Greater Silicon Valley Trading Area Market Analysis

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Prepared by INPUT
for

IBM San Jose Trading Area

May 6, 1991

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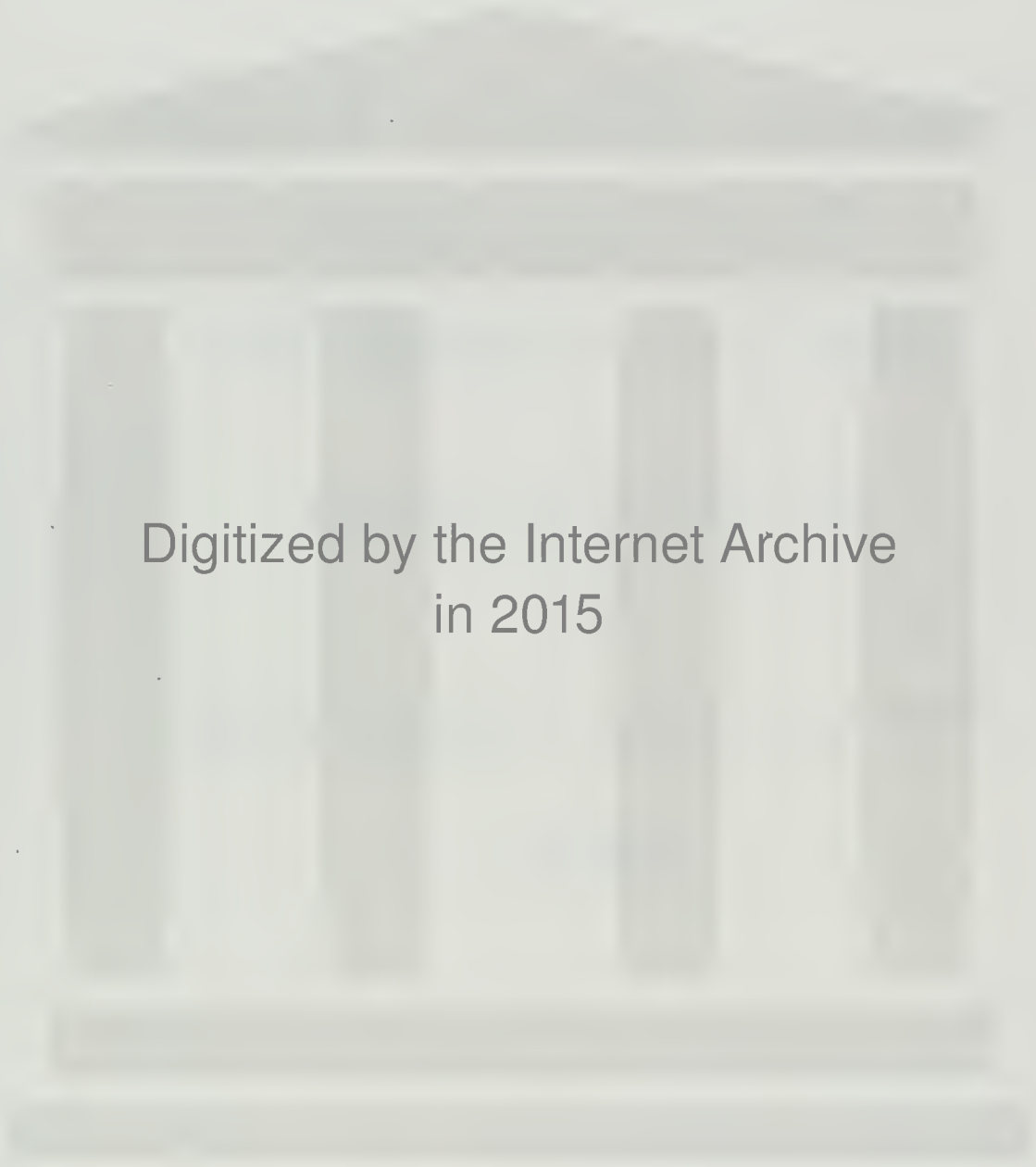


Study Objectives

- Provide an estimate of market sizes for key service sectors
- Estimate growth rates for key service segments
- Prepare a local competitive analysis
  - Identify key local competitors
  - Determine areas of penetration
  - Assess IBM's position

Scope
Geographic/Industry

- Geographic
  - Santa Clara, Monterey, Santa Cruz, San Benito counties
- Industry sectors

Emphasis on:

- Discrete manufacturing
- State and local government
- Education
- Health care

All sectors (except federal) included for complete perspective

Scope
Market Segments

Markets	Market Segments
Professional Services	Applications development Project management Systems programming Software installation Education Executive consulting
Systems Integration	Applications integration Network integration Infrastructure integration
Systems Operations	Platform operations Applications management
Network/Processing Services	*Excluding*: Transaction processing, electronic information

Methodology Overview

- Meetings with IBM project management executive
  - Intelligence gathering
  - Identification of critical interviews
  - Preliminary identification of competition
- Interview design—for user surveys, vendor assessments
- Conducted user interviews
- Tabulated user interview data

Forecast Methodology Overview Data Sources

- INPUT 1990 U.S. market forecast
  - By vertical industry
  - By delivery mode
- Commerce Department industry employment statistics
- Computer Intelligence (CI) data base
  - Sites within market area
  - Employment by industry—Peninsula, nationwide

Forecast Methodology Overview Process

- Converted INPUT U.S. market forecast to a per-employee basis
  - By vertical industry
  - By delivery mode
- Preliminary area forecast based on CI employment data
- Adjusted estimates for local market factors
  - Utilizing user survey results
  - Other INPUT research, industry expertise

Forecast Methodology Overview—Potential Issues

- Use of CI data base requires significant cleansing
  - Industry classifications vs. INPUT/Dept. of Commerce
  - Depth of market coverage—90% of all relevant sites.
  - Single company multiple sites—double counting
  - Large corporations with sites inside and outside the area
- CI employment vs. total industry employment
- All issues satisfactorily resolved

