



The Business of Aerospace and Defense

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Goal



Foster Informed Discussion of the Business Aspects of the Aerospace and Defense Industry



Agenda



- **Business Principles**
- **A&D Evolution**
- **A&D Contributions**
- **A&D Unique Characteristics**
- **Defense Contracting Considerations**
- **Summary**



Business Principles

What All Businesses Have in Common



- **Capacity to Produce**
 - **Employees and Facilities**
- **Opportunity to Sell**
 - **Customers and Markets**
- **Access to Capital**
 - **Lending Institutions and Shareholders**

Stakeholders' Values Drive Business

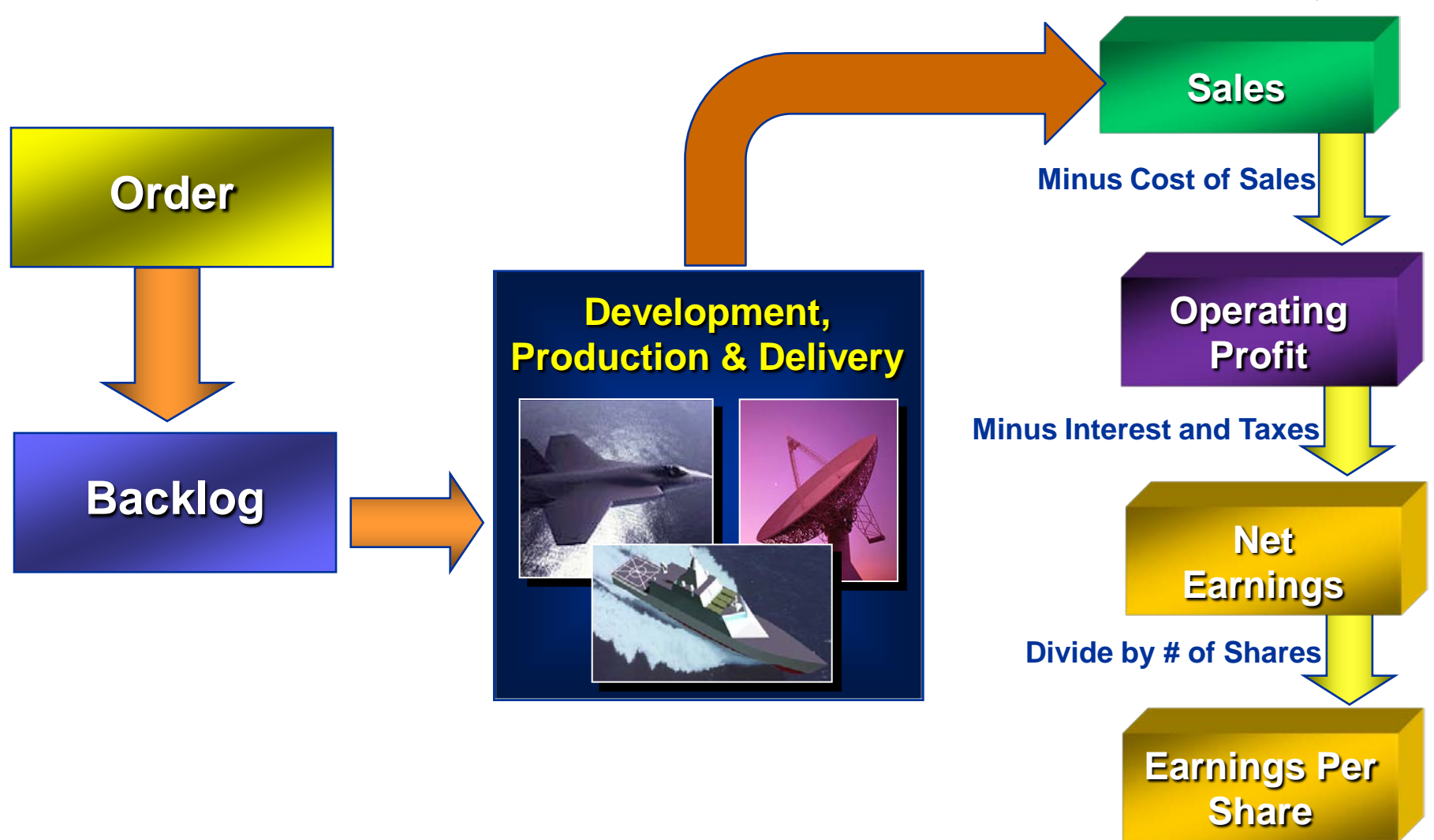
What All Successful Businesses Have in Common



- **Effective Business Rhythms**
 - **Strategy for Success and Determination to Execute It**
- **Strong Cash Flow**
 - **Processes Enabling Financing, Sales, Execution, and Collection**
- **Prudent Risk Management**
- **Reasonable Shareholder Returns**

Returns Enable Success

Financial Flow





A&D Evolution

Defense Industry Evolution

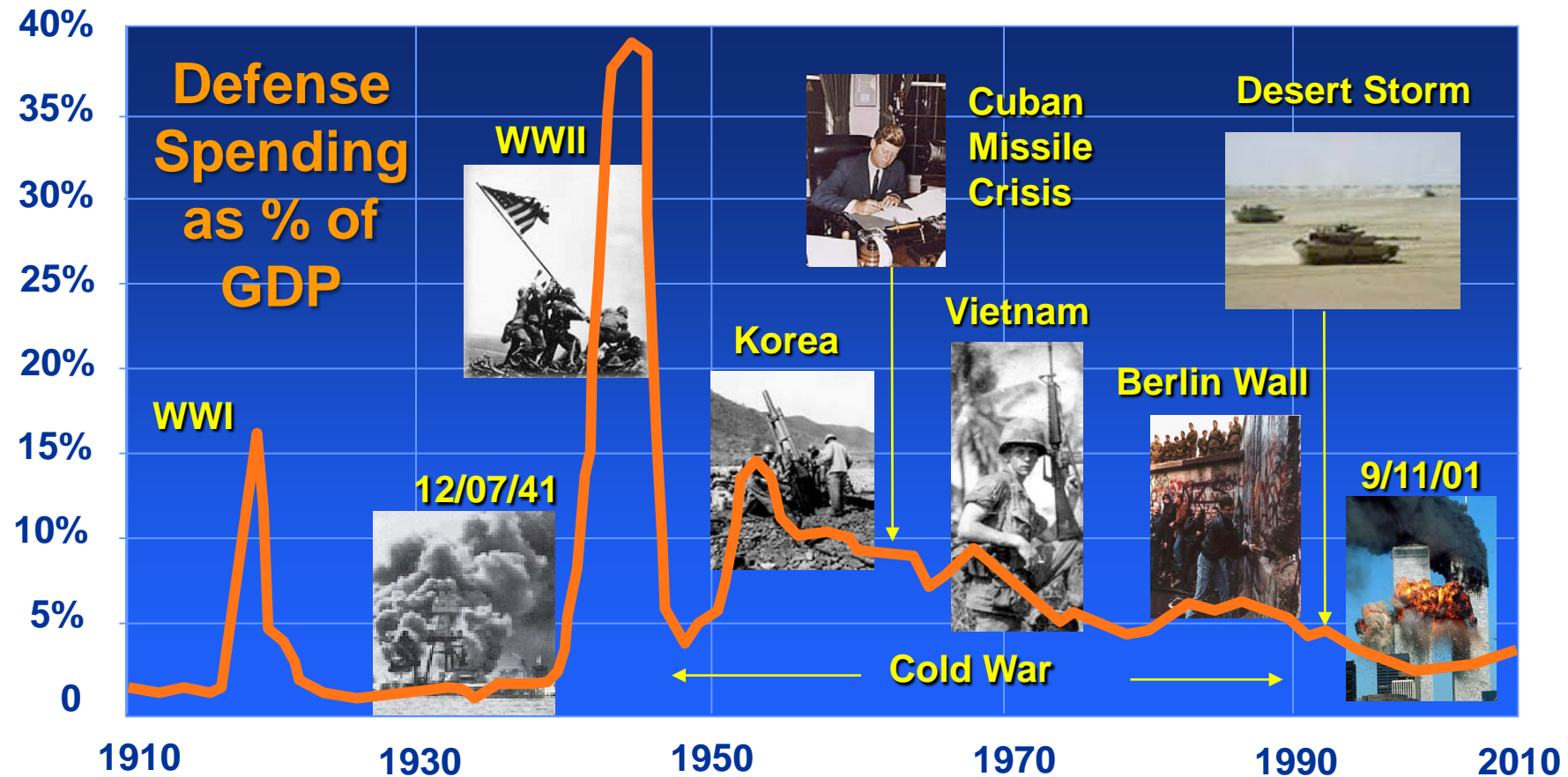
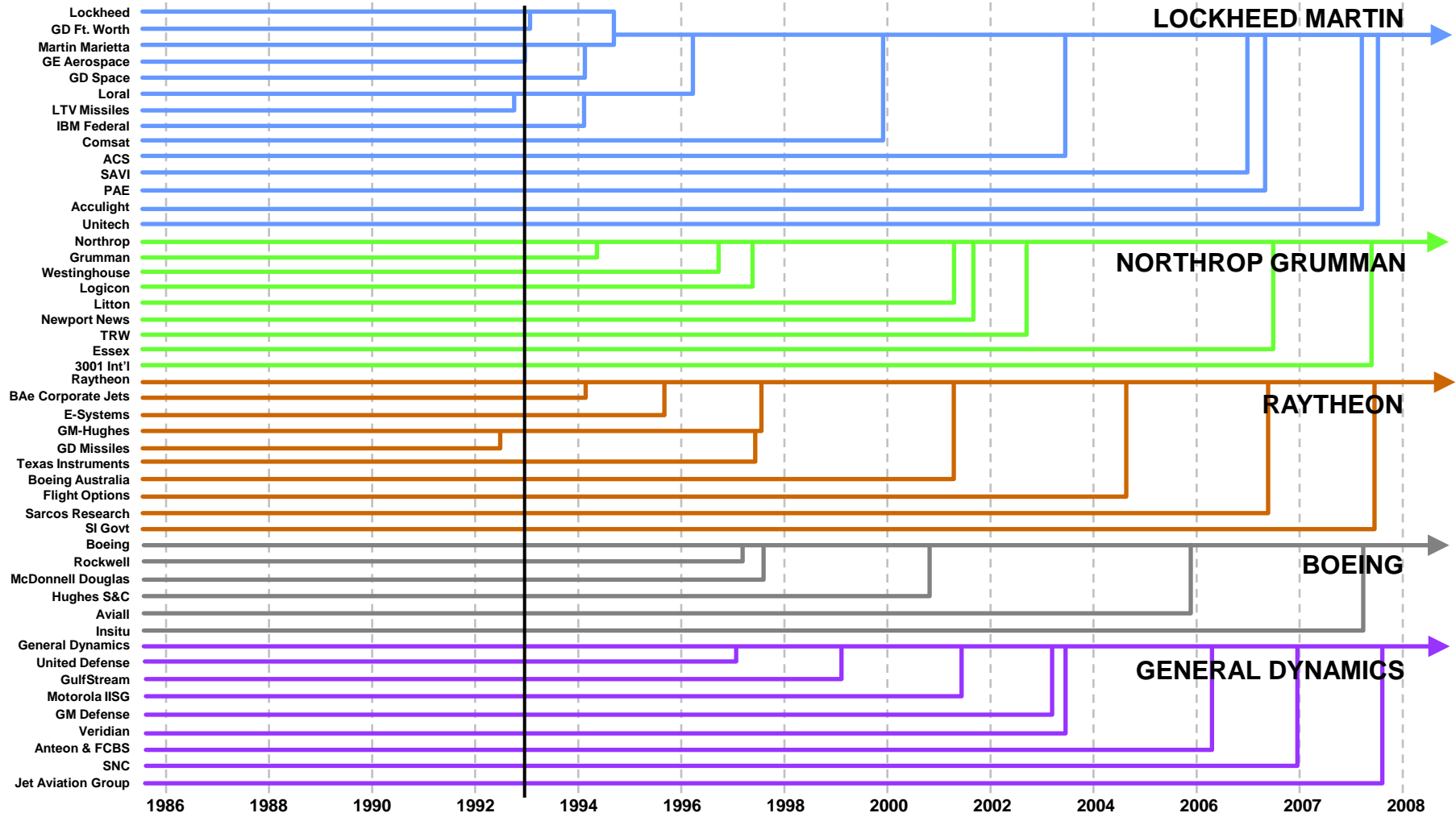


