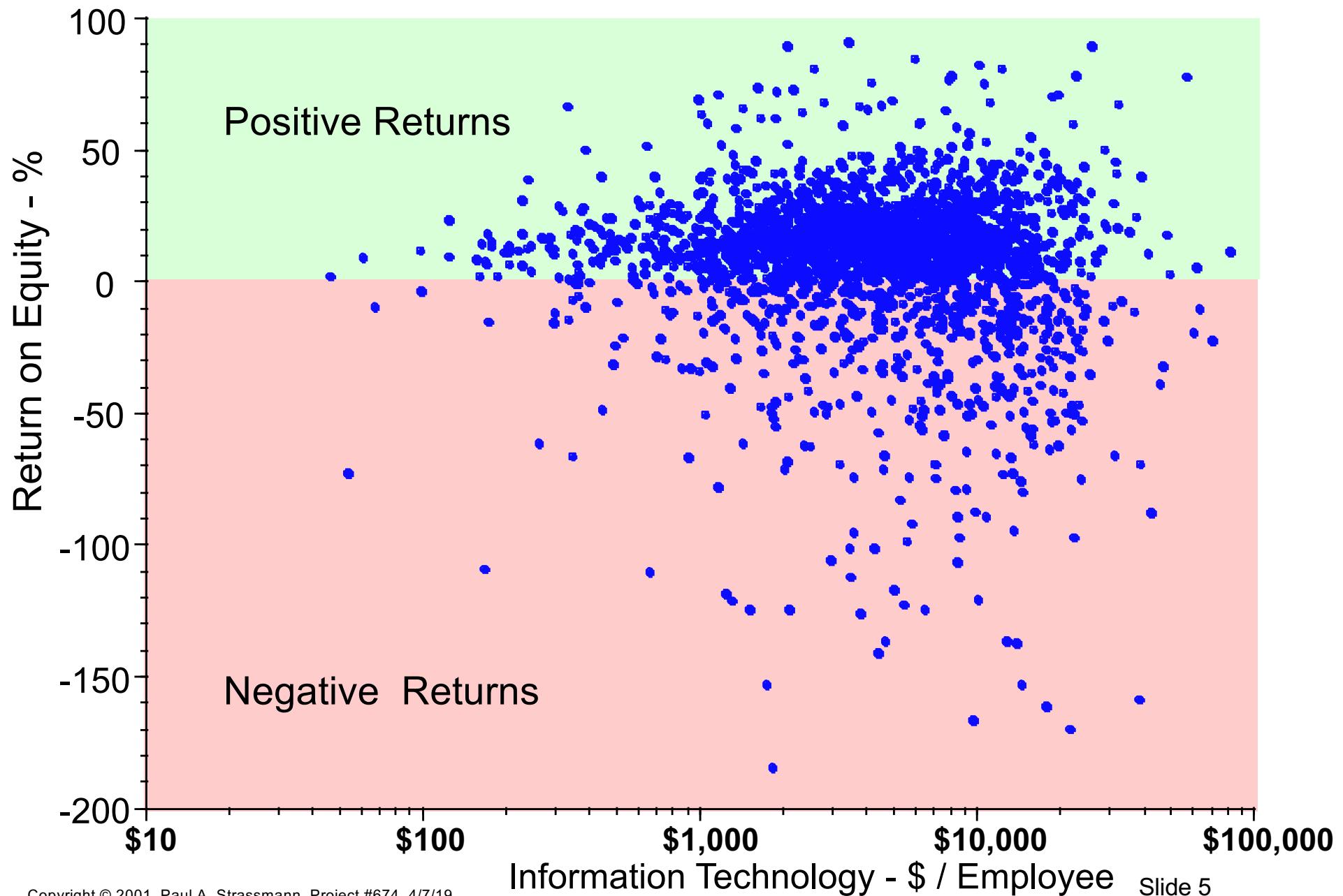
## *Theme of This Presentation*

*“ Only if you Can Measure It  
Can You Understand and Invest in It.”*

## **Presentation Outline – Part I**

- Concepts and Theories
  - Illustrative Case – Pharmaceutical Firms
  - Market Valuation of Employees' Worth
  - Structure of Knowledge-Based Economies
  - Summaries

## Information Technology Spending Is Irrelevant



**How Much?**

# Measuring the Worth of Knowledge

## Accepted Metrics Disregard Information as Input

**Productivity =  $\frac{\text{Output}}{\text{Input}}$**

**Return-On-Assets =  $\frac{\text{Profit}}{\text{Finance Capital}}$**



**SOURCE OF WEALTH**

## The Information Economy Must Focus on Information

**Information Productivity =  $\frac{\text{Output}}{\text{Input}}$**

**Info. Productivity =  $\frac{\text{Economic Profit}}{\text{Cost of Information}}$**

**SOURCE OF WEALTH**



**It is Efficient Knowledge Capital that Generates Profits**

**Economic Profit = Knowledge Capital \* Cost of Capital**

**Knowledge Capital =  $\frac{\text{Economic Profit}}{\text{Cost of Capital}}$**

® Knowledge Capital is a Registered Trademark of Strassmann, Inc.

