

Comm. Equipment: FTTH Conference, Bendable Fibers Provide a Catalyst

- We attended the FTTH (Fiber to the Home) Conference and Expo in Orlando this week; Corning stole the show, unveiling its new "bend insensitive fiber," also offered by others, which we think speeds the introduction of FTTH to MDUs and enterprises.
- Carriers continue to seek innovations to simplify installation, and labor-saving technology advances to lower FTTH installation costs; Verizon's switch from BPON to GPON still seems a ways off, and AT&T remains steadfast in its decision to deploy FTTN.
- We make no changes to ratings or estimates, but view the bendable fiber and related products as positive for ADC Telecom; expansion of AT&T's FTTN as positive for Alcatel-Lucent and CommScope; broader adoption of FTTx as positive for ADTRAN; and exposure to both telco and MSO access upgrades as positive for Dycem

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Summary

We attended the Fiber to the Home (FTTH) conference this week in Orlando, sponsored by the FTTH Council. Organizers report that the show again increased in size with over 160 vendors exhibiting and nearly 2,500 attendees. The investment community was widely represented early on at the show as Corning chose the first day of the FTTH conference to unveil its new bend-insensitive fiber dubbed ClearCurve, but trailed off quickly. Service provider representation consisted mainly of independent, rural and competitive carriers (IOCs, RLECs, and CLECs) and municipalities considering broadband, with some RBOCs and MSOs (Multiple System Operators). We think many smaller telcos are weighing the options of FTTH versus FTTN, and have adopted a wait-and-see approach with Verizon's FiOS (FTTH) and AT&T's U-verse (FTTN) serving as examples. We also think MSOs are considering FTTx alternatives to their traditional HFC architecture, in part to have a competitive offering to telcos for newly fibered office parks, housing developments, and soon MDUs (multi-dwelling units, such as condominiums and apartments).

Attendees continue to be puzzled by AT&T's steadfast decision to base U-verse on a FTTN approach, which many consider bandwidth-challenged at a maximum offering of around 50 Mb/s, yet are also convinced that AT&T will deploy U-verse in the newly acquired BellSouth, effectively capping BellSouth's FTTC deployments in Greenfield applications. AT&T's announced strategy for U-verse called for deployment of FTTH in Greenfield applications, yet our checks suggest the carrier has deployed very little, which we think is primarily Alcatel-Lucent (former Alcatel's) BPON gear. We have lost conviction that AT&T will deploy FTTH in favor of FTTN, as our checks also suggest that the carrier's capitalized labor costs have increased as field technicians prepare the copper infrastructure to deploy U-verse in the former SBC and BellSouth regions.

We gleaned a number of points of interest from our discussions at the show:

- **ADC Telecom** (ADCT, \$19.97, M-S): Corning (GLW, \$25.42, NR) stole the show with its new bend-insensitive fiber dubbed ClearCurve, yet while it may have out-marketed its fiber connectivity competitor ADC Telecom with the barrage of announcements in advance of the show, we think ADC Telecom has a lead on incorporating bendable fiber from Draka Comteq in new size-reduced connectivity gear announced at the conference, which is optimized for multi-dwelling units (MDUs, condominiums, and apartment buildings). ADC's new MDU connectivity products also incorporate "plug and play" pre-connectorized fiber that avoids splicing and reduces labor and operational expense for carriers; we think the size of conventional FTTH connectivity gear has in part delayed Verizon's deployment of its FTTH initiative FiOS in major cities. ADC's new gear is based on new bendable fiber introduced over a year ago, and we think is already being tested in Verizon's labs; Corning was also showing connectivity product prototypes based on its new fiber yet we think ADC Telecom has an early lead. Data collected at the show supports our view that Corning's new fiber doesn't threaten ADC's FTTH connectivity business – cabinet and enclosure sizes are dictated more by the size of connectors than the "bendability" of fiber – but likely poses more of a threat to other drop fiber cable suppliers. Corning and Draka's fiber can be bent around corners and stapled without degrading the signal which in our experience as industry experts is unique, and likely attractive to carriers eager to replace legacy copper pairs with fiber in MDUs. We think this could serve as a

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catalyst for Verizon to deploy FiOS in MDUs, which it has avoided due to "technical limitations," and provide upside to ADC's fiber connectivity sales in 2008, though we are uncertain as to timing; MDUs also represent the majority of living units in many parts of the world, which could lead to increased international sales.

