



JEA Telecom

Strategic Alternatives Development | July 2018



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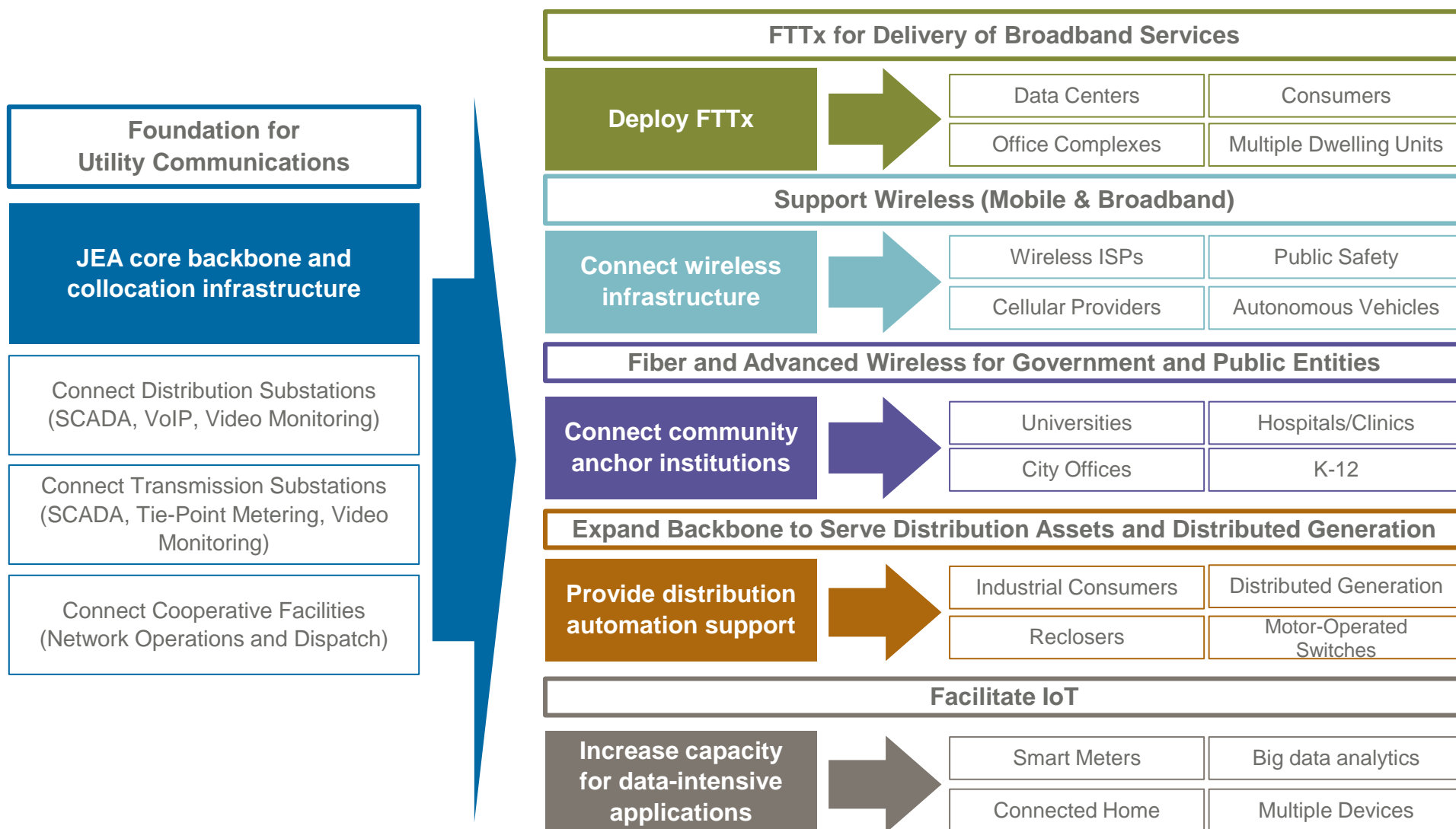
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Broadband has come the 4th utility







Critical infrastructure for the City of Jacksonville



Communications infrastructure industry

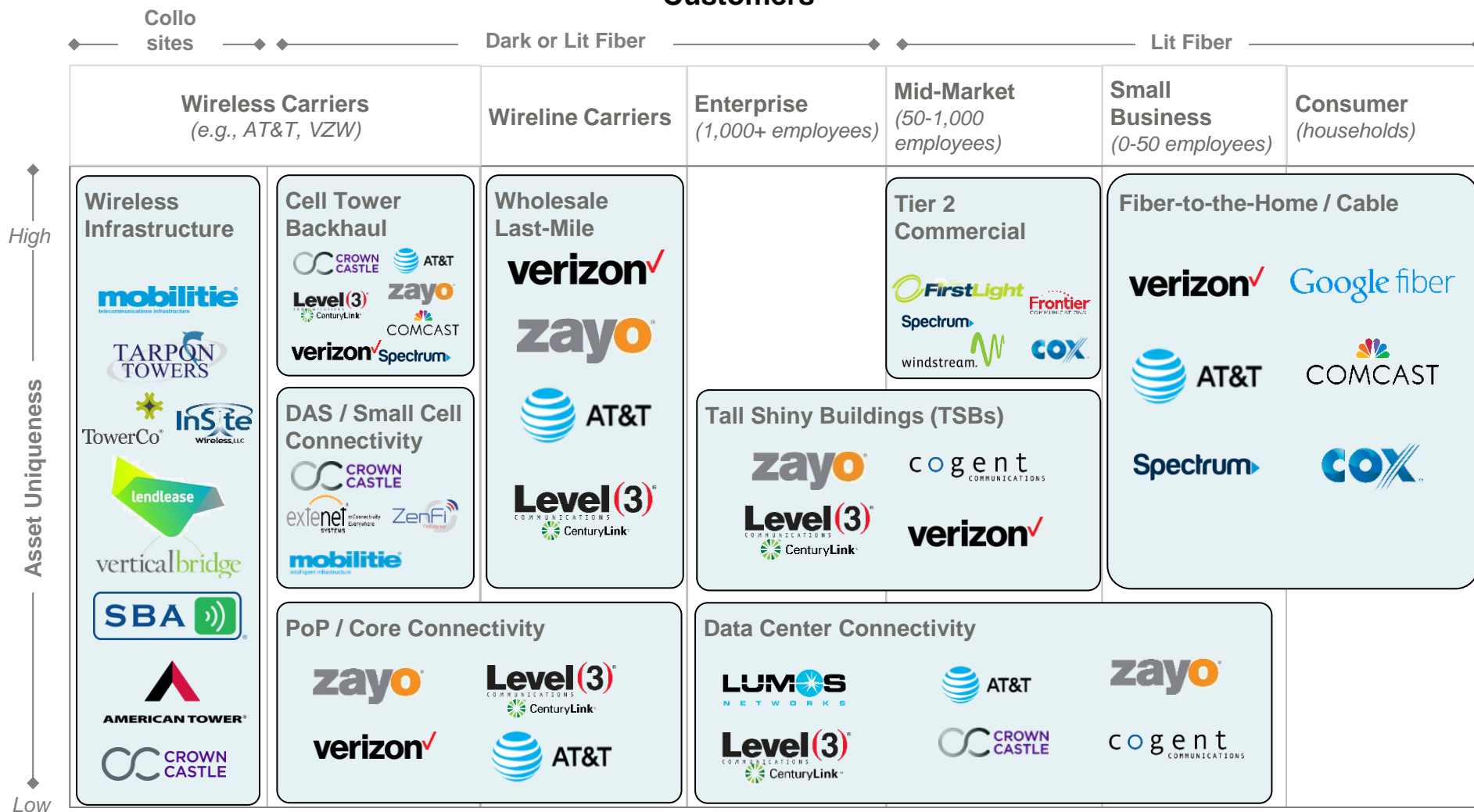
Key points

- Metro fiber companies operating results and a number of core metrics bear a close resemblance to data center and tower service providers
- Critical infrastructure
- Rapid growth in demand because of increasing bandwidth capacity need
- Long-term, take-or-pay contracts and success-based capital spending
- High growth and high margins
- High operating leverage

	Metro Fiber 	Competitive service providers 	Data Centers 	Towers 
Customer focus	■ Enterprise & Carrier	■ SMB, Enterprise & Carrier	■ Enterprise & Carrier	■ Wireless carriers only
Revenue model	■ Majority MRR	■ Majority MRR	■ Majority MRR	■ Majority MRR
Contract terms	■ 5–7 years	■ 2–7 years	■ 2–5 years	■ 5–7 years
Monthly revenue per customer/ tenant (\$000s)	■ \$20.0+	■ \$0.8–\$20.0+	■ ~\$20.0 (Retail)	■ \$2.0–\$2.4 per tenant
Monthly churn	■ 0.5%–1.0%	■ 0.5%–1.5%	■ 0.5%–1.5%	■ 0.0%–1.0%
EBITDA margins	■ 50.0%+	■ 30%–40%	■ 40%–55%	■ 60%–70%
FCF margins	■ 15.0%+	■ 10%–20%	■ 0%–10%	■ 20%–45%
Capex profile	■ Minimal maintenance ■ Primarily growth-based	■ Medium maintenance ■ Heavily growth-based	■ Medium maintenance ■ Heavily growth-based	■ Minimal maintenance ■ Primarily growth-based

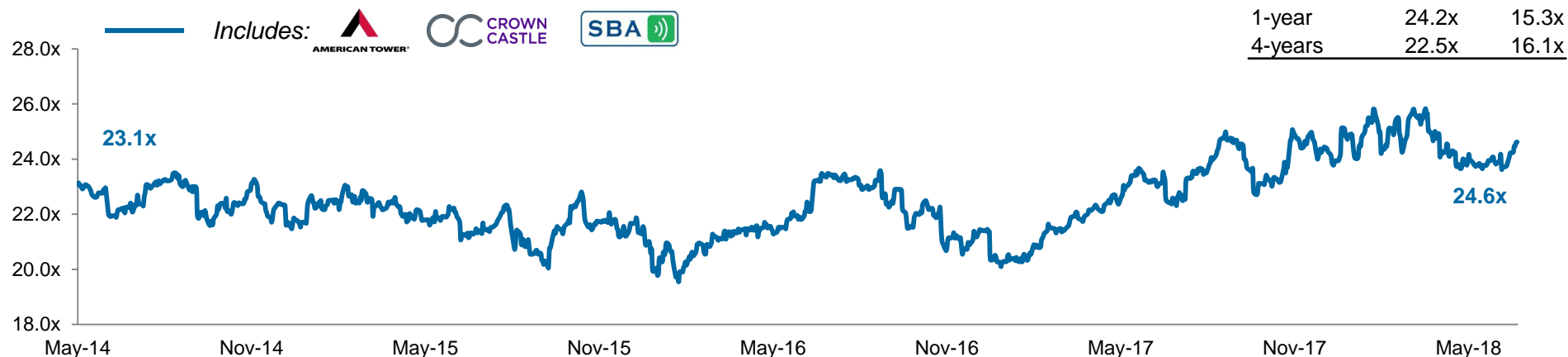
Communications infrastructure competitive landscape