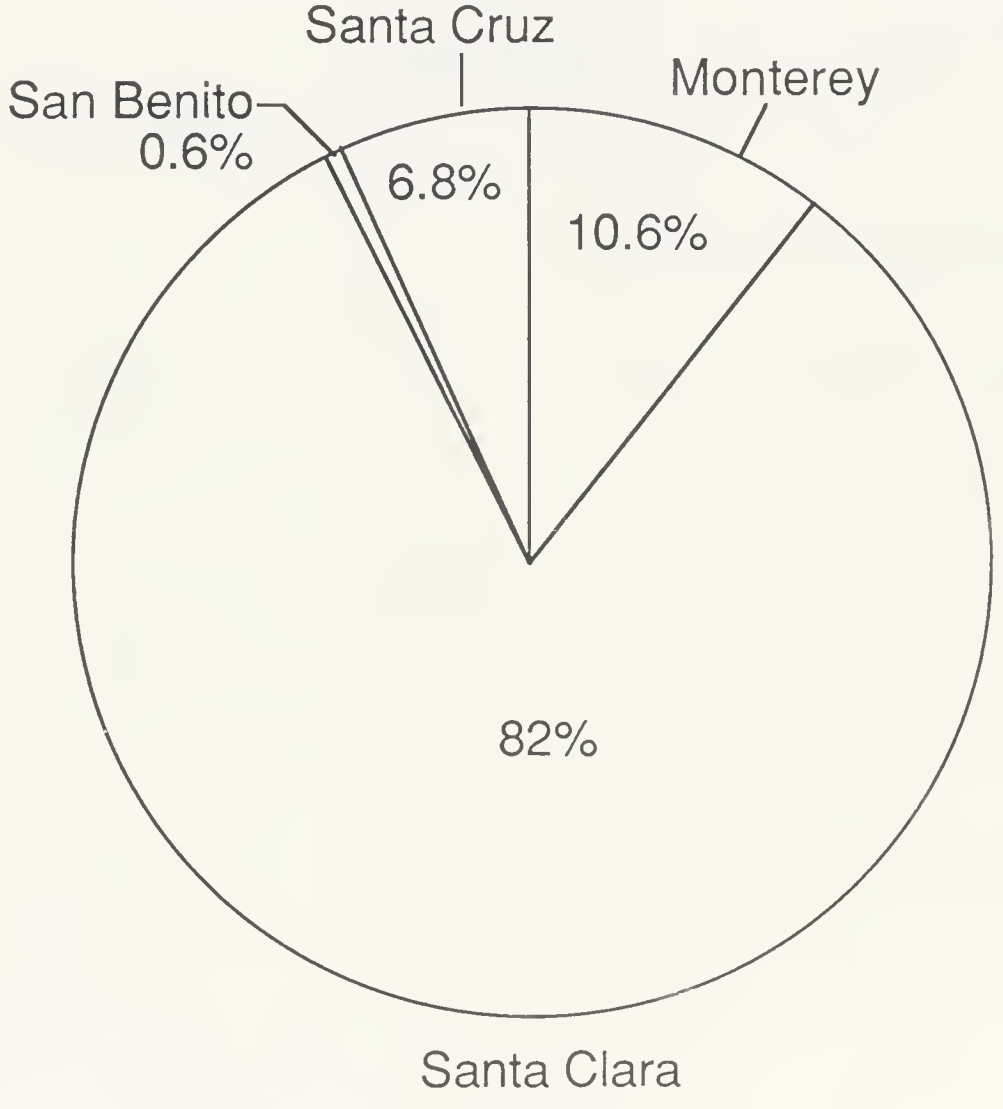
Comments
Competitive Market Share

Market share calculations impractical...

- Too many competitors across broad service spectrum
- Competitors' market areas non-congruent
- Large numbers of small/independent contractors
- Lack of commonality in product/service definitions
- High costs of data collection

