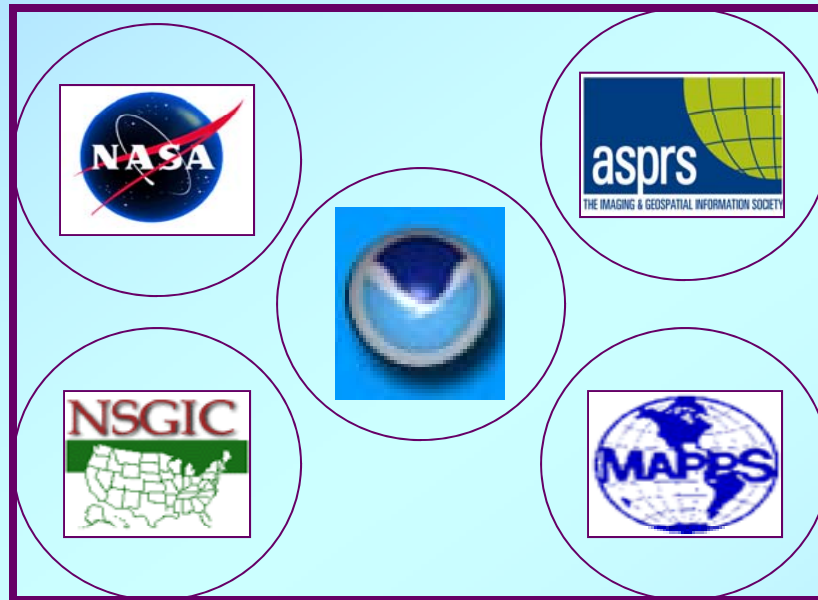# The 10-Year Remote Sensing Industry Analysis

ACCRES Highlights, January 14,2003

Charles Mondello, Pictometry, ASPRS Forecast Co-Chair

Agenda

- **Forecast background**

- **Executive summary of results**

- **Key issues noted during phases 1-2**

- **Develop policy analysis support material**

Background

- **In August 1999, ASPRS and NASA's entered into a 5-year Space Act Agreement (SAA) to:**
  - Baseline the Remote Sensing Industry (RSI)
  - Develop a 10-Year RSI market forecast and attendant processes
  - Provide improved information for decision makers

  - Deliver an analysis of the industry, collected by the industry and analyzed by representatives within the industry

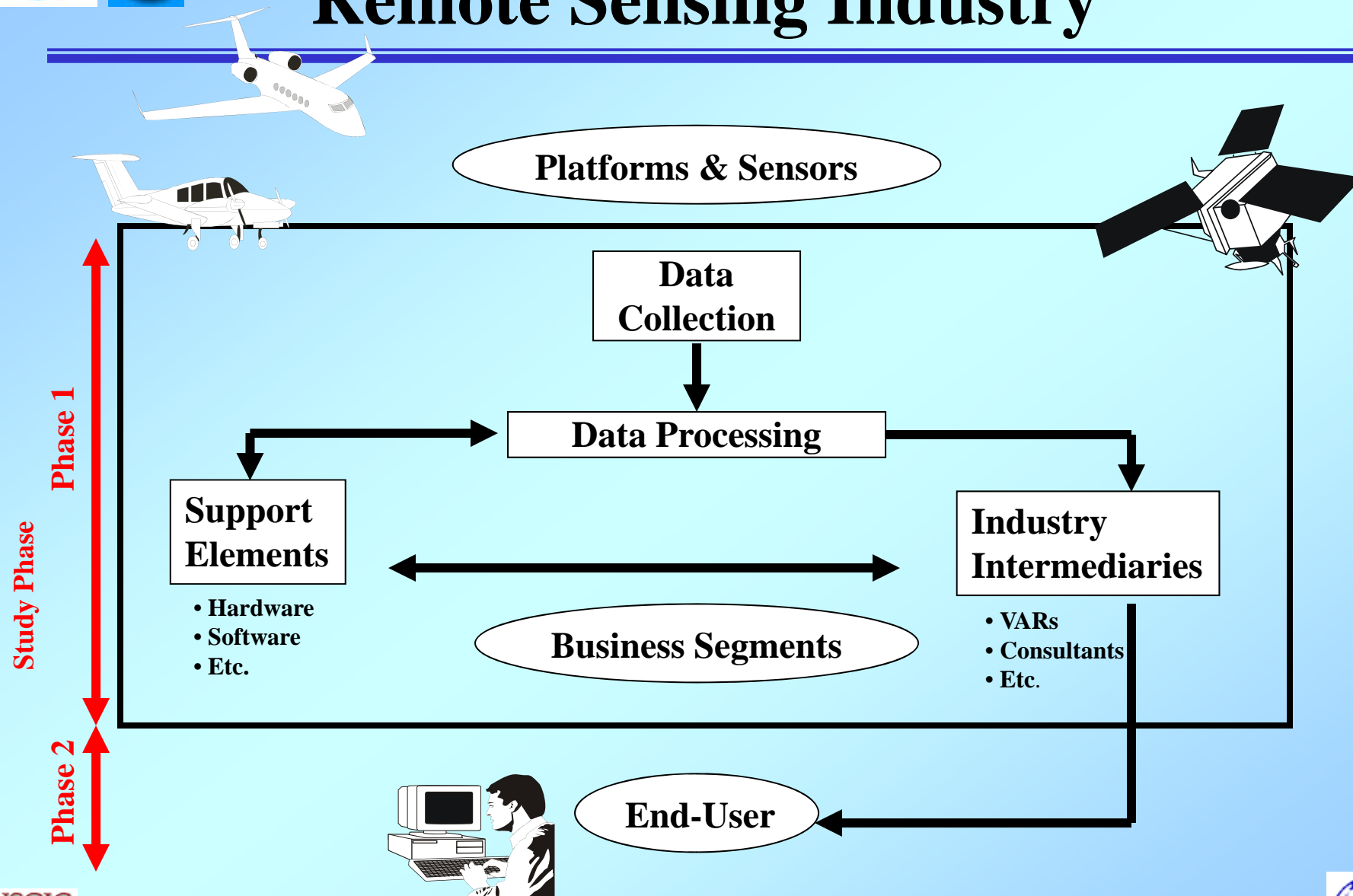- **In 2002 ASPRS partnered with NOAA for the documentation of the forecast results**
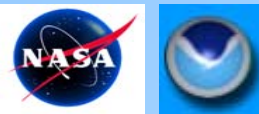
The Plan