Customers

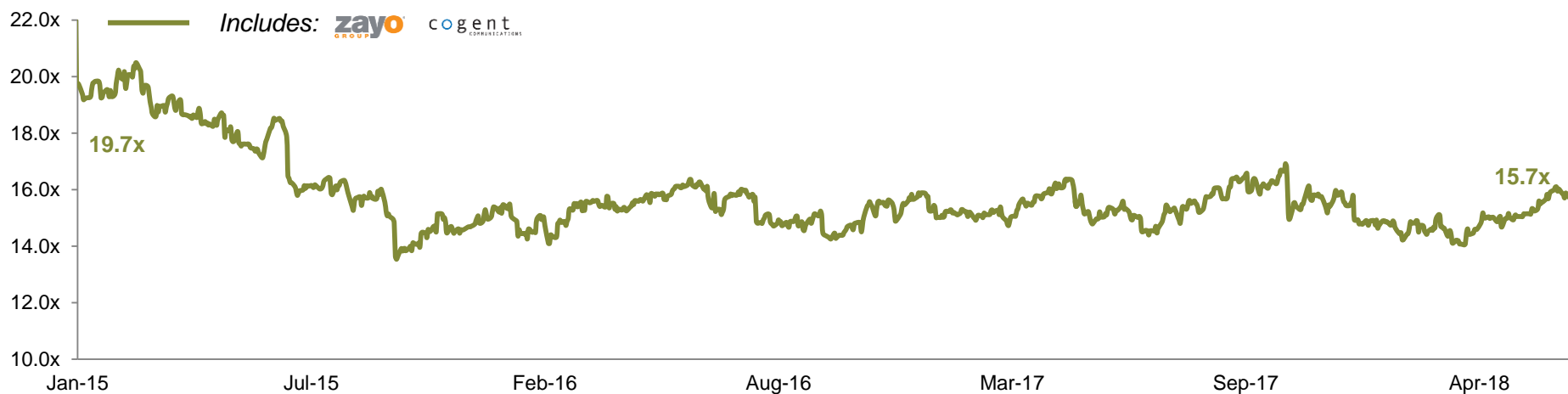


Public communications infrastructure valuation trends

Tower comparables – 4-year LTM EV / EBITDA



Fiber comparables – 4-year LTM EV / EBITDA



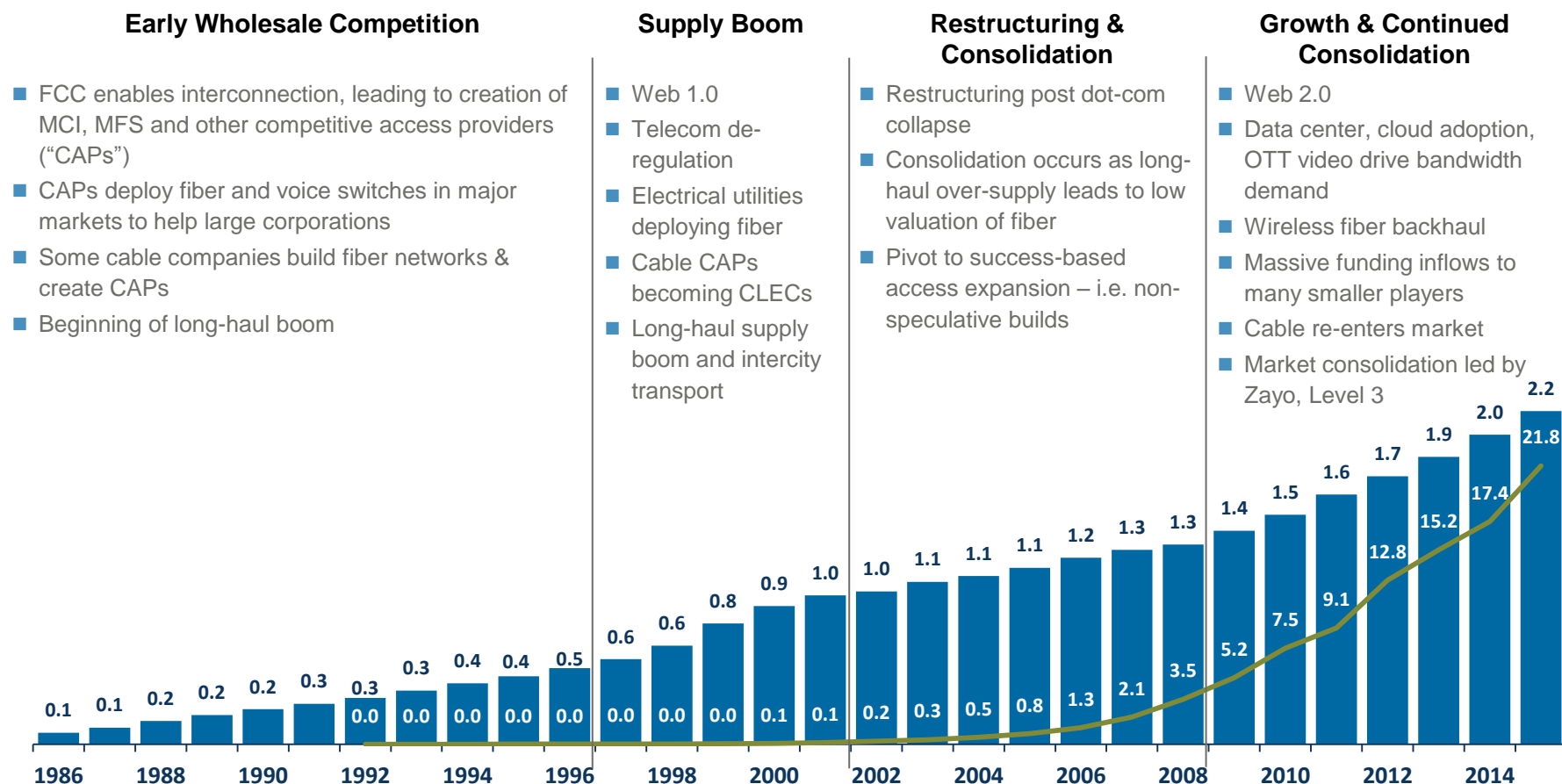
Source: Bloomberg as of 07/02/2018

Fiber market overview – fiber miles & data demand

Demand growth has spurred investment by incumbents and competitive fiber providers, which began with long-haul in the mid 1980s and is now moving to access

U.S. Cumulative Fiber Route Miles and Monthly Data Usage

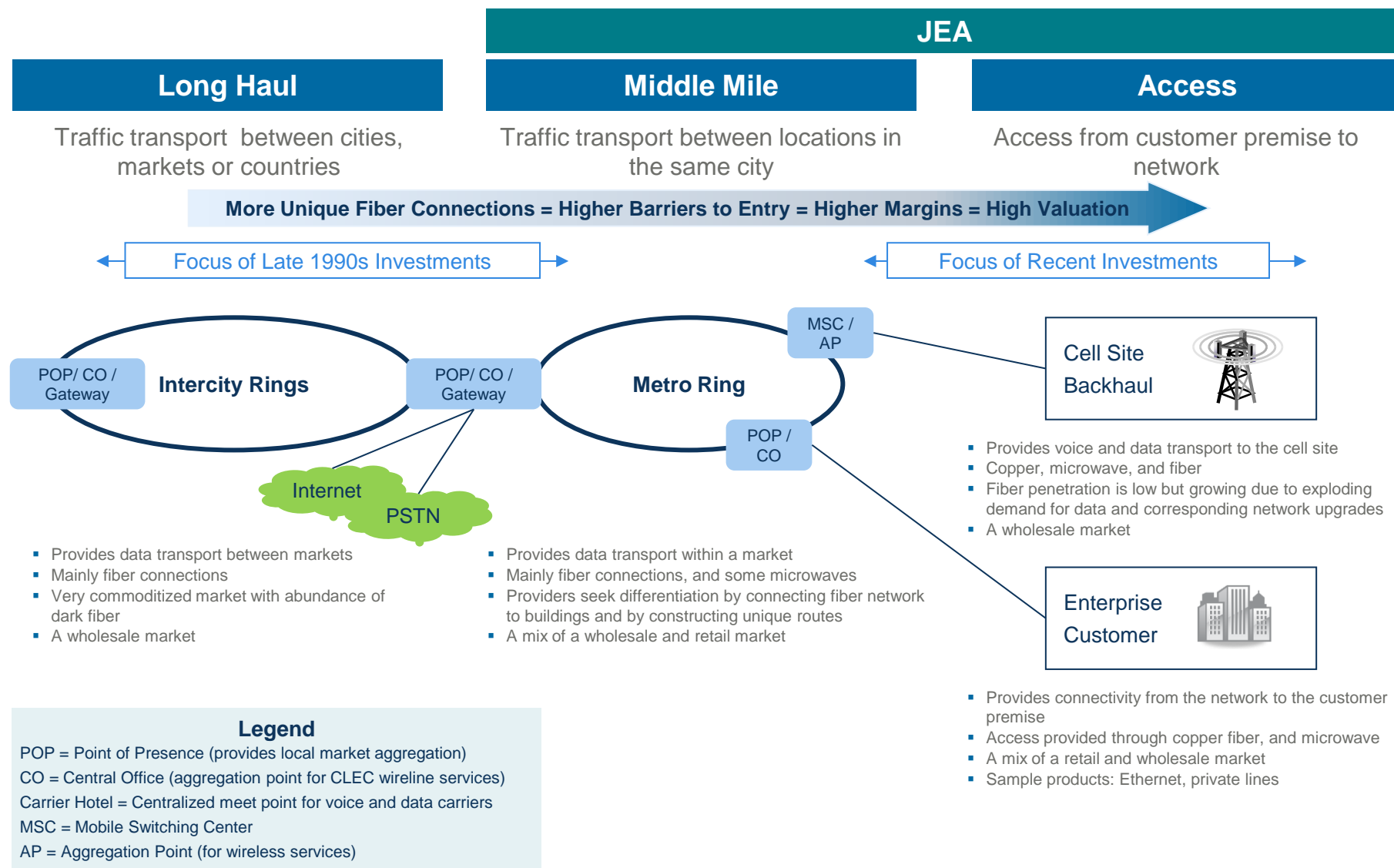
■ Total Route Miles (millions) — Monthly Data Usage (EBs per month)



Sources: AV&Co. research; FCC; Wesleyan University, Department of Economics, SNL Kagan, Cisco VNI, CTIA

Fiber market overview – network architecture

Investment in the US has moved from connecting cities to connecting buildings and towers

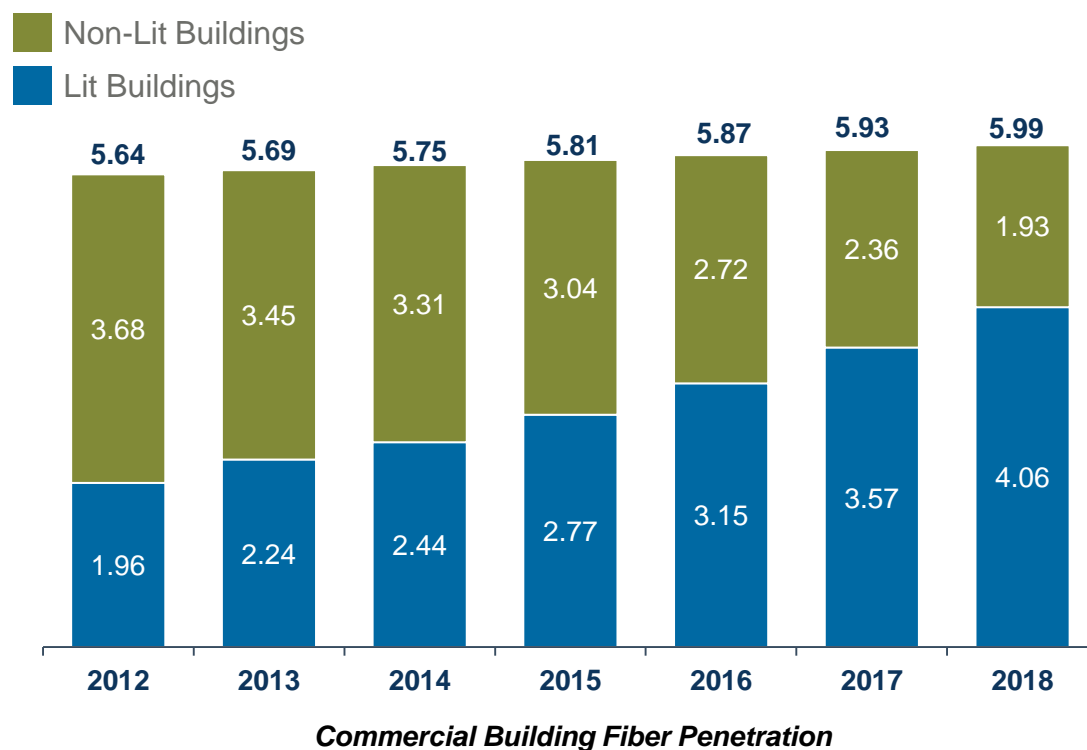


Enterprise BB technology trend

In the enterprise space, fiber building penetration is expected to continue to increase, making LECs continue to invest capital to build out their own fiber networks

U.S. Fiber Penetration of Commercial Buildings

(Millions of buildings, US 2010-2018)



Key Findings & Insights

- Strong growth expected to continue through 2018
- LECs will need to continue to invest in enterprise fiber deployments
- Other technologies, including fixed wireless, are unlikely to replace fiber for enterprise

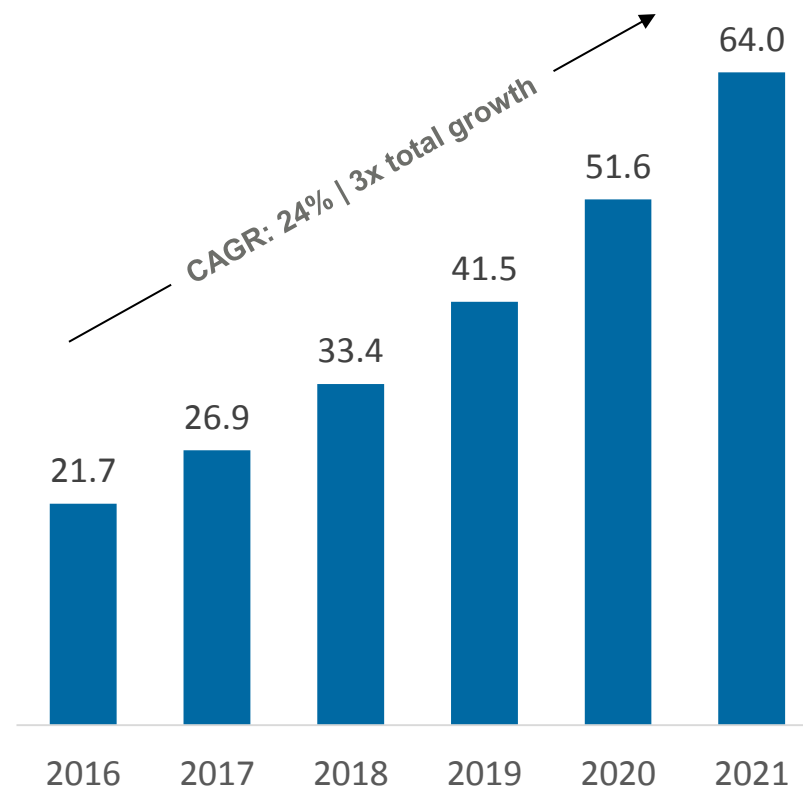
Market growth drivers – increase in consumption

Users are consuming more and more bandwidth as new use cases drive internet traffic – fiber is the only connectivity medium that can meet these bandwidth needs

U.S. Fiber Growth Drivers

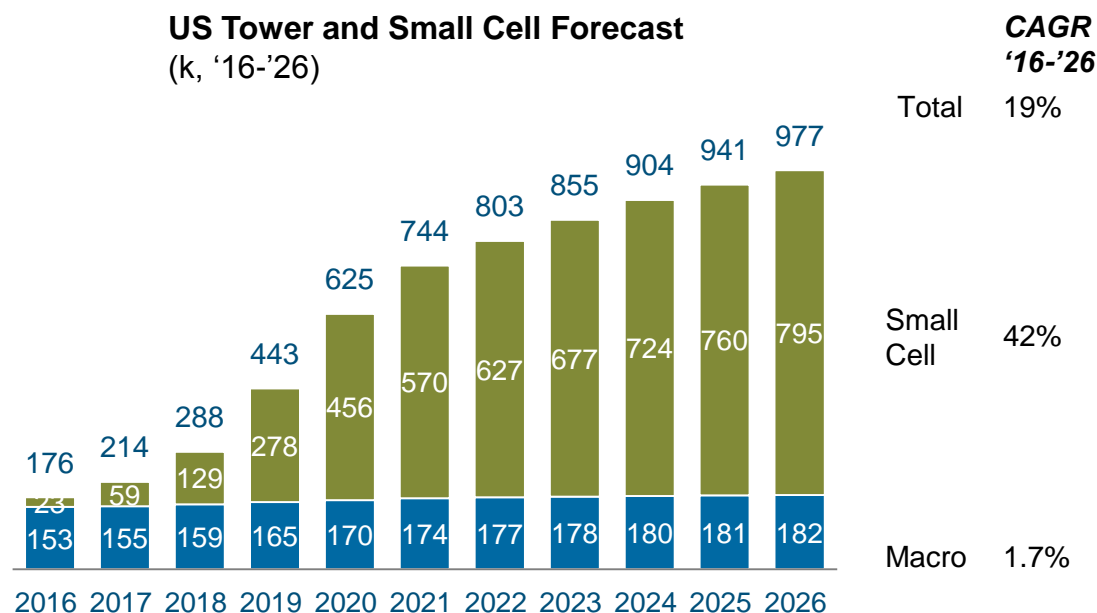
	2016		2021
Fixed Broadband Speeds	36 Mbps	2x	76 Mbps
Video Traffic	16.3 EBs per month	3x	50.4 EBs per month
Connected Devices	2.5 billion (7.8 per capita)	2x	4.4 billion (13.2 per capita)
Mobile Data Traffic	1.3 EBs per month	4x	5.6 EBs per month
Smartphone Data Usage	11 GB per User (includes Wi-Fi)	3x	36 GB per User (includes Wi-Fi)
Tablet Usage	11 GB per User (includes Wi-Fi)	3x	35 GB per User (includes Wi-Fi)
4K TV Usage	4 GB per User (includes Wi-Fi)	10x	43 GB per User (includes Wi-Fi)

