

Clearfield, Inc. (CLFD - \$99.28)
October 03, 2022*

Clearfield, Inc. (CLFD) designs, manufactures, and distributes fiber optic management, protection, and delivery products used to accelerate bandwidth speed to residential homes, businesses, and wireline network infrastructure, and wireless access network infrastructure. Clearfield's products include fiber cabinets, patch cards, assemblies, cassettes, frames, panels, microducts, terminals, vaults, wall boxes, and box enclosures. The Company primarily distributes its products directly to broadband service providers through its own sales force as well as through authorized distributors. The Company was founded in 1979 and is headquartered in Brooklyn Park, MN. Its fiscal year ends on 09/30.

Thesis Summary

We are concerned long lead times, persistent supply constraints, and longer-term orders may delay backlog conversion to revenue. Our concerns are heightened given (1) a disclosure change highlighting an extended backlog conversion timeline, (2) persistent lead time extensions despite guided improvement, (3) customers' ability to cancel/reschedule orders, and (4) customers may have pre-ordered ahead of demand (i.e. over-ordered relative to internal expectations). In our view, limited pricing power and commentary suggesting the Company may be unable and/or unwilling to pass on input cost inflation suggests Clearfield may continue to "absorb" higher input costs and margin pressure may persist. Our margin pressure concerns are heightened given (1) elevated inventory levels, (2) exposure to input cost inflation driven by lack of supplier agreements, (3) unwarranted (in our view) depressed inventory reserve levels, and (4) elevated capital expenditures. Our inventory concerns are heightened given the build may consist of unconstrained components and a new risk factor disclosure highlights increased inventory obsolescence risk. Our earnings sustainability concerns are heightened given elevated receivable levels, depressed cash flow levels, and recent insider divestitures.

Company Data

Country/Exchange	NYSE
Shares Outstanding (mil)	13.8
Float (mil)	11.5
Short Interest (mil)	0.9
% of Float Short	8.2%
Average Volume (mil)	\$33.50
52 Week Range	\$43.11 - \$130.01
Dividend Yield	0.0%
Market Cap (bil)	\$1.5
Net Cash (bil)	\$0.0
Enterprise Value (bil)	\$1.5
FY 21 Rev (mil)/Rev Growth	\$140.8 / 51.2%
FY 21 Op. Income (mil)	\$25.2
FY 21 GM %/Change	43.5% / 270 bps
FY 21 Op. Margin %/Chg	17.9% / 890 bps

Valuation (as of report date)

NTM P/S	4.7x
NTM EV/ EBITDA	18.7x
NTM P/E	28.7x

Consensus Estimate Drift

	EST	1M Ago	6M Ago	1YR Ago
Q4 22 Rev	\$71.4	\$71.4	\$43.8	\$42.8
FY 22 Rev	\$247.5	\$247.6	\$182.7	\$155.0
FY 23 Rev	\$299.5	\$299.5	\$205.6	--
Q4 22 EPS	\$0.86	\$0.86	\$0.46	\$0.49
FY 22 EPS	\$3.19	\$3.19	\$2.19	\$1.63
FY 23 EPS	\$3.55	\$3.55	\$2.39	--

Peers Mentioned In This Report

N/A

Catalysts and Timing

Weaker-than-expected Q4 22 results and/or FY 23 guidance
 Persistent supply constraints delay backlog conversion
 Inability to pass on input cost inflation and/or overbuilt inventory levels drive gross margin deterioration
 Customers reschedule/cancel orders as supply constraints ease

* All research is completed as of 4:00PM – 4:15PM Eastern Time unless otherwise noted.

Please refer to the end of this report for an updated version of *The Short List*.

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Company Background

Company description: Clearfield, Inc. (CLFD) designs, manufactures, and distributes fiber optic management, protection, and delivery products used to accelerate bandwidth speed to residential homes, businesses, and wireline network infrastructure, and wireless access network infrastructure. Clearfield’s products include fiber cabinets, patch cards, assemblies, cassettes, frames, panels, microducts, terminals, vaults, wall boxes, and box enclosures. The Company primarily distributes its products directly to broadband service providers through its own sales force as well as through authorized distributors. The Company was founded in 1979 and is headquartered in Brooklyn Park, MN. Its fiscal year ends on 09/30.

Results by market: In FY 21, the Broadband Service Provider market accounted for 98.0% of revenue while Legacy customers accounted for 2.0%. The Broadband Service Provider markets consists of four types of customers: Community Broadband customers, Multiple System Operators (i.e. cable television operators), National Carriers, and International customers. Legacy customers consist of original equipment manufacturers that require copper and fiber cable assemblies built to meet unique specifications.