Demographics
Trading Area

Firms by County



Total firms = 1,232

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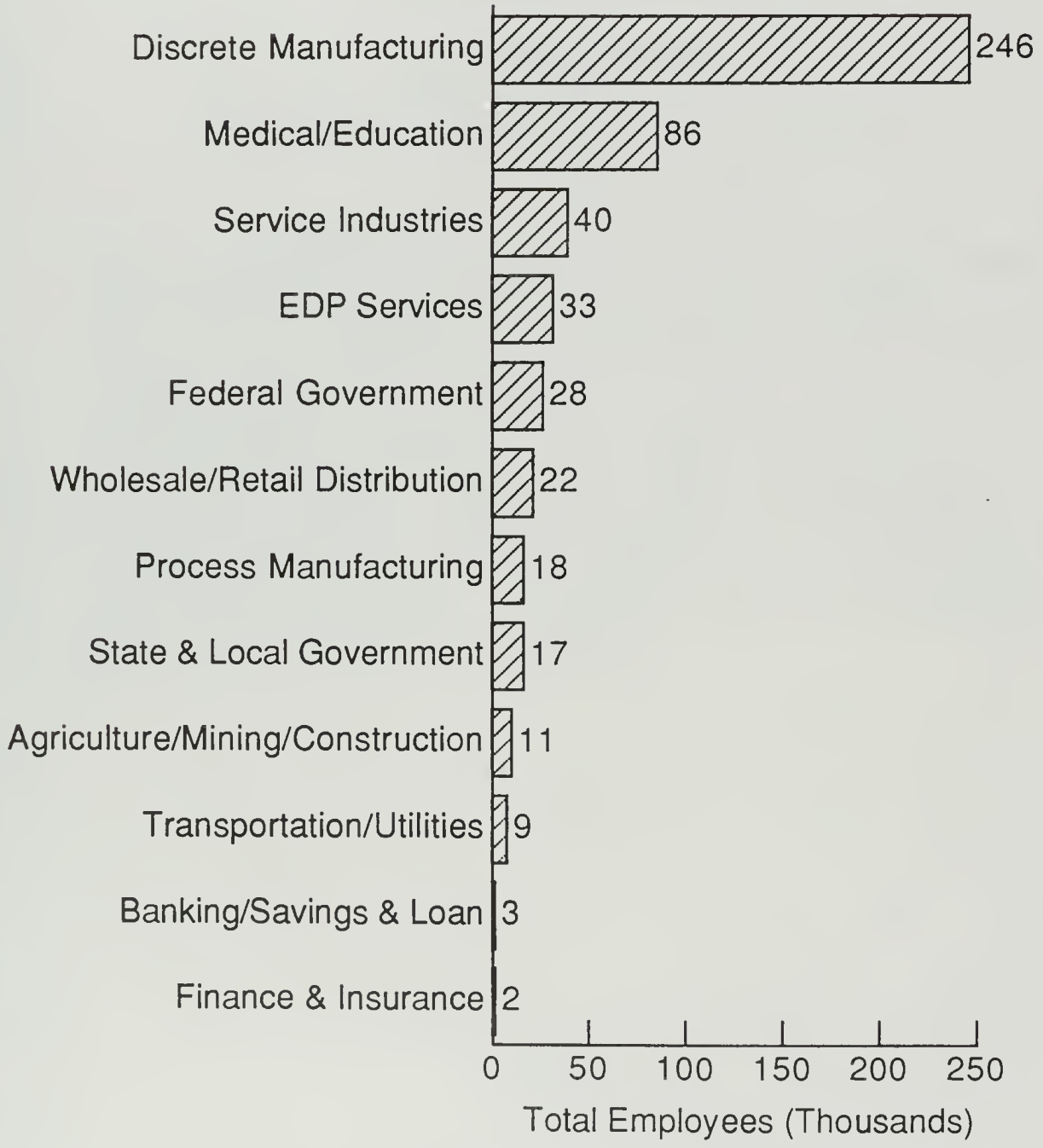
Demographics
Trading Area
Employees by Industrial Sector



