



## Identifying Key Changes in MDU Environments to Compete Long-term

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Fiber Connect 2021 Breakout Session

July 26, 2021 – 1:30-2:20 PM

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— Ron Westfall, Senior Analyst,  
Futurum Research

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# IDENTIFYING KEY CHANGES IN MDU ENVIRONMENTS TO COMPETE LONG-TERM: OUTLINE

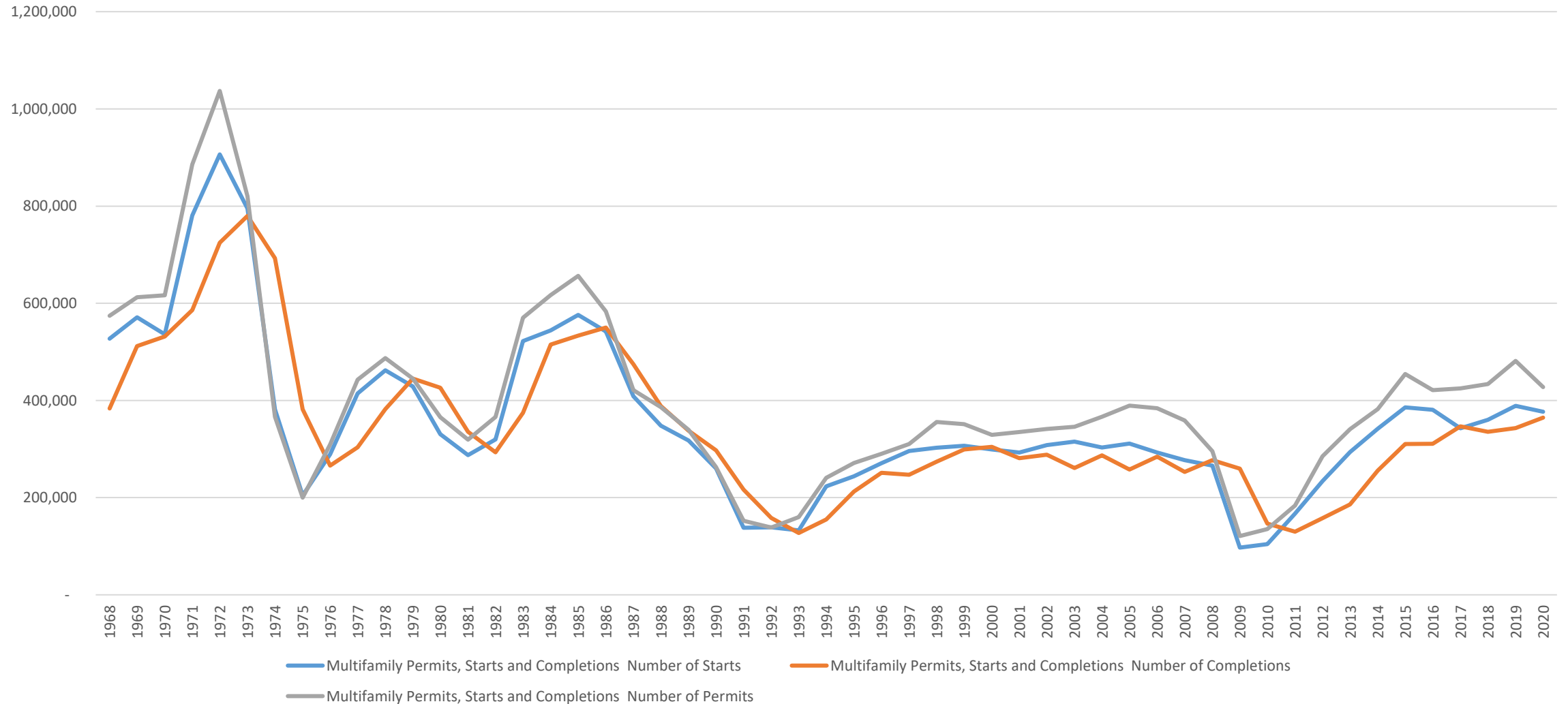
- Understanding Full-fiber and Fiber-enabled MDU Opportunities
- Fiber to the unit: Why Fiber Wins
- Fiber: Clear Need for Speed Winner
- All-Fiber vs HFC & DSL: OpEx Factors
- Full-Fiber vs Fixed Wireless Access (FWA)
- Full-Fiber MDU Use Cases: Answering the Why
- Full-fiber MDU: Best Value, Safest & Most Secure
- Key Takeaways
- Conclusion & Recommendations

# UNDERSTANDING FULL-FIBER AND FIBER-ENABLED MDU OPPORTUNITIES

- In the post-pandemic era, we view the full-fiber MDU proposition as an optimal opportunity for MDU property owners and service providers to deliver the full-value of fiber to all MDU residents.
- The U.S. multifamily property investment volume alone is expected to reach **\$148 billion** in 2021, an incredible **33% gain** over 2020's **\$111 billion** spend (according to CBRE Research).
- In 2020 of 14,000 multifamily buildings completed, 3,000 have 4 floors or more and 2000 have 50 units or more (according to the U.S. Census Bureau).
- The number of new, privately-owned housing units started – i.e., units in buildings with 5 units or more in May 2021 was 465.