U.S. Internet Traffic (Exabytes per month)



Fiber market – tower backhaul market

Rapid increase in small cells together with a transition to 5G are expected to drive significant growth in the tower backhaul industry over the next 5-10 years



5G Implications

- **Dramatic uptick in fiber demand** due to network densification
 - Dense urban areas require additional cells to cope with user demand
 - Shift to mm waves increases throughput but reduces cell radius
- Corresponding **shift from lit to dark fiber** for towers
 - Dark fiber is often more economical for carriers over the lifetime of a site
- Carriers will still need **lit macro towers outside of urban cores** where coverage is a priority

Market Economics (2017)

<i>Morphology</i>	<i>Macro ARPU</i>	<i>Macro Fiber %</i>	<i>Small Cell ARPU</i>	<i>Small Cell Fiber %</i>
Urban	\$795	100%	\$350 / mo.	100%
Suburban	\$1233	79%	n/a	n/a
Rural	\$1670	62%	n/a	n/a

Assumption Trends

- **Small cell market is still evolving** as demand increases
- **Unit costs are expected to decline**, but are outweighed by the increase in quantity
- Fiber penetration expected to increase ~10pp by 2021

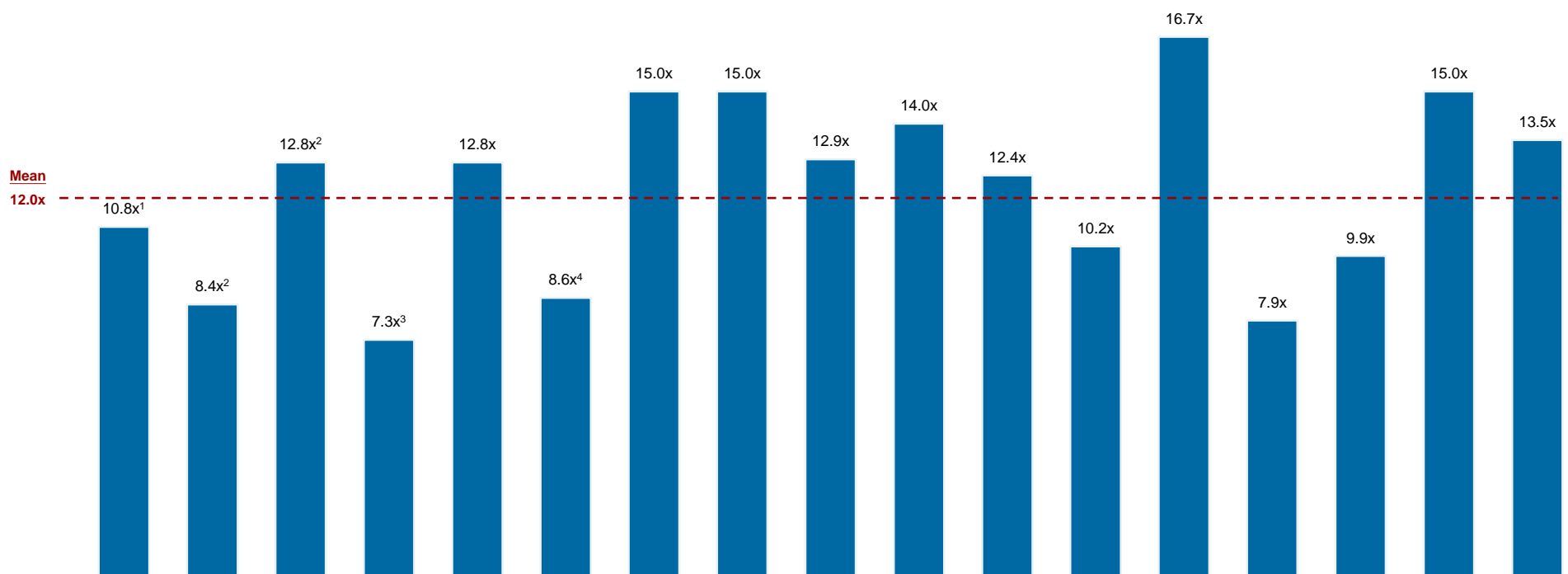
Public dark fiber pricing

	Term (years)	Up-front cost per strand	Maintenance cost per route mile	Price per month	Price per year	Effective price per month per pair	Effective price per year per pair	Effective price per month per strand (assumes purchase of pair)	Effective price per year per strand (assumes purchase of pair)
Metro-area Routes									
IL suburban/small town	20	\$1,500	\$300	-	-	\$13.75	\$165	\$6.87	\$82.50
Burbank	5			\$14.58		\$29	\$350	\$14.58	\$175
	15	-	-	\$11.25	-	\$22.50	\$270	\$11.25	\$135
TN small town	-	-	-	-	\$500	\$83	\$1,000	\$41.60	\$500
TN small town	-	-	-	-	\$1,000	\$166	\$2,000	\$83	\$1,000
Large Urban Routes									
JEA									
Palo Alto	-	-	-	\$177-295	-	\$355-591	\$4,360-7,092	\$177-295	\$2,124-3,540
CA large urban	-	-	-	\$120-300	-	\$320-600	\$2,880-7,200	\$120-300	\$1,440-3,600
IL urban	20	\$3,000	\$600	-	-	\$27.50	\$330	\$13.75	\$165
VA urban	20	\$1,500- 2,000 (includes full construction cost)	-	-	-	\$100-550	\$1,200+	\$50-275	\$600+
Long-haul Routes									
CA rural/suburban	20	\$1,000	\$250	-	-	\$9.37	\$112.50	\$4.68	\$56.25
IL rural	20	\$750	\$150	-	-	\$6.87	\$82.50	\$3.44	\$41.25
IL rural/suburban	20	\$1,500	\$250	-	-	\$13.54	\$162.50	\$6.77	\$81.25
NC rural	20-25	\$750	\$250	-	-	\$7.29	\$87.50	\$3.65	\$43.75
MD rural	-	-	-	\$45	-	\$90	\$1,080	\$45	\$540

Precedent fiber transactions

FV/LTM EBITDA

Deal value: \$60.2bn



Date	Jun	Dec	Dec	Oct	Jun	Jun	Apr	Apr	Jan	Mar	Oct	Nov	Nov	Nov	Feb	Mar	July
Target	Fiber-gate	Sidera	Light-ower	Dukenet	TW Telecom	Eventis	Fibertech	Sunesys	PEG Band-width	First-light	Level 3	Hibernia	FPL Fibernet	Electric Light-wave	Lumos	Southern Light	Light-ower
Acquiror	Zayo	Berkshire Partners	Berkshire Partners	Time Warner Cable	Level 3	Consolidated	Light-ower	Crown Castle	CS&L	Oak Hill	Century-Link	GTT	Crown Castle	Zayo	EQT	Uniti	Crown Castle
Deal size (\$mm unless otherwise noted)	118	630	1,400	600	7,300	408	1,900	1,000	450	N/A	34,000	590	1,500	1,420	950	700	7,100

Source: Company filings, websites, and press releases; Note: Multiples based on LTM EBITDA (post-SBC) unless otherwise noted; ¹ Zayo investor presentation May 2013, represents LQA adjusted EBITDA multiple per management; ² Financials per debt offering information memorandum; ³ DukeNet 2013E adjusted EBITDA based on Wall Street research estimates; ⁴ Represents entire Enventis business which comprises of RLEC and fiber segments;

Industry landscape and rationale for considering JEA tower alternatives

Rapid increase in demand for wireless bandwidth

- In recent years, consumer demand for wireless services continued to grow at a record pace
- This growth in wireless services is driven by the increased usage of wireless data applications
 - Mobile entertainment (such as mobile video, mobile applications, and social networking)
 - Mobile internet usage (such as email and web browsing)
 - Machine-to-machine applications
- As a result, consumer and enterprise wireless devices are trending toward bandwidth-intensive devices such as smartphones, laptops, tablets and other emerging devices

Urgent need to expand existing infrastructure

- Growing wireless consumption has resulted in wireless carriers continuing to invest in networks to improve network quality and capacity
- Additional antennas or other equipment for the transmission of services requires new tower capacity and is driving lease up and revenue growth
- Additionally, continued deployment of 4G long-term evolution ("LTE") networks, new spectrum licensed by the Federal Communications Commission ("FCC") to wireless carriers, and the introduction of 5G technology will require significant expansion of current tower capacity in the US
- FirstNet
- Environment has placed increased pressure on tower providers to support carriers needs and the major challenge that faces the industry is addressing this increased demand in a timely manner
- Increased investment in new tower builds will address a portion of the demand but the vast majority of the collocation capacity required will come from the acquisition of underutilized tower assets and the development of DAS and small cell platforms to complement macro tower infrastructure
- Result has been a competitive tower M&A environment and an increase in valuation expectations for quality assets

Situation has created a perfect storm for owners of quality assets such as JEA

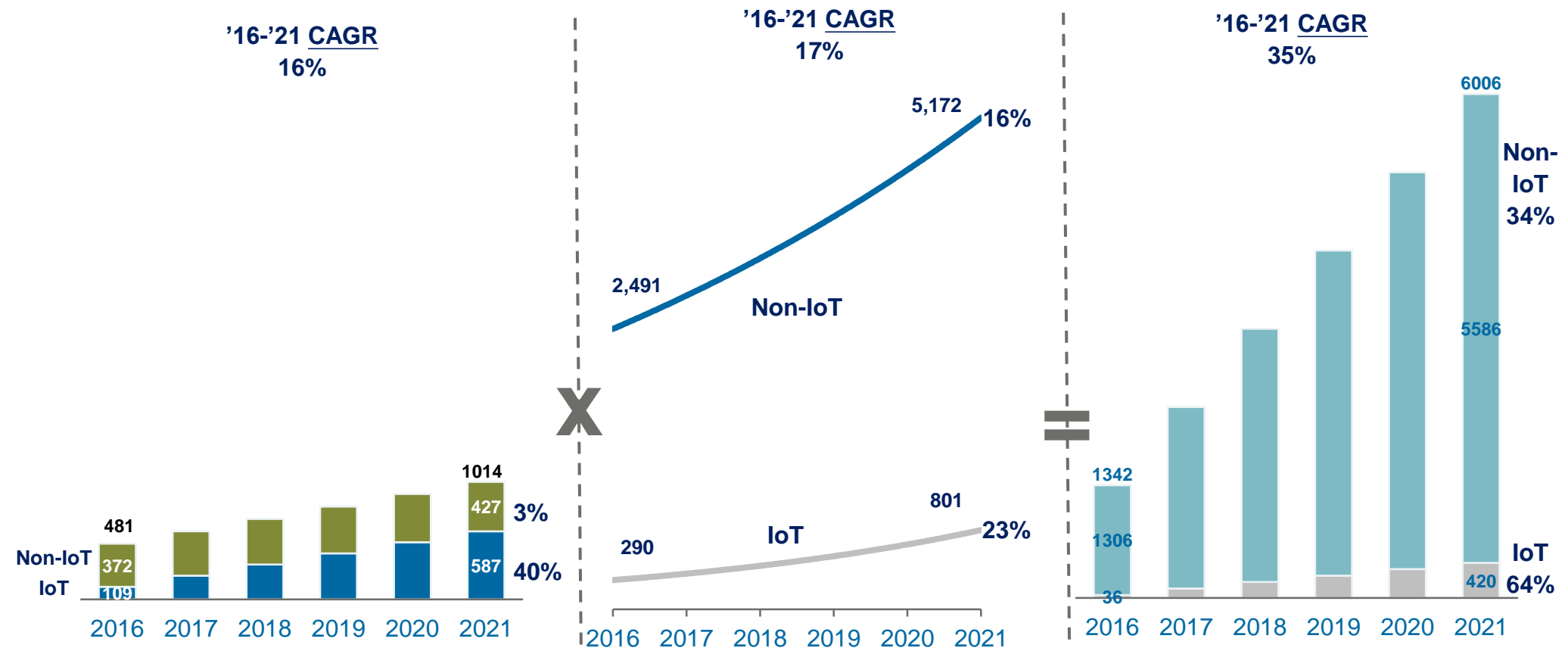
US mobile data growth

Expected to grow at 35% CAGR through at least 2021

U.S. Total Mobile-Connected Devices (millions)

U.S. Traffic per Mobile Connection (MB per mo.)