Data Source: *Computer Intelligence Data Base*

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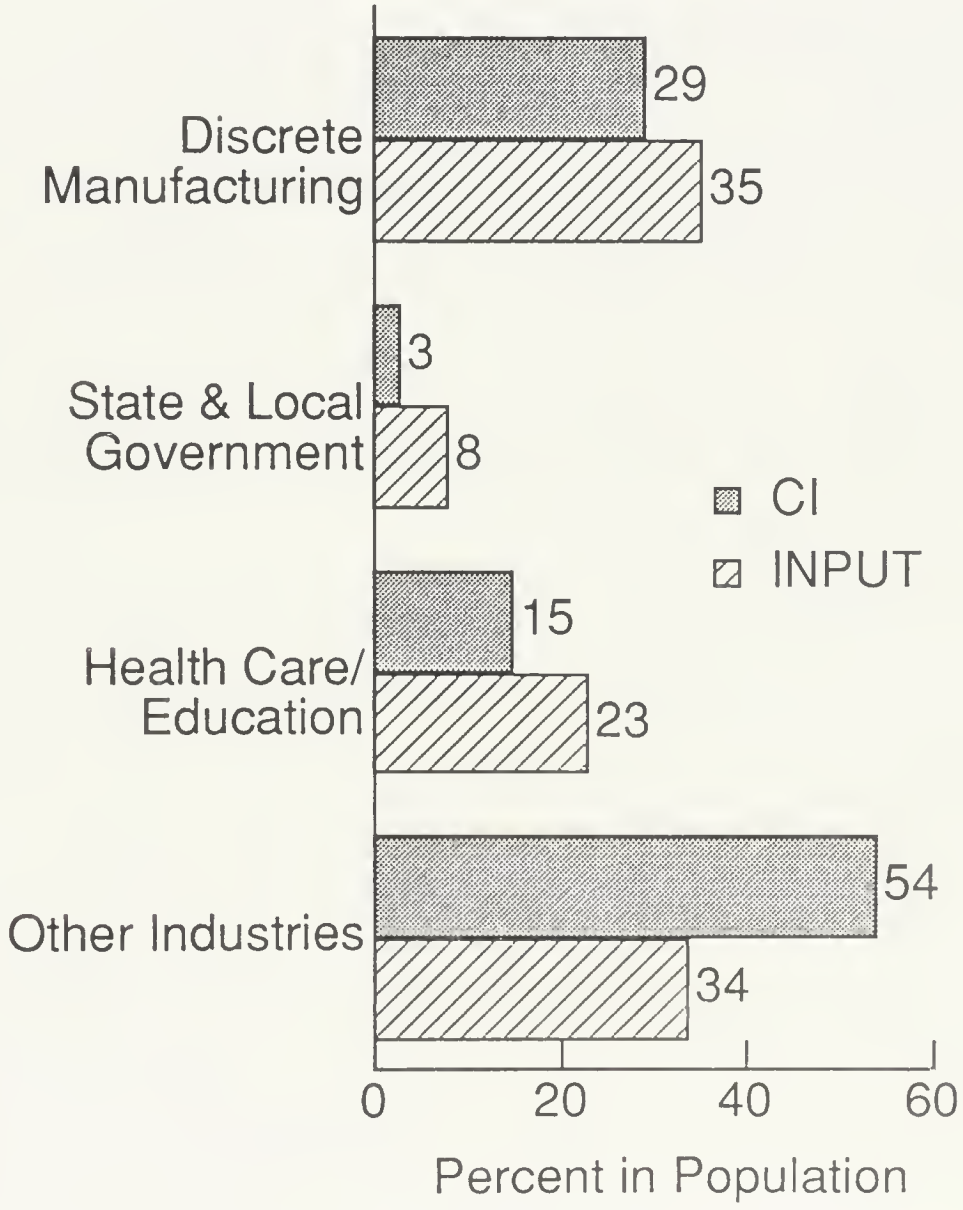
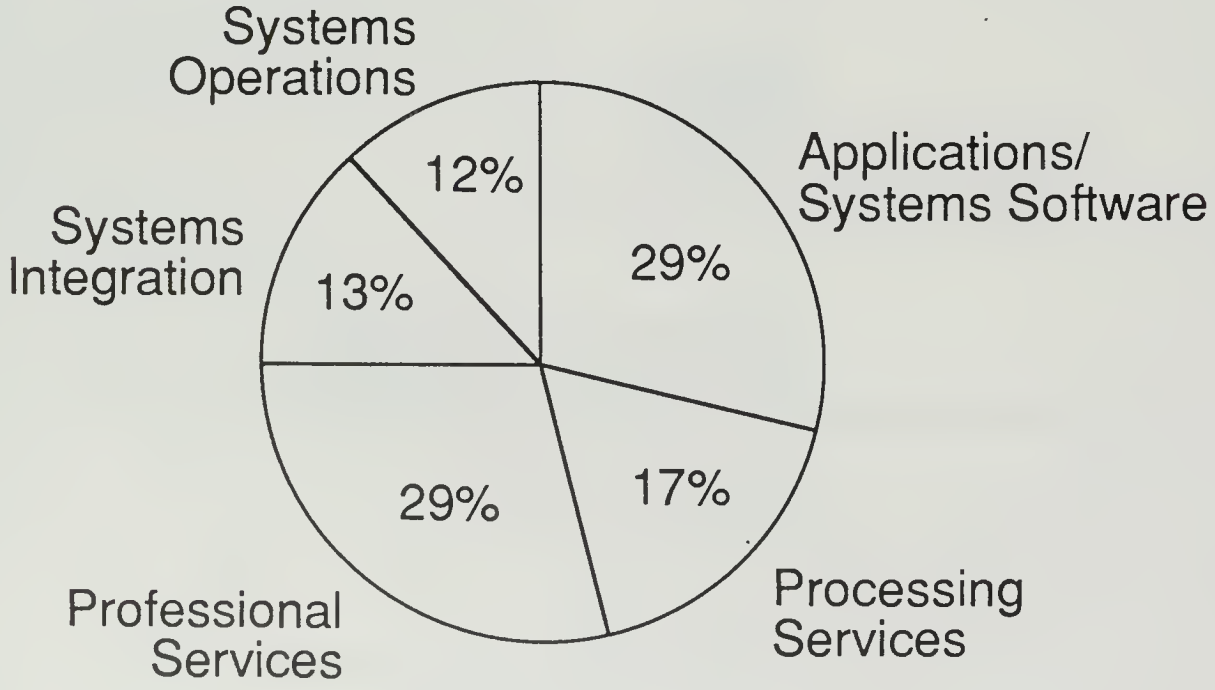
Demographics
Trading Area

