Project Definition

The Asaba Group was retained by the Minority Business Development Agency (MBDA)

OBJECTIVE

Develop a position paper that provides insights to creating larger minority-owned businesses in the telecommunications industry

- Industry trends and competitive issues
- Growth opportunities for minority suppliers
- State of minority sourcing within the industry
- Growth strategies and new business structures for minority suppliers

Need to identify new strategies to grow minority suppliers

Project Approach

Thought Process

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The Asaba Group

Key Points: Industry Trends and Competitive Issues

Telecommunication industry experiencing strong growth

- $576 Billion market and growing at 11% annually

Increase in internet usage and data traffic are significant drivers of growth

- Combination of fax, EDI and IP network applications

Industry experiencing new market pressures

- Deregulation, convergence and digitization

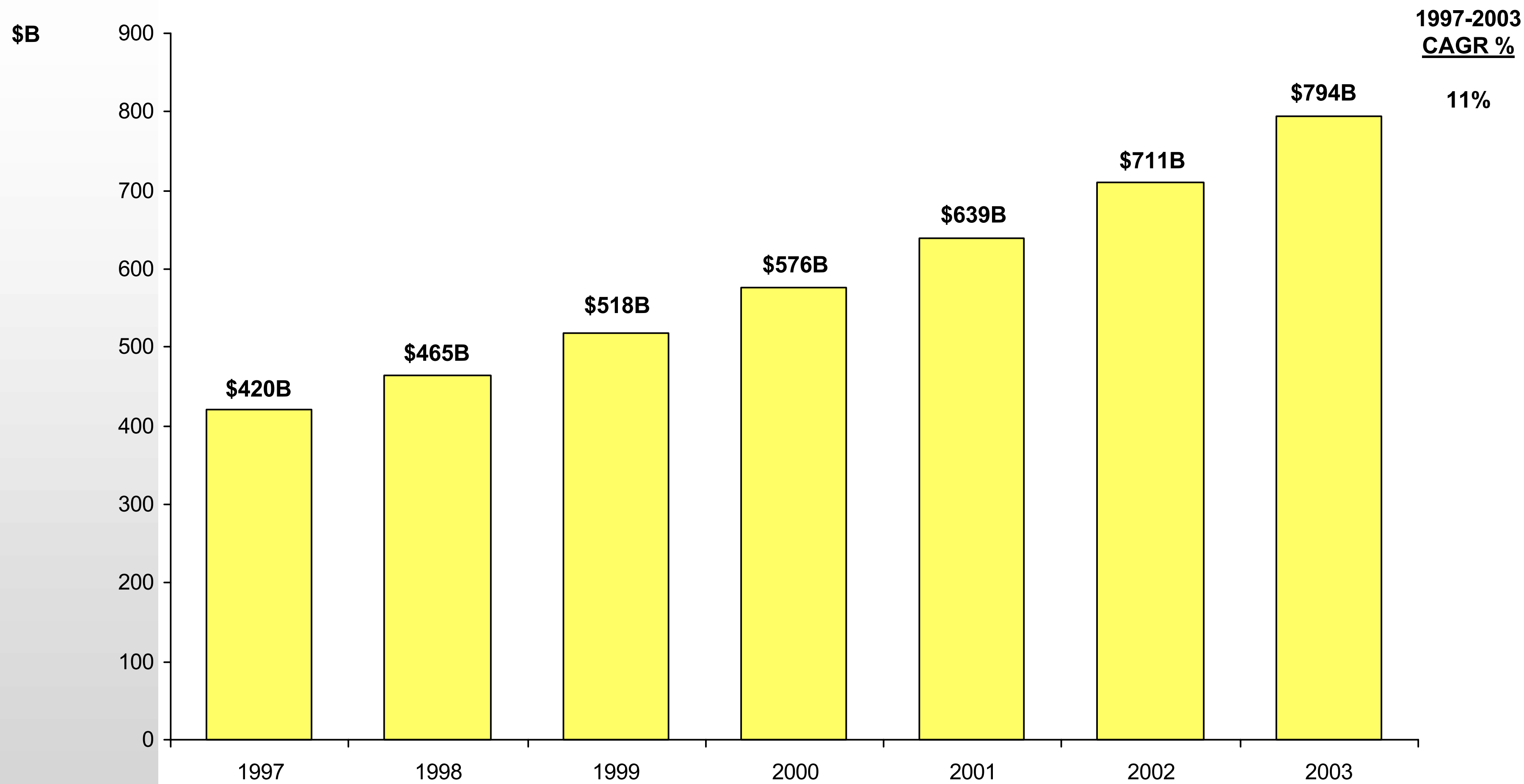
Industry players respond with different corporate strategy initiatives

- Consolidation, acquisitions, divestitures and alliances

Industry Undergoing Rapid Change

The Telecommunications Industry Is Experiencing Strong Growth

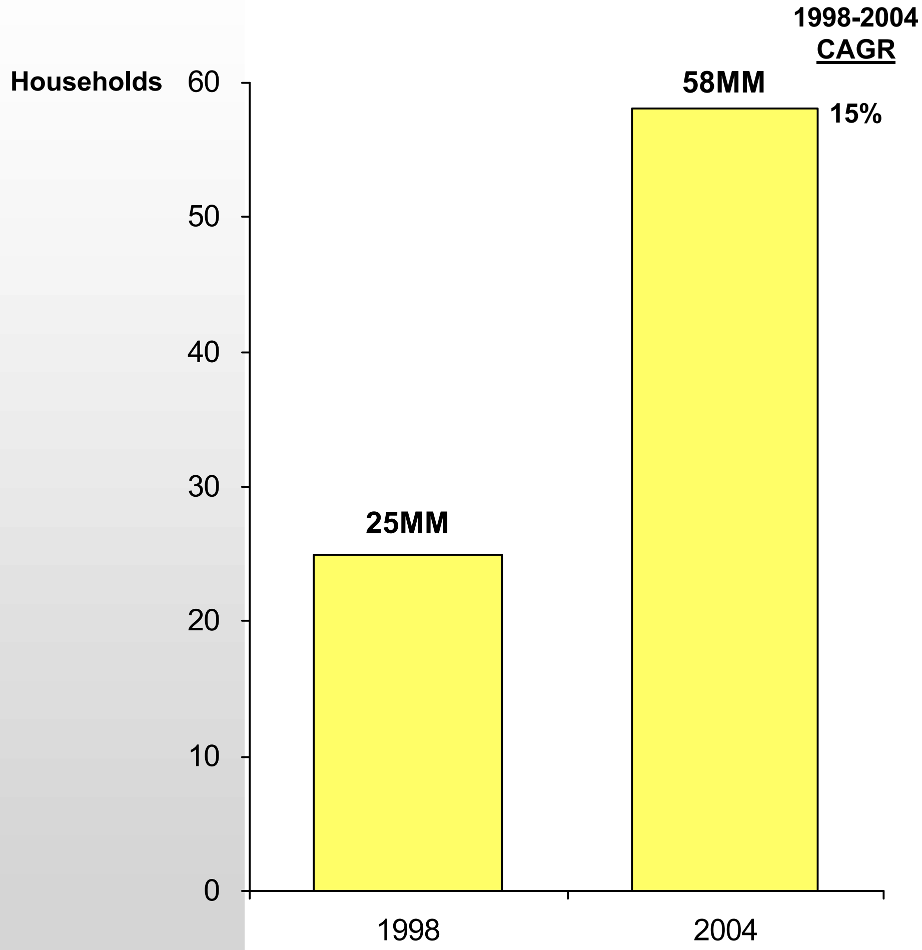
Forecasted to exceed $790 Billion by 2003