Chart Source:
Lexington
Institute

Defense Industry was Formed from Threats to National Security and Needs for Technological Investments

A&D Industry Consolidation

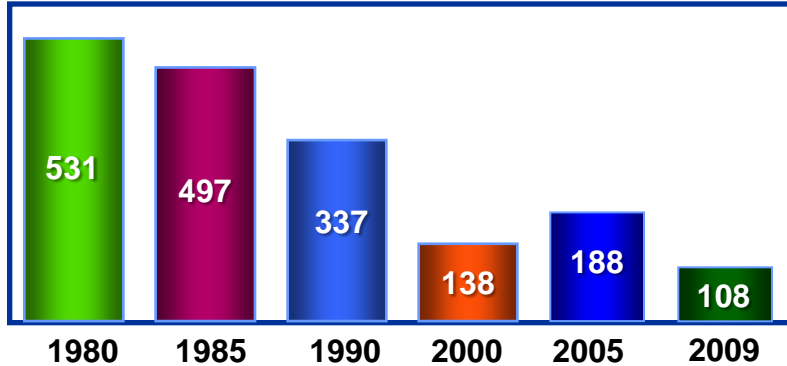


Reduced Demand and Market Forces Reshaped the Primes

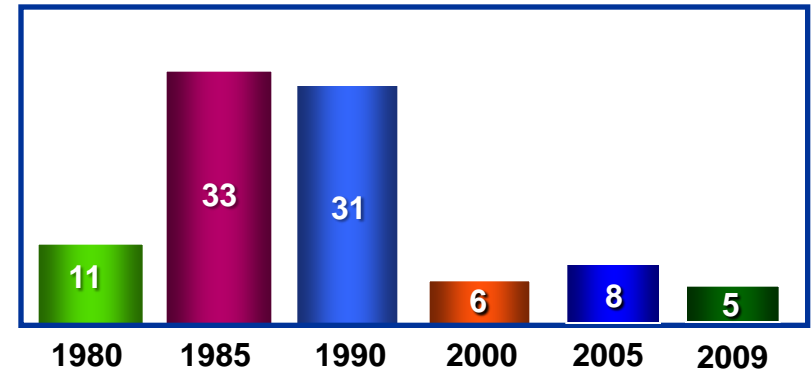
Defense Systems Procured



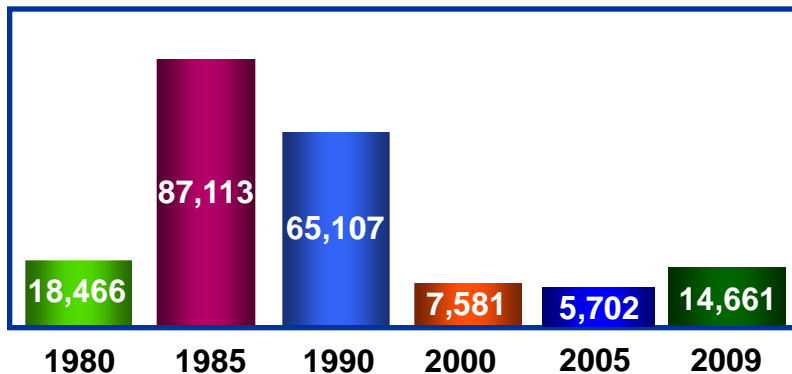
Aircraft Procurement



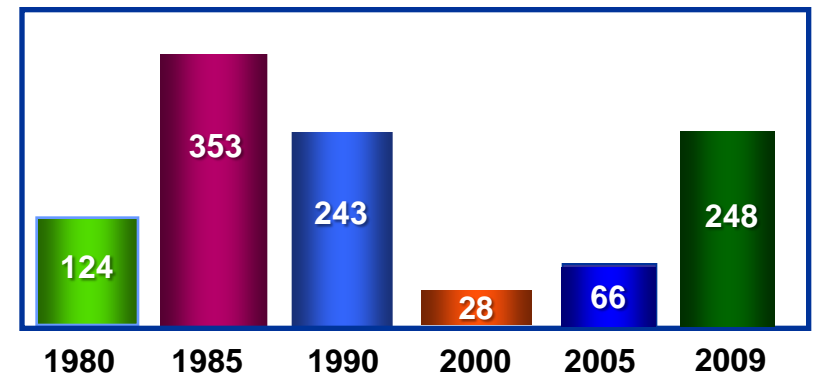
Ship Procurement



Missile Procurement



Helicopter Procurement

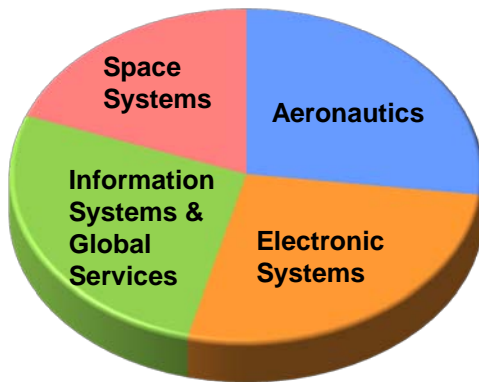


Source: DoD Procurement Programs P-1

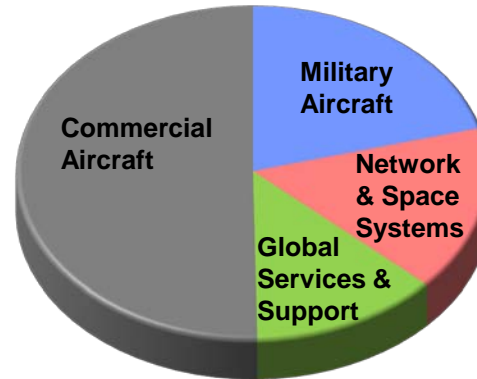
A&D Primes' Portfolios (2009 Sales)