U.S. Total Mobile Data Traffic (Petabytes)

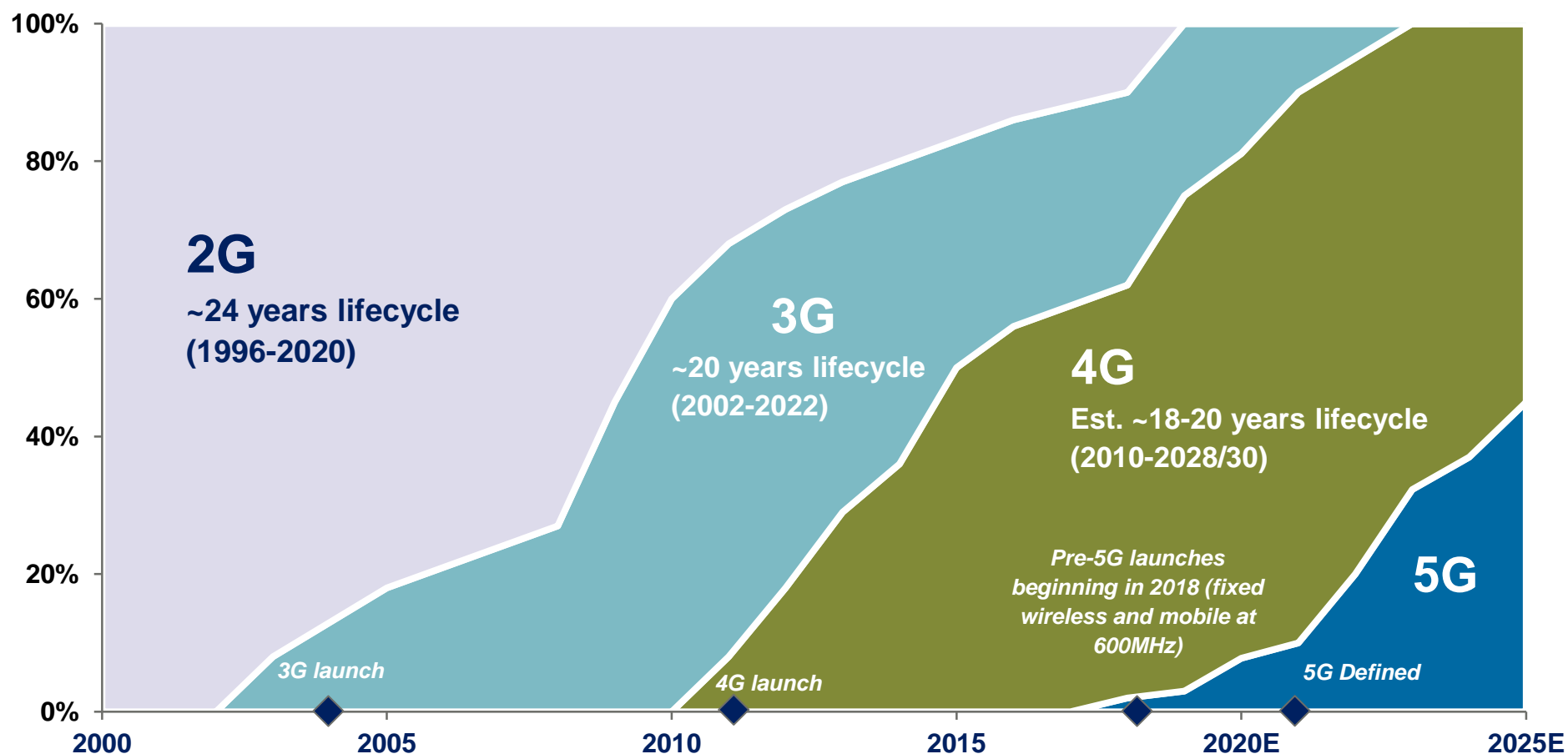


Exponential Growth in Devices and per Device Usage = Significant Growth in Overall Traffic

Source: Cisco Visual Networking Index

Wireless network evolution

Projected U.S. market share of connectivity standards (2000-2025) based on % devices



Non-standalone mobile 5G launches are expected in 2018, ahead of official standalone 5G standard-setting. At the same time, significant 4G investments are expected to continue, given the over 50% estimated 4G market share through 2025.

Types of wireless infrastructure



Rooftop

- Range in size
- Particularly useful in areas with strict zoning regulations
- Key component of next 5G development



Monopole

- 100–200 feet
- Typical use: Telephony



Lattice

- 200–400 feet
- Also called self-support
- Typical use: Telephony



Guyed

- 200–2,000 feet
- Typical use: Television and radio broadcasting, paging and telephony



Transmission

- Varied in range
- Radio equipment can be placed on transmission towers and / or power lines
- Minimal additional capex required



DAS / Small Cell

- Varied in range
- DAS is a point to multipoint system (centralized coverage)
- Small cells seek to cover a target area with a portfolio of small radios

Wireless infrastructure model

Recurring long-term revenue stream

- Sources
 - Multiple tenants lease vertical space on the tower and portions of the ground for their wireless communications equipment
- Long-term customer leases
 - Contracts are typically non-cancellable
 - Typical contract terms include an initial term of 5 to 10 years with multiple 5-year renewal periods
 - Annual lease escalators in the U.S. of approximately 3.5%
 - Escalations in international operations are typically based on local inflation rates
 - Historically low annual churn of less than 2%

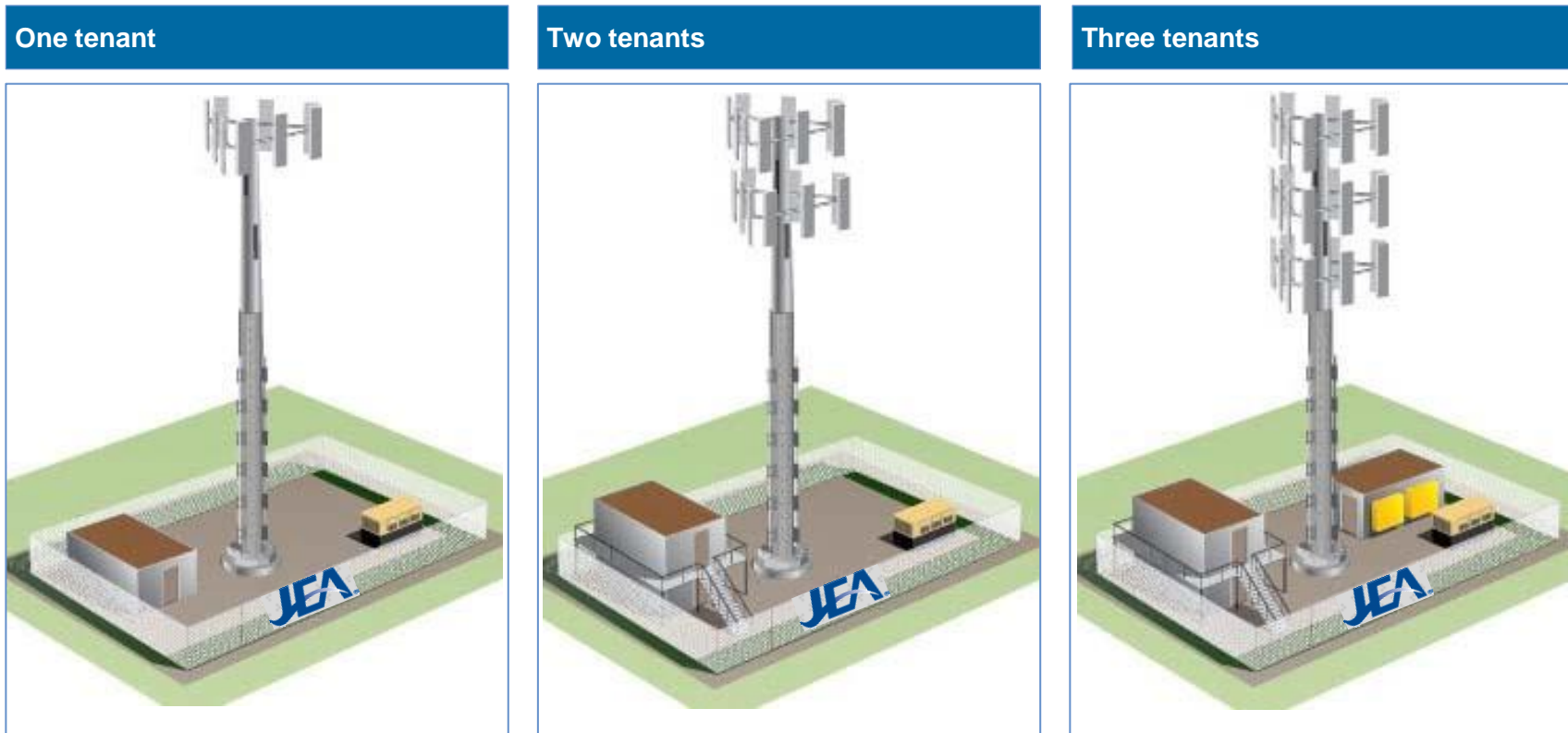
Fixed-cost, long-term ground interests

- Sources
 - Ground rent
 - Monitoring
 - Insurance
 - Real estate taxes
 - Utilities
 - Site maintenance
- Land lease attributes
 - Long term: average remaining ground lease term is approximately 22 years until final maturity in the U.S.
 - Annual lease escalators in the U.S. of approximately 3%; and international are typically based on local inflation rates
 - Selectively purchasing land interests where return hurdles are met
- Pass through
 - International markets typically pass through a portion of their operating expenses to the tenant
- Fixed cost structure of towers
 - Accommodating additional tenants requires minimal additional operating costs

Low ongoing capital requirements

- Minimal maintenance capex requirements
 - Examples include: lighting system and fence repair, ground upkeep
 - U.S. historical average: approximately \$1,500 per year, per site
 - International historical average: approximately \$500 per year, per site
- Augmentation capex
 - Capital spending to increase capacity of tower site, including height extension, foundation strengthening, extension of ground space, etc.
 - Investment payback period is typically one to two years
 - Cost typically shared with tenant
- Corporate Capex
 - Capital spending, primarily on IT infrastructure

Significant incremental cash flow from increased tower use



Adding tenants, equipment and upgrades results in significantly higher returns, as revenue is added with minimal incremental cost

Wireless infrastructure business model drives compelling cash flow metrics

	One tenant	Two tenants	Three tenants
Construction/Upgrade costs (US\$)	\$250,000	–	–
Tenant revenue	\$20,000	\$40,000	\$60,000
Operating expenses (including ground rent, utility, monitor)	\$12,000	\$13,000	\$14,000
Gross margin	\$8,000	\$27,000	\$46,000
Gross margin (%)	40%	68%	77%
Gross margin conversion rate (%)	–	95%	95%
Return on investment²	3%	11%	18%

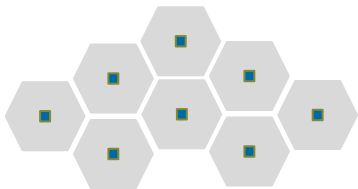
¹ For illustrative purposes only

² Calculated as Gross Margin divided by Construction/Upgrade Costs

Evolution of wireless networks

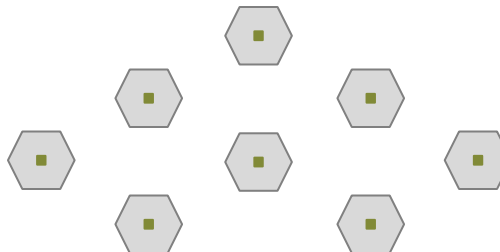
Network designed for initial voice and 3G services

- Quality of voice services on the rise
- Smartphones introduced to the market



As data usage rises, the existing network structure proves deficient for data signal propagation

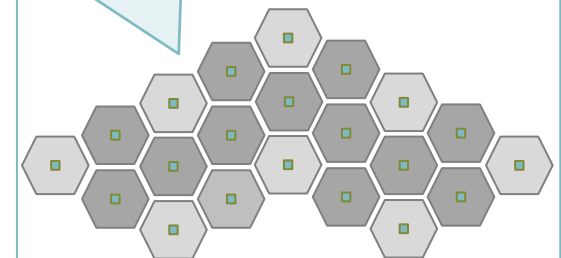
- Smartphone penetration on the rise
- New smartphone handsets introduced
- VoLTE (Voice over LTE)



Building new cell sites is therefore required to create adequate coverage for seamless data usage

- Carriers consistently invest in networks to meet growing demand

Significant portion of infrastructure needed is controlled by JEA



■ New cell site ■ Original cell site

Growing wireless usage results in the need for more cell sites and a meaningful opportunity for JEA

Traditional infrastructure used to fill the gap in next generation networks

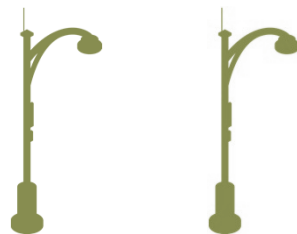
Indoor DAS

- Provides coverage in indoor venues, such as malls, casinos and conference centers where signals from towers are insufficient
- Neutral-host networks are readily accessible to collocation



Outdoor DAS / small cell

- Provides coverage in outdoor venues, such as racetracks and stadiums where wireless usage levels tend to be extremely concentrated
- Allows for multiple carriers to leverage single installation



Rooftops

- Predominantly located in dense urban areas where towers cannot be installed
- Used in combination with DAS and Wi-Fi to provide coverage to concentrated user base



Transmission & distribution

- Provide long, contiguous strategic infrastructure corridors that are ubiquitous in both urban and rural landscapes
- Diverse locations and structural design able to provide multiple alternatives to address collocation




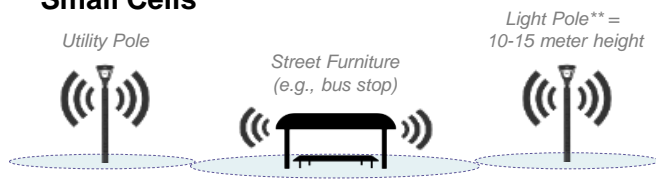
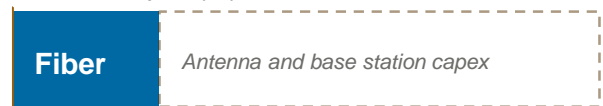

Indoor and outdoor distributed antenna systems (IDAS/ODAS), rooftops and T&D infrastructure help to provide coverage in areas where macro tower sites are not available

Key network updates for 5G

Relative to 4G, 5G will use higher frequency mmWave spectrum, primarily use small cells, and rely on access to robust fiber; as a result, deployments will be highly targeted

- Fiber costs in both cases can be outsourced and moved from CAPEX to OPEX

Major 5G Updates

	4G & Previous	5G
<i>Spectrum</i>	Low to Mid Band Spectrum (e.g. 700, 1700-2100, 1900 MHz) <ul style="list-style-type: none"> + Broader propagation + More resistant to interference - Required densification for additional capacity 	mmWave Spectrum (30 – 300 GHz) <ul style="list-style-type: none"> + High bandwidths of continuous spectrum available + More precise and directional - Limited propagation radius - Vulnerable to interference
<i>Primary Site Architecture</i>	Macro Cells  <p>Radius: 1-2+ km</p>	Small Cells  <p>Radius: 300m-1km</p>
<i>Backhaul</i>	Mix of Fiber and Legacy Backhaul <p>Cell Site Capex (%)</p>  <p>15-30% of total cost</p>	Rich Fiber Backhaul <p>Cell Site Capex (%)</p>  <p>70-85% of total cost</p> <p>20-30% of 5G nodes may be connected via fixed wireless backhaul, which could further lower fiber costs</p>

*Last mile = ~80-90% of fiber cost, metro backhaul rings = 5-10%, IP transit = <5%

**Light poles typically do not have power required for 5G, and power will need to be increased. However, utility poles do not have a power constraint

Sources: AV&Co. Research & Analysis, Fierce Telecom, Bloomberg, Technology Review

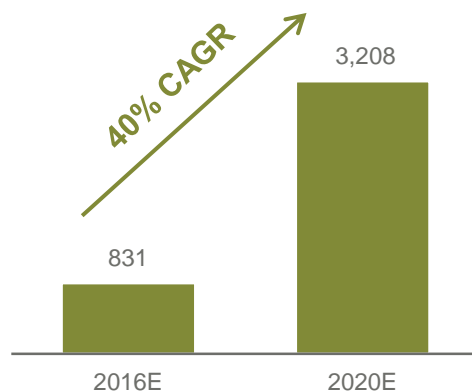
JEA fiber platform is critical to fixed and mobile broadband in Jacksonville

Rapid Expansion in Wireless Data...

