

**Colby Synesael**

646 562 1355

colby.synesael@cowen.com

**Gregory Williams, CFA**

646 562 1367

gregory.williams@cowen.com

**Michael Elias**

646 562 1358

michael.elias@cowen.com

**Joseph Kavaloski**

646 562 1353

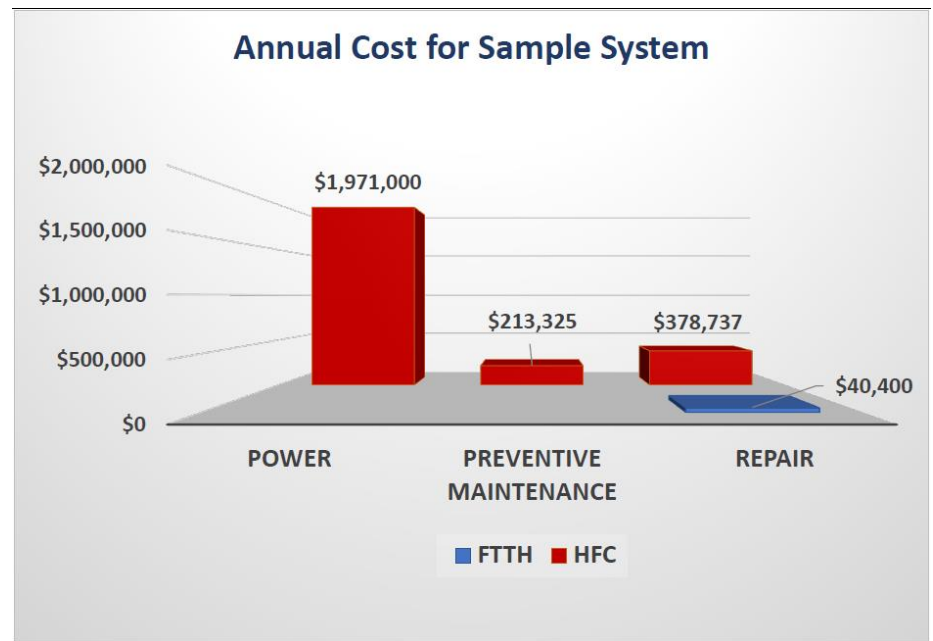
joseph.kavaloski@cowen.com

## CHART OF THE WEEK

### THE COWEN INSIGHT

We publish a chart every other week that captures an interesting data or talking point within the broader Comm. Infra. and Cable, Satellite, and Telecom Services sectors. This week, we are highlighting the annual network OpEx cost differential between legacy hybrid fiber-coaxial (HFC) networks and FTTH networks.

Figure 1 – Network OpEx Cost Comparison Between Legacy Hybrid Fiber-Coaxial (HFC) Networks and FTTH



Note: The above study was conducted with a sample of 100,000 homes in a suburban neighborhood with density of ~60-90 homes per mile. Costs above only include plant operations and do not include customer repair calls.

Source: Broadband Success Partners

*(Please see full report by opening link)*

### Conclusion

This week, we are highlighting the network OpEx cost comparison of legacy hybrid fiber-coaxial (HFC) networks vs. FTTH networks. During our 7<sup>th</sup> Annual Cowen Communications Infrastructure Summit earlier this week, we held a workshop with consulting firm Broadband Success Partners (BSP) detailing the case for FTTx, including the network topology and power and maintenance needs among other aspects, of which perhaps the most interesting takeaway was the meaningful network OpEx savings that can be achieved with FTTH when compared to HFC. In the above chart, BSP summarizes the results of a sample study of 100,000 homes located in a suburban neighborhood with density of ~60-90 homes per mile. In the study, they looked at the annual network-related costs required to run an HFC plant vs. a FTTH plant, including costs for power, preventive maintenance, and repair. In HFC networks, power made up the vast majority of the annual network OpEx (~\$2MM), with preventive maintenance (~\$200K) and repair (~\$400K) being far less. Conversely, in FTTH networks, the only network OpEx cost was ~\$40K for repair (for the occasional fiber break/fixes). With regards to power costs (including electricity, batteries, and battery maintenance), HFC networks have significant ongoing power expenses including electric utility payments and maintaining power supply to batteries while FTTH networks have no power needs as PONs are by definition “passive”, with optical