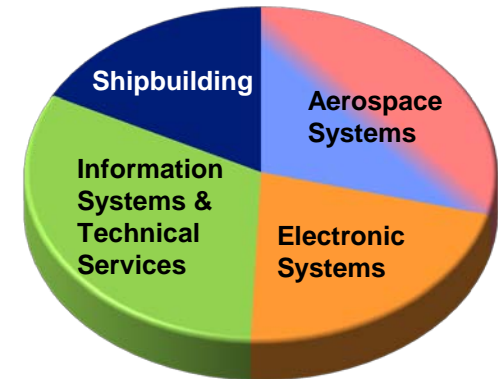
Lockheed Martin - \$45B



Boeing - \$68B



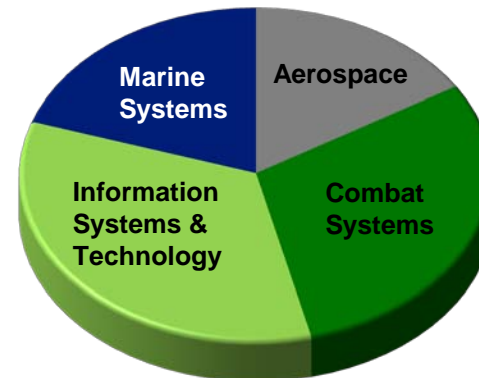
Northrop Grumman - \$34B



Raytheon - \$25B



General Dynamics - \$32B



Primes are Adapting to Changing Market Demands

A&D Industry Supports Global Security



Three-Tiered Global A&D Industry



A&D Global Primes

Sub-Primes &
Systems Partners

Lower-Tier
Suppliers



- 30,000+ Subsystems and materials suppliers
- Includes small, minority-owned and disadvantaged businesses (20,000+)
- Includes commercial companies
- Network of use extends to additional suppliers

60 to 75% of Work Subcontracted



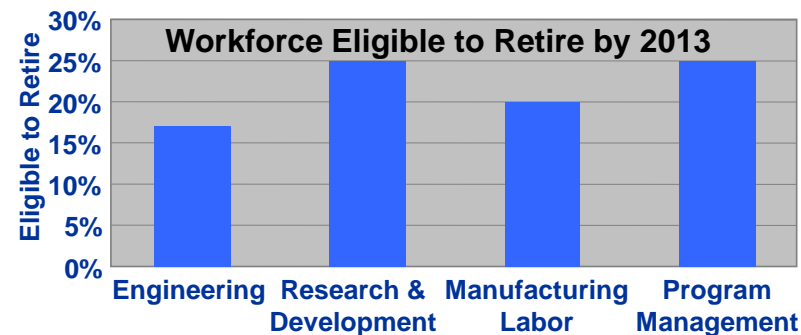
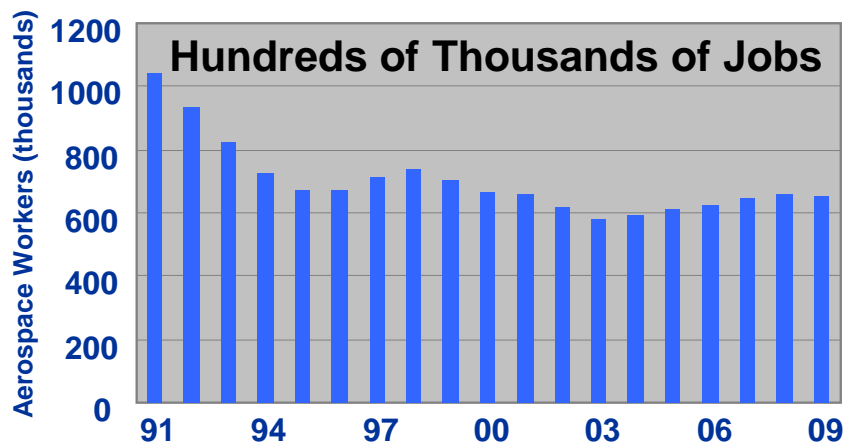
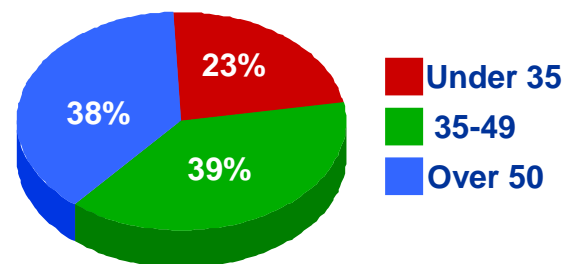
A&D Contributions

A&D Workforce Contributions



(Aviation Week 2009
Workforce Study)

Workforce Age Distribution



Over 40K A&D Jobs Lost Since 2009

Notes: Since First Quarter 2009, Actual and Announced

WA = 6578

↑ = 100 Jobs
Cut

NY = 2682

CA = 4458

FL = 10,108

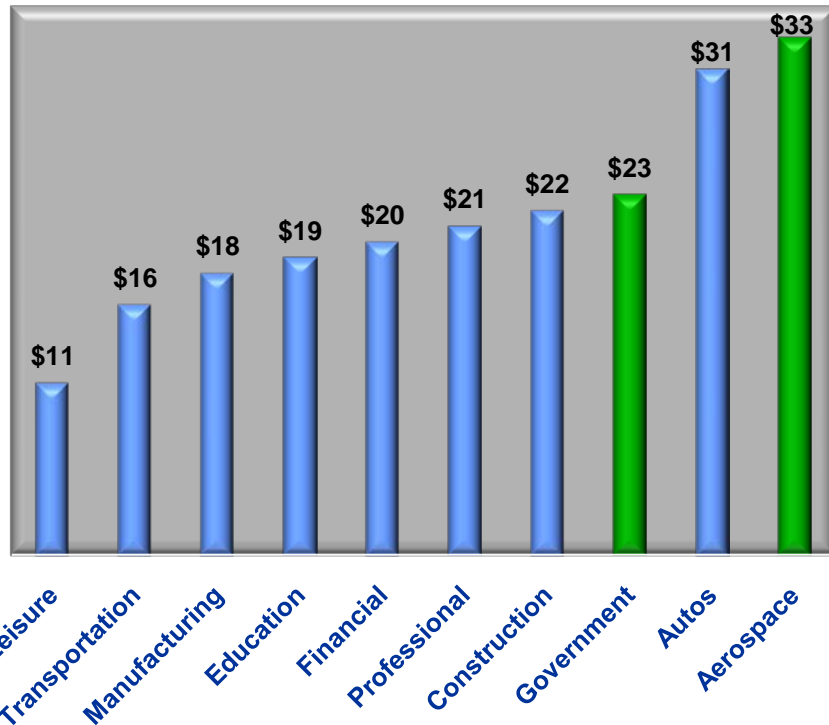
LA = 6771

Plus: Layoff of 560 A&D workers in San Diego who cannot find work in the region within one year could result in the loss of 760 supplier jobs and 400 jobs related to spending cutbacks by those laid off. This could mean a total nation-wide loss of ~120,000 A&D-connected jobs since 2009. (Source: Institute for Policy Research)

Competitive Compensation (2009)