Key Network Growth Drivers:

- Mobile Video
- Internet of Things (IoT)
- Machine-to-Machine (M2M)
- Autonomous Vehicles
- Big Data
- Smart Cities

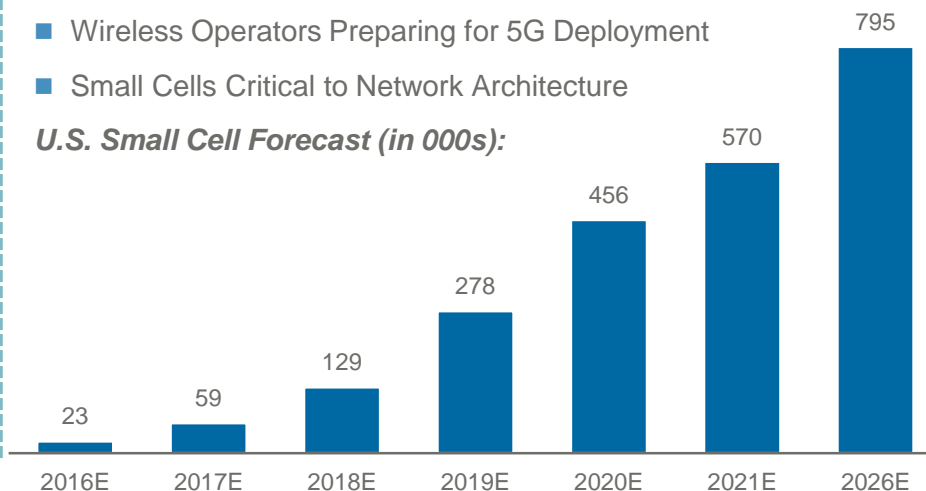
**NA Mobile Internet Traffic
(PBs of Traffic per Month):**



...Will Require Significant Investment...

- Carriers Continue to Densify Networks
- Wireless Operators Preparing for 5G Deployment
- Small Cells Critical to Network Architecture

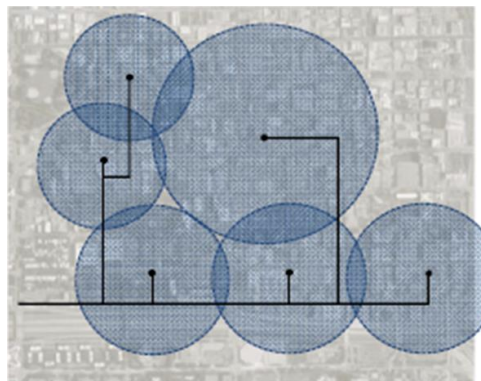
U.S. Small Cell Forecast (in 000s):



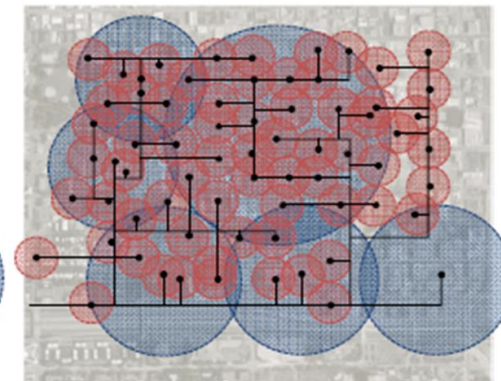
...Supported By Large-Scale and Dense Fiber Networks

- Future Devices will Demand Ultra Low-Latency and Uninterrupted Coverage
- Fiber Infrastructure is Critical to Future Wireless Networks
 - Existing Fiber Networks Generally not Sufficient to Satisfy Growing Demand
- Deep, Dense Fiber and Small Cells will be Critical to New Ecosystem
 - FCC is Supportive of Small Cell Deployment Expansion

Wireless Networks of Today



Wireless Networks of Tomorrow



Precedent wireless infrastructure transactions



Source: Company filings, websites, and press releases;

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JEA telecom business overview



Fiber Services

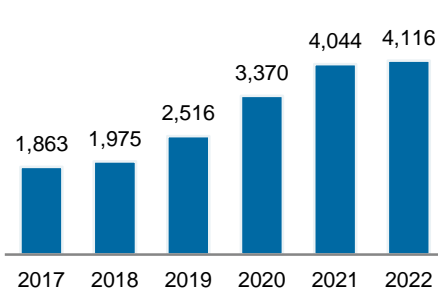
- Over 500 miles of dark fiber strategically located throughout the Jacksonville metropolitan area provides high barrier of entry for would be competitors
- Direct connection between JEA dark fibers and the JAX NAP significantly increases the value of JEA's fiber portfolio
- Fully operational dark fiber leasing business with existing infrastructure and business functions reduces capital required to transition the business to potential acquirers

Fiber operating metrics

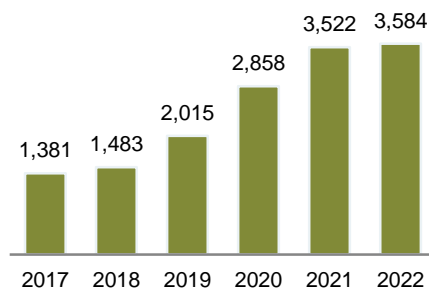
JEA to provide

Fiber financial metrics

Dark Fiber Leasing Revenue (\$000)



Dark Fiber Leasing EBITDA (\$000)



Wireless and fiber co-location

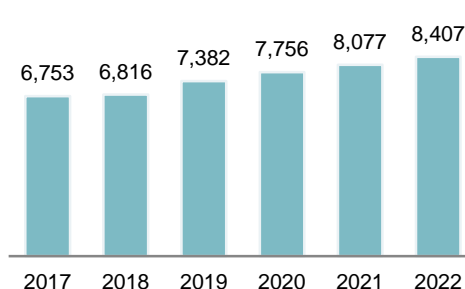
- JEA's extensive portfolio of power transmission and telecommunication assets create an excellent platform for providing wireless co-location services
- Over 200,000 electric and street light poles can be leveraged for small cell, DAS and other distributed telecommunication applications; larger power transmission towers and structures can serve as macro sites
- Power transmission lines, roof-tops and other strategic real estate can be leveraged to expand the revenue potential of JEA's co-location business

Collocation operating metrics

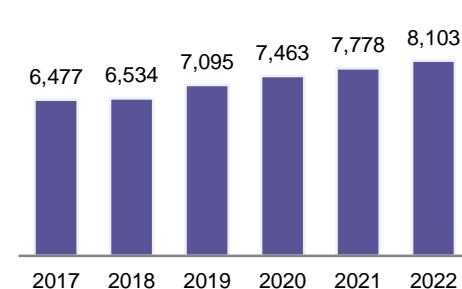
JEA to provide

Collocation financial metrics

Combined Co-location Revenue (\$000)



Combined Co-location EBITDA (\$000)



JEA telecom opportunity

Key Criteria	Dark Fiber	Wireless Infrastructure
Useful Life	✓ ~50+ Year	✓ ~50+ Year
Initial Term	✓ 10-20 Years	5 – 10 Years
Initial Yields	✓ 5% – 7%	✓ 5% – 10%+
Lease-up Potential	✓ 48-288 Fiber Strands per Cable	3 – 4 Tenants per Tower 1 – 2 Tenants for Poles / Street Furniture
Lease-up	✓ Significant Potential	Limited on Existing Towers / Significant on DAS/Small Cell & New Towers
Customer Churn	✓ Very Low	✓ Very Low
Success-Based Builds	✓ Investment from Anchor Customer	✓ Occasional Capex Investment with Additional Customers
Incremental Margins	✓ Incremental Margins of ~90%	✓ Incremental Margins of ~90%
Quality of Tenants	✓ High Credit Quality Tenants	✓ High Credit Quality Tenants

Key investment highlights

Strategically Located Fiber and Wireless Infrastructure Assets	<ul style="list-style-type: none"> ■ The proximity of JEA's telecommunication infrastructure to key industrial and commercial customers within Jacksonville allows would be partners to quickly provide services over the network without substantial incremental capital ■ Access to the power space on poles provides a cost effective way for to expand fiber and wireless infrastructure to strategic customers ■ Jacksonville's urban setting presents a high barrier to entry for building new infrastructure, increasing the strategic value of JEA's existing fiber and wireless network assets ■ Top 50 communications market ■ Jacksonville is a hub for local fiber optic connections: <ul style="list-style-type: none"> ■ Two subsea fiber optic cable systems (Central/South America & the Caribbean) meet in Jacksonville Beach ■ Connection point for direct fiber optic paths to Atlanta, Miami, and Dallas
Significant Expansion Potential	<ul style="list-style-type: none"> ■ Jacksonville has a growing and robust economy and is one of the largest metropolitan areas in the U.S. ■ JEA's utility infrastructure presents a significant opportunity for the Company and potential partners <ul style="list-style-type: none"> ■ T&D, street lights, etc are highly valuable given the increasing importance of macro, DAS, small cell deployment to support increases fiber and wireless communications needs ■ JEA's extensive electric / water service footprint provides would be partners with a ready made platform to roll out next generation, data-intensive services such as smart grid, energy use monitoring, internet of things etc.
Stable Existing Customer Base	<ul style="list-style-type: none"> ■ JEA serves over 50% of the customers in the Jacksonville area, including 459,000 retail customers and 50,000 commercial and industrial customers ■ Sizeable networking consisting of over 200,000 potential wireless colo sites and 575 mile fiber-optic network ■ High switching costs for existing customers due to high cost of building new infrastructure and permitting right-of-way
Revenue Potential	<ul style="list-style-type: none"> ■ Significant revenue expansion opportunity for strategic fiber and wireless infrastructure providers

JEA telecom financial summary

Revenue Summary

	2017	2018	2019	2020	2021	2022
Pole Attachment Revenues ^{1,2}	4,830,156.0	4,819,820.0	5,079,915.0	5,347,812.0	5,508,246.0	5,673,494.0
Wireless Colocation Leasing Revenues ³	1,922,505.0	1,996,213.0	2,302,533.0	2,408,306.0	2,568,710.0	2,733,930.0
Dark Fiber Leasing Revenues ⁴	1,863,363.0	1,974,901.0	2,120,023.0	2,326,139.0	2,370,578.0	2,426,929.0
Total Telecom Facilities Revenues	8,616,024.0	8,790,934.0	9,502,471.0	10,082,257.0	10,447,534.0	10,834,353.0
(-) O&M ⁵	605,270.0	617,376.0	629,723.0	642,318.0	655,164.0	668,267.0
(-) Maintenance Agreements ⁶	153,000.0	156,060.0	159,181.0	162,365.0	165,612.0	168,924.0
EBITDA	7,857,754.0	8,017,498.0	8,713,567.0	9,277,574.0	9,626,758.0	9,997,162.0
Capital expenditures ⁷	-	-	-	-	-	-

Notes and Assumptions - Telecom Facilities Infrastructure

- 1: Pole attachment revenue increases due to standard agreement with 3% escalator and new attachers; standard agreement in place across 10 attaching entities.
- 2: JEA Pole attachment rent rates calculated via APPA cost-based formula.
- 3: Wireless colocation revenues include both annual rents and construction & maintenance revenues for macro-site towers and small cells.
- 4: This revenue projection assumes status quo for Dark Fiber line of business; no approval of resolution to expand dark fiber business offering.
- 5: O&M:2% annual growth of Allocated Salaries, OT, and Benefits is based on cost center B0011 Management and cost center 30904 Management (35%) & Dedicated staff (100%)
- 6: Maintenance agreements and inspection expenses for tower and site maintenance.
- 7: There are no capital costs for pole attachment, wireless colocation, or Dark Fiber business offering (status quo). If approved to expand, Dark Fiber would incur capital costs.

Dark fiber financial summary

Dark Fiber Leasing Revenues

	2017	2018	2019	2020	2021	2022
Dark Fiber Leasing Revenues ¹	1,863,363.0	1,974,901.0	2,120,023.0	2,326,139.0	2,370,578.0	2,426,929.0
(-) O&M ²	482,135.0	491,778.0	501,613.0	511,646.0	521,878.0	532,316.0
EBITDA	1,381,228.0	1,483,123.0	1,618,410.0	1,814,493.0	1,848,700.0	1,894,613.0
Capital expenditures ³	-	-	-	-	-	-

All current capital expenses are part of Fiber R&R budget for utility services only

Future capital expenses will be customer project-driven, ensuring financial viability and rate of return targets.

1: Dark Fiber revenue growth based on current book of business; 3% escalator on Verizon ring; acquisition of westside ring mid-2019 due to joint-use expiration.

2: O&M: 2% annual growth of AI located Salaries, OT, and Benefits is based on cost center BOOII - Management(50%) and 30904 Management (35%) & Dedicated staff (100%)

3: Without approval of JEA Board Resolution #2018-01 by Jacksonville City Council, JEA is not authorized to spend capital funds on Dark Fiber line of business.

Dark Fiber Utility Services (Expanded Program Offering)

	2017	2018	2019	2020	2021	2022
Dark Fiber Leasing Revenues ¹	1,863,363.0	1,974,901.0	2,516,381.0	3,369,714.0	4,043,992.0	4,115,864.0
(-) O&M ²	482,135.0	491,778.0	501,613.0	511,646.0	521,878.0	532,316.0
EBITDA	1,381,228.0	1,483,123.0	2,014,768.0	2,858,068.0	3,522,114.0	3,583,548.0
(-) Capital expenditures ³	-	100,000.0	350,000.0	300,000.0	350,000.0	300,000.0
FCF	1,381,228.0	1,383,123.0	1,664,768.0	2,558,068.0	3,172,114.0	3,283,548.0

Future capital expenses will be customer project-driven, ensuring financial viability and rate of return targets

1: Dark Fiber revenues increase based upon rate escalation in contracts, new contract opportunities, and expiration of joint-use agreements leading to new revenue.