## Fundamental Proposition

**Today's *Economic Profit* is  
the return realized from an  
accumulation of efficient  
*Knowledge Capital.***

## **Presentation Outline – Part II**

- Concepts and Theories
- Illustrative Case – Pharmaceutical Firms
- Market Valuation of Employees' Worth
- Structure of Knowledge-Based Economies
- Summaries

## ***#1: Collect Latest Financial Data (\$000,1998)***

Company	Profits	Finance Capital	Interest Rate - %
MERCK & CO.	\$5,248,200	\$16,506,800	5.35
JOHNSON & JOHNSON	\$3,059,000	\$13,590,000	4.51
GLAXO WELLCOME	\$3,054,400	\$4,586,592	6.47
ABBOTT	\$2,333,231	\$5,713,661	5.16
WARNER-LAMBERT	\$1,254,000	\$3,612,100	8.74

## **#2: Calculate Economic Value-Added (US\$000)**

<b>Company</b>	<b>Economic Value-Added</b>
MERCK & CO.	\$4,365,086
GLAXO WELLCOME	\$2,757,647
JOHNSON & JOHNSON	\$2,446,091
ABBOTT	\$2,038,406
WARNER-LAMBERT	\$938,302

## #3: Calculate Knowledge Capital (\$000 1998)

Company	Knowledge Capital
MERCK & CO.	\$81,590,396
JOHNSON & JOHNSON	\$54,237,051
GLAXO WELLCOME	\$42,622,063
ABBOTT	\$39,503,994
WARNER-LAMBERT	\$10,735,726

## **#4: Show Share of Knowledge Capital, 1998**

Company	Finance Capital	Knowledge Capital
GLAXO WELLCOME	9.7%	90.3%
ABBOTT LABORATORIES	12.6%	87.4%
MERCK & CO.	16.8%	83.2%
JOHNSON & JOHNSON	20.0%	80.0%
WARNER-LAMBERT	25.2%	74.8%

## #5: Calculate Knowledge Capital/Employee

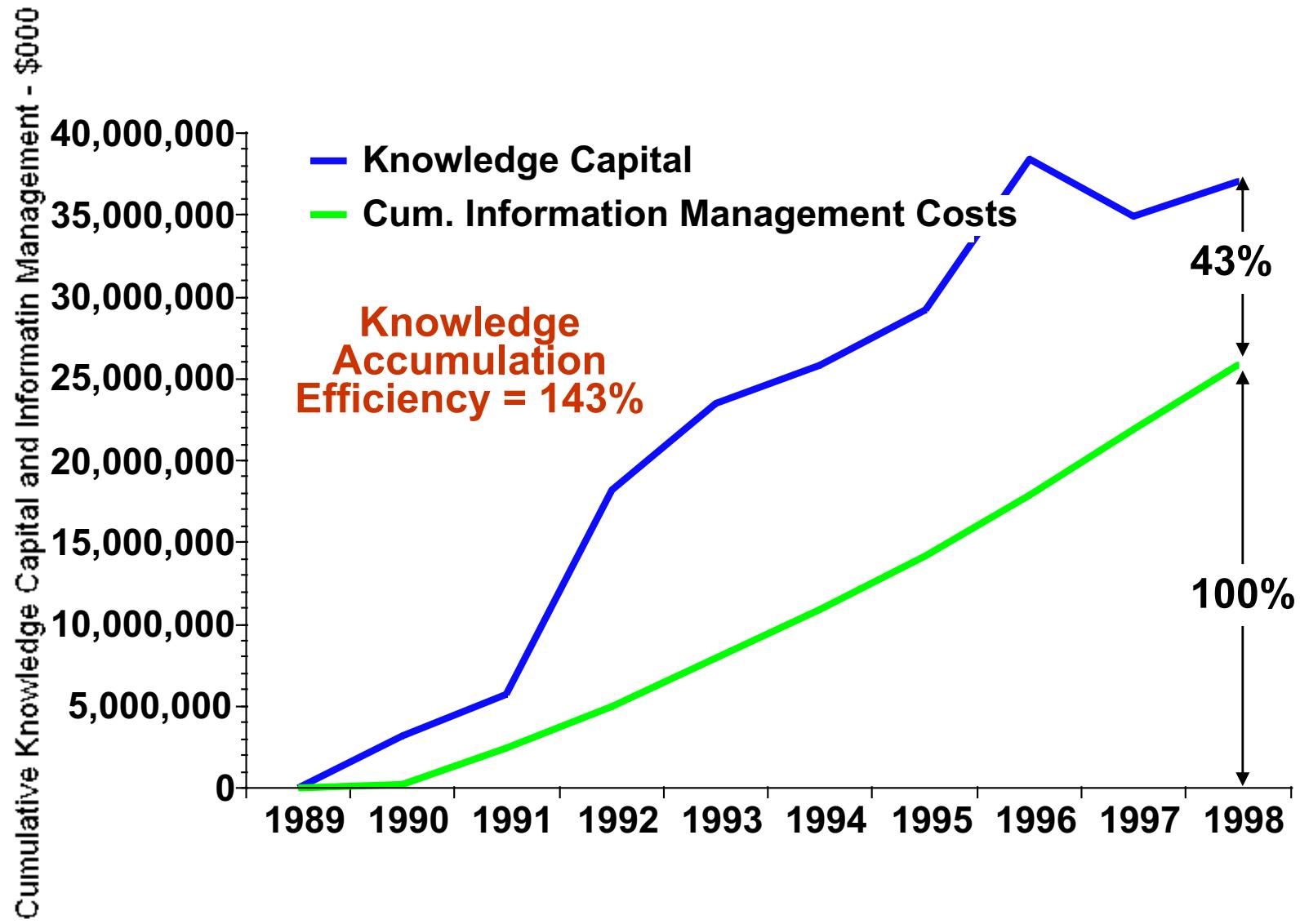
Company	Employees	Knowledge Capital/Employee
MERCK & CO.	57,300	\$1,423,916
GLAXO WELLCOME	54,350	\$784,215
ABBOTT	56,236	\$702,468
JOHNSON & JOHNSON	93,100	\$582,568
WARNER-LAMBERT	41,000	\$261,847