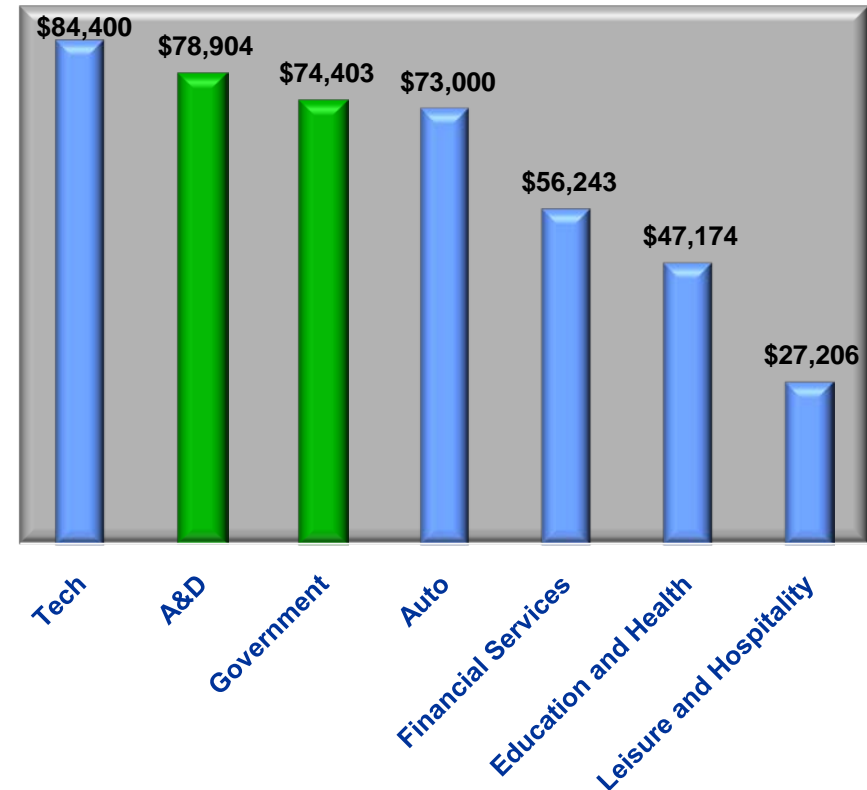


Production Workers Hourly Wage



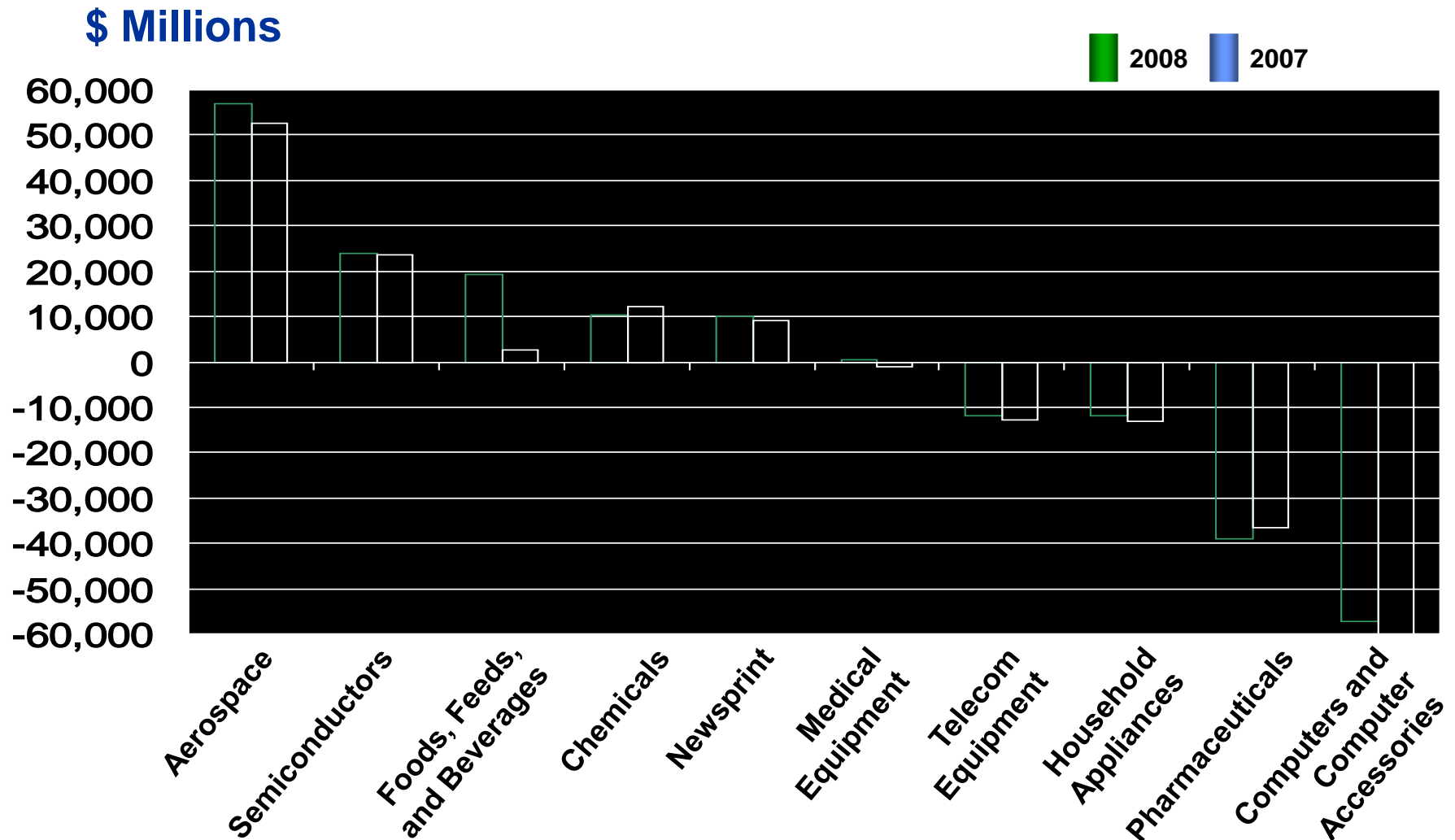
Sources: Bureau of Labor & Statistics, U.S. Census,
Aerospace Industries Association, TechAmerica

All Employee Annual Earning Comparisons



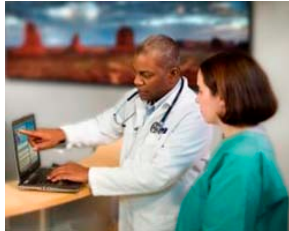
(Average U.S. Salary: \$38,000 per year)

Aerospace: A Leader in Net Exports

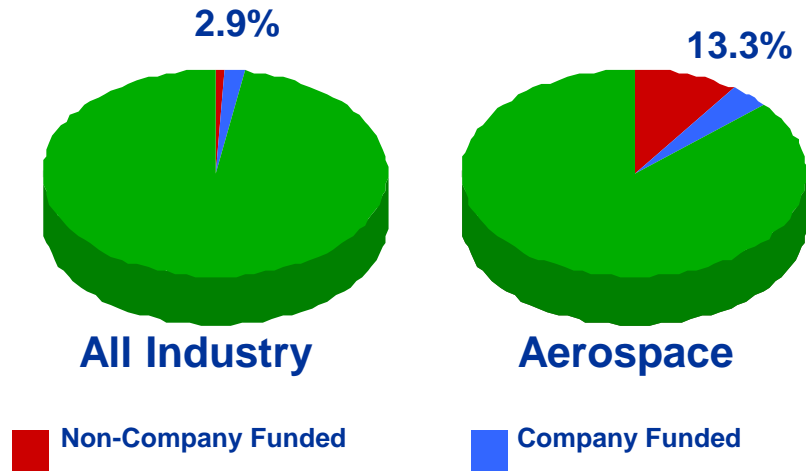


Source: Bureau of the Census (seasonally adjusted), Foreign Trade Division

A&D Technology Contributions



R&D Investment as a Proportion of Net Sales



(AIA, Bureau of Labor Statistics,
National Science Foundation)