2: O&M: 2% annual growth of Allocated Salaries, OT, and Benefits is based on cost center 80011 – Management (50%) and 30904 Management (35%) & Dedicated staff (100%)

3: Depreciation: From Project Accounting's Power Plan assets labeled Fiber Optics. Actuals are allocated based on approx. Strand Miles assumed available for lease (38.7%)

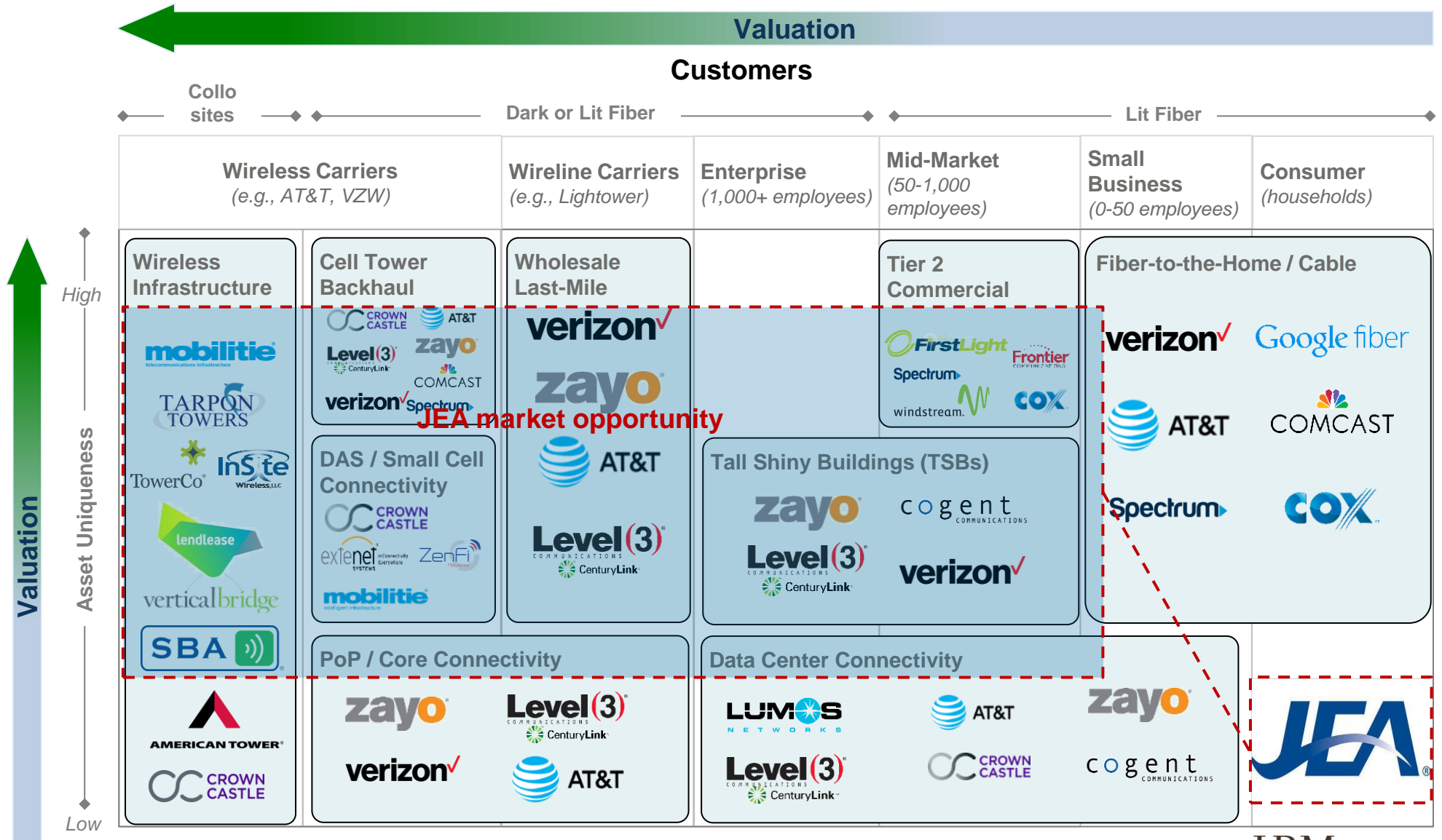
Combined collocation business financial summary

Colocation Revenue Summary

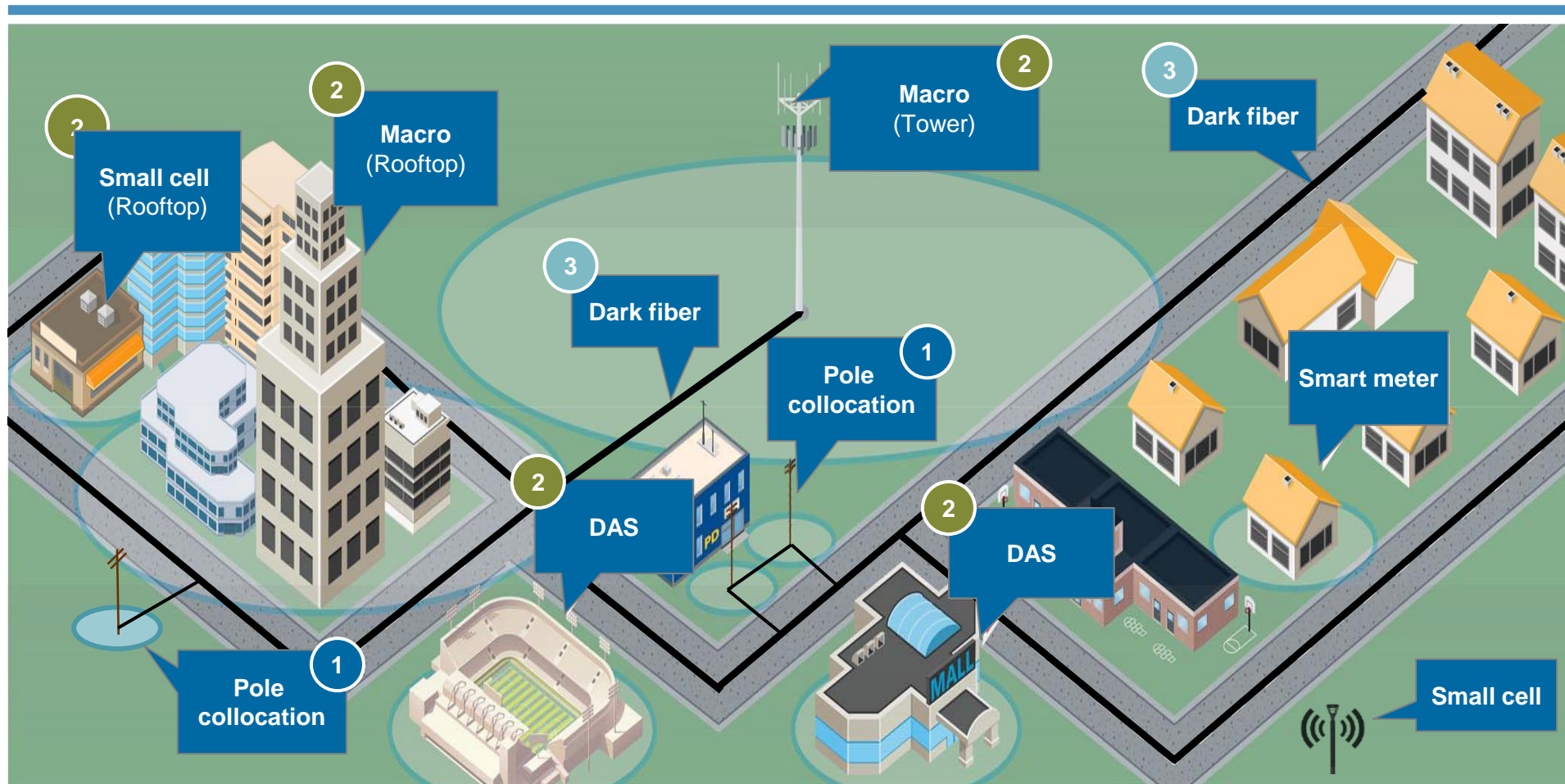
	2017	2018	2019	2020	2021	2022
Wireless Colocation Leasing Revenues	1,922,505.0	1,996,213.0	2,302,533.0	2,408,306.0	2,568,710.0	2,733,930.0
Utility Pole Attachment Revenues	4,830,156.0	4,819,820.0	5,079,915.0	5,347,812.0	5,508,246.0	5,673,494.0
Total Colocation Revenue	6,752,661.0	6,816,033.0	7,382,448.0	7,756,118.0	8,076,956.0	8,407,424.0
(-) Salaries, OT, and Benefits	123,136.0	125,598.0	128,110.0	130,672.0	133,286.0	135,952.0
(-) Maintenance Agreements	153,000.0	156,060.0	159,181.0	162,365.0	165,612.0	168,924.0
Site FCF	6,476,525.0	6,534,375.0	7,095,157.0	7,463,081.0	7,778,058.0	8,102,548.0