Phase I   **Characterization and Baseline Forecast
of the U.S. RSI (Dec 2000)**

Phase II   **Characterization of Customers/Users and Their
Requirements (Jan 2002)**

Phase III   **Validate I and II (Dec 2003)
Technology Assessment**

Phase IV   **Market Forecast (Dec 2004)**
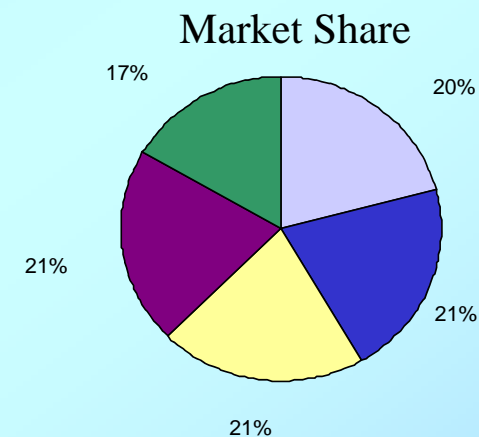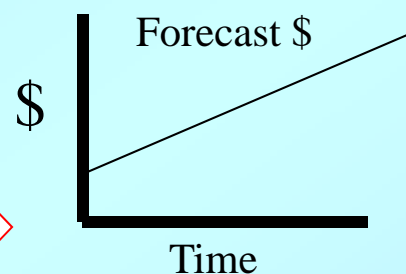
Remote Sensing Industry

Platforms & Sensors

Data Collection

Data Processing

Support Elements
- Hardware
- Software
- Etc.

Business Segments

Industry Intermediaries
- VARs
- Consultants
- Etc.