A&D Technology Contributions



Nuclear Power



Hydraulic Brakes



Jeep



Traffic Cameras



EZ Pass



Airbags



Pagers



Internet



Google earth



Air Traffic Control



Satellite Communications



Smoke Detectors



Computers



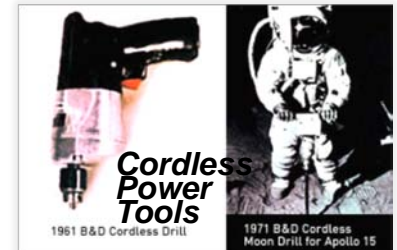
Jet Engines



Climate Monitoring



GPS



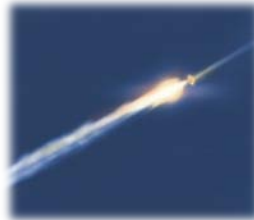
Cordless Power Tools

1961 B&D Cordless Drill

1971 B&D Cordless Moon Drill for Apollo 15

Legacy of Innovation and Public Benefit

Superior Systems for Warfighters



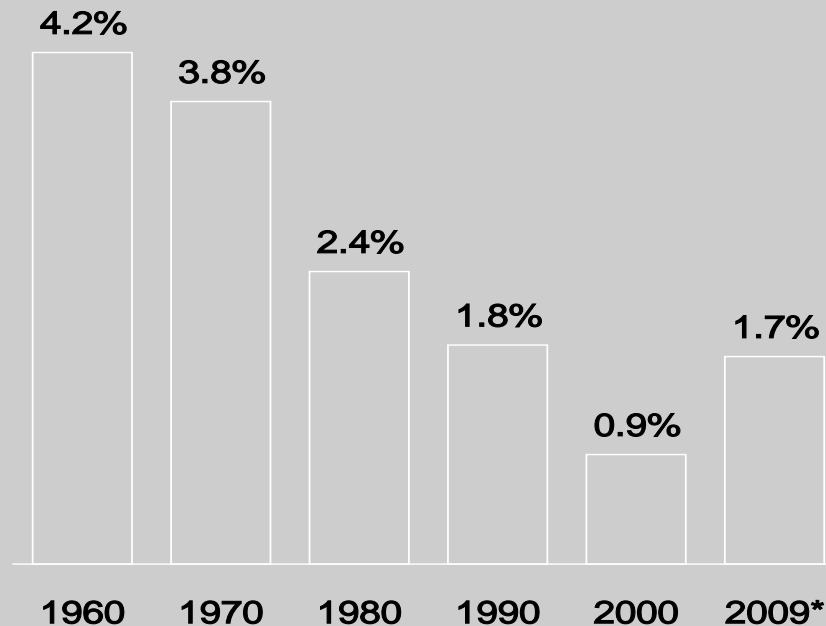


A&D Unique Characteristics

A&D Industry Market Value

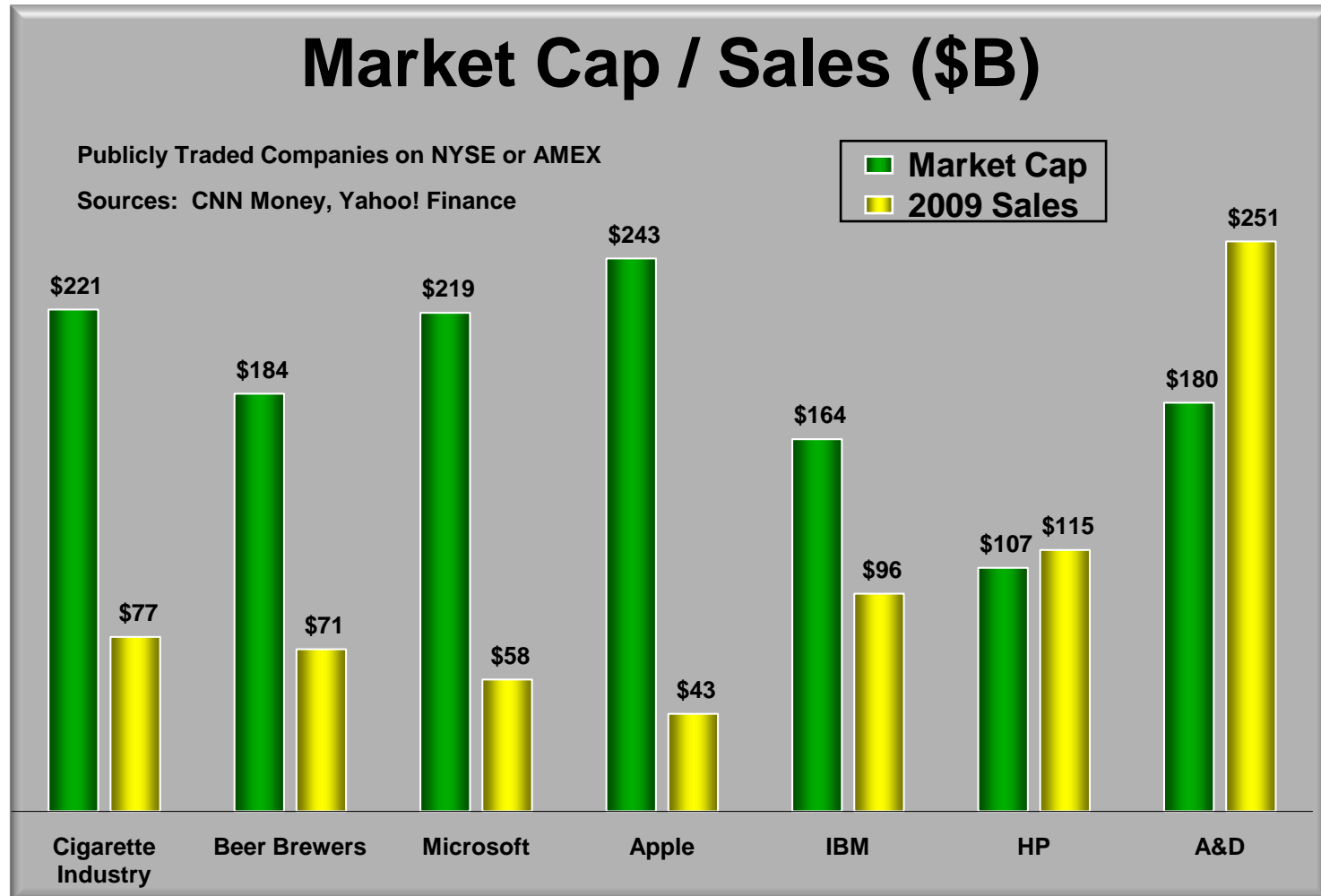


Aerospace & Defense Market Cap as % of S&P



* A&D as sum of LMT, BA, NOC, RTN, GD

Industry Comparisons



Aerospace and Defense: Lockheed Martin, Boeing, Northrop Grumman, General Dynamics, Raytheon, L3, and Honeywell Corporation

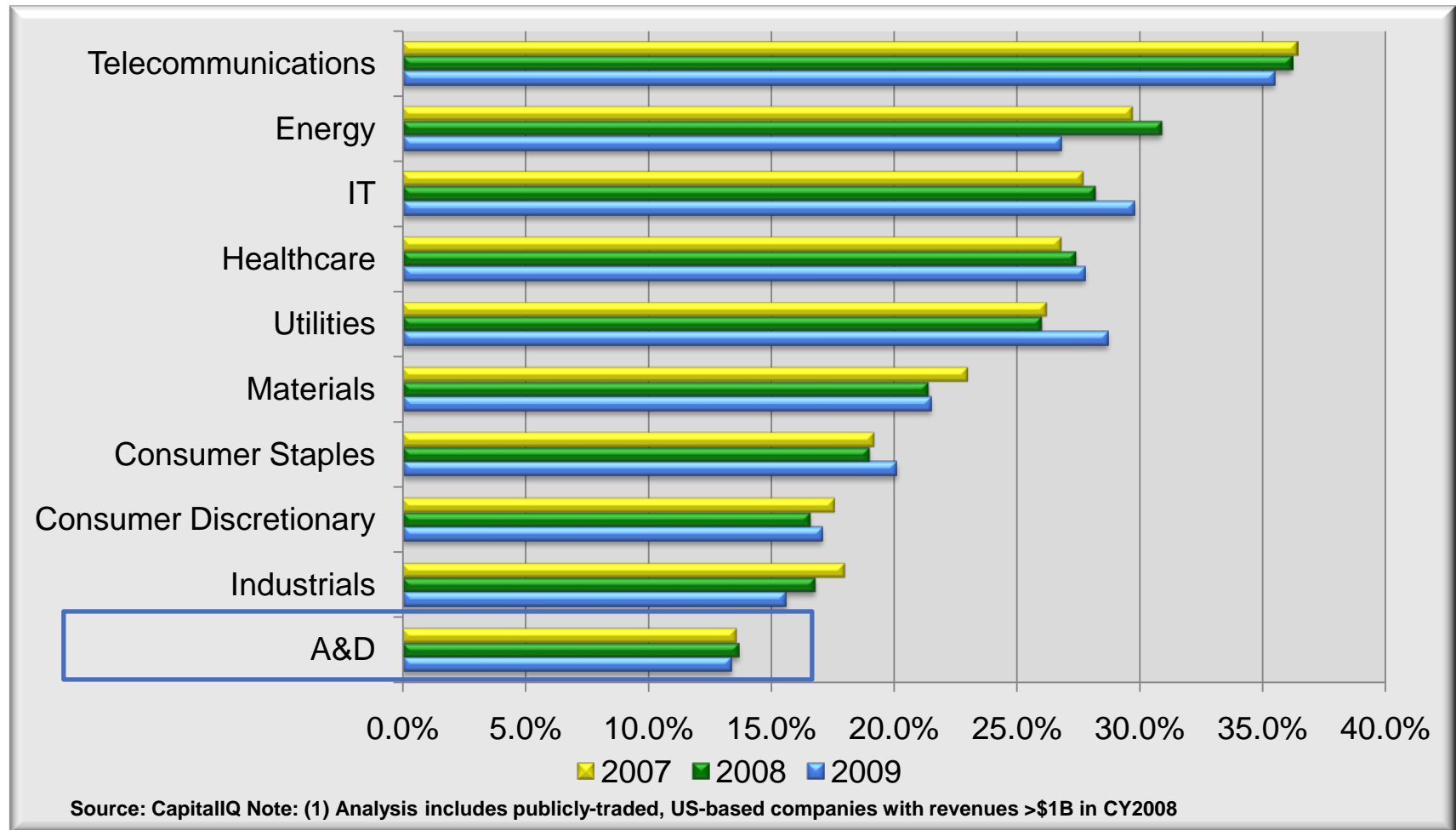
Cigarette Industry: Lorillard, Reynolds American, Vector Group, Star Scientific, Altria Group, Philip Morris International, and British American Tobacco Industries

Beer Brewers: Anheuser-Busch InBev, Fomento Economico Mexicano, Companhia de Bebidas das Americas, Molson Coors Brewing Co, Compania Cervecerias Unidas, Boston Beer, and China New Borun Corporation