JEA target market

JEA addresses a critical need in the market

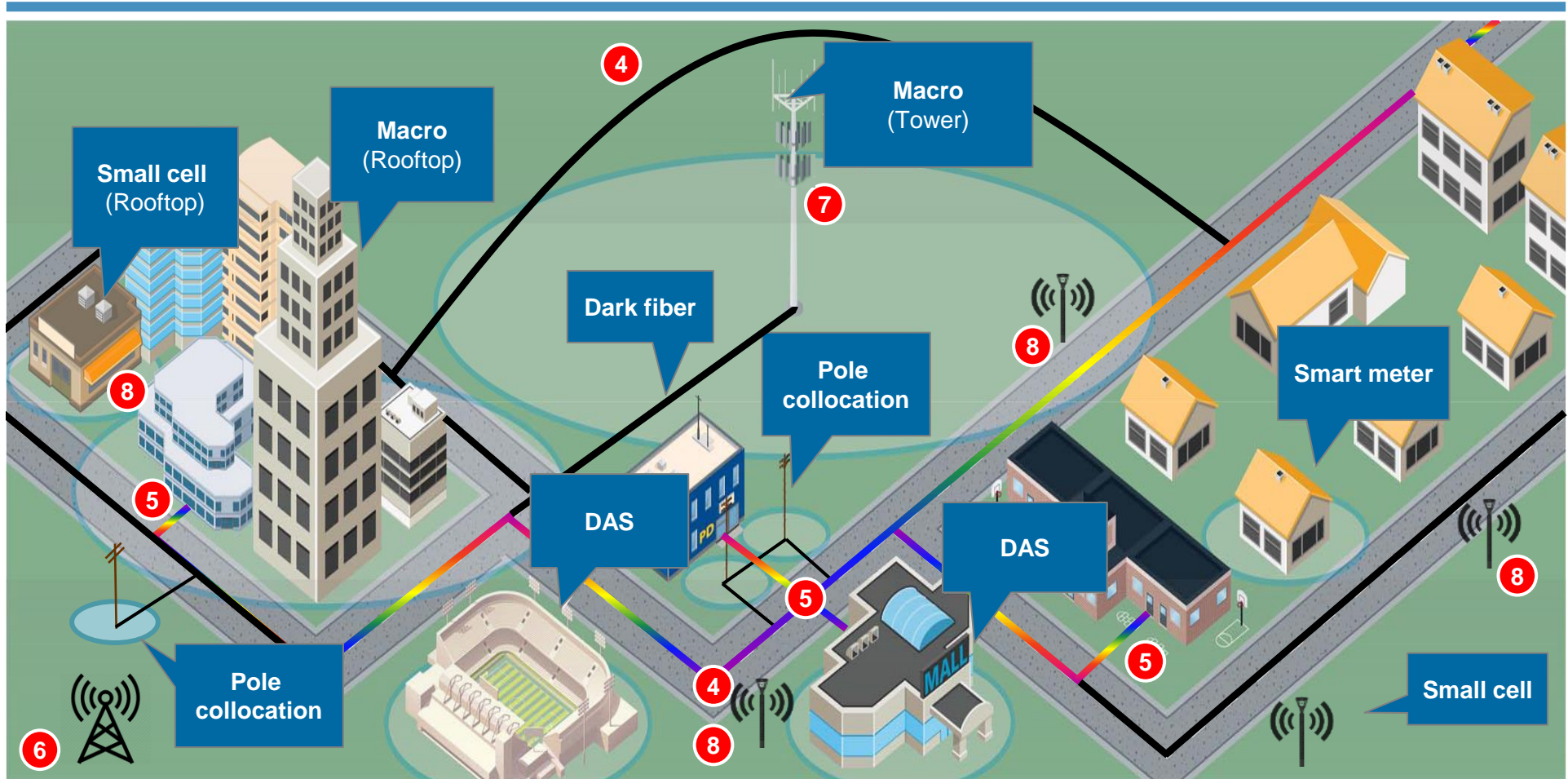


JEA telecom current sources of revenue



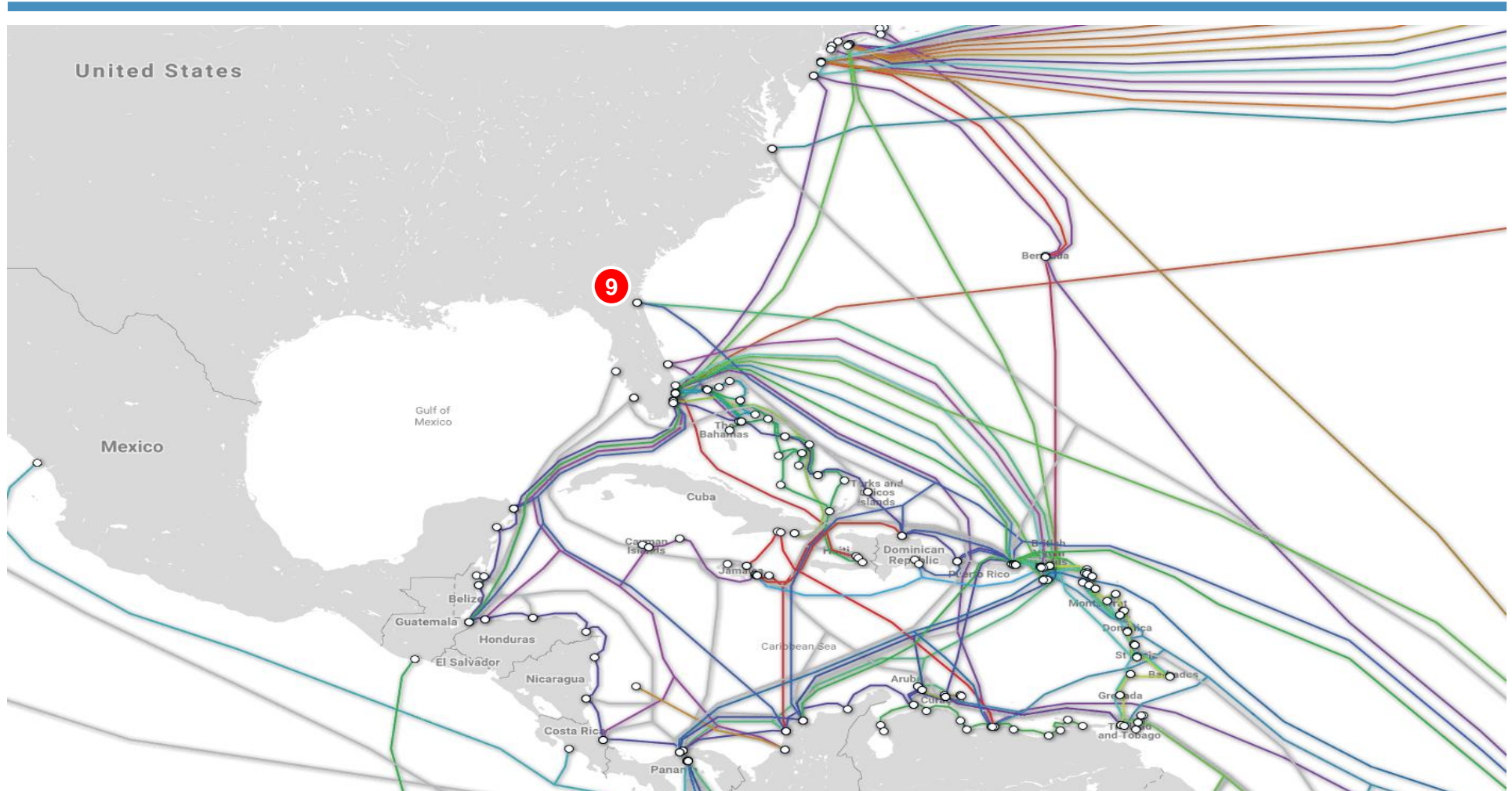
	2017	2018	2019	2020	2021	2022
1 Pole Attachment Revenues	4,830,156.0	4,819,820.0	5,079,915.0	5,347,812.0	5,508,246.0	5,673,494.0
2 Wireless Colocation Leasing Revenues	1,922,505.0	1,996,213.0	2,302,533.0	2,408,306.0	2,568,710.0	2,733,930.0
3 Dark Fiber Leasing Revenues	1,863,363.0	1,974,901.0	2,120,023.0	2,326,139.0	2,370,578.0	2,426,929.0

JEA telecom potential sources of revenue



- | | |
|---|--|
| <ul style="list-style-type: none"> 4 Fiber network expansion and Increased dark fiber capacity and revenue 5 Lit services 6 Tower / collocation expansion | <ul style="list-style-type: none"> 7 Increased collocation on existing sites 8 Expansion of DAS / small cell sites 9 Extend fiber capacity to support international submarine cables |
|---|--|

JEA telecom infrastructure is critical to the continued development of the City of Jacksonville as a global hub for communications



























Potential alternatives

	Status Quo	Partnership	Strategic Sale
Description	<ul style="list-style-type: none"> Continues to execute existing business plan 	<ul style="list-style-type: none"> P3 related to JEA's fiber and wireless infrastructure assets and operations Long term lease or concession Partial monetization via private investment 	<ul style="list-style-type: none"> Sale of telecom assets in competitive auction process Cash proceeds in exchange for fiber or wireless infrastructure assets Likely separate paths for fiber and wireless opportunity Potential to blend Partnership options with sale dynamics
Benefits	<ul style="list-style-type: none"> Allows JEA to maintain full control Retains the upside from potential growth and expansion Realize the benefits of sales backlog Provides more flexibility in implementing social objectives Less disruption to current employees Continue to receive full benefits of cash flow 	<ul style="list-style-type: none"> Share in the asset upside Increase scale of business and benefit from synergy potential External investment to expand network reach and services Leverage partner assets and sales channels to expand revenue potential Potential to retain portion of dividend 	<ul style="list-style-type: none"> Immediate monetization event allowing for proceeds to be used for Electric and Water System Take advantage of current market window and the scarcity value for fiber and wireless infrastructure assets Leverage buyer assets and investment to expand service offerings and network reach Reduction of operating costs
Strategic Considerations and Issues to be Addressed	<ul style="list-style-type: none"> Future operating costs and capital expenditures Network refresh Investment in business Current market dynamics and scarcity value Competitive overbuilding risk Levering 	<ul style="list-style-type: none"> Fiber, wireless infrastructure or combined Valuation and amount of any upfront payment Loss or reduction of current cash flow Security of existing employees Universe of potential partners Transaction complexity and asset hand back Rates for existing customers 	<ul style="list-style-type: none"> Fiber, wireless infrastructure or combined valuation Loss or reduction of current cash flow Credit to JEA for buyer synergies and sales backlog / high probability revenue Security of existing employees Ability to transfer assets, contracts and customers Maintenance of rates, service quality and policy initiatives post-close

























Control retained by JEA

Monetization of JEA telecom opportunity

Comparison of alternatives

	Status Quo	Partnership	Strategic Sale	Commentary
Delivery of Critical Infrastructure				<ul style="list-style-type: none"> P3 and Public option created the greatest certainty of comprehensive solution Strategic sale would require the negotiation of specific commitments / performance which is feasible assets in order to ensure the effective delivery of the assets
Open Access				<ul style="list-style-type: none"> P3 and Public option created the greatest certainty of delivery for fiber Wireless infrastructure is generally a neutral platform and therefore more straightforward to ensure
Value Creation				<ul style="list-style-type: none"> Ownership partial or complete allows for a share of the upside potential of the assets Creates revenue and a store of value that can be leveraged for future unrelated projects
Timing				<ul style="list-style-type: none"> Private interest and leverage of existing assets with expedite the overall process Delivery is critical but needs to be balanced with cost
Risk Transfer				<ul style="list-style-type: none"> P3 and strategic sale option reduce or eliminates risk associated with project While mitigating risk is important, managing rather than eliminating may produce disproportionate benefits
Cost Savings				<ul style="list-style-type: none"> Any strategic sale or change of control would result in the elimination of all operating cost and investments associated with JEA's telecom assets Partnership option may have similar cost savings benefits but would be spelled out in the project agreement
Investment				<ul style="list-style-type: none"> Both the partnership and strategic sale alternatives would be leveraged to increase third party investment in JEA's fiber and wireless infrastructure assets Key in any third party transactions will be the negotiation of desired levels of investment by any partner
Control				<ul style="list-style-type: none"> Private alternative is the only option that complete control is maintained Control comes with risks and may not be necessary to attain the objectives of the project

Landscape of potential partner or buyers

		Potential buyers
Fiber	Fiber	    
	Cable	   
	ILEC	   
Towers	National	   
	Regional	   
	Other	  

Approach to public communications infrastructure

	Public Option	Private Option	Public-Private Option
Objective	<ul style="list-style-type: none">■ Community own and manage all aspects of the broadband network or wireless infrastructure■ No outside resources for the financing, construction, management and maintenance of the asset	<ul style="list-style-type: none">■ Partner with a new or existing private entity that would finance, design, construct and own broadband or wireless infrastructure■ Often leverages existing assets and operations	<ul style="list-style-type: none">■ Combine the best aspects of the public and private alternatives■ Spread the risks and costs related to necessary capital investment, execution and adoption hurdles between a private partner and the community
Considerations	<ul style="list-style-type: none">■ Business model■ Management expertise■ Financing■ Risk exposure■ Competition■ Total cost of ownership	<ul style="list-style-type: none">■ Availability of partner(s)■ Objectives / targeted services■ Comprehensiveness of the solution■ Contract terms / payments■ Ability to promote community needs■ Total cost of ownership	<ul style="list-style-type: none">■ Type of P3■ Availability of partner(s)■ Business model■ Risk sharing mechanism■ Financing■ Total cost of ownership
Examples	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>		



State of New York Telecommunications Site Manager Case Study

Background

Agreement Overview

- In November 1997, the Division of State Police ("DSP"), on behalf of New York State ("State"), entered into a 20 year Telecommunications Site Manager Agreement ("Contract") with Crown Communications ("Crown") to manage, maintain and market State owned communication infrastructure
- The agreement is optionally renewable for 4 more times at 5 year increments upon expiry

Scope of the Program

- The Contract is broad in scope and gives Crown the responsibility of maintaining and refreshing existing State structures, construct new ones if necessary, marketing the structures to private carriers and negotiate subsequent contracts with carriers
- The State and Crown shares in the gross revenues generated from structures covered under the Contract's scope
- Participation by State agencies is optional
- In 2012, the Superintendent of Administration for DSP agreed to a request from Crown to reduce DSP oversight over contract approval that gave Crown more autonomy in signing new contracts on State structures

Agreement Status

- As of 2012
 - Collocated 1,250 antennas
 - Developed 72 wireless infrastructure sites, 27 of which were newly constructed and are State owned
- In 2015, a whistleblower filed a suit alleging Crown significantly underpaid the State by hiding fees Crown received from private carriers generated on State structures

Potential Revenues (\$000s)

	2017	%
Transportation	1,583.6	28.8%
Parks & Recreation	888.9	16.2%
Mental Health	847.7	15.4%
General Services	805.7	14.7%
Corrections	597.5	10.9%
State Police	435.9	7.9%
SUNY	338.3	6.2%
Total	5,497.6	100.0%

Sources: JPM estimates based on OSC Audit Report from 2007

Revenue Sharing Mechanism

Useable State Structures that Pre-existed the Contract

- 50% of Gross Revenues
- Paid Monthly

Pre-existing State Structures that Require Renovations

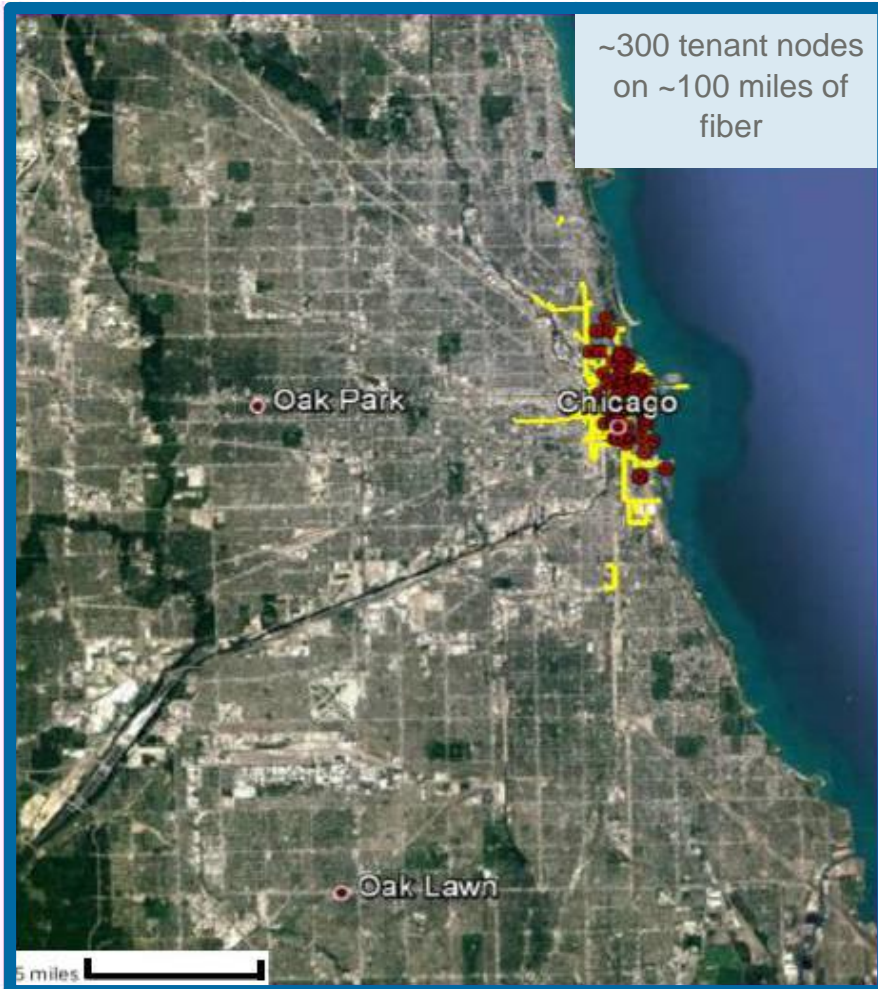
- 30% of Gross Revenues for the first 10 years, 50% there after
- Paid Monthly

New Crown Structures

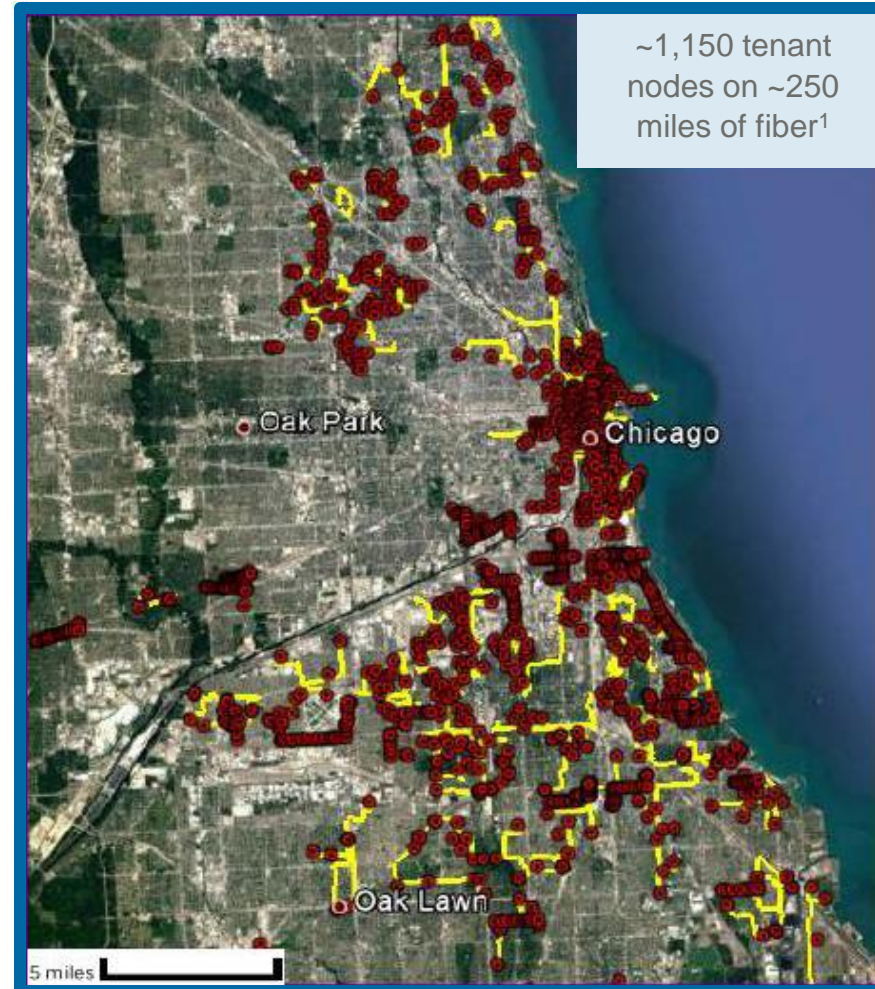
- 30% of Gross Revenues for the first 10 years, 50% there after
- Paid Monthly