Percent Firms in INPUT Sample
vs. CI Population



General Sample Characteristics

- Demographics:
  - Average budget = $9.7 million
  - 53% Development/maint., 37% Operations, 10% Mgt./Other
  - 50% have systems developed or maintained outside IS
- Outside information services expenditures:
  - Average outside information services = $980 K (10%)
  - Broken down as follows:



Sample User Expenditures Compared to National Averages

	1990 INPUT User Expenditures*	INPUT Percent	Sample Percent
Apps/System Software	34,533	42	29
Processing Services	17,028	21	17
Professional Services	16,764	20	29
Systems Integration	6,411	8	13
Systems Operations	7,262	9	12
TOTAL	81,998	100	100

*Domestic U.S. in $Billions

- Sample understates expenditures for systems software (low systems software % may reflect bundling of software and hardware for core systems).
- SI/SO numbers dominated by one or two large contracts.

Demographics—Comments

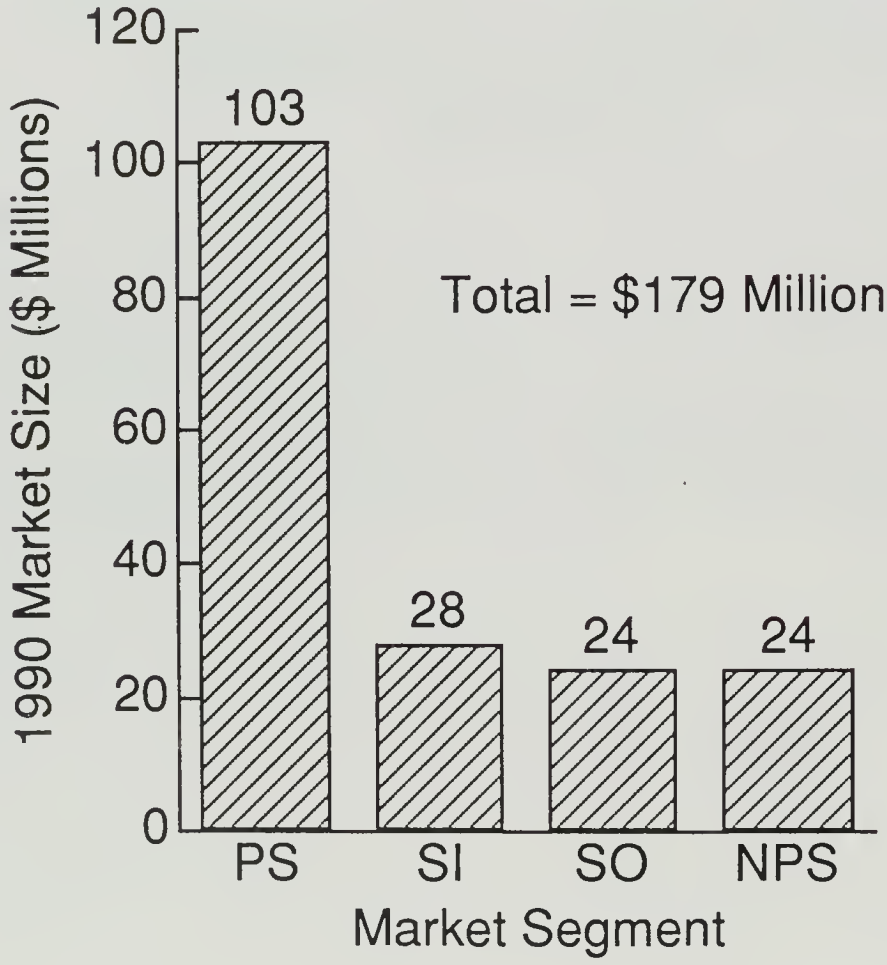
Not Necessarily News

- Total area business environment has extremes
  - A few very large firms
  - Lots of Moms and Pops
- Lack of significant firms in financial sectors
  - Headquartered out of the area
  - Dominated by LA and San Francisco companies
- Manufacturing highly specialized—high tech
- Heavy concentration of workstation MIPS
- Dominated by manufacturing
- Disproportionately high ratio of minis to mainframes
- Heterogeneous hardware environment

Market Sizing/Forecasts Overview

- Market segment sizes and forecasted growth
- INPUT's observations on survey data
- Other significant findings from user surveys

Trading Area Market Sizes (Adjusted)



PS = Professional services
SI = Systems integration
SO = Systems operations
NPS = Network/Processing services

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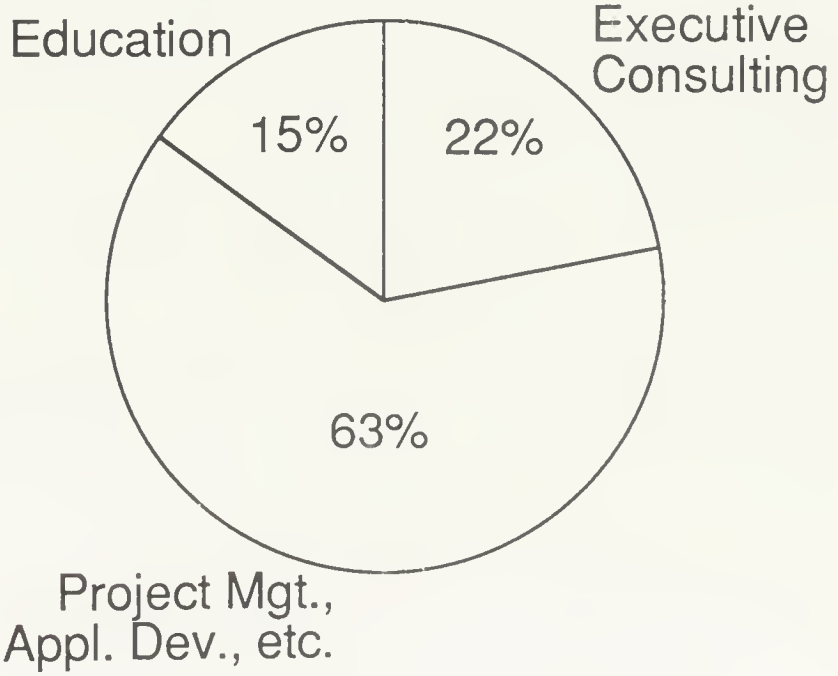
Market Parameters
Professional Services

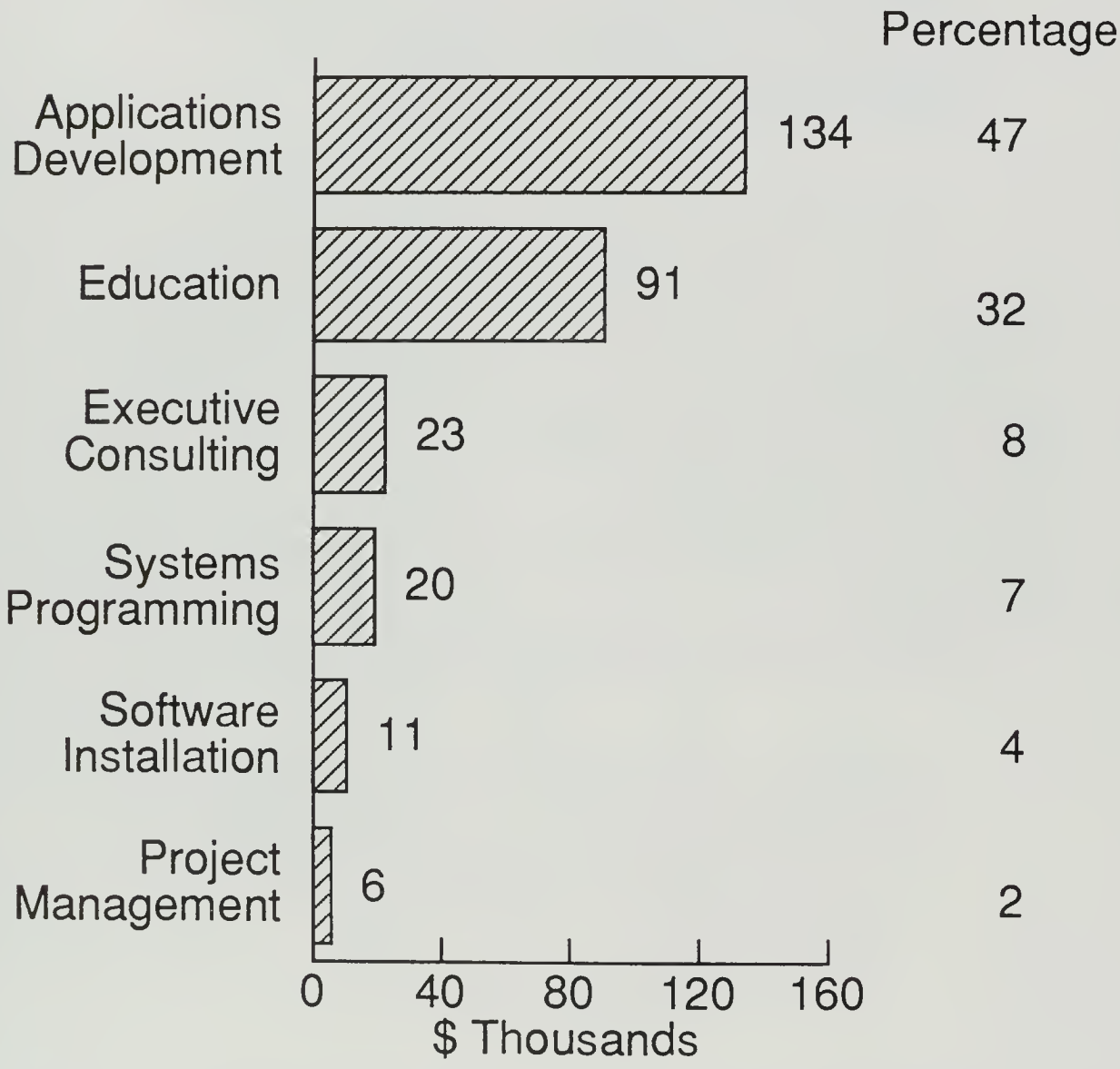
Overall market size:	$102 Million
Growth rate:	11%*
1992 market size:	$125 Million