## #6: Assess Employees as a Valuable Asset

Company	Annual Valuation of Employees As a Risky Asset	Estimated Difference between Employee Valuation and Employee Pay
MERCK & CO.	\$185,109	\$130,109
GLAXO WELLCOME	\$101,948	\$46,948
ABBOTT	\$91,321	\$36,321
JOHNSON & JOHNSON	\$75,734	\$20,734
WARNER-LAMBERT	\$34,040	\$ -20,960

Acquired by  
Pfizer, June 2000

## **#7: Measure Knowledge Accum. Efficiency (Abbott)**



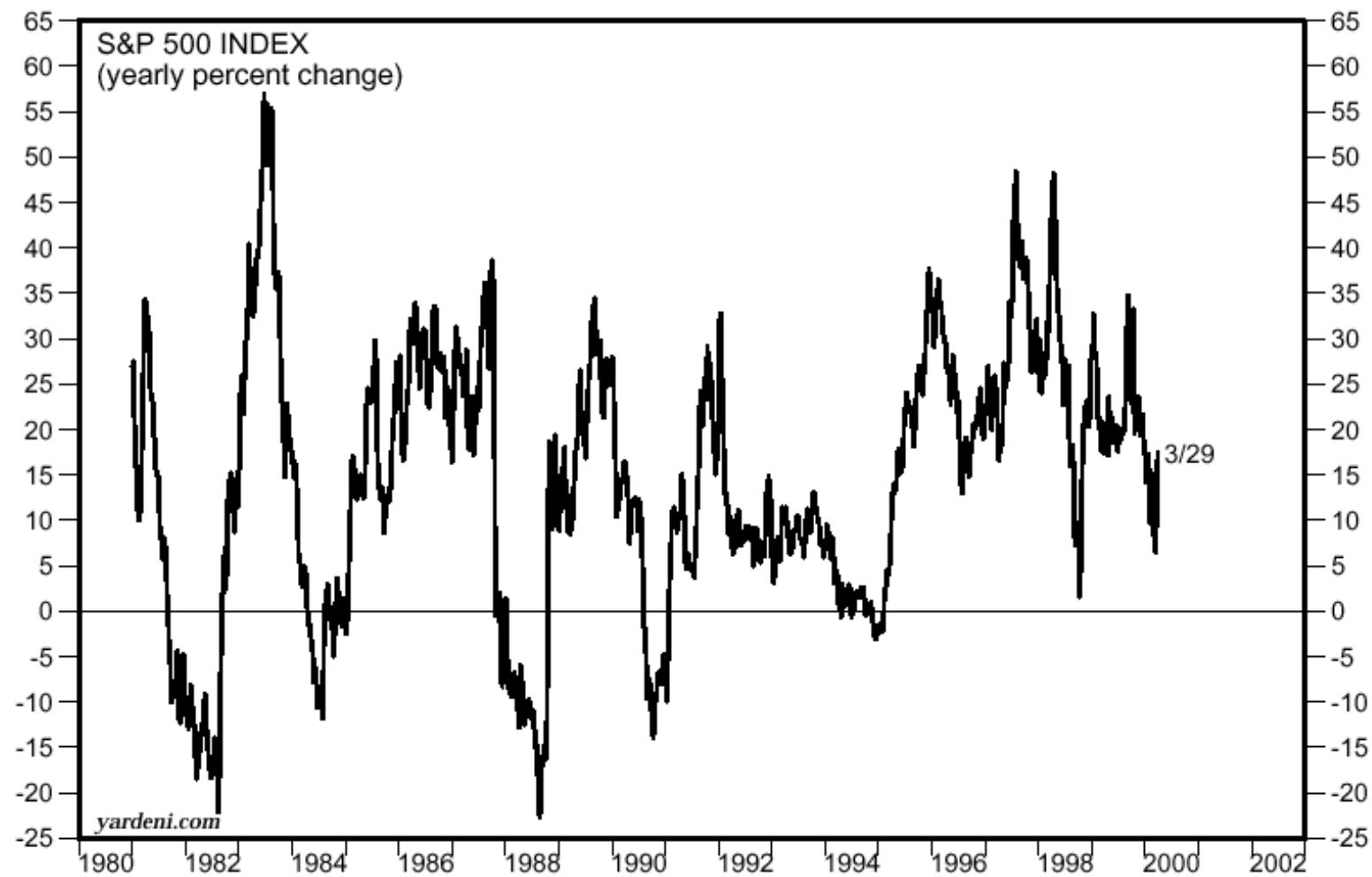