End-User

Phase 1

Study Phase

Phase 2

Forecast Process

Literature Search

Internet / Closed Envelope Survey

ANALYSIS

Interview / focus groups

$ | Forecast $

Time

Market Share

17%   20%
21%   21%
21%
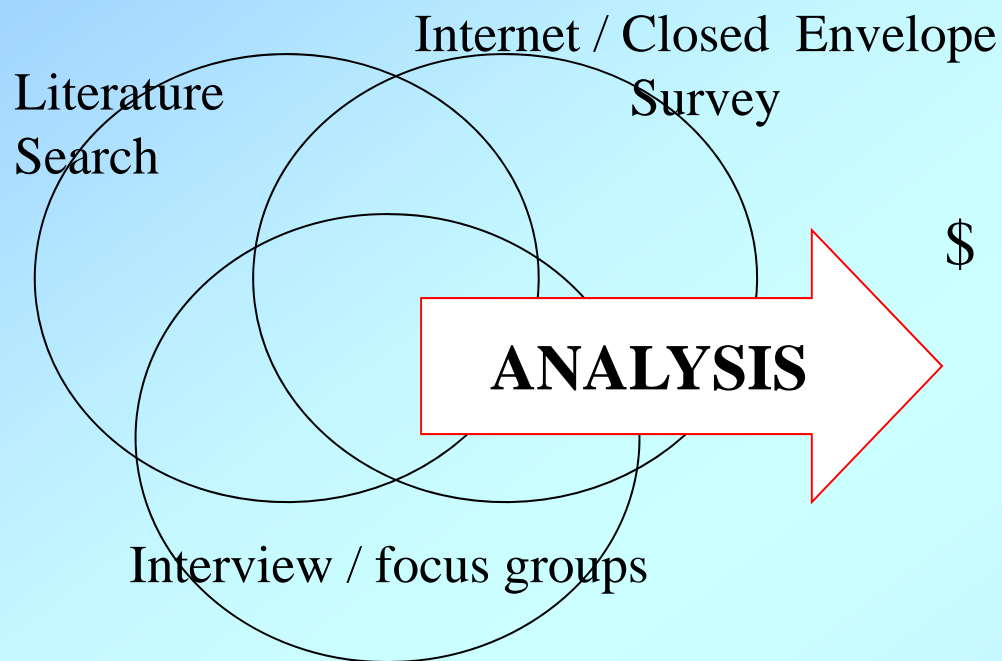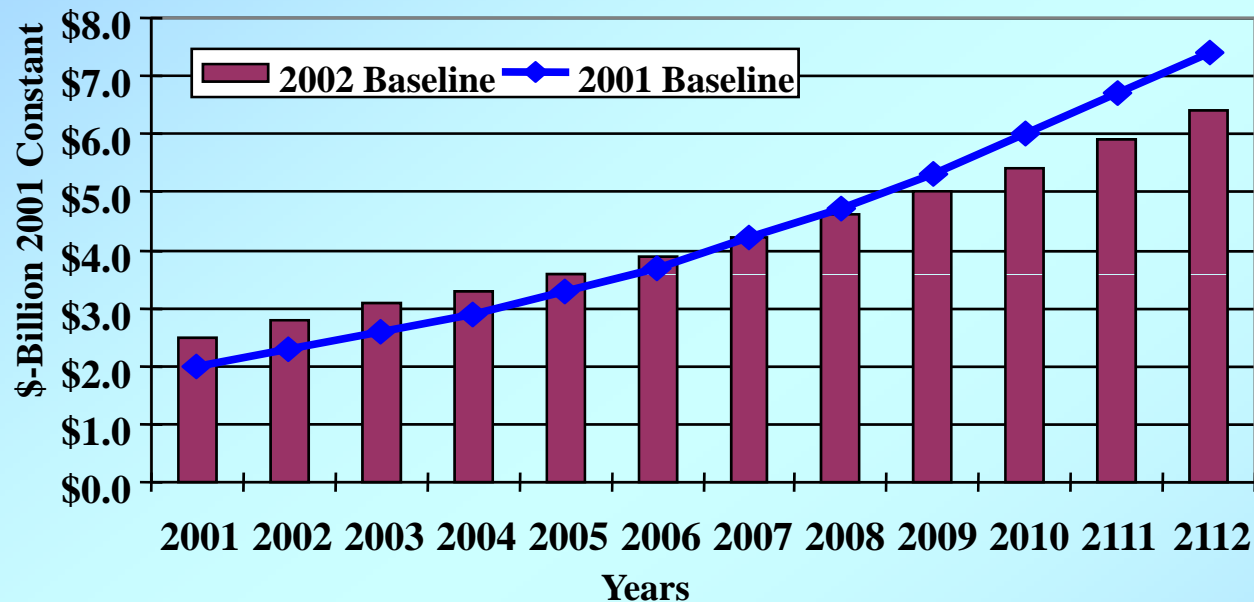
Findings
-
-
-
-

Conclusions

2002 Baseline Forecast

•**Assume best insight comes from CEOs/CFOs and use their Expected Revenues and build revised baseline 2002 accordingly**