Market Segment	$ Millions	%*
Executive Consulting	23	13
Project Management Applications Development Software Installation Systems Programming	64	10
Education	15	10

* Compound Annual Growth Rate 1990 - 1992



Breakout of Professional Services for a Typical Sample Respondent



Two largest categories heavily correlated with package vendors

Growth over the next three years

- 55% see budgets increasing by 29% on average
- Only 11 % see budgets decreasing

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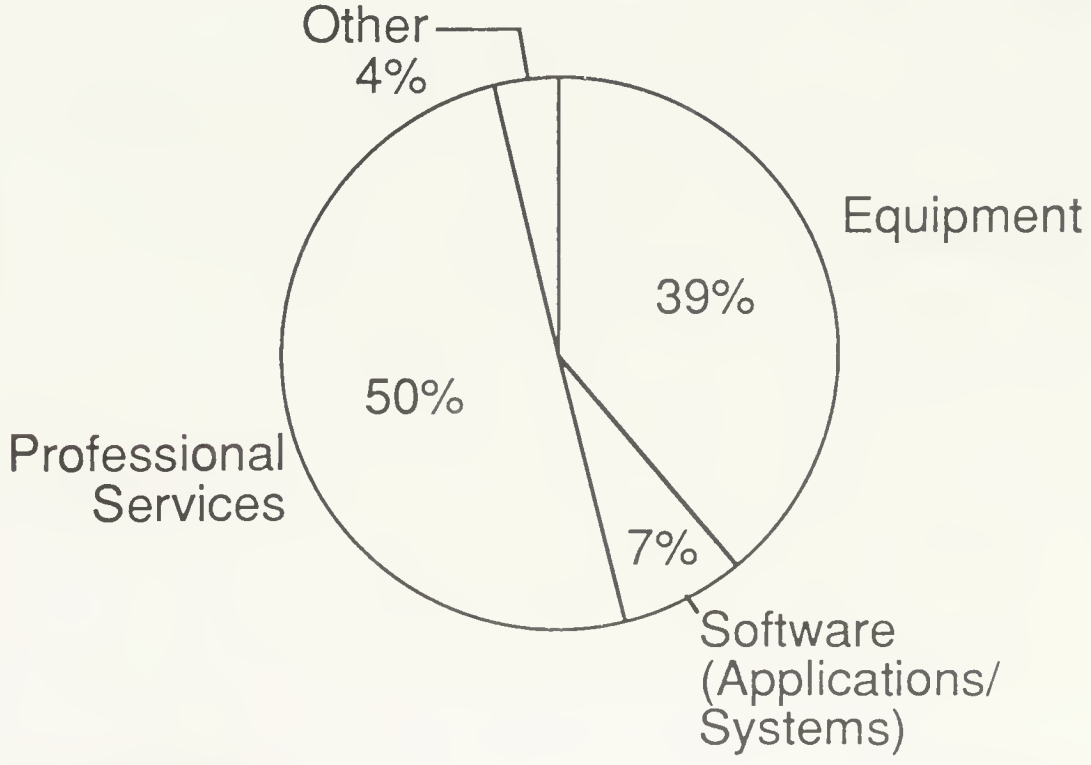
Market Parameters
Systems Integration

Overall market size:	$28 Million
Growth rate:	20%*
1992 market size:	$41 Million

Market Segment	$ Millions	%*
Equipment	11	19
Software (Applications/ Systems)	2	26
Professional Services	14	19
Other	1	18

* Compound Annual Growth Rate 1990 - 1992



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Respondents' Views on Systems Integration