August 13, 2021



line terminals (OLT) typically in the head-end (HE) feeding the outside plant, with little/no need for active electronics, and fewer “moving parts” in the field. Furthermore, given HFC networks must monitor for signal leakage, water intrusion, corrosion, and ongoing proof of performance, they carry higher preventive maintenance costs relative to FTTH plants that require no routine or preventive maintenance, thus saving another ~\$200K per annum, according to BSP. Finally, on repair costs, the sample study shows HFC networks requiring ~\$400K per annum in repairs, while the FTTH sample costs just over \$40K, again highlighting the durability of FTTH infrastructure. All said, once installed, a fiber network requires less equipment (removing hubs, taps, and amplifiers through the network), no field power requirements, no routine maintenance, no signal leakage measurement or remediation, and has no fear of corrosion with metallic connectors the way a HFC network would. As such, Fiber networks can save operators ~\$2.5MM per 100K homes per annum in network OpEx costs, on average. Furthermore, in addition to this study, FTTH can drive meaningful savings on non-network OpEx as we’ve noted a potential for a 30-40% lower incident rate (fewer service calls, fewer outages, faster repair times, fewer truck rolls) that can drive an overall OpEx savings of 30-40% (we’ve heard as high as 50%). To that point, Altice claims that their entire ~5MM HHP FTTH business case is justified from the OpEx savings alone (no ARPU or churn benefits needed) with a payback in “only a few years”. (See page 11 [linked here](#)).





## VALUATION METHODOLOGY AND RISKS

---

### Valuation Methodology

---

#### Communications Infrastructure:

Our valuation methodology consists of an absolute and relative value approach. We arrive at a fair value utilizing either 1) a five-year discounted cash flow (DCF), 2) a segmented sum-of-parts (SOP) analysis, or 3) a segmented hybrid valuation using both a SOP and a NAV analysis. Our relative value approach takes into account EV/EBITDA, EV/FRE, P/FFO, P/AFFO, dividend yield, cap rates, P/FCF, P/FRE, and when applicable P/E.

### Investment Risks

---

#### Communications Infrastructure:

Risks Include: (1) Communication Infrastructure stocks can be more sensitive to movements (or expectation of movements) in interest rates with higher/lower rates often leading to an outsized decrease/increase in stock price; (2) rapidly changing/disruptive technology, new product/service offerings, and evolving industry/technology standards could have an impact on demand and/or pricing; and (3) deterioration in the macro environment both domestically and internationally could lead to a reduction in demand and a consequent impact on valuation multiples.

## ADDENDUM

### Analyst Certification

Each author of this research report hereby certifies that (i) the views expressed in the research report accurately reflect his or her personal views about any and all of the subject securities or issuers, and (ii) no part of his or her compensation was, is, or will be related, directly or indirectly, to the specific recommendations or views expressed in this report.

### Important Disclosures

This report constitutes a compendium report (covers six or more subject companies). As such, Cowen and Company, LLC chooses to provide specific disclosures for the companies mentioned by reference. To access current disclosures for the all companies in this report, clients should refer to <https://cowen.bluematrix.com/sellside/Disclosures.action> or contact your Cowen and Company, LLC representative for additional information.

Cowen and Company, LLC compensates research analysts for activities and services intended to benefit the firm's investor clients. Individual compensation determinations for research analysts, including the author(s) of this report, are based on a variety of factors, including the overall profitability of the firm and the total revenue derived from all sources, including revenues from investment banking, sales and trading or principal trading revenues. Cowen and Company, LLC does not compensate research analysts based on specific investment banking transactions or specific sales and trading or principal trading revenues.

### Disclaimer

Our research reports are simultaneously available to all clients on our client website. Research reports are for our clients only. Not all research reports are disseminated, e-mailed or made available to third-party aggregators. Cowen and Company, LLC is not responsible for the redistribution of research by third party aggregators. Selected research reports are available in printed form in addition to an electronic form. All published research reports can be obtained on the firm's client website, <https://cowenlibrary.bluematrix.com/client/library.jsp>.