Broadband Service Provider customers background: In FY 21, Community Broadband customers accounted for 69.5% of revenue, Multiple Systems Operators accounted for 13.2%, National Carriers accounted for 8.5%, and International customers accounted for 6.8%. Community Broadband customers include Tier 2 and Tier 3 telecom carriers, utilities, municipalities, and alternative carriers. Multiple System Operators include cable television operators. National Carrier customers include Tier 1 wireline and wireless telecom carriers (i.e. Internet Service Providers or ISPs). International customers include service providers outside the US, primarily located in Central/Latin America and Canada.

FY 21 Customers Analysis (as % of total)	Revenue
Community Broadband	69.5%
Multiple System Operators	13.2%
National Carriers	8.5%
International	6.8%
Total Broadband Service Provider market	98.0%
Legacy customers	2.0%
Total	100.0%

Markets background: In its FY 21 10K, Clearfield disclosed it sold products in six markets: Fiber to Premise (FTTP) also called Fiber to the Home (FTTH), Fiber to the Business (FTTB), FTT-Cell site, Distributed Antenna System (DAS), Centralized Radio Area Network (C-RAN), and Build to Print.

- **Fiber to Premise (FTTP):** The FTTP market, also called Fiber to the Home (FTTH), delivers bandwidth directly to the user.
- **Fiber to the Business (FTTB):** The FTTB market principally targets Multiple System Operators and National Carriers to service their business customers.
- **FTT-Cell site:** The FTT-Cell site market enhances wireless service providers’ bandwidth coverage.
- **Distributed-Antenna System (DAS):** The DAS market includes customers utilizing spatially separated antennas to provide wireless service in a geographical area or structure.

- **Centralized Radio Area Network (C-RAN):** The C-RAN market uses fiber connections to communicate between cell sites and Baseband Units (BBU) located in datacenters (i.e. the cloud). C-RAN uses Radio Access Network (RAN) cellular architecture that traditionally used fiber to backhaul signals from BBUs located at a cell tower to the mobile core network.
- **Build to Print:** The Build to Print market includes original equipment manufacturers (OEMs) who require copper and fiber cable assemblies built to their unique specifications.

Product line background: In its FY 21 10K, the Company disclosed it offered eight product lines (also called platforms) based on customers' unique fiber optic management and deployment needs including FieldSmart®, WaveSmart®, CraftSmart®, FieldShield®, YOURx® Platform, StreetSmart®, Active Cabinets/Fiber Active Cabinet/FiberFlex, and Fiber and Copper Assemblies.

- **FieldSmart®:** The FieldSmart product line includes panels, cabinets, wall boxes, frames, pedestals, and other enclosures that house components used to provide consistent design through the entire broadband distribution system (i.e. from the service provider's or cable television's central office to the network access point in a home or business).
- **WaveSmart®:** The WaveSmart product line includes signal coupling, splitting, termination, multiplexing, demultiplexing, and attenuation components to integrate with Clearfield's fiber management platform. Products are built for harsh environments to meet strict industry standards and ensure trouble-free performance in extreme outside plant conditions.
- **CraftSmart®:** The CraftSmart product line provides physical fiber protection enclosure products to house FieldSmart products at the last-mile access point of the network in above-grade or below-grade installations. Products in the CraftSmart product line include fiber protection vaults (FPVs) and fiber protection pedestals (FPPs).
- **FieldShield®:** The FieldShield product line includes fiber pathway, protection, and installation tools that reduce the cost, time, and space for contractors and installers of broadband deployment. FieldShield products include microducts, cable connectors, and drop cables strong enough to be installed using traditional methods (e.g. boring and plowing) and/or using newer conduit placement technologies (e.g. micro trenching or saw cutting).
- **YOURx® Platform:** The YOURx Platform uses a modular, building block approach with tool-less system design focusing on the fiber drop to the customer. The YOURx platform consists of hardened terminals, test access points, and multiple drop cable options designed for the most challenging portion of the access network across all fiber drop cable media.
- **StreetSmart®:** The StreetSmart product line provides security and connection points for wireless and wireline service providers while also creating centralized test points technicians can easily access for cleaning and maintenance. Products include hand-off and wall boxes for on premise, outside plant, and aerial application access points.
- **Active Cabinets/Fiber Active Cabinet/FiberFlex:** The Active Cabinets/FiberActive Cabinet/FiberFlex platforms offer integrated, engineered cabinets equipped with specific active electronics configurations and universal cabinets ready for mounting other electronic equipment. Products include powered cabinets for outside plant and access networks to enable fiber access, protection, and density among outside plant fiber cabinets for Passive Optical Networks (PON), cross connect, and hub collapse environments.
- **Fiber and Copper Assemblies:** Fiber and Copper Assemblies product offerings include the manufacturing of high quality, industry-standard and/or customer-specific configurations. In addition, Clearfield's engineering services team works alongside the original equipment manufacturer customers' engineering departments to design and manufacture custom solutions for both in-the-box and network connectivity assemblies specific to the customers' product lines.