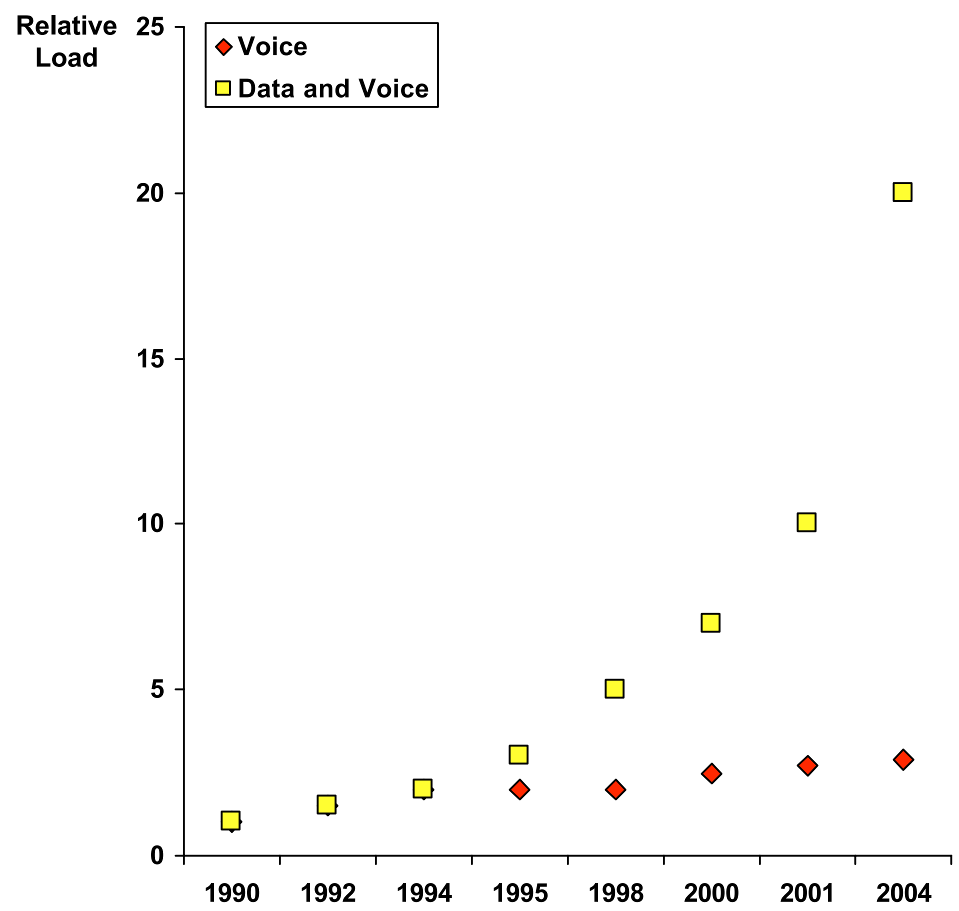
SOURCE: 2000 Multimedia Telecommunications Forecast

Growth Driven By Increase In Internet Usage and Data Traffic

Household Internet Penetrations

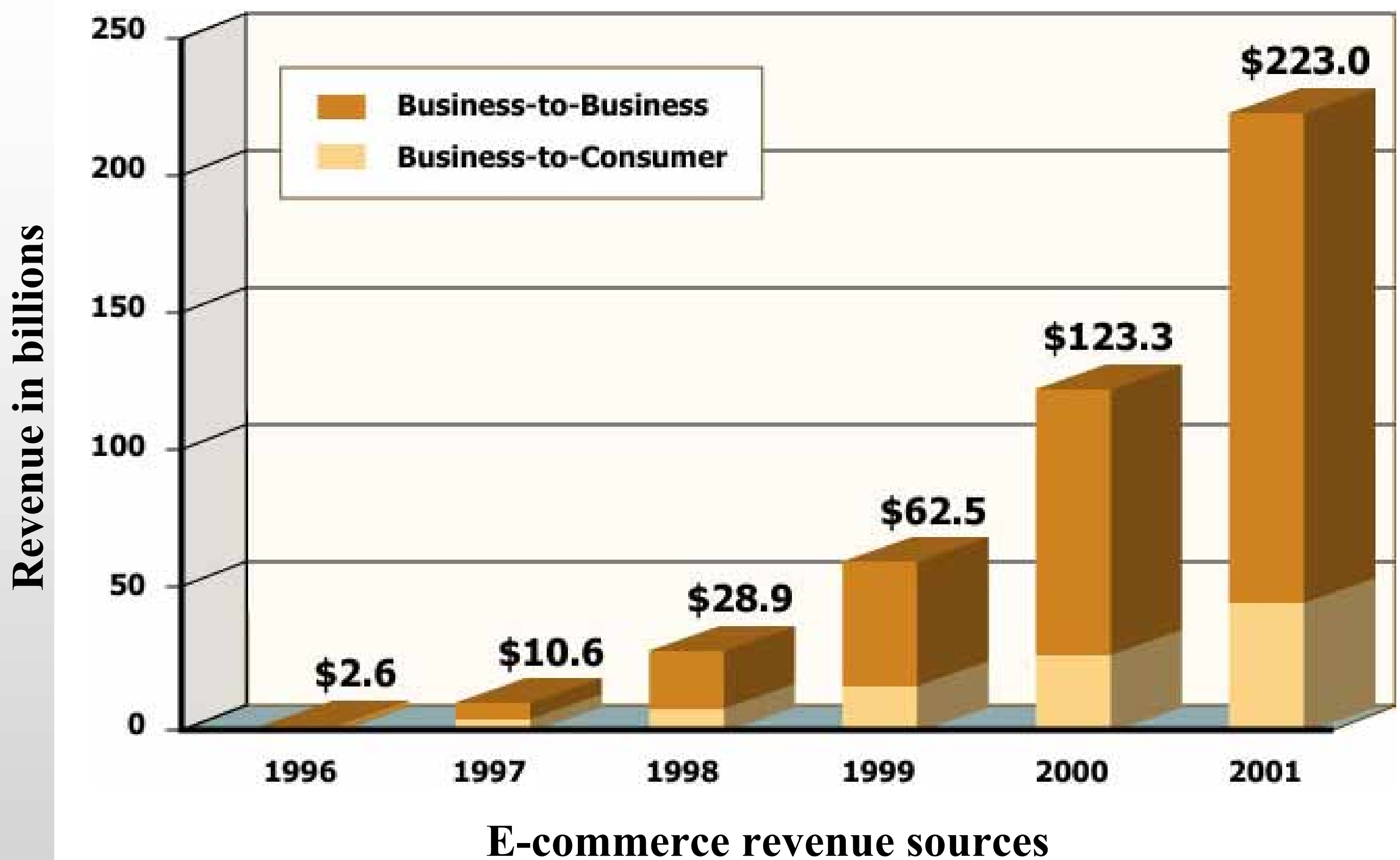


Relative Traffic Data and Voice



SOURCE: Stanford University Photonics Industry Study; Telecom companies 10K reports

E-Commerce Is A Significant Driver of Growth



SOURCE: IDC

Market Pressures Accelerating Change Within The Industry

Deregulation

- 1996 Telecommunication Act created new markets and competition
- Removed significant barriers to innovation and new entrants

Convergence of applications and industries

- Multimedia applications – voice, video and data
- Circuit-based switching and data-packet switching
- Computer and telephone integration
- Blurring industries boundaries (telecom, computing, and media)
  - AOL, Time Warner, AT&T

The 1996 Telecommunications Act Increases The Intensity of Competition

Opened up local phone market to new competitors

- Opened up a $108 Billion market to competition

Allowed Incumbent Local Exchange Carriers (ILECs) to provide long distance service

Created new competition by allowing cable companies to provide local phone services

Deregulation attracting new entrants

- Created Competitive Local Exchange Carriers (CLECs)
- Increased from 57 in 1995 to 146 in 1998

Accelerating the pace of convergence (voice, data, video)

- Proliferation of new products and services

Increased Industry Competitiveness – ‘Faster, Better, Cheaper’ New Mantra

Industry Landscape Undergoing Significant Changes
Industry Players Respond To These Forces

Consolidation by Regional Bell Operating Companies (RBOCs)