Gross Earnings Sector Comparisons



EBITDA Margin from 2007 – 2009¹



Aerospace and Defense Margins Lag Other Industries

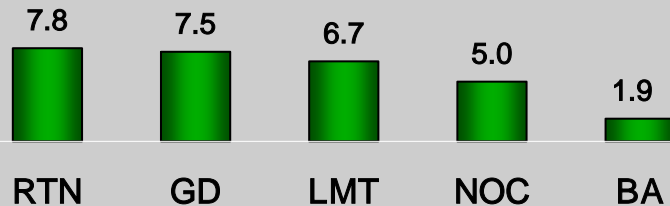
Net Earnings as % of Revenue

Company Comparisons from Various Industries



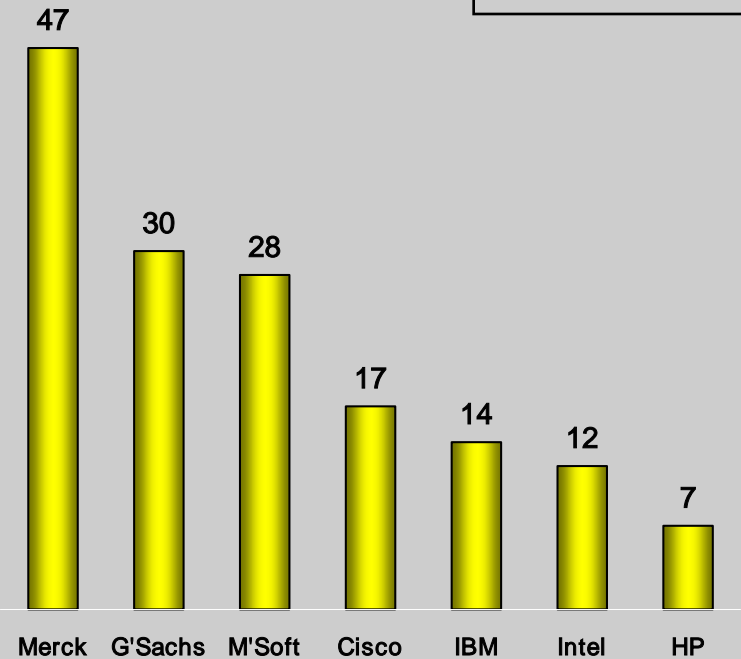
A&D Sector

■ Yr 2009



Other Industries

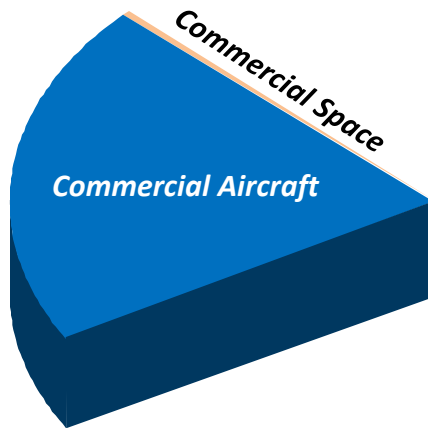
■ Yr 2009



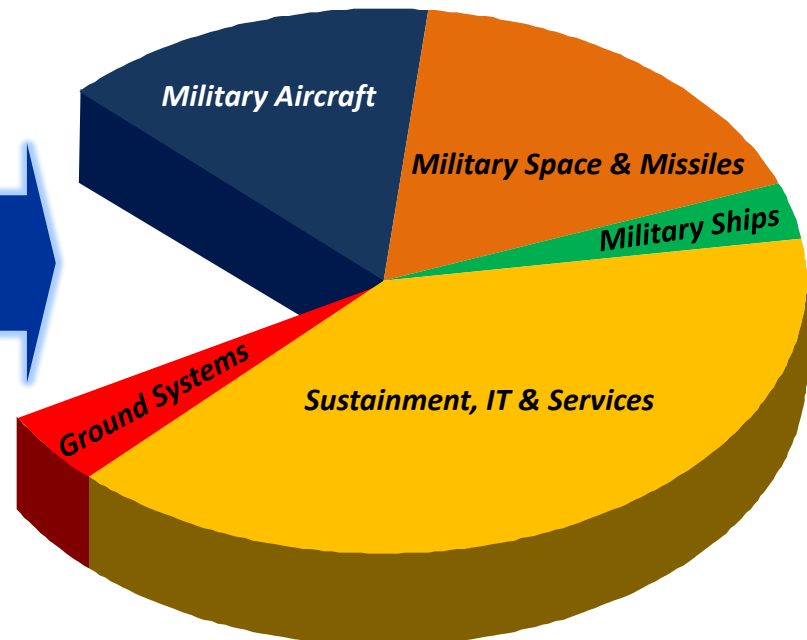
Aerospace & Defense Elements



Commercial



Defense



**Commercial and Defense Sectors Share Technical Skills,
But Require Segmented Business Systems**

Commercial vs. Gov't Contractors



Commercial Business	Government Business
<ul style="list-style-type: none">• Open Markets<ul style="list-style-type: none">• Multiple Customers With Individual Transactions• Anti-trust Limits• Price-based Business Model<ul style="list-style-type: none">• Closed Books• Maximize Sales• Upside/Downside Unlimited• R&D Investments Recouped in Production Price	<ul style="list-style-type: none">• Monopsony<ul style="list-style-type: none">• Single Customer Comprised of Multiple Constituencies• Industrial Base Policy Limits• Cost-based Business Model<ul style="list-style-type: none">• Truth In Negotiations Act (TINA)• Maximize Sales• Upside/Downside Capped• R&D Investments Funded or Reimbursed by Government

Commercial vs. Gov't Contractors



Commercial Business	Government Business
<ul style="list-style-type: none">• Limited Government Oversight• Not Subject To Federal Acquisition Regs• Limited Export Control• Multi Year Projections; Consumer Driven	<ul style="list-style-type: none">• Significant Government Oversight• Subject To Federal Acquisition Regs• Export Licenses Required to Sell Overseas• Annual Funding; Government Policy Driven