Revenue by geography: In FY 21, the US accounted for 93.3% of revenue while international accounted for 6.7%. In its FY 21 10K, the Company disclosed it allocated revenue from external customers to geographic areas based on the location the product was shipped. The Company represented revenue outside the US was primarily from countries in the Caribbean, Central America, South America, and Canada.

Geography Analysis (as % of revenue)	FY 21
United States	93.3%
All other countries	6.7%
Total	100.0%

Background on manufacturing: In its FY 21 10K, the Company disclosed “substantially all of the final build and assembly” of its products was completed at its plants in Minnesota and Mexico. The Company also leverages a network of domestic and global manufacturing partners, suppliers, and labor to manufacture its products. The Company highlighted it purchased certain components and third-party manufacturing services from “a single or a limited number of suppliers.”

Seasonality: Over the past three years, H2 (April through September) accounted for 57.0% of revenue on average, while H1 (October through March) accounted for 43.0%. In its FY 21 10K, the Company disclosed sales were typically lower in the first half of the year, primarily due to customer budget cycles, deployment schedules of outdoor products, geographical concentrations, and standard vacation and holiday periods.

Seasonality Analysis (as % of total revenue)	Q1	Q2	Q3	Q4
FY 21 quarterly revenue contribution	19.2%	21.1%	27.5%	32.1%
FY 20 quarterly revenue contribution	20.8%	21.9%	27.9%	29.4%
FY 19 quarterly revenue contribution	23.6%	22.4%	25.7%	28.2%
Three-year-average	21.2%	21.8%	27.1%	29.9%

Competition: Clearfield competes with various companies across its product lines. Its FieldSmart product line competes with Corning Incorporated, Furukawa Electric North America, Inc., Fujikura Ltd., AFL Telecommunications, Nokia Corporation, and CommScope, Inc. Its CraftSmart product line competes with Emerson Network Power and Charles Industries, Ltd. Its FieldShield product line primarily competes with PPC Broadband, Inc.¹

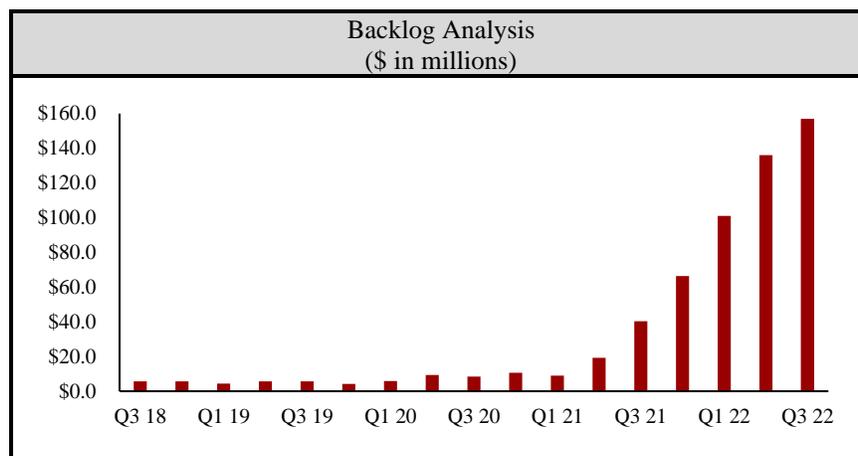
¹ Corning Incorporated (GLW), Furukawa Electric North America, Inc. (FUWAF), Fujikura Ltd. (TYO 5803), AFL Telecommunications (subsidiary of TYO 5803), Nokia Corporation (NOK), CommScope Holding Company, Inc. (COMM), Emerson Network Power Co. (subsidiary of VRT), Charles Industries, Ltd. (subsidiary of APH), PPC Broadband, Inc. (Private)

Voyant's Earnings Risk Assessment

We are concerned long lead times, persistent supply constraints, and longer-term orders may delay backlog conversion to revenue. Our concerns are heightened given (1) a disclosure change highlighting an extended backlog conversion timeline, (2) persistent lead time extensions despite guided improvement, (3) customers' ability to cancel/reschedule orders, and (4) customers may have pre-ordered ahead of demand (i.e. over-ordered relative to internal expectations). In our view, limited pricing power and commentary suggesting the Company may be unable and/or unwilling to pass on input cost inflation suggests Clearfield may continue to "absorb" higher input costs and margin pressure may persist. Our margin pressure concerns are heightened given (1) elevated inventory levels, (2) exposure to input cost inflation driven by lack of supplier agreements, (3) unwarranted (in our view) depressed inventory reserve levels, and (4) elevated capital expenditures. Our inventory concerns are heightened given the build may consist of unconstrained components and a new risk factor disclosure highlights increased inventory obsolescence risk. Our earnings sustainability concerns are heightened given elevated receivable levels, depressed cash flow levels, and recent insider divestitures.