- Bell Atlantic acquires Nynex then merged with GTE

Divestitures, spin-offs and equity carve-outs

- AT&T spins-off Lucent Technologies. Creates tracking stock for wireless business
- Lucent Technologies spins-off its enterprise network, power systems, and microelectronics businesses

Acquisitions to gain new competencies and markets

- AT&T acquires Media One – access to cable customers
- Qwest acquires US West – access to local markets
- Lucent acquires Ascend – packet-switching capabilities
- Alcatel buys seven companies in last 20 months

Alliances

- AT&T with Time Warner and Comcast to provide telephone services to residential customers

Deregulation, Convergence, and Competition Creates New Application Segments for Service Providers

	Network Services	Web Infrastructure	Access	Software	Content
Traditional	• Intelligent networks • Legacy data, voice • Transport	• Outsourced CPE/LAN/WAN	• Narrowband • ISDN • 2G Wireless	• Transaction support tools • Custom development	• Electronic Data Interchange (EDI)
New	• Network application layer • IP-based services	• Managed network services • ASP/Web hosting • Data centers • Traffic management • Web access/ISP	• DSL • Cable • Wireless data • 3G Wireless • Fixed wireless	• Knowledge management • Personalization • Unified messaging • Digital content services	• Business information - Decision support • Consumer information - Financial - RTQ - Entertainment

New Opportunities for Service Providers

SOURCE:Andersen Consulting Analysis, Asaba Group Analysis

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Key Points: Growth Opportunities for Minority Suppliers

Industry players focused on core competencies and developing new capabilities

- Maintaining competitiveness in high growth and rapidly changing environment requires building new capabilities
- Increased competition requires a focus on core business and competencies

Significant growth opportunities exist for minority businesses

- By optimizing linkages along the value chain
- Improving service levels to equipment manufacturers, carriers and customers

Rapid product development and speed to market requirements present opportunities for low cost, flexible manufacturing partners

Industry players look to outsource essential business processes to focused and more efficient partners

Immediate opportunities in enterprise network management, contract manufacturing and customer relationship management

Telecommunications Industry Value Chain

Technology/ Component Providers → **Equipment Manufacturer** → **Service Providers** → **Consumers**

Technology Provider
- JDS Uniphase
- Ciena
- (Optical electronics)
- (Wave Division Multiplexing)

Software
- 3Com
- Microsoft

Component Manufacturing
- Selectron
- Sanmina
- SCI
- Teradyne

Lucent Technologies
Cisco Systems
Nortel
Alcatel
Sun Microsystems

ILECs
- RBOCs

Inter Exchange Carriers (IXCs)
- AT&T
- Sprint
- Worldcom

CLECs
- Covad Communications
- Allegiance Telecom

Cable
- Media One
- Cox Communications
- TCI

Business
Small Office
Home Office
Residential
Corporate

Dominated By Established Players

Industry Players Focused On Developing Core Competencies

Driven by Strategic Position in Value Chain

Component/ Technology Providers	Focusing on core technologies for data transfer with broad industry applications - Optoelectronics, Wave Division Multiplexing (WDM) etc.
Equipment Manufacturers	Developing end-to-end solutions for voice and data applications -Switching and transmission platforms Driving innovation for data-packet switching equipment -Increasing bandwidth capabilities -Integrating core technologies to enhance data networking e.g. optical networking
Long Distance Carriers (IXCs)	Expanding scale and scope of product and service offerings -Enhancing positions in long distance -Entering new markets: local service and broadband -Developing embedded applications to meet customer data/voice needs -e.g Fax and Voice over IP, Virtual Private Networks, etc
ILECs/ RBOCs	Consolidating and building scale Unbundling key assets e.g. wireless Developing new products: enhanced local services, broadband, etc.
CLECs	Focusing on most profitable segments in local markets -Business customers (small to midsize) -Industrial parks
Cable	Focusing on leveraging residential customer base Providing broadband and local telephone services

Growth Opportunities Exist At the Linkages In The Value Chain

Technology/ Component Providers → **Equipment Manufacturer** → **Service Providers** → **Consumers**

Technology Provider
- JDS Uniphase
- Ciena
- (Optical electronics)
- (Wave Division Multiplexing)

Software
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Business
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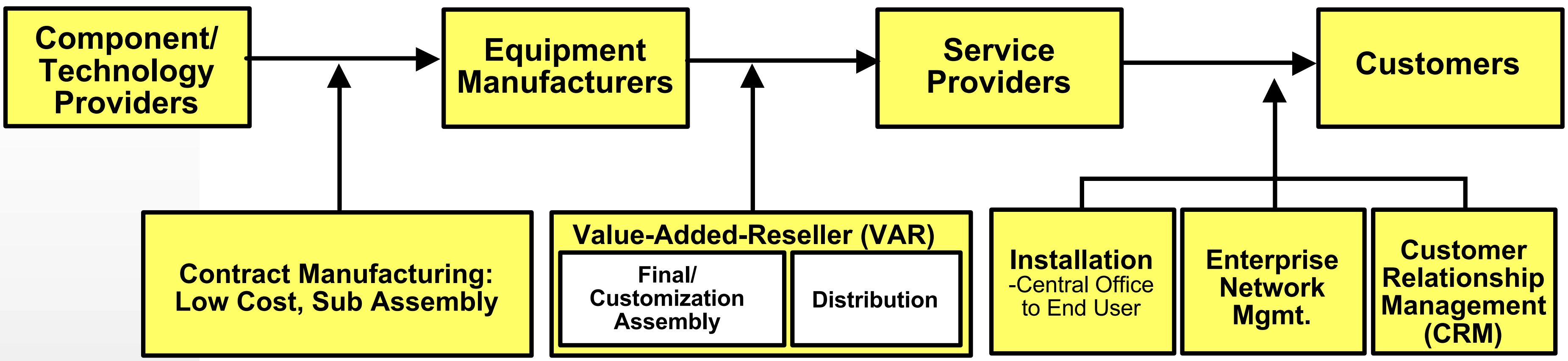
What Are These Roles?

Growth Opportunities Exist In Managing The Linkages Within Value Chain



Contract Manufacturing: Low Cost, Sub Assembly

- Low cost manufacturing/assembly
  - Offshore
  - Empowerment zones
  - Mexico (Maqiladora)
- Kits, mechanical assemblies
- Target legacy equipment and low-end electronic modules
- Software testing and quality assurance

Value-Added-Reseller (VAR): Final/ Customization Assembly

- Final customization
- Quality assurance
- Software installation

Value-Added-Reseller (VAR): Distribution

- Fulfillment
- Just-In-Time (JIT) delivery
- Safety stock inventory

Installation -Central Office to End User

- Network construction
  - Engineer, Furnish and Install
- Facilities construction
  - Backbone
  - Wireless
  - Broadband
- Planning and Deployment