•**The 2001 and 2002 Base line were developed from independent annual surveys**
•**The projected growth of the industry appears to be between 9-14 percent per annum**
•**The effects of September 11 on this growth will be further assessed during phase 3 of the forecast**
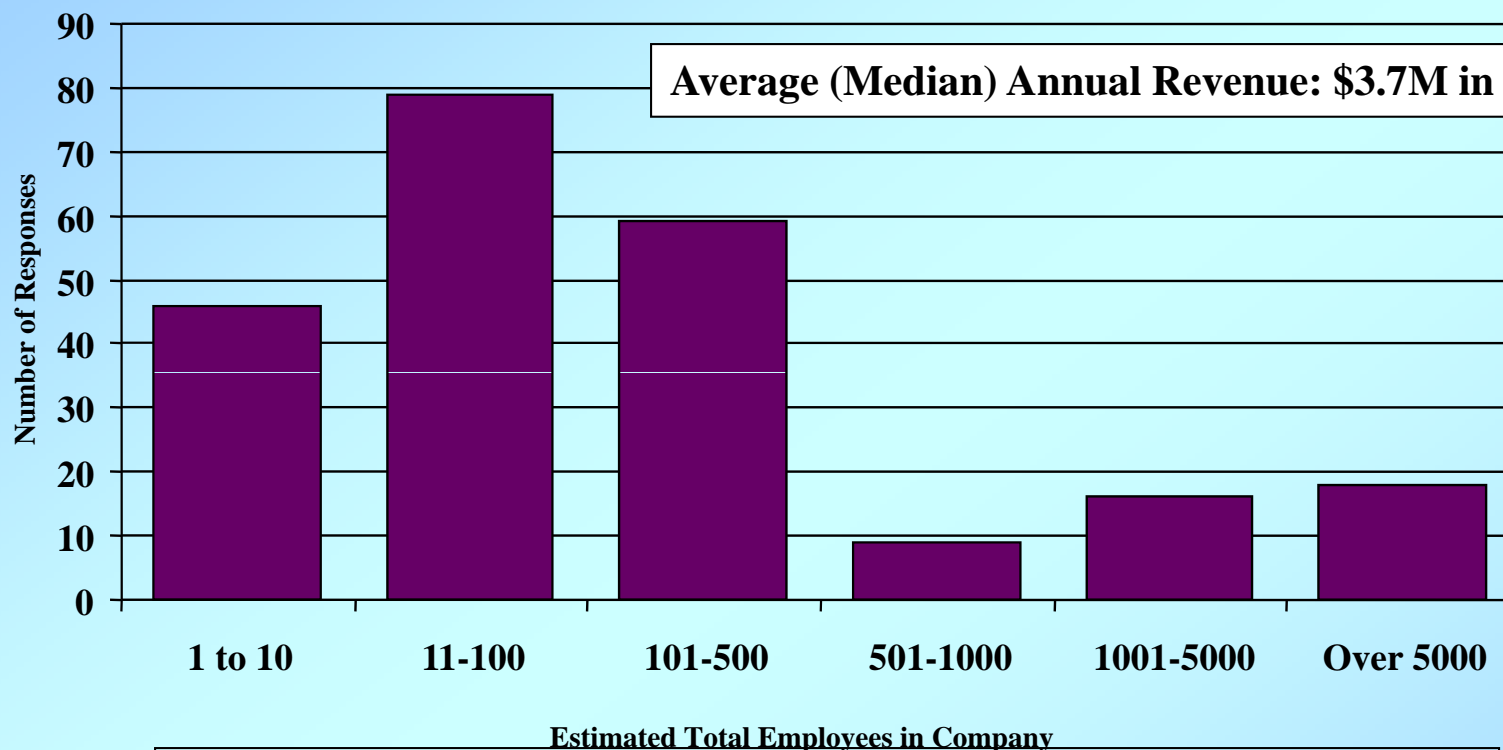
Approach:
1.   **Average 2001 and 2002 CEO/CFO Expected Revenue estimates. Use to plot 2001-2006**
2.   **Apply AAGR associated with those estimates to forecast 2007-2112**

Commercial Company Size

Average (Median) Annual Revenue: $3.7M in CY2001

Number of Responses vs. Estimated Total Employees in Company

| Category	Value
1 to 10	~46
11-100	~79
101-500	~59
501-1000	~9
1001-5000	~16
Over 5000	~18

- **This is a fragmented Industry**
  - **Smaller Companies are in the Majority**
  - **Smaller firms in general are focused on unique market segments and value added products**
- **Data policies applied to larger firms will affect smaller companies who have greater revenue susceptibility**

% of Revenues by Market Segment 2000& 2001
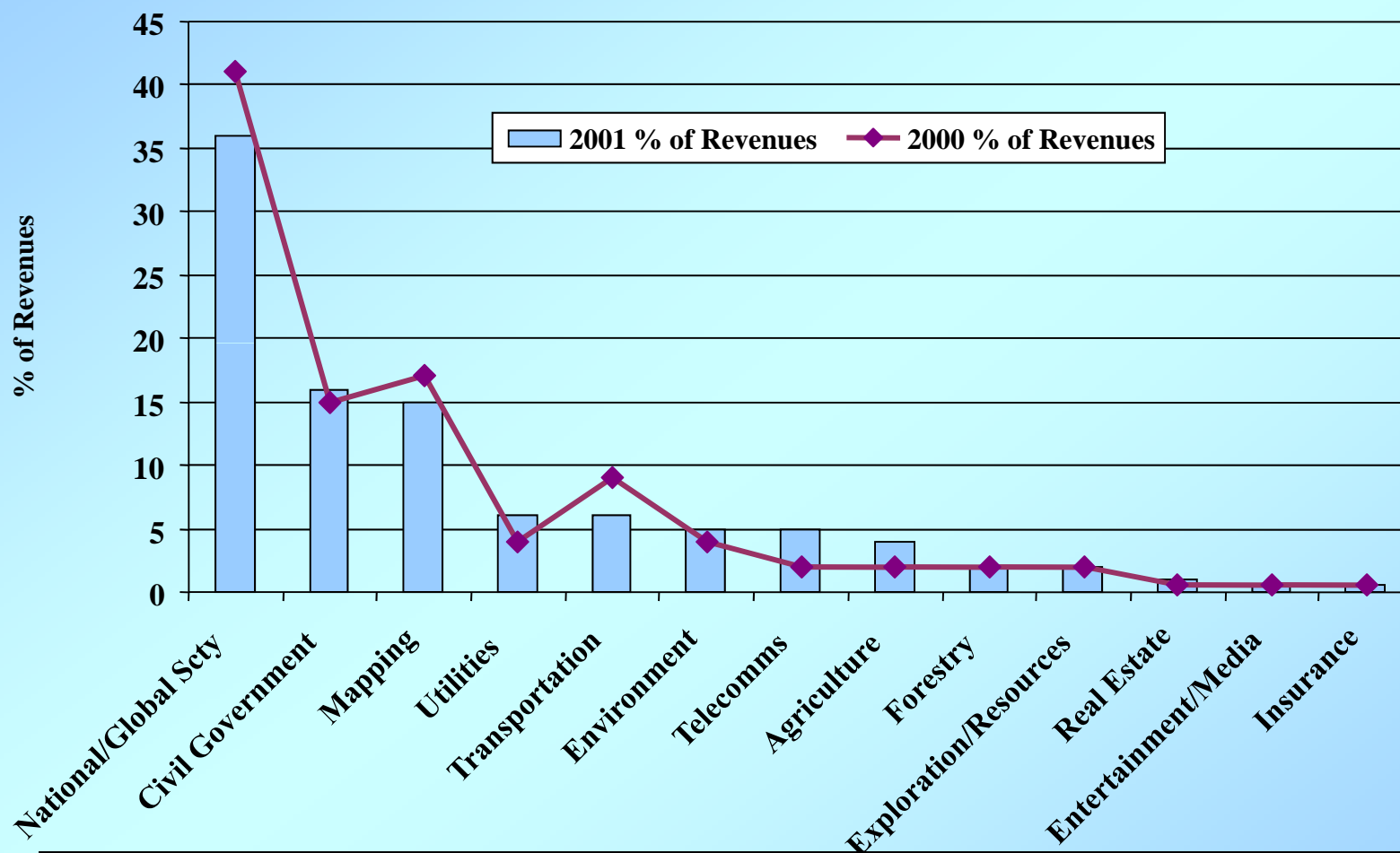
- Based on Responses of >40 CEOs/CFOs(20% of "Core Companies")
- The policies set on the broad industry may affect the sub segments to different levels
- More effective communication of remote sensing benefits in low use market segments may stimulate growth? (a phase 3 study area)