## *Summary Observation*

- **Knowledge Capital is the largest asset for most corporations;**
- **Knowledge Capital can be measured.**

## **Presentation Outline – Part III**

- Concepts and Theories
- Illustrative Case – Pharmaceutical Firms
- **Market Valuation of Employees' Worth**
- Structure of Knowledge-Based Economies
- Summaries

## **Stock Prices Cannot Explain Knowledge Capital**



**SOURCE:** [www.yardeni.com](http://www.yardeni.com)

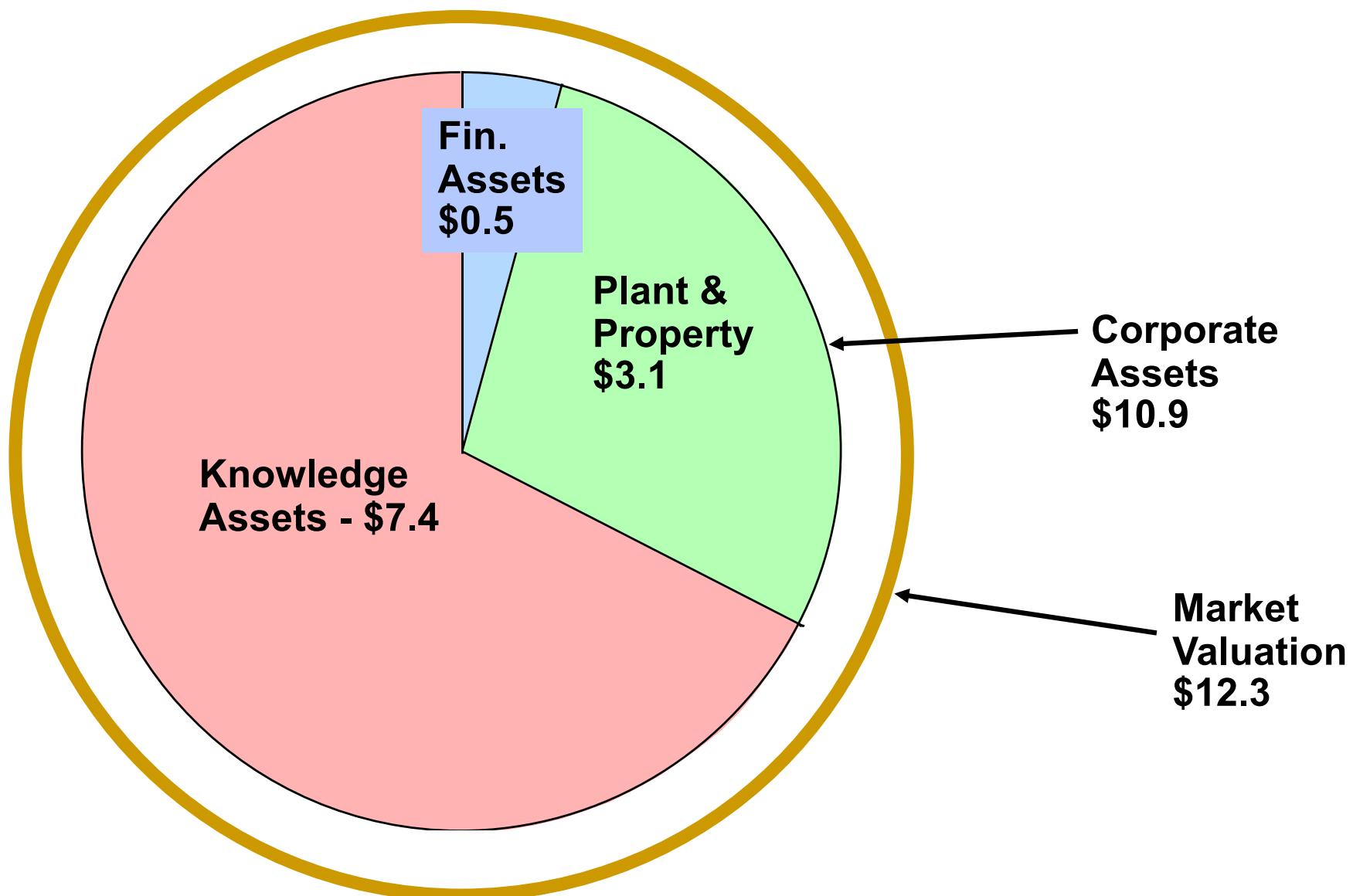
## Comparing Total and Market Capitalization