- **ADTRAN** (ADTN, \$22.82, M-S): This was the "TA-5000 show" for ADTRAN with the vendor highlighting the myriad of options available for its new multi-service access and aggregation platform, including but not limited to all flavors of FTTx – FTTN, FTTC, and FTTH, with the latter supporting the newer generation IP-based GPON, not the earlier ATM-based BPON – Ethernet over TDM applications such as Ethernet over Copper, broadband DLC upgrades for Tellabs' (TLAB, \$9.65, M-S) former AFC DLC cabinets, and an ETSI (European standard) compliant shelf. ADTRAN has broken the mold with this product, in our view, looking more like an innovator than a fast follower, competing with start-ups like privately held Hatteras and Actelis for Ethernet over TDM for example, and winning business at AT&T for this application. Our checks suggest the product has been well received from independent telcos to tier-1 carriers; for example, we think ADTRAN is in the running to replace Ericsson's (ERIC, \$39.71, NR) acquired Entrisphere gear for FTTN upgrades at Embarq (see our September 10, 2007 note, "ADTN: Embarq Opportunity"). The TA-5000 has generated a good buzz, and while it has yet to contribute much revenue, could begin to contribute materially in 2008 as an offset to slowing DSL sales.
- **Alcatel-Lucent** (ALU, \$10.12, O-S): We think Alcatel-Lucent, selected by Verizon along with incumbents Motorola (MOT, \$18.72, M-M) and Tellabs to supply next-generation GPON, was first to get through lab testing and into initial first office applications in Texas and perhaps other locations with its GPON gear. Our checks suggest that Verizon's switch from BPON to GPON is not likely to happen soon, and could be delayed further into 2008, with the multiple vendors to be tested in the lab along with attractive BPON pricing contributing to the delays. In addition to its GPON gear Alcatel-Lucent was also showing its Reconfigurable Optical ADM (ROADM) recently acquired from Tropic (the former Alcatel was an investor in privately held Tropic and Alcatel-Lucent recently acquired its assets), which we found puzzling; we think Alcatel-Lucent is pitching the 1850 ROADM for Verizon's Packet Optical Transport Platform RFP, with 1850 assets from the former Alcatel and in-house developed ROADM from the former Lucent. Alcatel-Lucent serves as system and project integrator for AT&T's U-verse initiative and we think benefits as the carrier ramps FTTN deployment in the former SBC and applies the architecture to newly acquired BellSouth; Alcatel-Lucent also likely stands to benefit if AT&T deploys more FTTH in Greenfield applications, which our checks suggest the carrier has not done in earnest.
- **CommScope** (CTV, \$51.90, O-S): CommScope's presence at a FTTH show may seem odd; it supplies FTTN, not FTTH cabinets to telcos including AT&T for its U-verse initiative. However CommScope has developed a Cable PON (passive optical network) approach dubbed BrightPath which emulates the MSO hybrid fiber coax (HFC) architecture, yet replaces the final coax link to the home with fiber, effectively removing the "C" from "HFC." While MSOs are unlikely to replace their HFC architecture anytime soon, we think the approach has promise in rural areas, where passive fiber runs could replace otherwise costly electronics, and in applications where MSOs seek competitive offerings to telcos for newly fibered office parks, housing developments, and soon MDUs (multi-dwelling units, such as condominiums and apartments). While we think the applications represent a niche and aren't likely to move the needle anytime soon, we also believe that MSOs are exploring Cable PON alternatives to remain competitive with telco deep fiber initiatives in the longer term. Near term we see CommScope's FTTN cabinet business with AT&T driving sales, with expansion into BellSouth regions in 2008 providing room for upside.
- **Dycom** (DY, \$31.35, M-M): We think Dycom benefits from having a foot in both the MSO and telco camps as both spend to upgrade infrastructure and compete more effectively. Our checks suggest that MSOs are "quietly" upgrading networks to 1 GHz in response to competitive threats from telcos, and AT&T (including the former BellSouth) maintenance spending is up as the carrier prepares its copper plant for U-verse deployment. Verizon only has so much aerial plant, which has been the initial focus for its FiOS initiative, and could begin buried work later in 2007 or early in 2008; all contribute to Dycom's construction and maintenance businesses. We think the new bendable fibers touted at the conference by Corning and others provide a catalyst for Verizon's FiOS deployment in MDUs, and we think Dycom participates in MDU work for Verizon as well. Dycom is favorably exposed to trends and benefits from a scarcity of resources, which could drive operating margin improvement as it lacks volume leverage.
- **Tellabs**: Tellabs currently has the lion's share of Verizon's BPON business but has suffered as pricing declines exceed cost reduction efforts. We doubt Verizon's switch to GPON is imminent, which could benefit Tellabs and give further sustenance to its BPON sales. We think Tellabs has reduced the number of platforms that support GPON from three to two; the 8865 (Vivace) based GPON solution, which we think was pitched to and selected by Verizon, and the 1150 (Marconi, acquired by AFC) which was deployed in FTTC configurations at the former BellSouth, which Tellabs offers to other (smaller) carriers, but has scuttled plans to develop GPON on the 1000 (AFC) BPON gear currently deployed at Verizon. We think the move is prudent and reflects Tellabs efforts to cut costs. While Verizon spending remains healthy on BPON gear, we think the former BellSouth's spending on Tellabs' FTTC gear is reduced as AT&T imposes its U-verse architecture in the acquired region.

Recommendation

We make no changes to estimates or ratings, yet data points collected at the show leave us incrementally positive on the ramp of telco deep fiber initiatives, including AT&T's FTTN based U-verse and Verizon's FTTH-based FiOS. We think new bendable fiber from Corning and others serves as a catalyst for fiber deployment in multi-dwelling units and enterprises,

and could spur Verizon's deployment of FiOS in major cities. In spite of mounting doubts, AT&T remains steadfastly committed to its FTTN approach, and ramps deployment in the former BellSouth in 2008 in our view. For vendors, we view the bendable fiber and related products as positive for ADC Telecom; expansion of AT&T's FTTN as positive for Alcatel-Lucent and CommScope; broader adoption of FTTx at tier-2+ carriers as positive for ADTRAN; and exposure to both telco and MSO access upgrades as positive for Dycom.

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