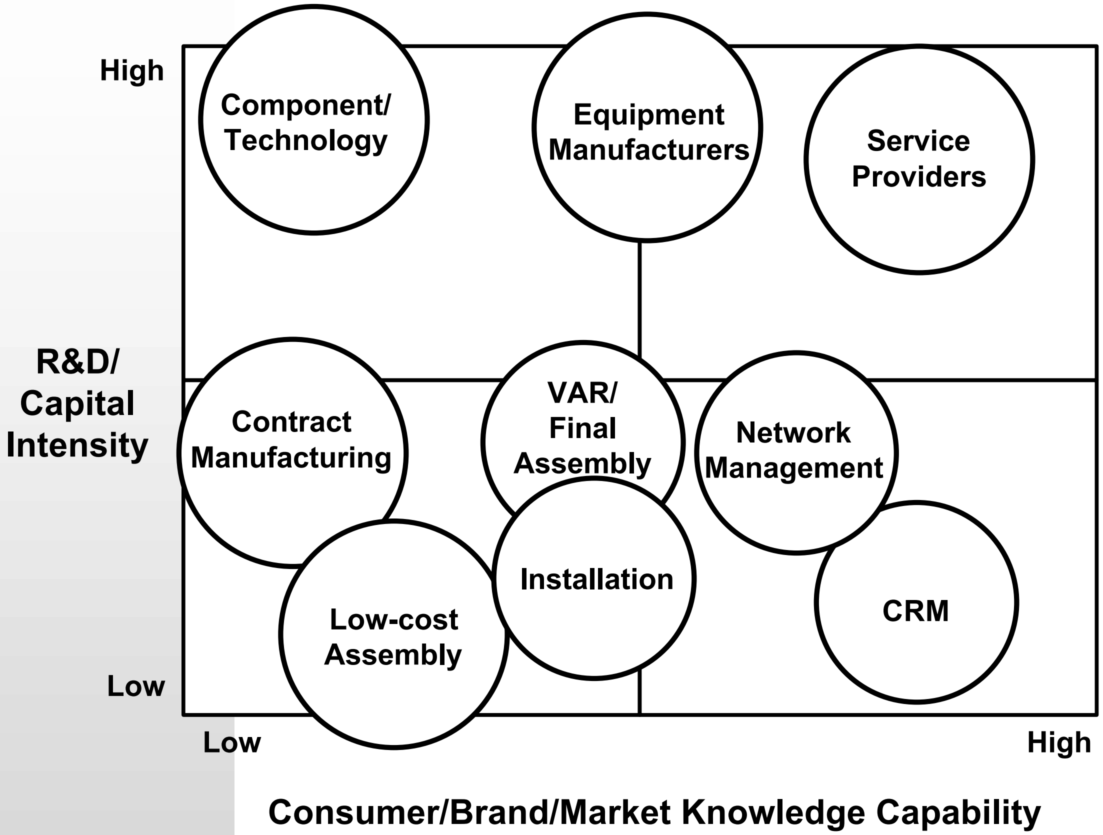
Enterprise Network Mgmt.

- Premise based support (sales site)
  - End user
- Upgrade hardware and software
- Maintenance

Customer Relationship Management (CRM)

- Call center management
- Customer service
- Information processing
  - Invoicing/ billing

Relatively Low Capital And R&D Requirement Compared To Traditional Roles



Barriers To Traditional Roles

- Very entrenched players
- High capital and investment requirements
- Business model capability requires time to build
  - Innovation
  - Managing value propositions in marketspace (marginal cost = 0)
  - Consumer branding

Opportunities Attractive For Minority Businesses

Equipment Expenditures Significant Driver of Opportunities

Drivers of Equipment Spending

ILECs upgrading existing infrastructure to provide broadband services

- Multimedia content requires more bandwidth for transmission

CLECs building new central offices within local markets

- Higher profit margins for facilities based CLECs (30-50%) as compared to 15% in resale
- CLECs Spending on switching and transmission equipment

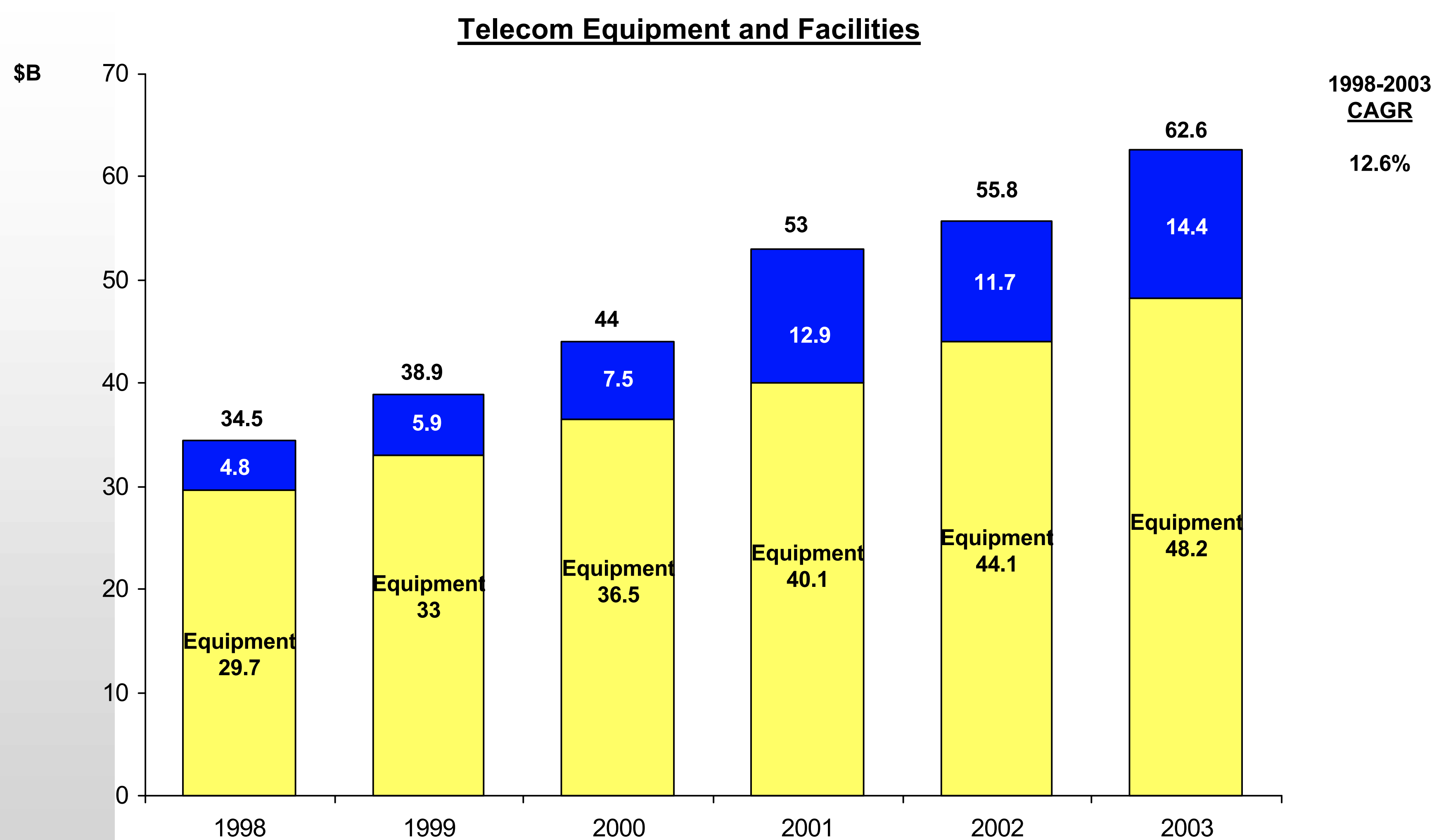
Cable networks upgrading infrastructure for two-way communication

- Migration from narrowband to broadband
- Analog circuit switched to digital packetswitch networks

Explosive growth of data traffic

- Includes fax, text, graphics, video, audio and all non-voice
- Data traffic will account for 92% of worldwide traffic content by 2002
- Increase in automated business processes (EDI) occurring in Business-to-Business environments and world-wide web activity