7/9/2009

Commercial Sector Interview Findings*

- 📄 **Technology: Innovations needed to...**
  - Speed availability of information
  - Provide information valued by user
  - Develop system of systems that integrate/merge applications, and provide multi-disciplinary solutions
  - Lower costs

- 📄 **Governmental Influence is pervasive...**
  - Legislation and policies restricting U.S. company foreign sales; but do not hinder foreign companies
  - Government should not compete with the private sector
  - Government predominant purchaser of data
  - Mergers with foreign companies are problematic
  - Standardization
  - Data Distribution

- 📄 **Lack of Customer/Potential Customer Knowledge re: potential of RS/GIS products to enhance decision making and the bottom line may be inhibiting Market Growth**
  - Applications based Marketing and Demonstrations may help

* Commercial Sector findings only (internet, focus group, surveys and sealed envelopes)

Commercial Sector Interview Findings*

Workforce education
- Demand for entry-level persons exceed supply
- How many students do we train and retain? (foreign students train in US, return home)

Competition
- The international playing field is not level.
    - U.S. Companies are not "part of the Government" as are foreign competitors
- Foreign competitors' workforces train in U.S.
- Smaller companies have trouble "staying in the game" due to investment costs
- Aerial and Satellite markets are both growing; competition continues, but satellite has not replaced airborne data collection; satellite and airborne markets even enhance each other in some cases