The information, opinions, estimates and forecasts are as of the date of this report and subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Research reports are published at irregular intervals as appropriate in the analyst's judgement.

Further information on subject securities may be obtained from our offices. This research report is published solely for information purposes, and is not to be construed as an offer to sell or the solicitation of an offer to buy any security in any state where such an offer or solicitation would be illegal. Other than disclosures relating to Cowen and Company, LLC, the information herein is based on sources we believe to be reliable but is not guaranteed by us and does not purport to be a complete statement or summary of the available data. Any opinions expressed herein are statements of our judgment on this date and are subject to change without notice. The opinions and recommendations herein do not take into account individual client circumstances, objectives or needs and are not intended as recommendations of investment strategy. The recipients of this report must make their own independent decisions regarding any securities subject to this research report. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. To the extent that this report discusses any legal proceedings or issues, it has not been prepared to express or intended to express any legal conclusion, opinion or advice. Our salespeople, traders and other professionals may provide oral or written market commentary or trading strategies to our clients that reflect opinions that are contrary to the opinions expressed in our research. Our principal trading area and investing businesses may make investment decisions that are inconsistent with recommendations or views expressed in our research. Cowen and Company, LLC maintains physical, electronic and procedural information barriers to address the flow of information between and among departments within Cowen and Company, LLC in order to prevent and avoid conflicts of interest with respect to analyst recommendations.

For important disclosures regarding the companies that are the subject of this research report, please contact Compliance Department, Cowen and Company, LLC, 599 Lexington Avenue, 20th Floor, New York, NY 10022. In addition, the same important disclosures, with the exception of the valuation methods and risks, are available on the Firm's disclosure website at <https://cowen.bluematrix.com/sellside/Disclosures.action>.

**Equity Research Price Targets:** Cowen and Company, LLC assigns price targets on all companies covered in equity research unless noted otherwise. The equity research price target for an issuer's stock represents the value that the analyst reasonably expects the stock to reach over a performance period of twelve months. Any price targets in equity securities in this report should be considered in the context of all prior published Cowen and Company, LLC equity research reports (including the disclosures in any such equity report or on the Firm's disclosure website), which may or may not include equity research price targets, as well as developments relating to the issuer, its industry and the financial markets. For equity research price target valuation methodology and risks associated with the achievement of any given equity research price target, please see the analyst's equity research report publishing such targets.

**Cowen Cross-Asset Research:** Due to the nature of the fixed income market, the issuers or debt securities of the issuers discussed in "Cowen Cross-Asset Research" reports do not assign ratings and price targets and may not be continuously followed. Accordingly, investors must regard such branded reports as providing stand-alone analysis and reflecting the analyst's opinion as of the date of the report and should not expect continuing analysis or additional reports relating to such issuers or debt securities of the issuers.

From time to time "Cowen Cross-Asset Research" analysts provide investment recommendations on securities that are the subject of this report. These recommendations are intended only as of the time and date of publication and only within the parameters specified in each individual report. "Cowen Cross-Asset Research" investment recommendations are made strictly on a case-by-case basis, and no recommendation is provided as part of an overarching rating system or other set of consistently applied benchmarks. The views expressed in "Cross-Asset Research" report may differ from the views offered in the firm's equity research reports prepared for our clients.

**Notice to UK Investors:** This publication is produced by Cowen and Company, LLC which is regulated in the United States by FINRA. It is to be communicated only to persons of a kind described in Articles 19 and 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005. It must not be further transmitted to any other person without our consent.

**Notice to European Union Investors:** Individuals producing recommendations are required to obtain certain licenses by the Financial Regulatory Authority (FINRA). You can review the author's current licensing status and history, employment history and, if any, reported regulatory, customer dispute, criminal and other matters via "Brokercheck by FINRA" at <http://brokercheck.finra.org/>. An individual's licensing status with FINRA should not be construed as an endorsement by FINRA. General biographical information is also available for each Research Analyst at [www.cowen.com](http://www.cowen.com).