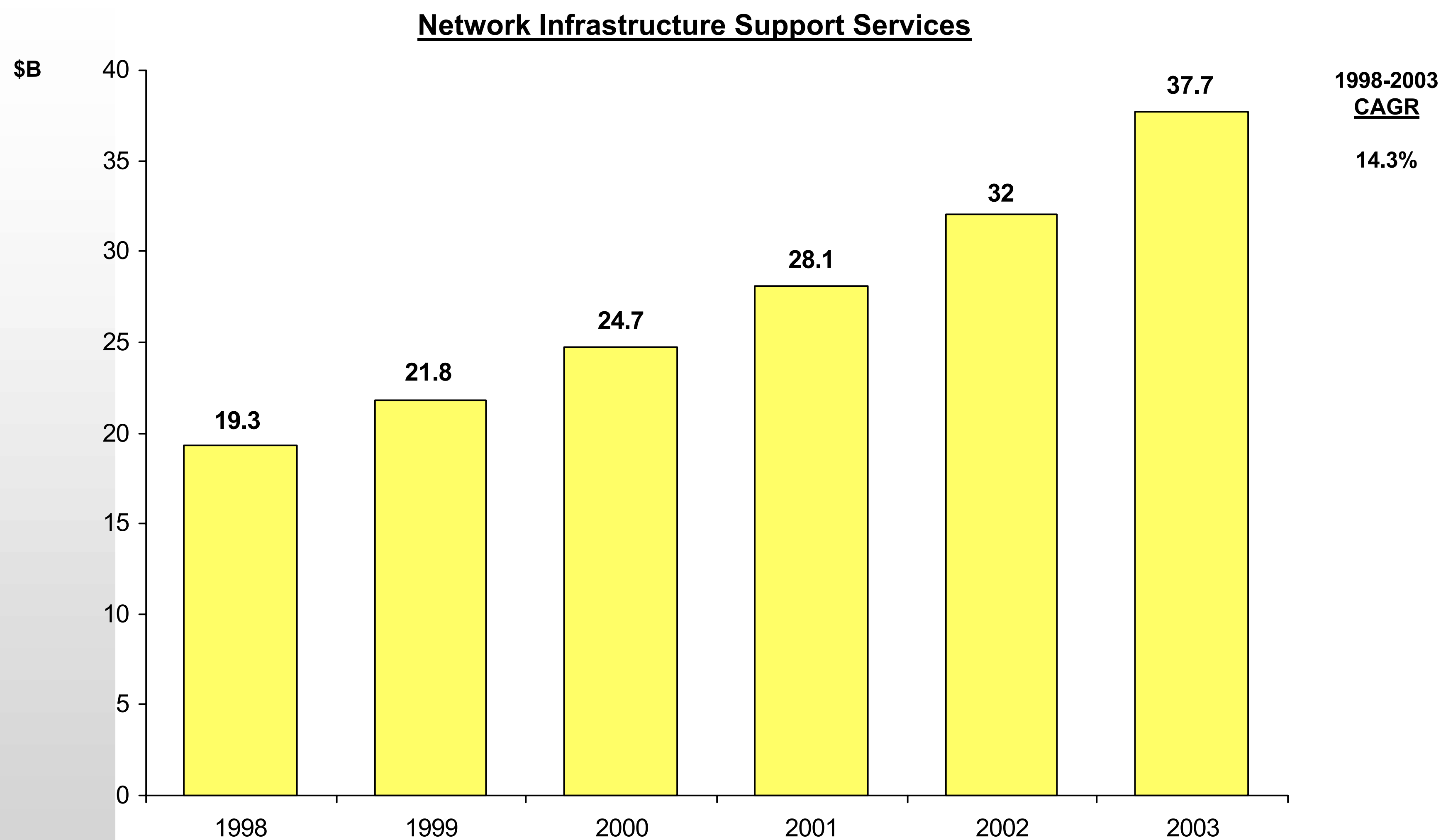
Carriers Expected To Grow Equipment and Facilities Spending



SOURCE: MMTA

Carriers Need To Support and Maintain Installed Equipment (New and Legacy)

Support Expenditures Will Grow At A Faster Rate



SOURCE: MMTA; TAG analysis

Growth Opportunities For Minority Suppliers

Manufacturing	Enterprise Network Management	Customer Relationship Management	Installation

Enterprise Network Management Opportunity

Installation and support of end-user premise based communication equipment

Maintenance and upgrading of equipment

Non-core activities for most equipment manufacturers

Very fragmented customer base

Key Success Criteria

- Service support to minimize customer downtime
- Technical capability required to upgrade end-user equipment with new applications
- Operation focus on low cost and high reliability
- Technical employees and broad geographic coverage

Customer Relationship Management (CRM) Opportunity

Call center management

Customer service and sales supports

Information processing such as billing, invoicing, settlement, payment and collections

<u>Key Success Criteria</u>

- Provide customer relationship management intelligence to service providers on different customer segments
  - Determine the bundle of services for customer segments which will drive profitability
- Build knowledge in an environment of rapid new products and applications
- Internet-enable low value-added processes
- Strong IT capability/call center experience/contract management

Contract Manufacturing/Sub-Assembly Opportunity

Manufacturing of lower electronic sub-assemblies

- Leveraging ability to perform processes with lower factor costs

Equipment manufacturers continuously introducing new products

- Outsourcing of low volume legacy products

Working with technology providers to integrate new technology devices into telecom modules

<u>Key Success Factors</u>

- Internet-based order management
  - Seamless interface with manufacturers, production planning
- Capabilities to handle manufacturing complexities
  - Low volume but multiple product variations
- Large enough (well capitalized) to support multi-year contracts

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Key Points: State of Minority-Sourcing

Minority population fastest growing consumer segment and will be a significant share of industry consumers

- Understanding and responding to these consumers critical to future success

Telecommunication companies understand that minority sourcing creates value

- Success stories exist with minority suppliers providing shorter delivery times and increased service levels

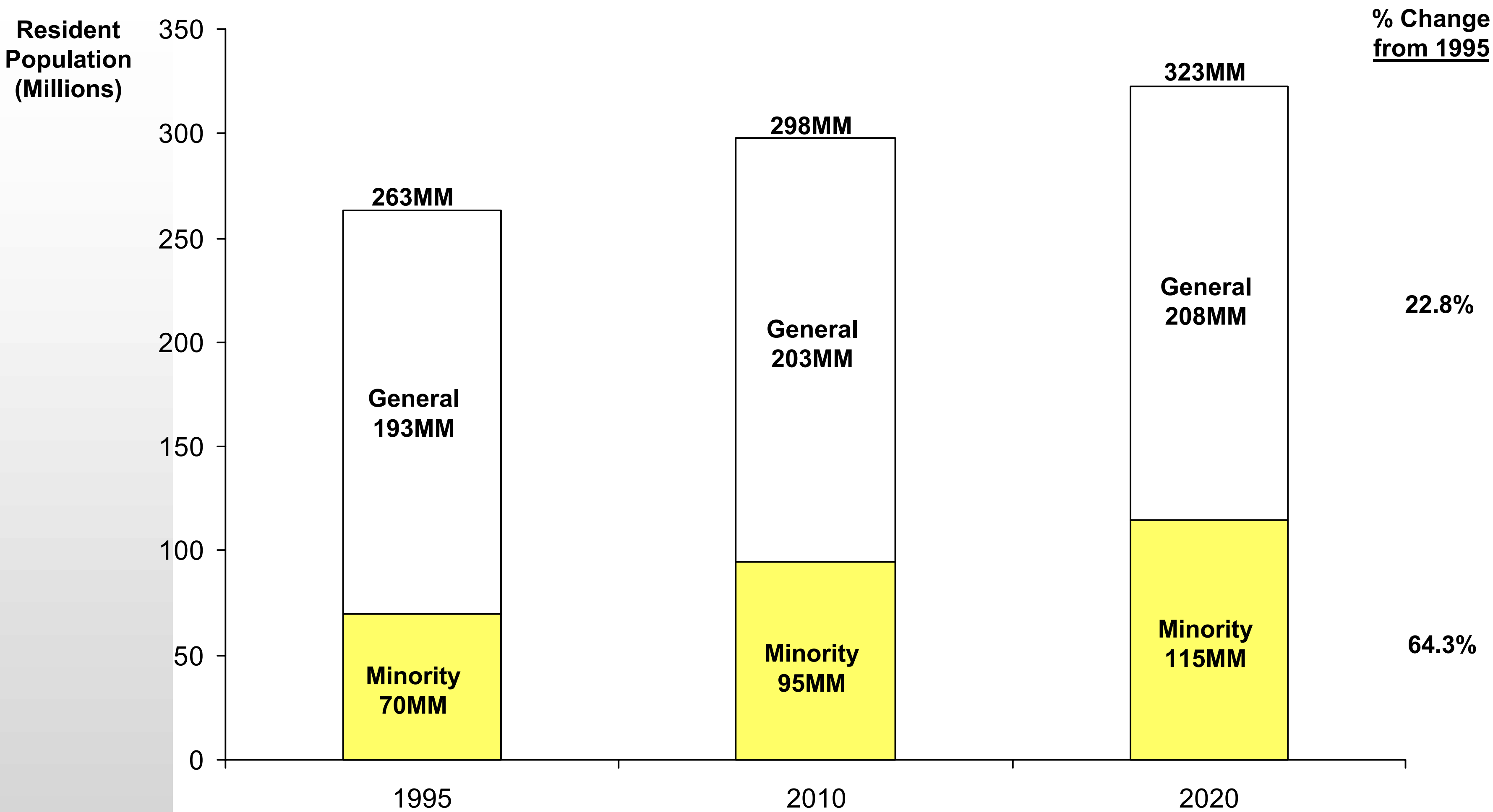
Telecommunication companies committed to minority sourcing