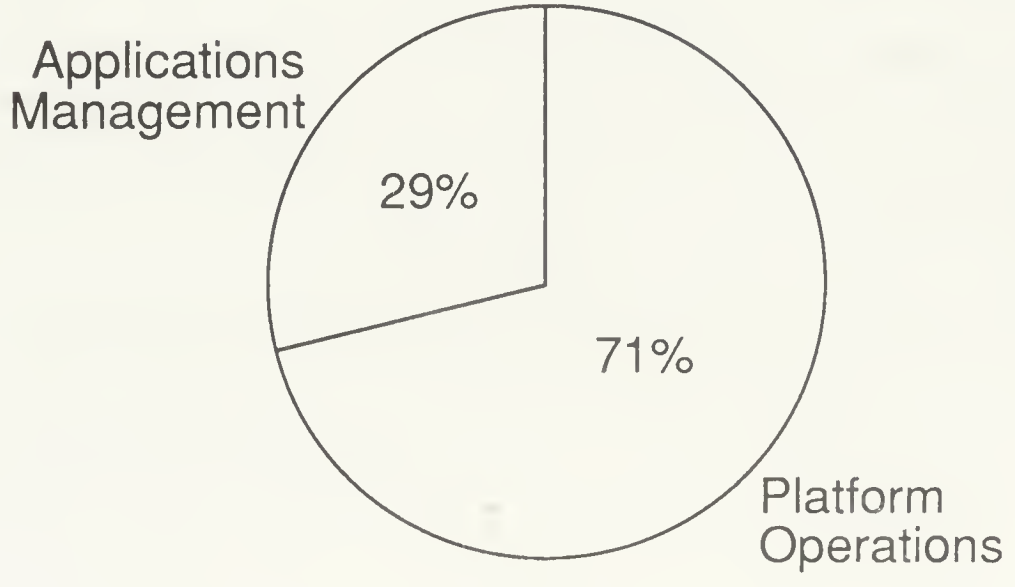
- 7% have used integrators over the past three years
- $900K was the average project size measured by the sample
- Key respondents in the sample included:
  - County of Santa Clara—Transportation
  - Northern Telecom
  - GE Nuclear Energy
- 16% indicated future intent to utilize an integrator
  - 81% Probability—Applications Integration
  - 75% Probability—Infrastructure Integration
  - 69% Probability—Network Integration

Market Parameters
Systems Operations

Overall market size:	$24 Million
Growth rate:	17%*
1992 market size:	$32 Million

Market Segment	$ Millions	%*
Platform Operations	17	18
Applications Management	7	16

* Compound Annual Growth Rate 1990 - 1992



Respondents' Views on Systems Operations

- 9% have utilized an SO firm over the past three years
- $750K is the average annual contract size
- Key respondents in the sample included:
  - ASK (tied to EDS investment)
  - El Camino Hospital
  - BT/Tymnet
  - County of Santa Clara—Transportation
- 13% indicated future intent to consider SO (3-year horizon)
  - 69% Probability—Traditional FM
  - 31% Probability—Applications Management

Summary and Conclusions
Market Segments

- Professional Services:
  - Strong preferences for package vendors
  - Use of independents with highly specialized expertise
  - Heavier use of small contractors than industry in general
- Systems Integration/Systems Operations:
  - Generally picked for industry application or functional expertise
  - Application integration the most common area of need
  - SO contracts likely to be smaller than national averages
- Network/Processing Services:
  - General timesharing use declining
  - Includes disaster recovery services
  - VAN market small based on sample data
  - EDI highly significant

Local Industry Observations
Discrete Manufacturing

- Largest sector in terms of employment and revenues
- Large employers associated with the information systems industry
  - Lockheed
  - Hewlett-Packard
  - Northern Telecom
  - Rolm
  - AMD
  - Intel
  - National Semi
  - Varian
- Less use of outside consultants than national averages
- Minimal interest in systems integration and systems operations
- Applications software requirements highly specialized
- Professional services needs tend to be industry specific

Local Industry Observations
Process Manufacturing

- No heavy or extremely large industry
- Food processors are a large part of the market
- Low IS intensity compared to national average

Local Industry Observations
Medical and Education

- No major local medical buying points
  - University hospitals self-sufficient
  - Few chains
  - Some use of SO with specialized suppliers
- Large universities are small markets
- Local schools are heavily constrained
  - Budget crisis
  - Competitive/cost-driven bidding procedures

Local Industry Observations
State and Local Government

- Very few major buying points
- Same budget and bidding constraints as education
- Strong preference for independent contractors
  - Cheaper
  - Focused expertise

Local Industry Observations
Other Industries

- Industries with average IS intensity and site sizes
  - Services, EDP Services, Agriculture/Mining/ Construction
- Industries with below-average IS intensity/no major sites
  - Transportation/Utilities, Wholesale/Retail Distribution, Financial Services
- Federal government has minimal market potential locally
  - Local employment largely military
  - Few major general purpose sites

Competitive Analysis

- General observations on vendors—from user survey
- INPUT's analysis of key local vendors
- Summary and conclusions

General Observations on Vendors

- Systems programming support almost exclusively from...
  - Hardware vendors
  - Package vendors (Oracle, etc.)
- Accounting firms have less than average market
  However: Dominate executive consulting
- Extremely heavy use of "brokering" vendors for agency-based independents
  - Far West Consulting
  - CRG
  - Disabled Programmers

User Views
Major Delivery Mode
Leading Vendors

Delivery Mode	Vendor	Percent*
Applications/Systems Software	1 - IBM 2 - CA, HP DEC Microsoft 3 - ASK	42
Processing Services	1 - BofA 2 - ADP	33
Professional Services	1 - CRG 2 - SRA, D&T, HP IBM, Dis. Vets. 3 - Price Waterhouse	23
Systems Integration	1 - Andersen 2 - IBM, HP, DEC, AT&T	71
Systems Operations	1 - EDS 2 - IBM, DEC	75

*Percent mentions for all leaders combined

Vendors of Choice
Professional Services

Service Category	Vendor	Percent*
Applications Development	CRG, CA, Disab. Prog., E&Y, Price, Oracle	60
Project Management	CRG, Peat, D&T	60
Systems Programming	HP, IBM, DEC	55
Software Installation	Package Vendor, IBM, HP	72
Education	Package Vendor, IBM, DEC, HP, ASK	75
Executive Consulting	Andersen, Peat, IBM	N/A

*Percent mentions for all leaders combined

Vendor Profile

- National market strategy/position
  - National revenues/growth rates
  - Key vertical markets
  - Key strengths
  - Unique characteristics
  - Key weaknesses
- Local capabilities
  - Key vertical markets
  - Unique technologies/facilities
  - View of competition
  - Organization/coverage

Vendor Profile
Andersen Consulting
National Characteristics

Characteristic	Parameter
Revenues*	IS Practice - $800M SI Practice - $560M SO Practice - $60M
Market Focus	Vertical - All markets
Key Strengths	Consulting Applications software Relationship sell Vertical expertise Alliances - software and hardware Education capabilities - internal
Directions	Systems/applications management Investments in SO centers Investments in tools

*Does not include hardware passthrough.