Defense Program Reductions



B-2 Bomber
Programmed: 132 Built: 21



Expeditionary Fighting Vehicle
Programmed: 1025 Being Built: 593



F-22 Fighter
Programmed: 750 Being Built: 187



V-22 Tiltrotor
Programmed: 913 Being Built: 458

Terminations for Convenience



RAH-66 Comanche
\$9 Billion Spent



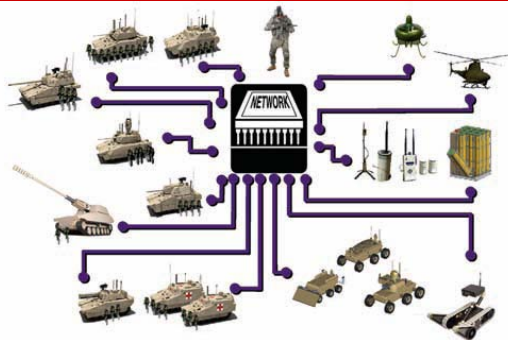
TSAT/TMOS
\$10 Billion Spent



VH-71 Presidential Helicopter
\$5 Billion Spent



Airborne Laser
\$7 Billion Spent



Future Combat System
\$24 Billion Spent



XM2001 Crusader
\$2 Billion Spent

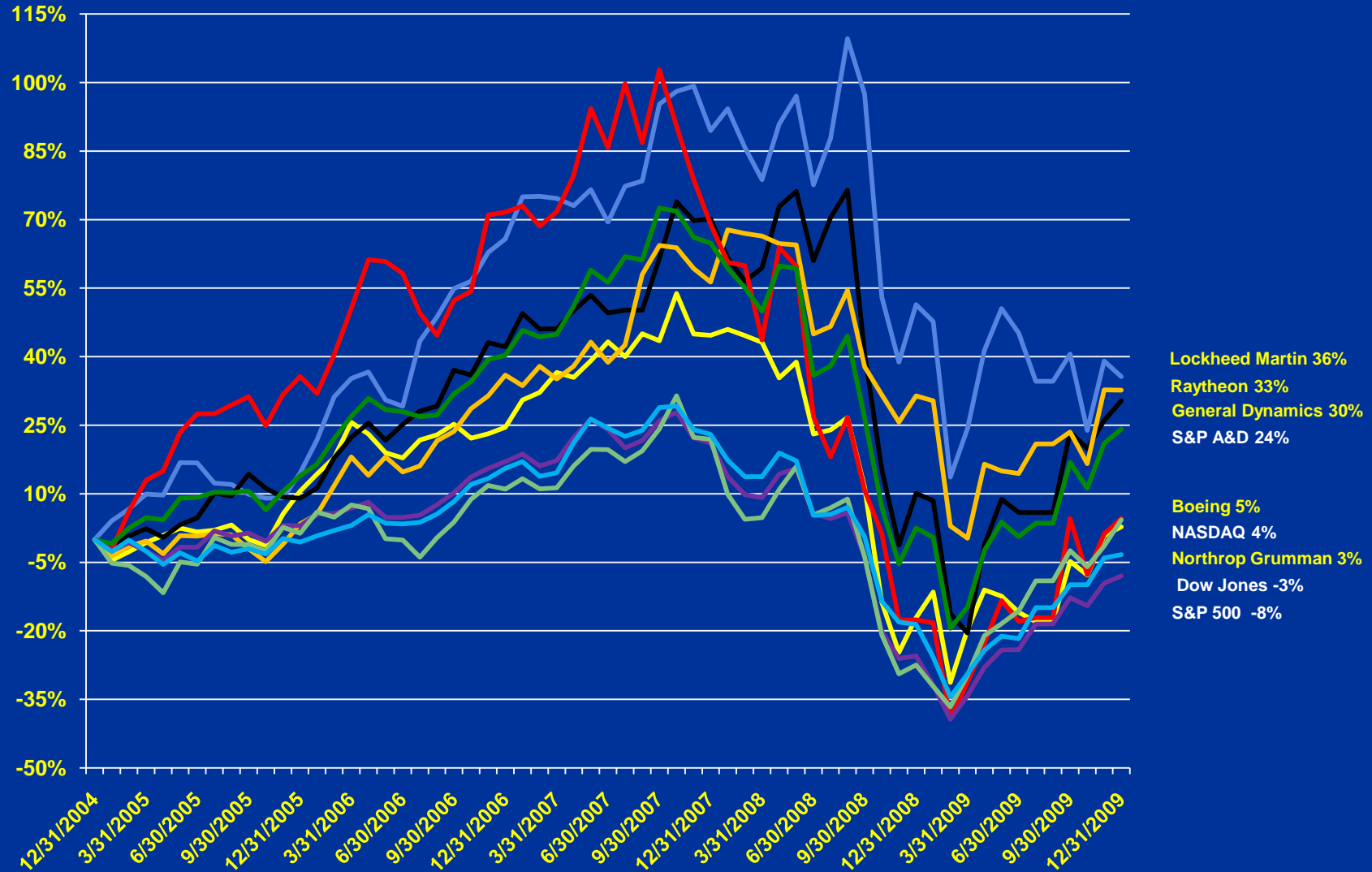
Why Invest in the A&D Industry



- **Reasonable Returns on Investment**
- **Strong Cash Flows**
- **Consistent Dividend Returns**
- **Longer Term Business Outlook**
- **Sustainable Revenue Streams**
- **Government Indemnification from Catastrophic Risk**
- **Counter Cyclic to the Market**

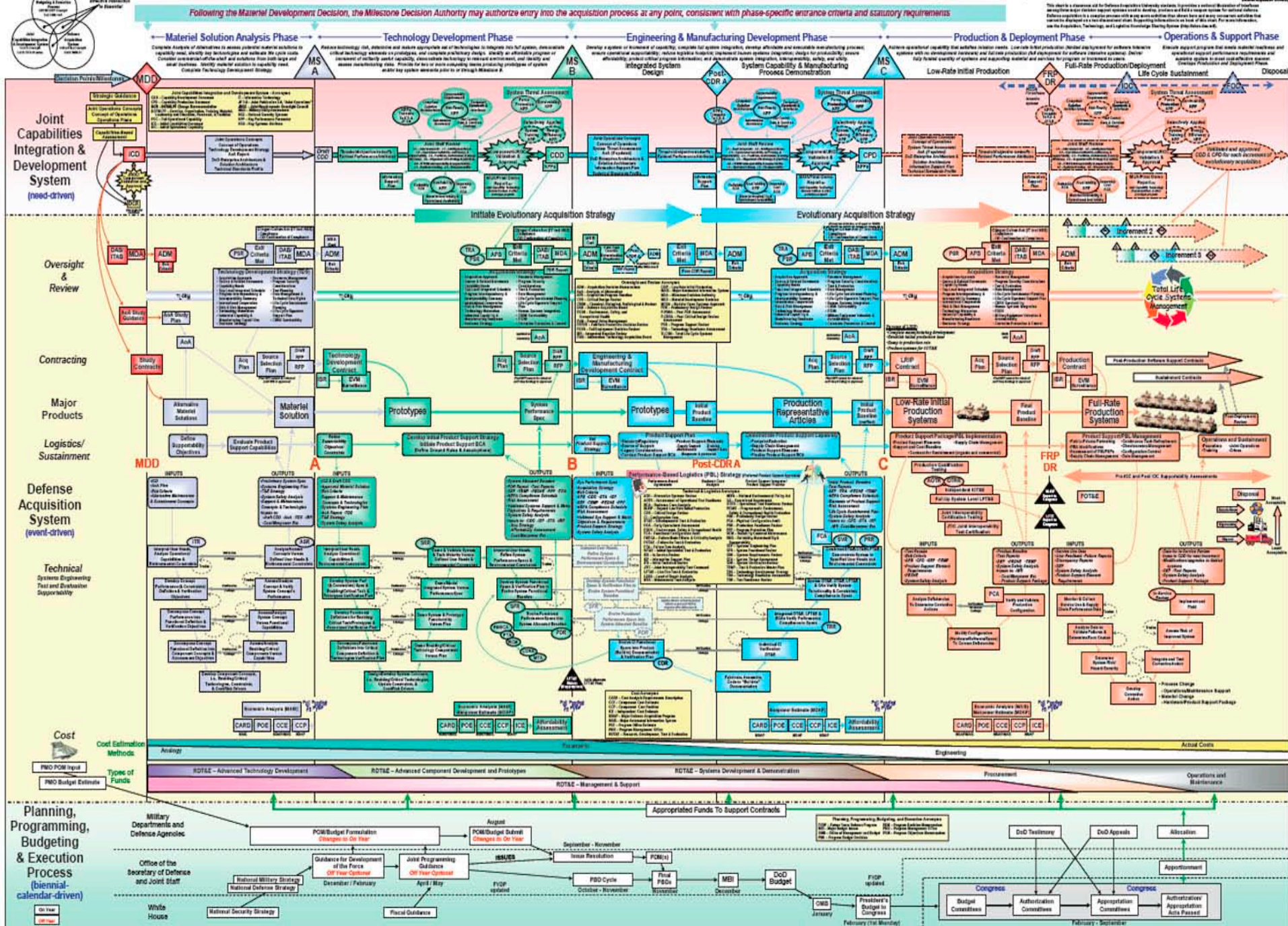
Five Year Stock Performance

(through December 31, 2009)





Defense Contracting Considerations



Government vs. Industry View of Profit

Government Perspective

Total Allowable Cost	\$9,000,000
Profit/Fee @ 12%	<u>\$1,080,000</u>
Price	<u>\$10,080,000</u>
Return on Sales	10.7%

Industry Perspective

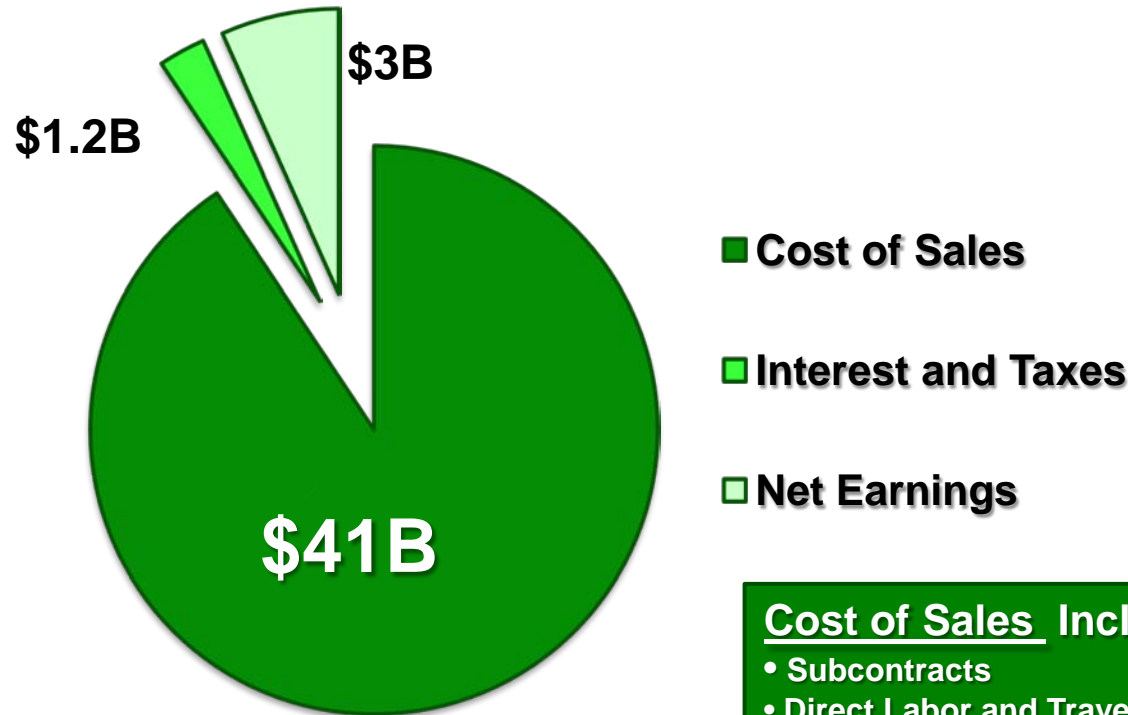
Sales	\$10,080,000
Total Allowable Cost	(\$9,000,000)
Unallowable Cost @ 3% of Sales	<u>(\$310,500)</u>
Earnings Before Taxes	769,500
Income Taxes @ 35%	<u>(\$269,325)</u>
Net Income	<u>\$500,175</u>
Net Income as % of Sales	4.96%