- SuperComm 2000 signatories target an increase of $1.5B to MWDVBE sourcing

Current sourcing dollars concentrated in VAR and field installation categories

- Opportunity to drive inclusion in other areas of the value chain

Minorities Becoming Larger Share of Population



Focusing on Minority Consumers Is Critical To Success

SOURCE: U.S. Census

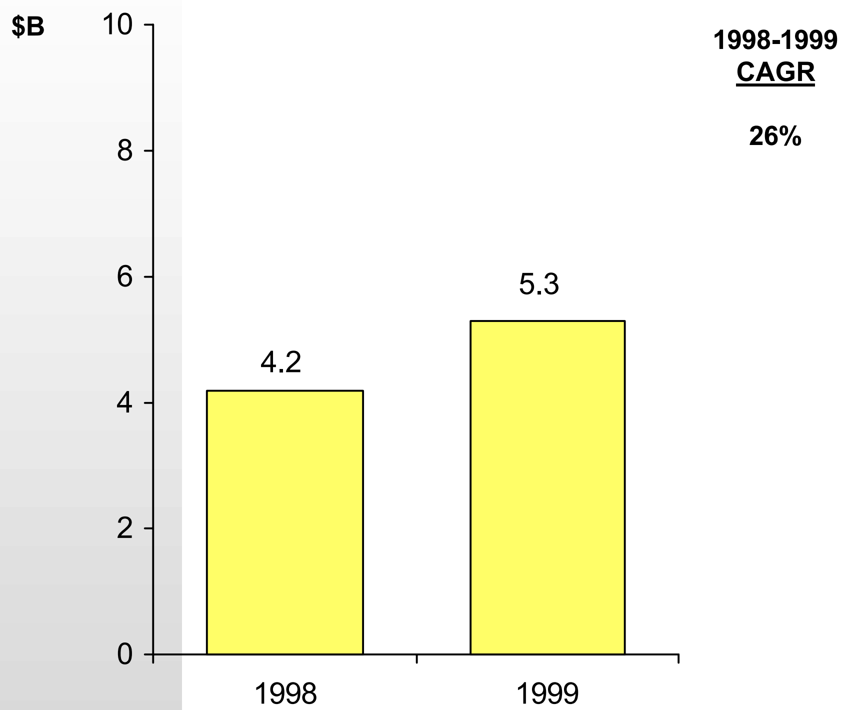
Telecommunication Companies Understand Minority Sourcing Is Good Business

Minority businesses create value for carriers and equipment manufacturers

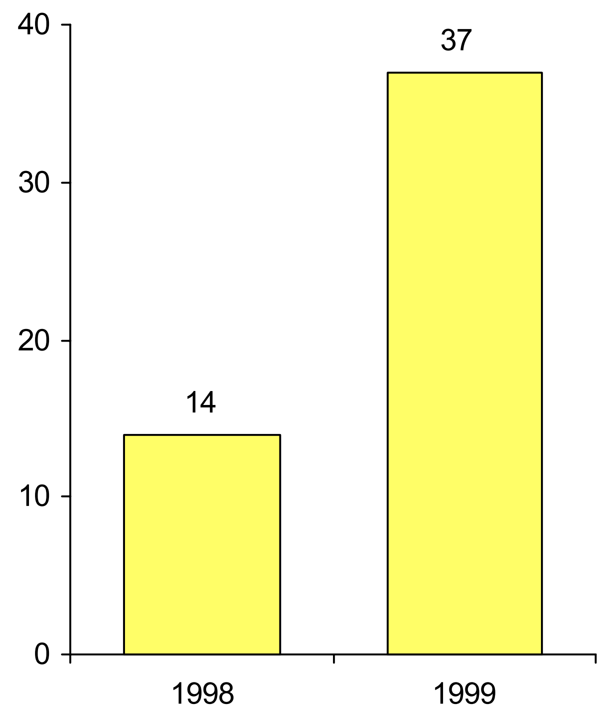
- Carriers leverage minority sourcing in brand differentiation and building loyalty
  - Minority businesses and consumers attractive segments
- Equipment manufacturers take advantage of minority suppliers' lower factor cost capabilities:
  - Lower cost customization and faster fulfillment of carrier equipment needs
  - Reliable low cost partners for outsourcing of non-core business processes e.g. network installation and support
  - Potential for low cost manufacturing and assembly of legacy equipment

Telecommunications Industry Has Shown Commitment to Minority Sourcing (SuperComm 2000)