Company	Finance + Knowledge Capital	Market Valuation	Fin + Knowlge /Market Capital
ABBOTT	\$45,217,655	\$74,287,000	61%
JOHNSON & JOHNSON	\$67,827,051	\$112,732,000	60%
MERCK & CO.	\$98,097,196	\$174,083,000	56%
GLAXO WELLCOME	\$47,208,655	\$124,315,000	38%
WARNER-LAMBERT	\$14,347,826	\$61,771,000	23%

All Valuations as of December 31, 1998

Acquired by  
Pfizer, June 2000

## Knowledge Capital in the US Economy (1998 data, \$ trillions)

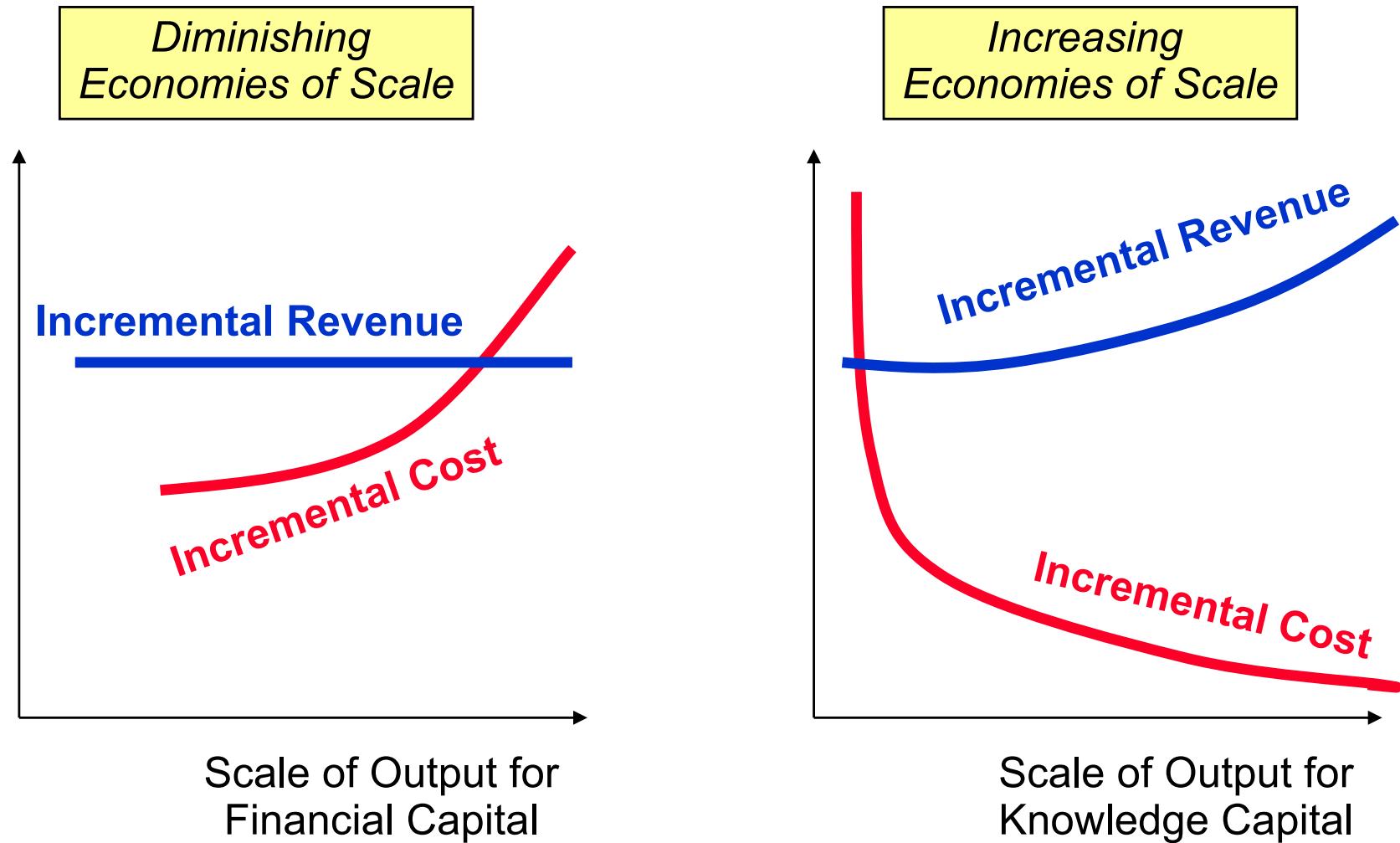


SOURCE: Strassmann, Inc. database of 5,763 US firms

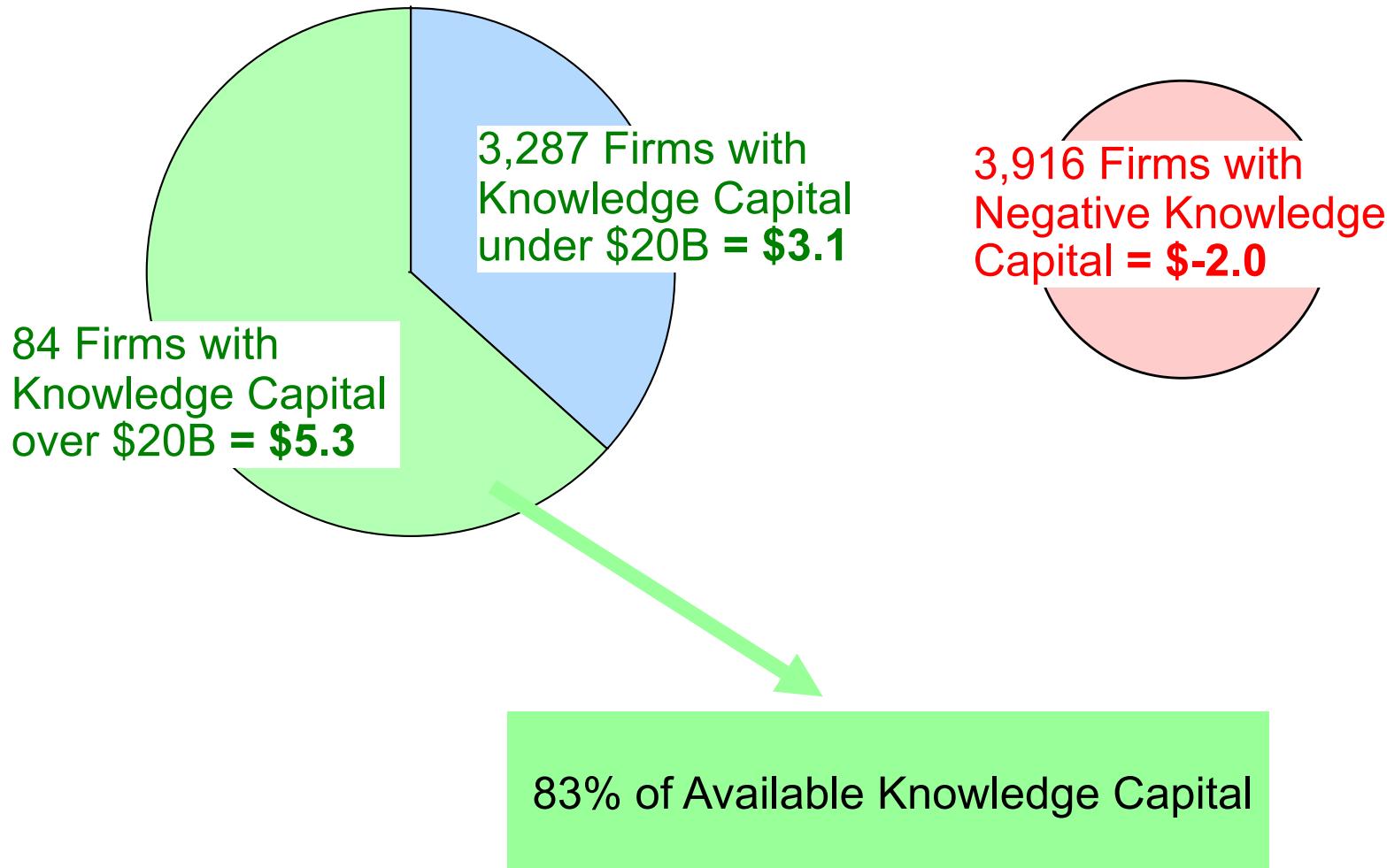
## **Presentation Outline – Part IV**

- Concepts and Theories
- Illustrative Case – Pharmaceutical Firms
- Market Valuation of Employees' Worth
- **Structure of Knowledge-Based Economies**
- Summaries

## Comparison of Financial Capital vs. Knowledge Capital



# Knowledge Capital is Concentrated *(in \$ Trillions)*



SOURCE: Strassmann, Inc. Data Base of U.S. Knowledge Capital

## ***Few Firms Remaining as Software Firms Consolidate***

	Number of Firms	Total Profits	% of total firms	% of total Profits