How 12% Yields 4.96%

Revenue Distribution



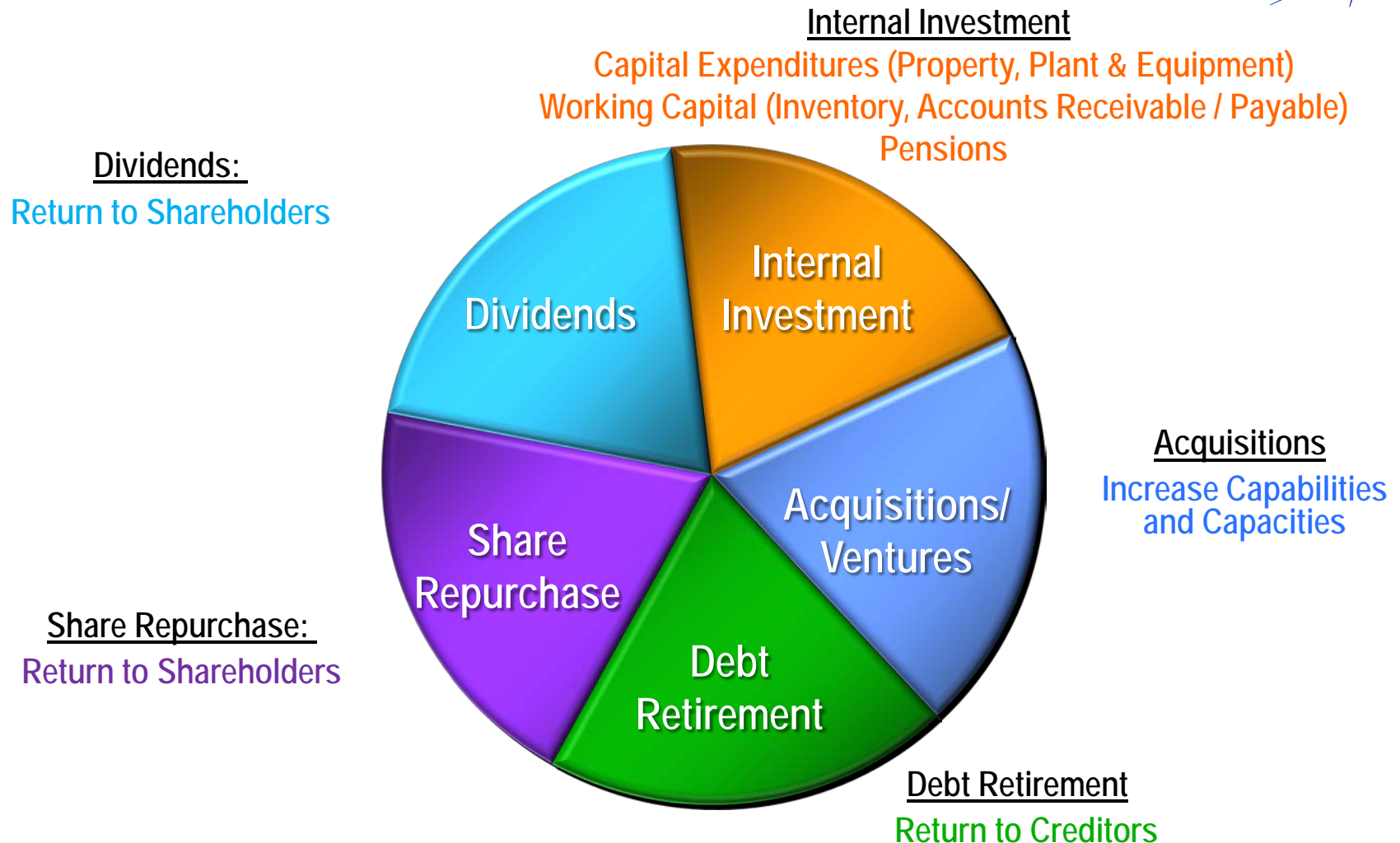
Net Lockheed Martin 2009 Sales \$45.2B



Cost of Sales Includes:

- Subcontracts
- Direct Labor and Travel
- Materials and Distribution
- Amortized Property, Plant & Equipment
- IRAD
- Bid and Proposal
- Unallowable Compensation
- Charitable Contributions

Cash Deployment

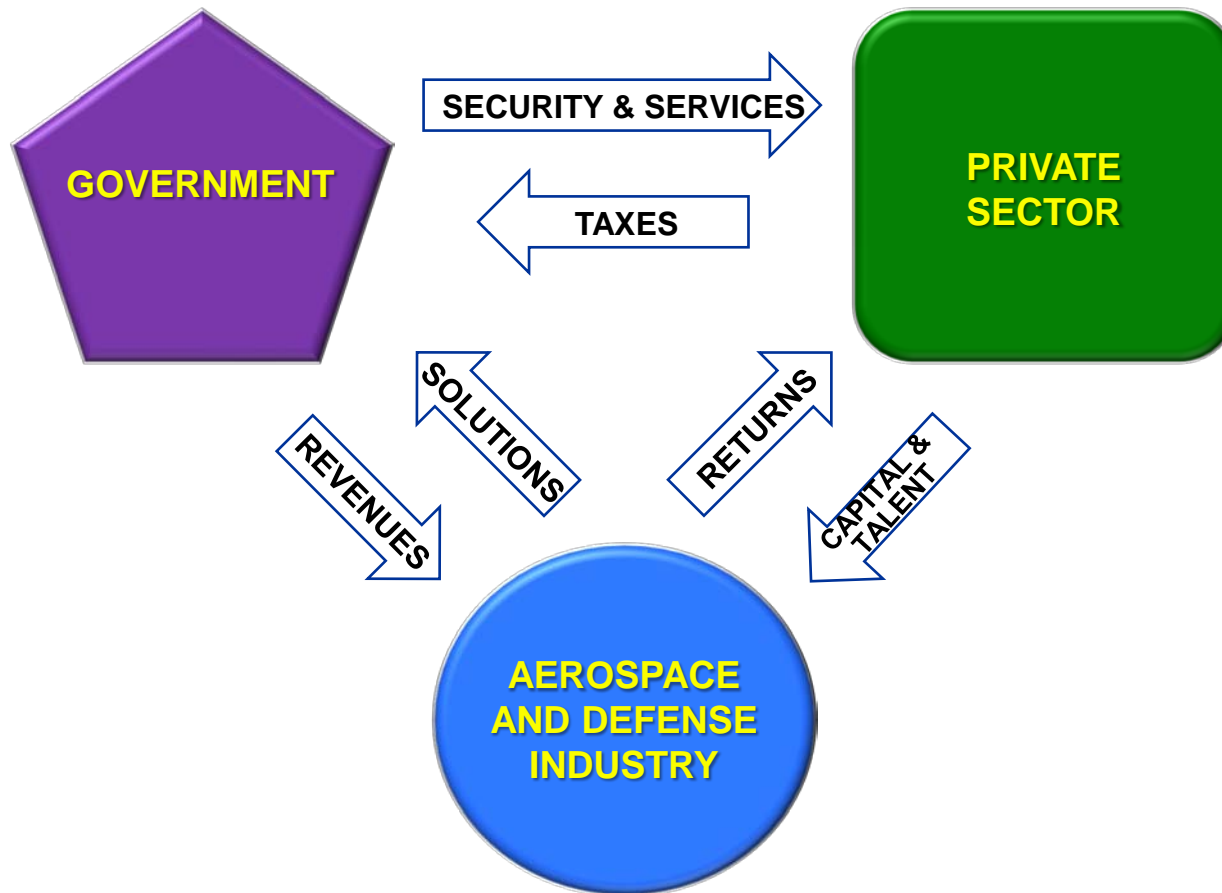


Supports All Stakeholders



Summary

A&D Industry's Unique Role



Translating Private Sector Resources into Public Sector Solutions

A Healthy Defense Industrial Base

- **Supports Investment**
 - **Research and Development**
 - **Facilities and Infrastructure**
- **Creates and Protects American Jobs**
- **Is a Major Exporter**
- **Attracts and Retains Top-Tier Talent**
- **Promotes American Technology Preeminence**
- **Enables a Stable Partner for a Long Cycle of Business**
- **Enhances Allied Political, Military and Industrial Partnerships**

**Stability Supports an Industrial Base that Can Respond to
Tomorrow's Challenges**