MWDVBE Purchasing Spend



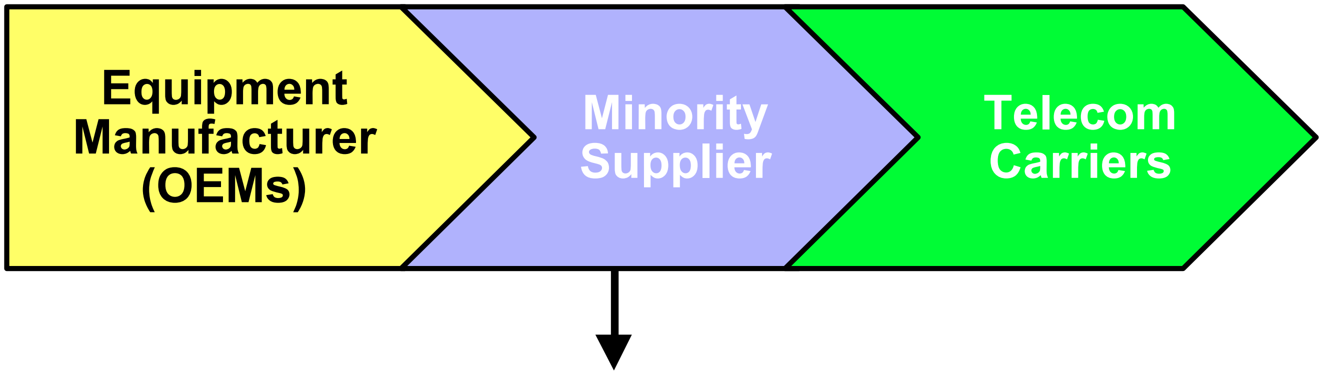
SuperComm SDC Signatures



Committed to Add 25 New Signatories and an Additional $1.5B in MWDVBE Spending

SOURCE: SuperComm press release

Most Large Minority Dollar Transactions Focused On VAR Roles

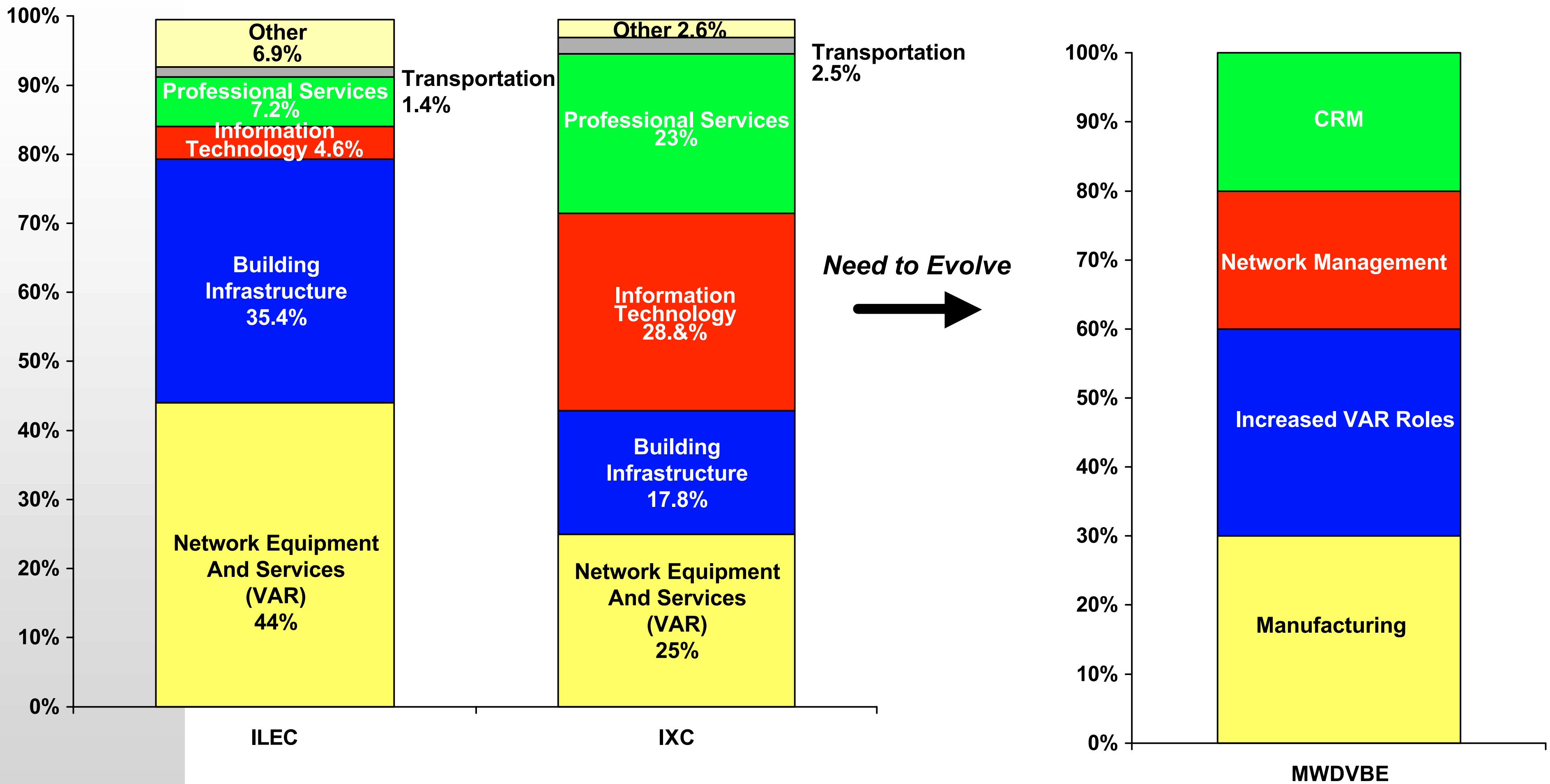


- Shorter delivery time
- Higher fill rate/service levels
- Engineer Furnish & Installation (EF&I)
- Customer configuration

A Win-Win Scenario for OEMs and Carriers

SOURCE: MBDA documentation (New Realities Telecom Paper)

Minority Spending by Commodity Category



Additional Sourcing Opportunities Across The Value Chain

SOURCE: LEC and IXC internal data; TAG analysis

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Key Points: Growth Strategies and Business Structures

Industry dynamics and sourcing opportunities favor larger scale suppliers

- Economies of scale, geographic scope and risk bearing all are a function of size
- Ability to deliver cost performance over the long term
- Scale and growth are mutually reinforcing

Organic growth presents significant time and investment challenges

- Tight labor markets and increase in organizational/management complexities
- Must look for alternative ways to gain scale

Strategic alliances as a tool in minority sourcing relatively new in the industry

- What best practices can be learned from the automotive industry?

Significant efforts from the MBDA and industry players will be required to create much needed alliances

Business Case For Larger Minority Suppliers

High growth industries drive industry players to focus on delivering core value propositions

- Focused on core competencies; outsource non-core operations
- Favors a “fire and forget” approach to outsourcing partners

Outsourced processes are typically broad in scope but fragmented in execution/operation

- Information processing of account receivable activities at multiple locations
- Customers desire turnkey solutions due to pace of innovation and technology adoption

Industry players seek to reduce surveillance, monitoring, and transaction costs of outsourcing

- Trending towards working with fewer established suppliers but larger transactions

Seek Suppliers Who Possess Knowledge, Scope and Scale to Execute Functions Seamlessly

Larger Minority Business Entities Are Self-Reinforcing

Larger suppliers have scope and scale

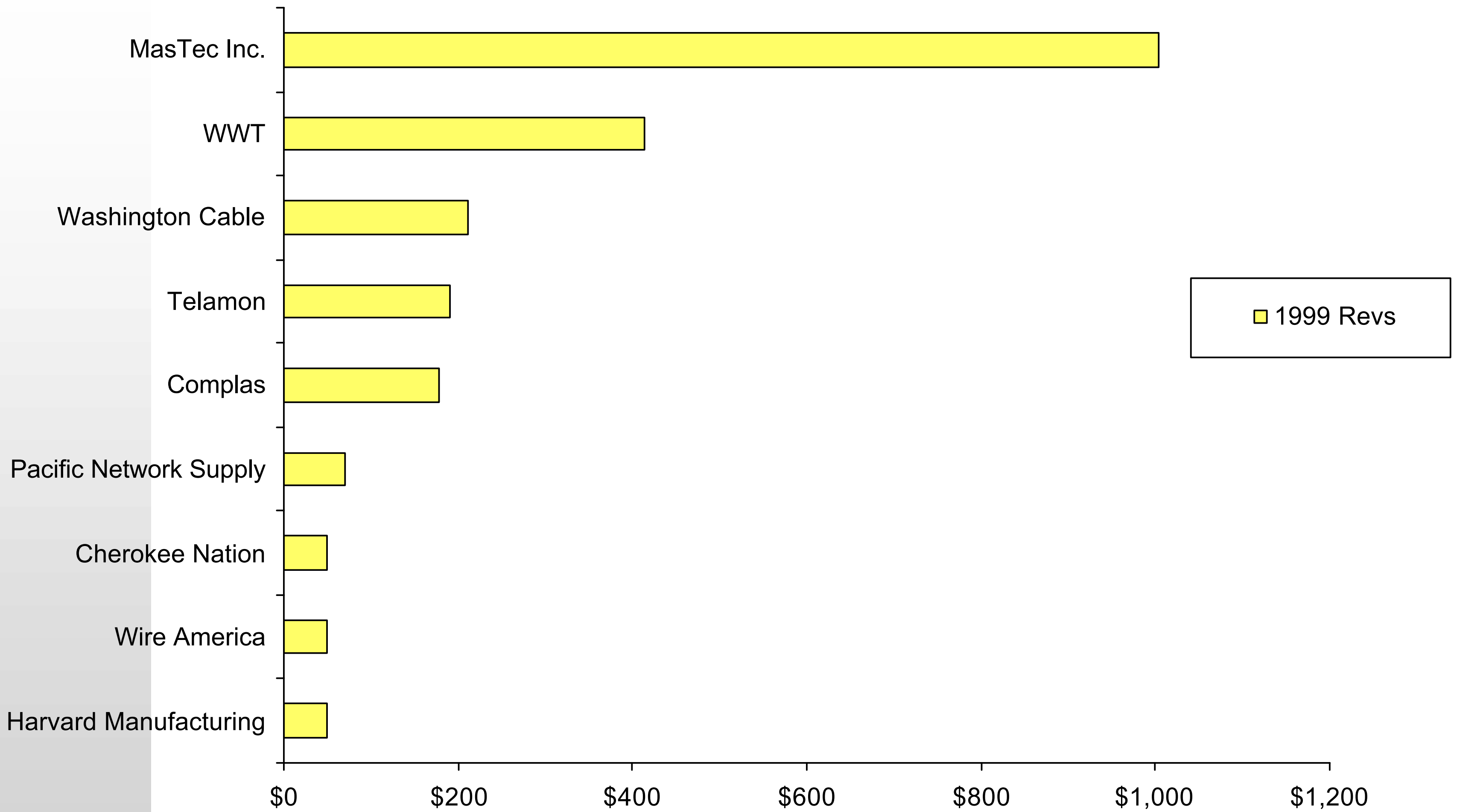
- Leverage economies of scale to achieve profit levels which allow reinvestments and attracts outside capital
- Provides the ability for the organization to withstand downside operating risks
  - Product recalls, warranty risks etc
- Increases the company's ability to retain and attract world class talents