The State of the US Economy heavily impacts on the U.S. remote sensing industry
- Majority of RSI companies are small and very sensitive to economic fluctuations
- The government consumption of data is a major influence on the industry
- State and local government spending on data creates further impacts
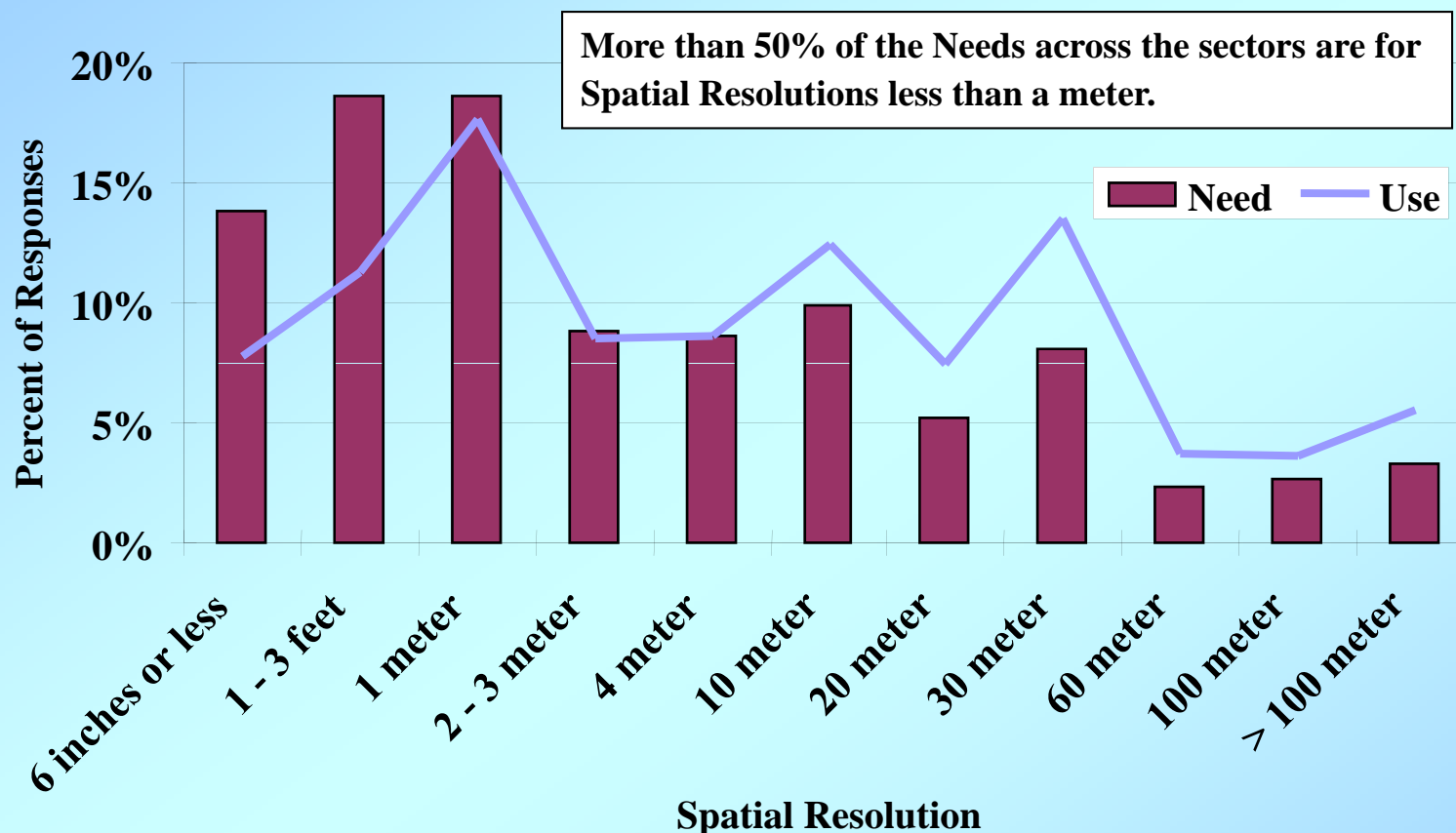
* Commercial Sector findings only (internet, focus group, surveys and sealed envelopes)

Spatial Resolution: Use vs. Needs (All Sectors)

More than 50% of the Needs across the sectors are for Spatial Resolutions less than a meter.

Legend: ■ Need — Use

Y-axis: Percent of Responses (0%, 5%, 10%, 15%, 20%)

X-axis categories: 6 inches or less, 1 - 3 feet, 1 meter, 2 - 3 meter, 4 meter, 10 meter, 20 meter, 30 meter, 60 meter, 100 meter, > 100 meter
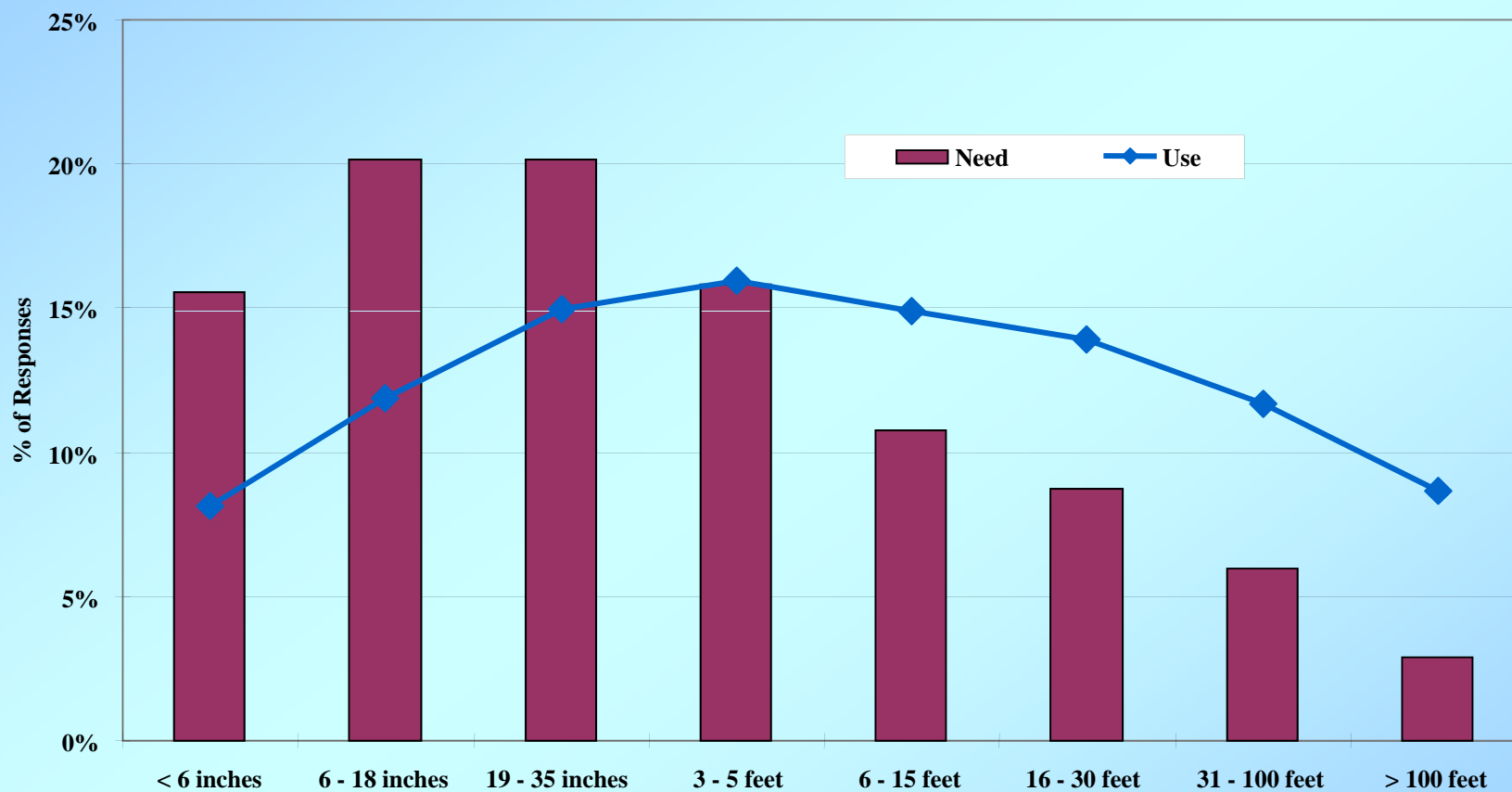
Spatial Resolution