<b>Losses - \$ Millions</b>	380	\$-4,673	53.4%	-38.8%
<b>Profits - \$ Millions</b>	331	\$8,932	46.5%	74.2%
<b>Microsoft Profits - \$ Millions</b>	1	\$7,785	0.1%	64.6%
<b>Total Net Profits</b>	712	\$12,044	100.0%	100.0%

SOURCE: 1998 Financial Reports for listed Global Firms with SIC Codes 7371 and 7372

## **Negative Knowledge Capital Firms May Not Survive**

Grouping of Firms	Number of Firms	Total Knowledge Capital - \$Billion	% of total firms	% of total Knowledge Capital
Negative Knowledge Capital	3,916	\$-1,997	53.7%	-31.1%
Positive Knowledge Capital < \$20 B	3,287	\$3,078	45.1%	48.0%
Positive Knowledge Capital > \$20 B	84	\$5,331	1.2%	83.1%
Total Knowledge Capital	7,287	\$6,411	100.0%	100.0%

SOURCE: Knowledge Capital®, 1998 Financial Reports for listed U.S. Firms

## **Presentation Outline – Part V**

- Concepts and Theories
- Illustrative Case – Pharmaceutical Firms
- Market Valuation of Employees' Worth
- Structure of Knowledge-Based Economies
- Summaries

## *Summary Observation*

- **Social and political conflicts will occur as Knowledge Capital is displaced and redistributed on a global scale.**

## **Summary Observation**

- **The marginal cost characteristics of Knowledge Capital favor concentration of economic power in dominant firms.**
- **The “cyber-utopian” theories about increased competitiveness of small firms applies only in the case of radical innovations.**

## *Summary Observation*

- **Successful firms will have to plan and budget Knowledge Capital with equal care as given to Financial Capital.**

## *Summary Observation*

- **Successful firms will have to plan and budget for rapid accumulation of Knowledge Capital / Employee as the principal source of wealth.**

## **Fourth Rule**

**For Profit Gains I.T. Spending Must  
Support Competitive Strategies**

## Where to Focus I.T. Investments

Contributors to Profitability	Explanation of Profitability
Market position; Competition	65%
Strategic moves	10%
Operating effectiveness	15%
Random events, luck	10%

Source: The PIMS Program, sample of over 3,000 businesses from over 300 corporations