Additionally, the complete preceding 12-month recommendations history related to recommendation in this research report is available at <https://cowen.bluematrix.com/sellside/Disclosures.action>

The recommendation contained in this report was produced at August 13, 2021, 16:07 ET. and disseminated at August 13, 2021, 16:07 ET.

### Copyright, User Agreement and other general information related to this report

© 2021 Cowen and Company, LLC. All rights reserved. Member NYSE, FINRA and SIPC. This research report is prepared for the exclusive use of Cowen clients and may not be reproduced, displayed, modified, distributed, transmitted or disclosed, in whole or in part, or in any form or manner, to others outside your organization without the express prior written consent of Cowen. Cowen research reports are distributed simultaneously to all clients eligible to receive such research reports. Any unauthorized use or disclosure is

prohibited. Receipt and/or review of this research constitutes your agreement not to reproduce, display, modify, distribute, transmit, or disclose to others outside your organization. All Cowen trademarks displayed in this report are owned by Cowen and may not be used without its prior written consent.

**Cowen and Company, LLC.** New York 646 562 1010 **Boston** 617 946 3700 **San Francisco** 415 646 7200 **Chicago** 312 577 2240 **Cleveland** 440 331 3531 **Atlanta** 866 544 7009 **Stamford** 646 616 3000 **Washington, D.C.** 202 868 5300 **London** (affiliate) 44 207 071 7500

**COWEN AND COMPANY EQUITY RESEARCH RATING DEFINITIONS**

**Outperform (1):** The stock is expected to achieve a total positive return of at least 15% over the next 12 months

**Market Perform (2):** The stock is expected to have a total return that falls between the parameters of an Outperform and Underperform over the next 12 months

**Underperform (3):** Stock is expected to achieve a total negative return of at least 10% over the next 12 months

**Assumption:** The expected total return calculation includes anticipated dividend yield

**Cowen and Company Equity Research Rating Distribution**

**Distribution of Ratings/Investment Banking Services (IB) as of 06/30/21**

| Rating   | Count | Ratings Distribution | Count | IB Services/Past 12 Months |
|----------|-------|----------------------|-------|----------------------------|
| Buy (a)  | 579   | 69.84%               | 185   | 31.95%                     |
| Hold (b) | 241   | 29.07%               | 20    | 8.30%                      |
| Sell (c) | 9     | 1.09%                | 0     | 0.00%                      |

(a) Corresponds to "Outperform" rated stocks as defined in Cowen and Company, LLC's equity research rating definitions. (b) Corresponds to "Market Perform" as defined in Cowen and Company, LLC's equity research ratings definitions. (c) Corresponds to "Underperform" as defined in Cowen and Company, LLC's equity research ratings definitions. Cowen and Company Equity Research Rating Distribution Table does not include any company for which the equity research rating is currently suspended or any debt security followed by Cowen Credit Research and Trading.

Note: "Buy", "Hold" and "Sell" are not terms that Cowen and Company, LLC uses in its ratings system and should not be construed as investment options. Rather, these ratings terms are used illustratively to comply with FINRA regulation.

## POINTS OF CONTACT

### Reaching Cowen

#### Main U.S. Locations

##### New York

599 Lexington Avenue  
New York, NY 10022  
646 562 1010  
800 221 5616

##### Boston

Two International Place  
Boston, MA 02110  
617 946 3700  
800 343 7068

##### Cleveland

20006 Detroit Road  
Suite 100  
Rocky River, OH 44116  
440 331 3531

##### San Francisco

One Maritime Plaza, 9th Floor  
San Francisco, CA 94111  
415 646 7200  
800 858 9316

##### Atlanta

3424 Peachtree Road NE  
Suite 2200  
Atlanta, GA 30326  
866 544 7009

##### Chicago

181 West Madison Street  
Suite 3135  
Chicago, IL 60602  
312 577 2240

##### Stamford

262 Harbor Drive  
Stamford, CT 06902  
646 616 3000

##### Washington, D.C.

2900 K Street, NW  
Suite 520  
Washington, DC 20007  
202 868 5300

#### International Location

##### Cowen International Limited

##### London

1 Snowden Street - 11th Floor  
London EC2A 2DQ  
United Kingdom  
44 20 7071 7500