- **The major shortfall in data is toward better resolution**
- **The policy trend to higher resolution fits industry need**
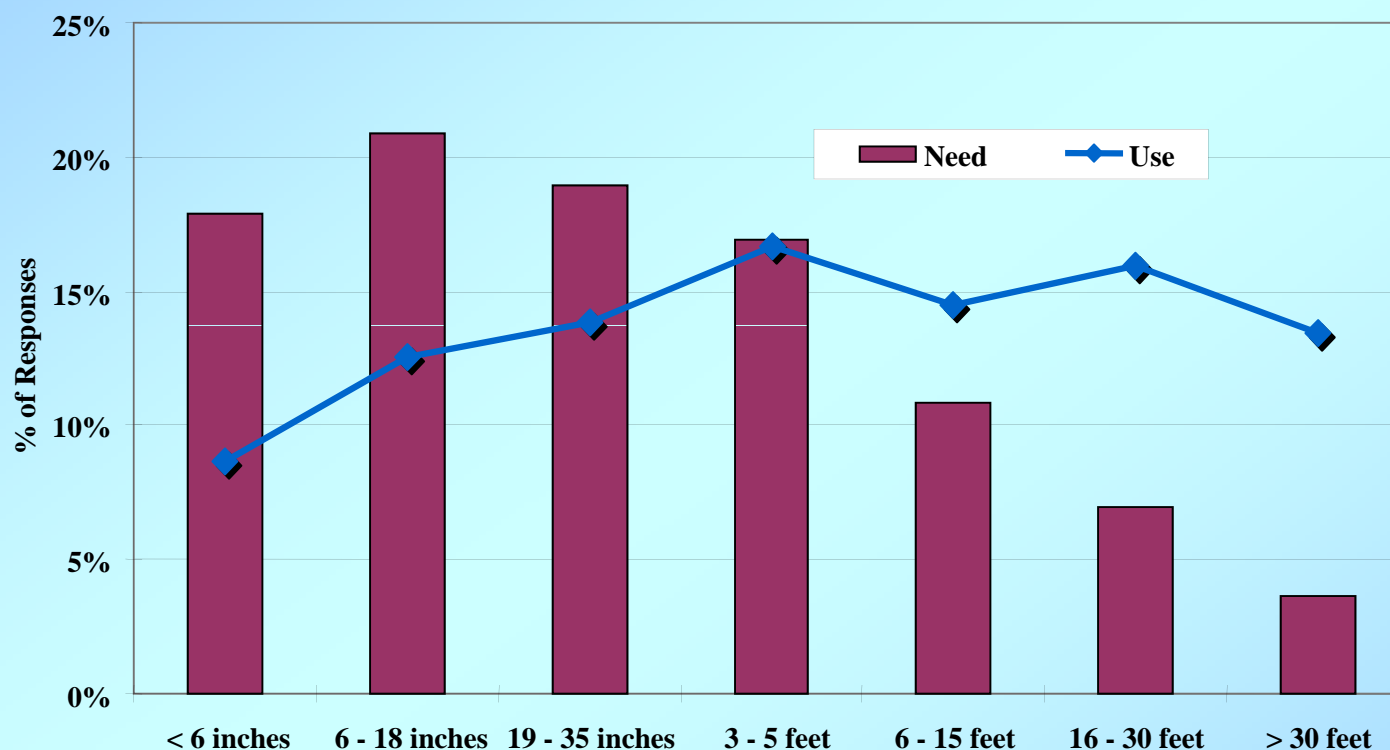
Geo-location Accuracy Use Vs. Needs: All Sectors