Ability to invest in building internet capabilities to ensure long term competitiveness

Enables organization to grow business across multiple industries

- Leveraging infrastructure and capabilities

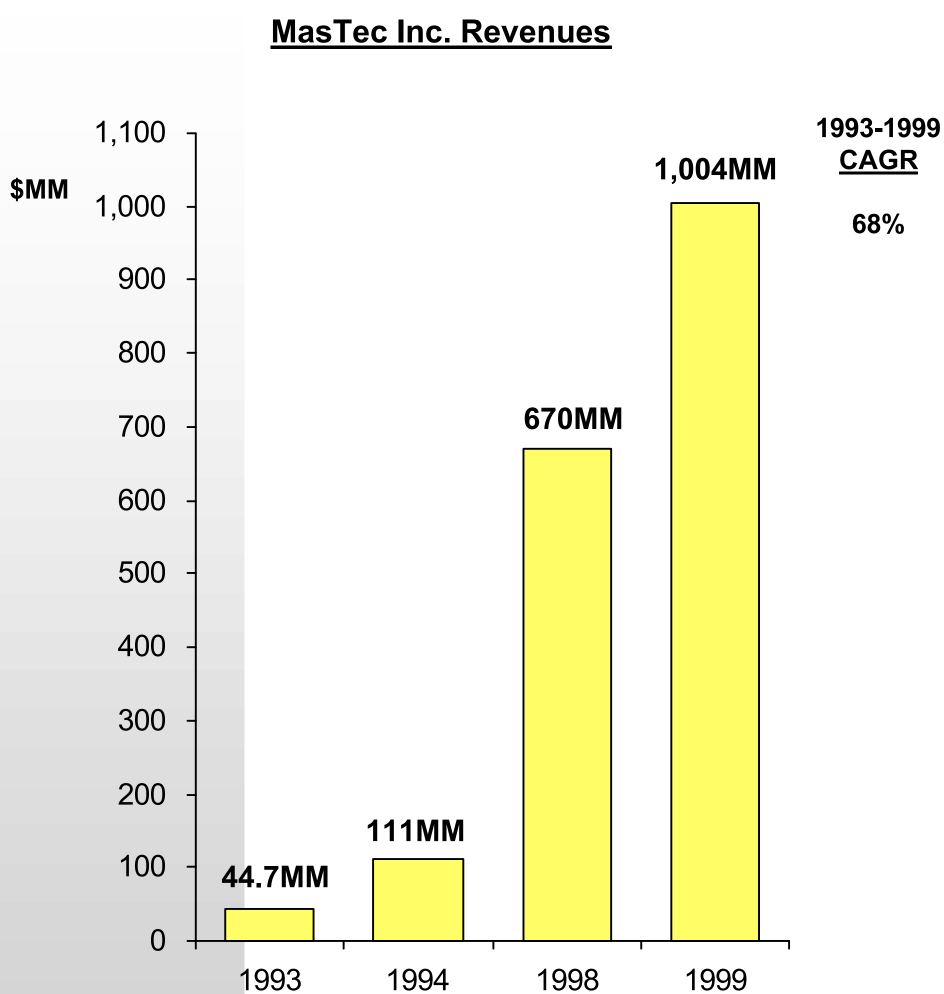
Challenging To Drive Scale Strictly By Organic Efforts



What Can We Learn From MasTec Inc. ?

SOURCE: Company annual reports, 10K; MBN, Hispanic Business Magazine,TAG analysis

MasTec Inc. - Installation and Network Management
Design, Installation and Maintenance of Internal and External Network



Key Highlights

- Hispanic family largest shareholder
- Originated from an acquisition in 1994
  - Burnup & Sims (public company)
- Growth driven by focused acquisitions to build scale and geographic scope
  - Approximately 33 acquisitions
  - 200 locations throughout North America
- Divested non-core businesses
  - Spanish subsidiaries
  - Non-related operations
- 1998 to 1999 growth all organic/internal
- National footprint and name recognition

Acquisition, Mergers and Strategic Alliances Provide Additional Growth Vehicles

SOURCE: Company annual reports, 10K; TAG analysis

Partner Collaboration and Changing Customer Requirements Provide a Framework for Which Business Structures Are Suitable

Degree of Collaboration With Partner	Changing Customer Requirements: Low	Changing Customer Requirements: High
High	• Low-cost assembly • Managing outsource functions – Partners bring complementary skills for defined goal – **Joint venture relationships**	• Contract (module) manufacturing” – Longer term interest – **Alliance with technology specialist**
Low	• Installation/network management – Consistency in executions – Economies of scale – **Acquisition/mergers**	• Consortium space “Ideal for coordinating standard and risk dispersion.”

Business Structure Must Reinforce Competitive Capabilities

Business Structures That Drive Growth and Scale Depend on Value Chain Opportunities

Typically Defined by Customer Requirements

	Contract Manufacturing	Low-Cost Assembly
Customer Requirements	• Low cost • High reliability • New technology	• Low cost assembly • JIT/sequenced products
Business Objective	• Integrate new technologies into telecom applications	• Outsourcing partner to equipment manufacturer - Assembly of lower end modules
MBE Competitive Levers	• Low cost manufacturing - Factor cost • Shorter cycle time	• High process capability • Ability to integrate into production planning (virtual Integration)
Suggested Business Structure	• Strategic investor model with technology specialist or provider (alliance with specialist) • Target innovative technology factors - Optoelectronics, WDM, etc.	• Joint venture with equipment manufacturer - Sharing best practices - Gain manufacturing and process expertise
Example	• Motorola/Saturn Electronic & Engr. partnership in telematics (Auto applications)	• Bridgewater Interiors and Lear Corporation

Business Structures That Drive Growth and Scale Depend on Value Chain Opportunities

Typically Defined by Customer Requirements

	Installation	Enterprise Network Management	CRM Process/Tasks
Customer Requirements	• Turnkey solution from order to installations • Shorter cycle times • National coverage	• Turnkey solutions for carrier/end users • Ability to bear operating risks • High service levels	• Low cost management of critical customer relationship process • Value-based differentiation • Provide improvement in customer service
Business Objectives	• VARs forward integrate to provide total solution	• Build scale and brand equity • Geographic scope - National footprint	• Become the "EDS" for call centers operation/CRM Processes
MBE Competitive Levers	• Knowledge of customer requirements • Low cost • Distribution capabilities	• Technical expertise • Reliable customer service • Experienced management	• Technical expertise • Lower factor cost • Experienced management
Suggested Business Structure	• Mergers/acquisition of large regional or national installation companies	• Very fragmented • Build rollup/acquisition platform	• Joint venture with carriers • "Operated by Others" (OBO relationship)
Example	• Mas Tec Inc	• MasTec Inc.	•