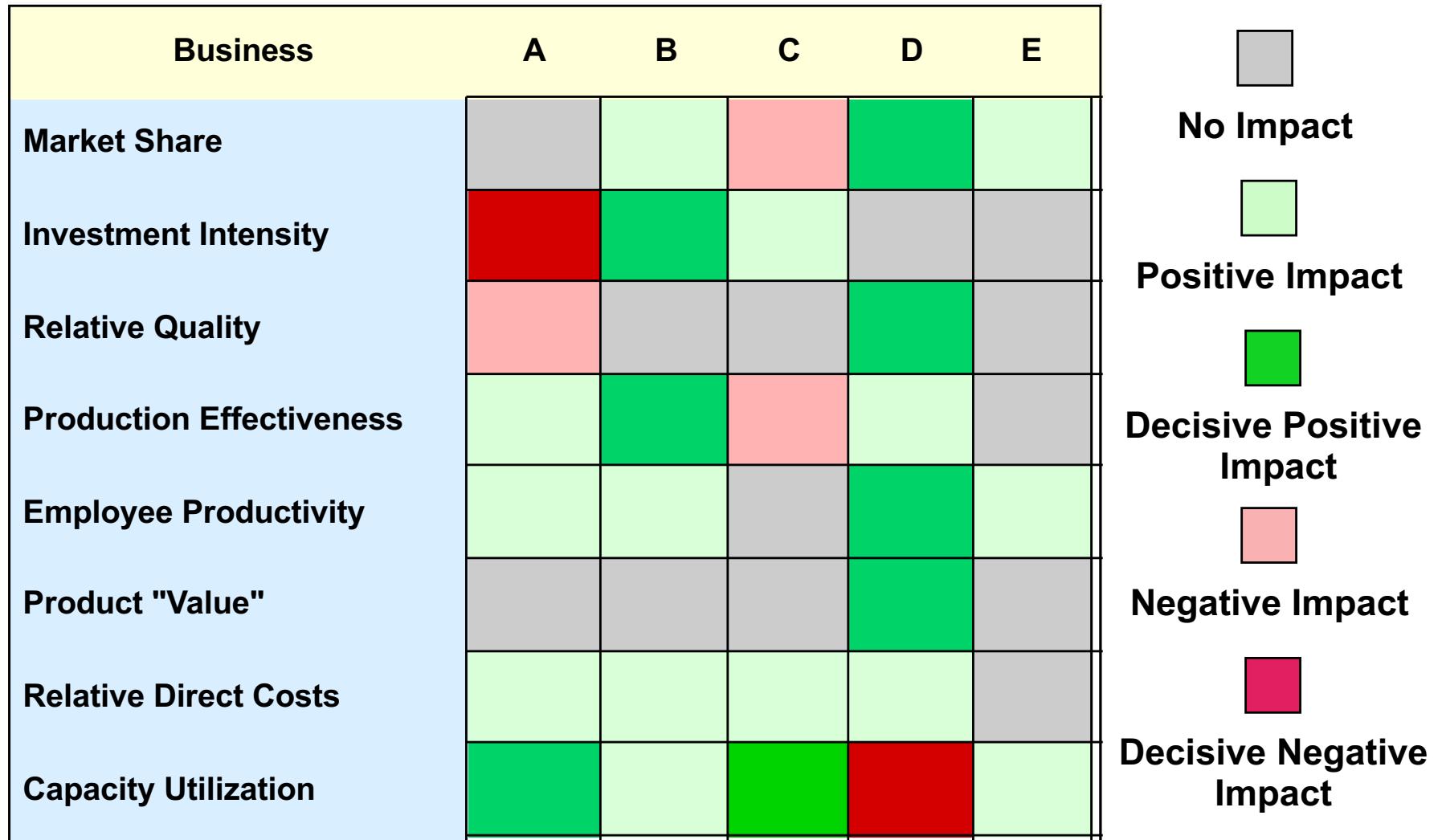
## Use I.T. to Improve Strategic Influences

Favorable	Strategic Influence	Unfavorable
Differentiated Segmented High High Low Good Low Substantial Growing Positive High New	Product or Service	Commodity
	Served Market	Unsegmented
	Relative Market Share	Low
	Relative Product Quality	Low
	Relative Costs	High
	Operating Effectiveness	Poor
	Investment Intensity	High
	Perceived Quality	Thin
	Value Added	Shrinking
	Growth Rate	Flat or Negative
	SG&A and R&D	Low
	Age of Assets	Old

## All I.T. Investments Must Start with Strategic Assessment

Business	Return-on-Equity	Market Share	Market Growth	Allocation of Investments
A	6%	10%	0%	44%
	41%	22%	-2%	5%
	7%	8%	23%	21%
	34%	67%	3%	26%
	30%	22%	50%	4%

## I.T. Portfolio: Sorting Out Priorities



## **The Difference Between I.T. Management and I.T. Leadership**

**Operational Effectiveness =  
Management**

**Strategic Choices =  
Leadership**

## **Management is Not Leadership**

### **Management**

- Do what is necessary.
- Execute better than the competitors.
- Deliver quality, efficiency, productivity, etc.
- Delegate if you can.

## **Leadership is Not Management**

### **Leadership**

- Attain sustainable competitive advantage.
- Deliver better value to customers.
- Pick market segment where you can win.
- Make it your primary job.