# UNDERSTANDING FULL-FIBER AND FIBER-ENABLED MDU OPPORTUNITIES

## Multifamily Permits, Starts and Completions



# FIBER TO THE UNIT: WHY FIBER WINS

FTTU Capabilities	Fiber	Cable	DSL	Structured Ethernet	FWA
Interworking Ease	Yes	No	No	No	No
Speeds up to 10Gbps+	Yes	No	No	No (except w costly Cat6)	No
Equal DS & US Speeds	Yes	No	No	No	No
Non-flammable	Yes	No	No	No	No

*Only fiber technology provides the full range of access benefits across interworking, speed, symmetrical bandwidth capabilities, and safety considerations that can assure premium bandwidth experiences for MDU residents.*

## FIBER: CLEAR NEED FOR SPEED WINNER

Access Technology	Download Speed Range	Upload Speed Range
Fiber	250 – 10,000 Mbps+	250 – 10,000 Mbps+
HFC Cable	10 – 10,000 Mbps	5 – 1,000 Mbps
Copper DSL	5 – 35 Mbps	1 - 10 Mbps
Satellite	0.5 – 1.5 Mbps	0.1 – 0.5 Mbps

- Fiber presents the best broadband economic opportunity for MDU property owners to improve the value and ROI on their properties.
- Existing and emerging use cases will drive the demand for even more fiber.

# ALL-FIBER VS HFC & DSL: OPEX FACTORS

Savings	Fiber vs HFC	Fiber vs DSL
1 year/Home/Passed	\$54: Fiber is Less Expensive	\$91: Fiber is Less Expensive
10 years/Home/Passed	\$540: Fiber is Less Expensive	\$910: Fiber is Less Expensive

- HFC upgrades are complex and require additional cost considerations such as powering the nodes, amplifiers, and cable modems across any modification.
- All these devices rely on the availability of commercial power as well as battery backup systems.
- Powered HFC devices have difficulty holding up in extreme weather conditions and require protection, adding to cost of HFC build and upgrades as well as ongoing OpEx to inspect and maintain these devices.

# FULL-FIBER VS FIXED WIRELESS ACCESS (FWA)

Criteria	Full-Fiber	mmWave FWA
Throughput	Constant & predictable: 100X more capability than FWA	Decreases proportionally to distance; varies depending on obstructions to signal path
Availability	Constant & predictable	Depends on distance & location of user terminal; foliage and IRR glass reduce availability
Number of users	Linearly Scalable	Variable depending on deployment scenario as well as other factors
TCO	Low Opex: @12 mo. Breakeven	22 mos. to breakeven (scenario and case dependent)



# FULL-FIBER MDU USE CASES: ANSWERING THE WHY

- High-value residential services
  - WFH/WFA, Video steaming, telehealth, distance learning
- Optimized WiFi-enabled retail services
  - Embedded retail sections, guest services
- Hosting 5G/small cell services
  - CSP/MDU owner partnerships, DAS/FWA applications
- Residential video security and surveillance
  - Increase security, appeal to safety-conscious, lower ins. rates
- Future proofing for emerging applications
  - 4K/8K video streaming, AR/VR, facial recognition, holography

# FULL-FIBER MDU: BEST VALUE, SAFEST & MOST SECURE

Attributes	Fiber	Fiber Alternatives
Maintenance/Upgrades	Rare to None	Common and costly (e.g., HFC Plant Upgrades)
Installation	Thinner, More Flexible	Increases space demand and costlier (e.g., HFC, DSL, Ethernet)
MDU Safety (Wood Structures)	Non-flammable; Compatible with Water Distribution Systems.	Incompatible with Water Distribution Systems;
Connectivity Reliability	Best Suited for all MDU Environments: FTTU and FTTB	FWA, Satellite, and building-wide WiFi prone to interference
Backhaul: 5G/4G	Gold Standard	Legacy technology; Bandwidth challenged (Copper)
Broadband Security	Light on fiber is virtually unbreachable	WiFi = Hacker's Delight; Data on Copper is Vulnerable
WFH Corporate Policies	Best Suited to meet Corporate QoS/QoE Requirements	Insufficient or Requires Costly Upgrades
Multi-Gig Services	Ready to Go	Unreachable or Requires Expensive Cat6 Cabling & Interworking

## KEY TAKEAWAYS

- Full-Fiber broadband, among all access and transport technologies, is clearly the technology best-suited for delivering the full economic value of broadband services in MDU environments.
- Multifamily structure builds are expected to skyrocket throughout 2021, further strengthening the full-fiber MDU cause and use cases.
- Full-fiber implementation is the optimal approach for delivering the key emerging MDU use cases including high value residential services, optimized WiFi for retail services, 5G/small cell interworking, and residential security/video surveillance services.
- The society-wide shift to full-time and hybrid WFH models adds warrant and urgency to the full-fiber MDU approach.
- Fiber offers built-in advantages over alternative technologies in areas such as installation ease, upgrade costs, building safety, 5G interworking, WFH corporate policies, and broadband security that makes the full-fiber prop

# CONCLUSION & RECOMMENDATIONS

- **MDU Owners Must Consider Full-Fiber Solutions.** MDU owners should prioritize consideration of the overall full-fiber use case to increase the value of their properties and net incomes.
- **Service Providers Must Prioritize Fiber to Win More MDU Business.** Service providers must emphasize the economic benefits of their full-fiber capabilities to win more MDU business including the potential to improve insurance rates through better safety capabilities (i.e., non-flammable) and video surveillance support as well as differentiating properties with best value broadband packages.
- **WFH Era Changes the Fiber Broadband Stakes.** Service providers are in their best position to drive full-fiber implementations across MDU properties since the economics of fiber broadband are the best for meeting the security and QoS demands of WFH distributed workforces, especially in comparison to alternative access technologies.

# A FULL-FIBER THANK YOU

## Fiber Connect 2021