Small cell case study – Crown Castle Chicago

2013



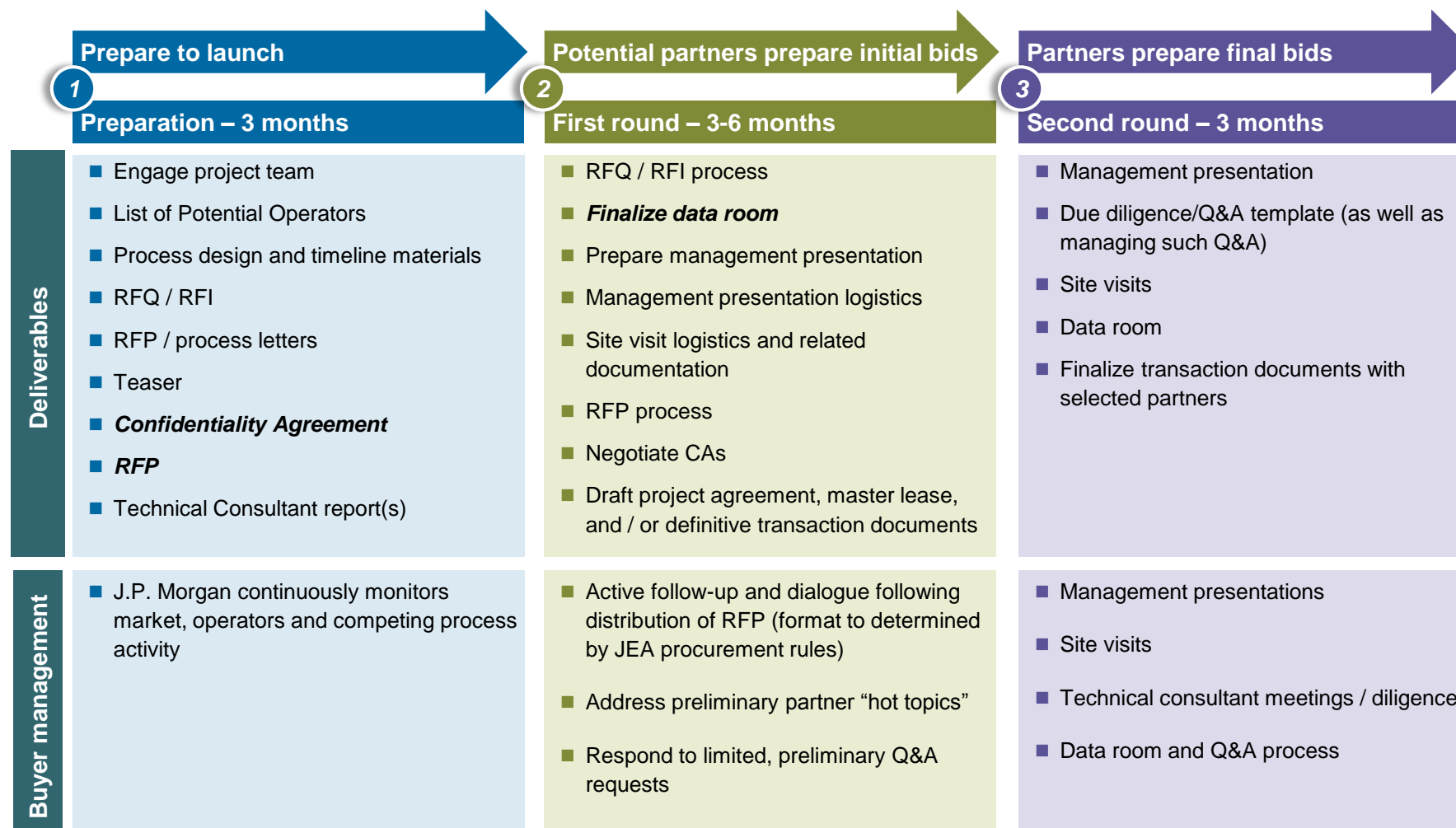
2016



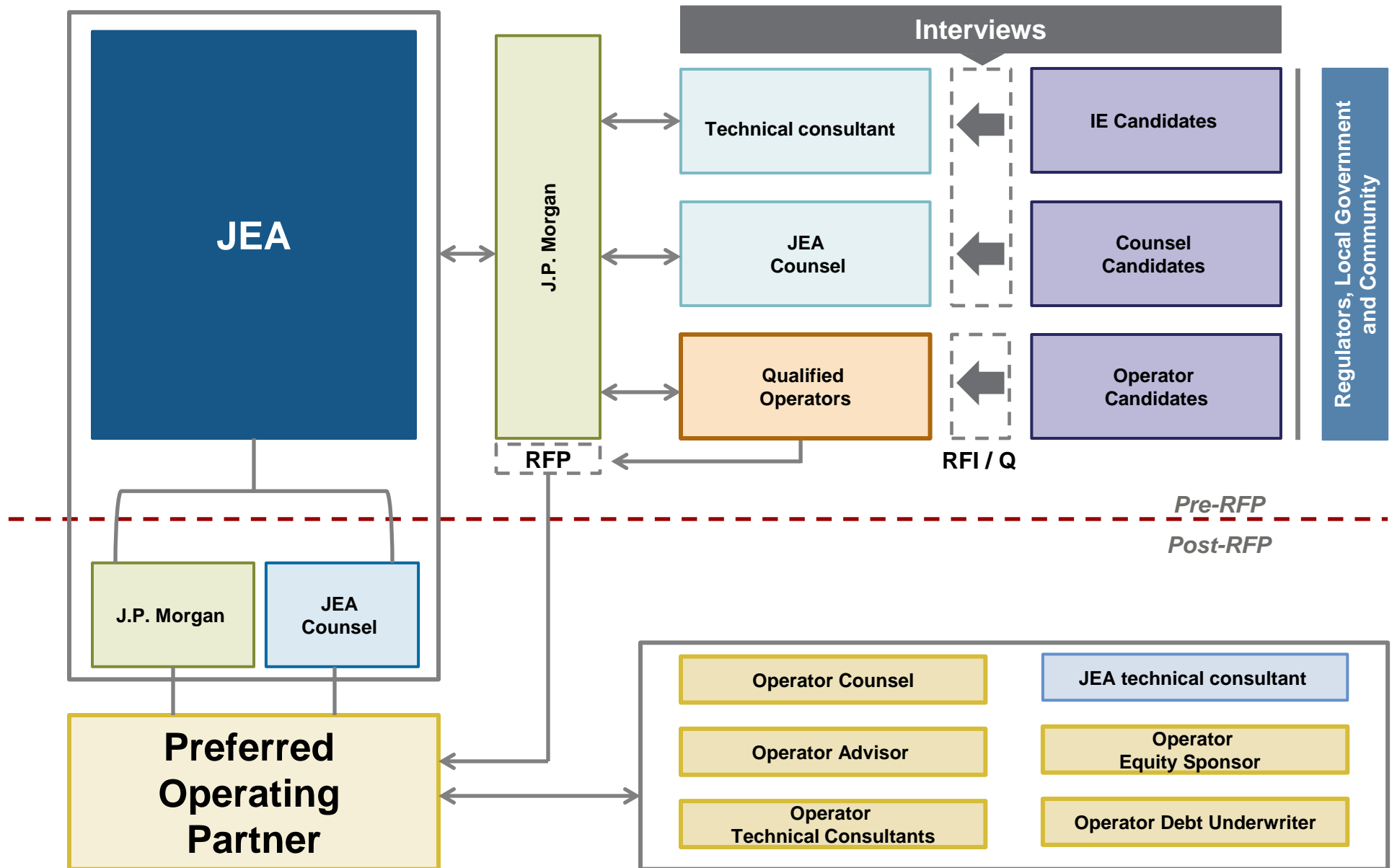
- Initial build-out of approximately 300 tenant nodes on approximately 100 miles of fiber focused on downtown
- Between 2013 and 2016, further densification with substantial expansion into the greater metro and suburban core
- Increasing density from ~3 tenant nodes per mile to ~5 tenant nodes per mile, driving higher returns

¹Includes tenant nodes and fiber miles under construction

Process overview



Process overview (continued)



Trading comparables

Company	Share Price	Market Capitalization (\$mm)	Adjusted firm value (\$mm)	Adj. FV / EBITDA		Eq.V / AFFO ⁶		Adj. FV / (EBITDA - capex)		Net debt / LTM EBITDA
				CY2018E	CY2019E	CY2018E	CY2019E	CY2018E	CY2019E	
<u>Fiber and fixed line infrastructure</u>										
Zayo ¹	36.52	9,082	14,495	11.5	10.8	10.2	9.3	30.3	25.1	4.1
GTT Communications	51.15	2,303	3,380	10.9	9.6	17.3	15.0	13.3	11.7	5.5
Cogent	53.45	2,478	2,946	15.8	14.0	27.6	22.0	22.7	19.1	2.9
<u>REIT/Fiber infrastructure</u>										
Uniti ²	23.24	4,116	8,673	10.9	10.5	9.1	8.1	13.4	12.6	6.3
Mean				12.3	11.2	16.0	13.6	19.9	17.1	4.7
Median				11.2	10.7	13.7	12.2	18.0	15.8	4.8
<u>Data centre and connectivity</u>										
Equinix	405.33	31,997	40,501	18.1	15.9	18.6	16.2	NM	32.2	4.1
Digital Realty ³	108.76	22,388	31,901	17.3	16.1	20.8	19.5	NM	NM	6.2
CyrusOne ⁴	58.59	5,933	8,402	19.8	17.1	18.8	16.4	NM	NM	7.9
Coresite	107.86	5,208	6,113	21.7	19.7	23.7	21.1	NM	36.3	3.1
Switch	12.98	3,280	4,258	19.4	16.1	19.2	15.8	NM	NM	4.6
Mean				19.3	17.0	20.2	17.8	NM	34.3	5.2
Median				19.4	16.1	19.2	16.4	NM	34.3	4.6
<u>Towers</u>										
American Towers	141.14	62,945	84,978	19.8	18.7	19.0	16.9	19.8	18.7	4.8
Crown Castle ⁵	104.68	43,558	62,570	21.0	19.6	19.1	17.5	21.9	20.4	6.7
SBA	160.75	18,648	27,559	22.0	20.2	19.9	18.0	22.5	20.8	7.8
Mean				20.9	19.5	19.3	17.5	21.4	20.0	6.4
Median				21.0	19.6	19.1	17.5	21.9	20.4	6.7

Note: EBITDA numbers in valuation multiples are post-SBC; EBITDA numbers in leverage calculation are pre-SBC; stock prices as of 06/12/2018.

¹ Pro forma for Electric Lightwave acquisition; ² Pro forma for Southern Light and Hunt Telecom acquisitions; ³ Pro forma for DFT acquisition; ⁴ Pro forma for Zenium acquisition; ⁵ Pro forma for Lighttower acquisition; ⁶ AFFO estimates for fiber companies was computed as LFCF plus capex minus maintenance capex assuming maintenance capex to be 4% of revenues; AFFO estimates for data centre and connectivity and towers companies were obtained from broker reports

Operating comparables

(\$mm, except per share data)

Company	Revenue CAGR	EBITDA (post-SBC) CAGR	AFFO CAGR	EBITDA (post SBC) margin		(EBITDA-Capex) / EBITDA
	CY2018E-CY2020E	CY2018E-CY2020E	CY2018E-CY2020E	CY 2018E	CY 2019E	CY2018E
<u>Fiber and fixed line infrastructure</u>						
Zayo ¹	4.6%	7.0%	8.0%	46.8%	47.9%	43.1%
GTT Communications	8.9%	12.5%	14.9%	25.1%	26.1%	82.3%
Cogent	7.7%	11.9%	1.0%	36.2%	37.7%	73.8%
<u>REIT/Fiber infrastructure</u>						
Uniti ²	3.1%	2.8%	6.4%	78.5%	79.1%	83.9%
Mean	6.1%	8.6%	7.6%	46.7%	47.7%	70.8%
Median	6.2%	9.5%	7.2%	41.5%	42.8%	78.1%
<u>Data centre and connectivity</u>						
Equinix	10.1%	13.2%	14.3%	44.1%	45.0%	43.2%
Digital Realty ³	7.4%	7.3%	8.6%	59.7%	59.4%	29.7%
CyrusOne ⁴	8.9%	11.4%	14.5%	54.8%	57.5%	NM
Coresite	8.9%	9.8%	12.2%	52.6%	53.1%	0.4%
Switch	19.4%	19.3%	20.6%	51.1%	51.3%	NM
Mean	10.9%	12.2%	14.0%	52.5%	53.3%	24.4%
Median	8.9%	11.4%	14.3%	52.6%	53.1%	29.7%
<u>Towers</u>						
American Towers	5.9%	6.4%	9.9%	60.2%	60.5%	96.4%
Crown Castle ⁵	8.1%	7.2%	9.0%	55.5%	55.1%	96.1%
SBA	7.3%	8.4%	9.4%	68.1%	68.8%	97.2%
Mean	7.1%	7.3%	9.4%	61.3%	61.5%	96.6%
Median	7.3%	7.2%	9.4%	60.2%	60.5%	96.4%

Note: EBITDA numbers in valuation multiples are post-SBC; EBITDA numbers in leverage calculation are pre-SBC

¹ Pro forma for Electric Lightwave acquisition; ² Pro forma for Southern Light and Hunt Telecom acquisitions; ³ Pro forma for DFT acquisition; ⁴ Pro forma for Zenium acquisition; ⁵ Pro forma for Lighttower acquisition