Vendor Profile
Andersen Consulting
Local Characteristics

- Market Focus
  - Emphasis on front-end consulting
  - Not as prominent as other geographies
  - Taking initiative on "applications management"
  - Key verticals—manufacturing, services
- Directions
  - Bay Area possible SO target
  - SO processing center through SO contract
  - Leverage high-tech relationships through Japanese practice

Vendor Profile
DEC
National Characteristics

Characteristic	Parameter
Revenues	Professional services - $250M (Est.) SI practice - $275M SO practice - None at present
Market Focus	Finance and services Process/discrete manufacturing Federal & state government Telecommunications
Key Strengths	Integrated architecture In-house applications software Third-party applications software Vertical expertise EIS Division of 18,000 employees Newly formed consulting services Digital Customer Centers (DCCs) Expertise in distributed systems
Directions	Addition of new market sectors Target highly visible projects Focus on larger scale projects Full-service solution provider

Vendor Profile
DEC
Local Characteristics

- Market Focus
  - High-tech manufacturing is key
  - Telecommunications and services follow
- Local Sales Approach
  - Field sales matrixed against San Jose DCC
  - San Jose DCC significant market advantage
  - Local alliance with Deloitte for manufacturing
  - Special initiative in "silicon" manufacturing
- Directions
  - Expansion of technical expertise (DCC)
  - Possible valley location for new consulting organization
  - Increased integration with other DCCs *(Virtual demonstration capability)*

Vendor Profile
EDS
National Characteristics

Characteristic	Parameter
Revenues	Manufacturing - $2,240 M* Banking and finance - $820M Government - $600M Insurance - $330M Other - $660M
Market Focus	Federal/state/local government Process/discrete manufacturing Banking and finance Insurance Engineering/Networking
Key Strengths	Vertical industry orientation Worldwide integrated network GM technology transfer Perceived price performance Hardware relationships (NAS, etc.) Vertical applications software
Directions	Full-service provider Addition of vertical consulting Acquire missing components Increase worldwide presence

*Approximately 50% captive through GM.

Vendor Profile
EDS
Local Characteristics

- Market Focus
  - Manufacturing, state & local government key
  - Growing interest in retail distribution
  - Primary market segment is SO
- Local Sales Approach
  - Coordination managed from Sacramento
  - Industry oriented sales staff in SF/LA
  - Heavy reliance on reference sell
  - Relationship with ASK/Ingres important
- Directions
  - Increased emphasis on discrete manufacturing
  - Possible network node site
  - Possible showcase for distributed capabilities
  - More local marketing presence

Vendor Profile
Peat Marwick
National Characteristics

Characteristic	Parameter
Revenues	SI - $230M Professional services - $300M
Market Focus	Banks Health care/Insurance Manufacturing - high technology Transportation/Energy/Utilities Wholesale/Retail/Merchandising
Key Strengths	Vertical industry orientation Nolan, Norton & Co. PM Advanced Technology group Tools/applications software portfolio Matrixed delivery capability
Directions	Focus on high-end engagements More selective use of alliances Increase in joint marketing efforts

Conclusions
Recommendations

Subject Area	Conclusions/Recommendations
Area Markets	*Conclusions* - Geographically dominated by Santa Clara - Dominance by computer industry firms - Opportunities smaller than national average - Currently depressed by recession - Some sectors show significant growth opportunities *Recommendations* - Consider vertical industry delivery approach - Re-examine targeted industries: services, EDP services, and distribution appear to have potential

Conclusions
Recommendations

Subject Area	Conclusions/Recommendations
Products/Services	*Conclusions* - Heavy reliance on package suppliers - Applications development key expenditure area - Education disproportionately high vs. national averages (Dominated by hardware and software vendors) - SI/SO have good potential with larger firms and specific industries - Body shop business more price sensitive than some other markets and is highly specialized *Recommendations* - Invest in vertical consulting expertise for high-tech manufacturing - Build integrated offerings for target industries - Include IBM's network capabilities in offering - Leverage IBM's reputation in education - Take targeted approach to SI/SO

Conclusions
Recommendations

Subject Area	Conclusions/Recommendations
Competition	*Conclusions* - Highly diverse in professional services - No clear leaders in most segments - Executive consulting dominated by "Big Six" - Software houses play unusually strong role - No one with dominant market share in any segment *Recommendations* - Go against accounting and software firms with solution packages (manufacturing) - Consider long-term agreements for applications portfolio maintenance - Further analyze pricing strategy against CRG's and other body shops

Perceptions of IBM Potential

- Competitive Advantages
  - General reputation
  - Depth of resources available
- Competitive Disadvantages
  - Perceived parochialism
  - Lack of experience in multivendor environments
  - Cost
  - Perceived lack of industry expertise
  - Lack of industry-specific applications software

Markets and Issues

- Markets To Avoid
  - General applications programming
  - Modification of non-IBM packages
- Attractive Markets
  - Mainframe systems programming
  - SI/SO, downsizing, infrastructure migration

Key Issue: Willingness to support multivendor offering. Hardware/Network/Software/Packages

About INPUT

INPUT provides planning information, analysis, and recommendations for the information technology industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

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