Systems providing or operating with higher quality positioning, calibration and DEMs will become a driving force in data use

Based on Phase II 1501 Survey Use responses and 1153 Need responses
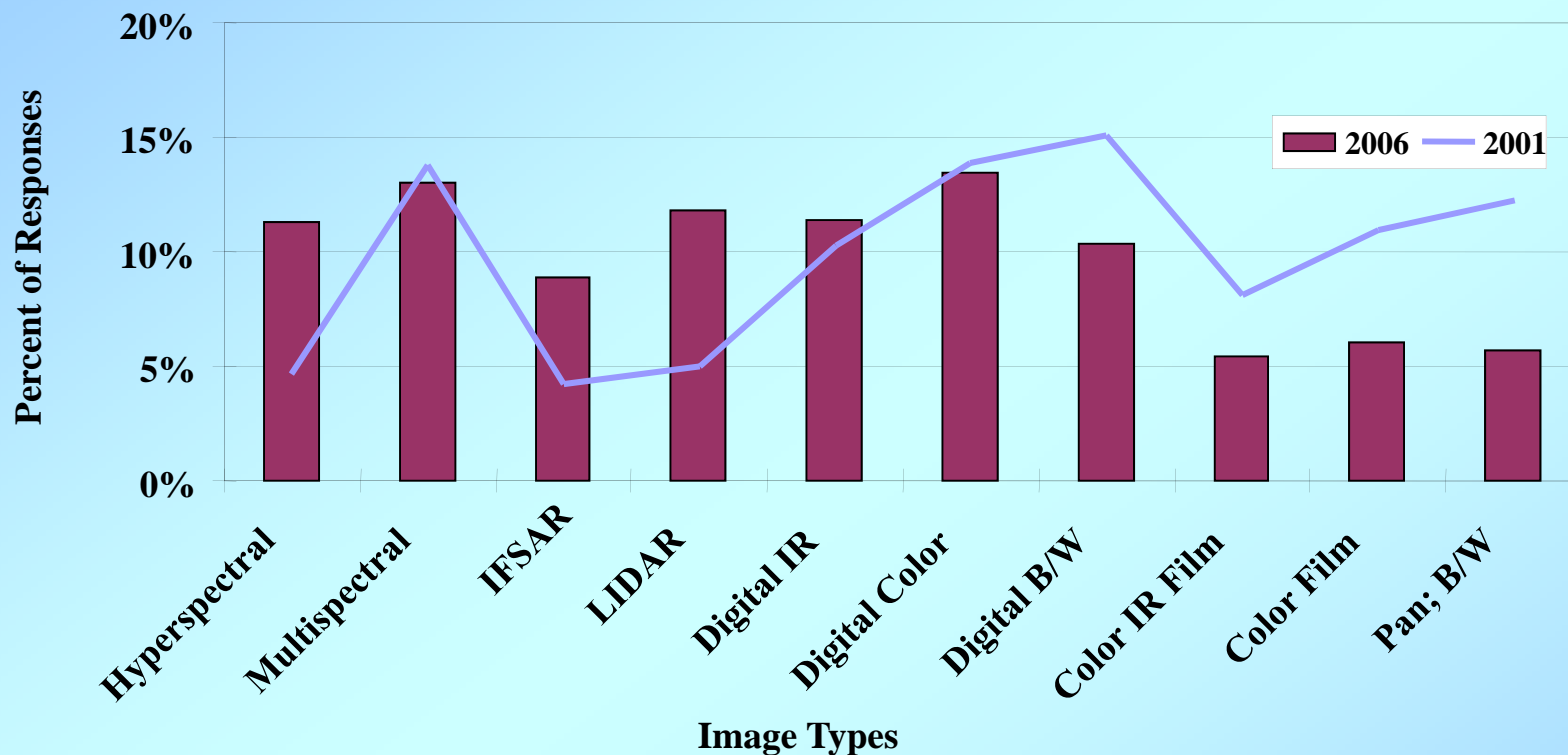
Elevation Accuracy: Use vs. Need (All Sectors)

- **Higher quality elevation data is core to industry growth**

- **60% of the need is at elevation accuracies of better than 3 feet**

Based on Phase II 1050 Survey Use responses and 968 Need responses

- The industry is fragmented due to sensor technology as well as firm size and market segment
  - Sensor combination further diversifies the mix

Selected Analysis Participants

- NASA
- NOAA
- USGS

- ASPRS
- MAPPS
- NSGIC

- American Forests
- Autometrics
- Eaglescan
- EarthData
- Geomatics
- Kodak
- Landcare Avn.
- Leading Edge
- Lockheed Martin
- PAR
- Pictometry
- RAND
- Spencer-Gross
- SPOT
- Space Imaging

- George Washington University
- University of Utah
- University of Arizona
- University of Missouri
- University of Southern Mississippi

Analysis by the Industry For the Industry

(Not by an outside agent for profit)