Long Lead Times, Longer-Term Orders, & Order Flexibility Highlight Backlog Risk

Backlog surges to highest level ever reported: In its FY 21 10K, the Company disclosed backlog reflected unfulfilled purchase orders received from customers. In Q3 22, backlog surged 289.6% year-over-year to \$157.0 million, the highest level ever reported. On its Q3 22 Conference Call on 07/28/22, the Company highlighted strong sales bookings momentum drove the backlog surge. While we acknowledge the backlog surge may have benefited from strong demand, we believe a portion of the build may be driven by long lead times and longer-term orders (discussed below).



Backlog conversion disclosure change highlights backlog conversion timeline extension, in our view: In its FY 21 10K, the Company extended its expected backlog shipping timeline from three months (in its FY 20 10K) to six months (in the FY 21 10K). The Company attributed the extended shipment timeline to "unprecedented lead-times and challenges in the global supply chain." In our view, the disclosure change highlights longer lead times and supply chain disruptions extended the timeline to convert backlog to revenue. In addition, the backlog conversion to revenue timeline may have extended even further since the release of the FY 21 10K (discussed next). As such, we believe the recent backlog surge may not be comparable to historical backlog levels when backlog conversion to revenue was approximately one quarter.

At September 30, 2021, most of the Company's backlog orders are scheduled to ship **within the next six months**. (FY 21 10K) [emphasis added]

Backlog orders are generally shipped **within three months**. (FY 20 10K) [emphasis added]

Persistent lead time extensions despite guided improvement highlight backlog conversion delays: Prior to its Q3 21 10Q, the Company did not disclose estimated lead times in its quarterly (10Q) or annual (10K) reports. In its Q3 21 10Q, the Company represented lead times were eight to ten weeks and guided for lead times to normalize to “historic levels” of four to six weeks. However, in its Q3 22 10Q, the Company highlighted lead times “stretched” to eight to 20 weeks or longer. **We believe the persistent lead time extensions over the past four quarters despite guided improvement highlight persistent supply constraints and suggest backlog conversion may be delayed.**

Lead Time Guidance Analysis	Purchase Order Lead Time Disclosure
Q3 21 10Q	<i>lead times...8 to 10 weeks or longer; expects...historic levels of 4 to 6 weeks</i>
FY 21 10K	<i>lead times...8 to 10 weeks or longer; expects...historic levels of 4 to 6 weeks</i>
Q1 22 10Q	<i>lead times stretched...8 to 12 weeks or longer; working to...more historic levels</i>
Q2 22 10Q	<i>lead times stretched...8 to 12 weeks or longer; working to...more historic levels</i>
Q3 22 10Q	<i>lead times stretched... 8 to 20 weeks or longer; working to... more historic levels</i>

Longer-term customer orders suggest order rescheduling/cancellation risk may be elevated: On its Q3 22 Conference Call, the Company disclosed customers placed “longer-term” orders scheduled for delivery into next year. In our view, the commentary suggests a portion of backlog expansion may have been driven by customers submitting purchase orders further in advance of their near- to mid-term operational needs to secure supply ahead of project deployments. Given the industry has been impacted by extended lead times and supply constraints, we are concerned customers may have over-ordered relative to internal projections to secure supply and may adjust, reschedule, and/or cancel (discussed next) longer-dated orders as supply chain constraints ease and lead times normalize.

The backlog is pretty consistent with third quarter and some increase in regard to longer-term solutions, we’re seeing in the market that more and more customers **are looking to actually place long-term scheduled orders into next year**. (CEO Ms. Cheryl Beranek, Q3 22 Conference Call, 07/28/22) [emphasis added]

Adjustable customer purchase orders heighten our backlog conversion/cancellation concerns: In its FY 21 10K, the Company disclosed it did not have agreements obligating customers to make future purchases. On its Q1 22 Conference Call on 01/27/22, the Company highlighted customers may “tweak” or “change” the “early” orders based on their needs. In our view, the commentary suggests orders with delayed shipment schedules and/or purchase orders placed well in advance of customer deployments may be exposed to cancellation, rescheduling, and/or volume modification risk. Given we believe customers may have over-ordered relative to internal production requirements, the commentary about customers’ ability to “tweak” and “change” orders heightens our concerns about order cancellation/rescheduling risk. While we believe supply constraints may persist and lead times may remain extended in the near term (discussed above), we are concerned order cancellation/rescheduling may increase when supply constraints ease and lead times normalize.

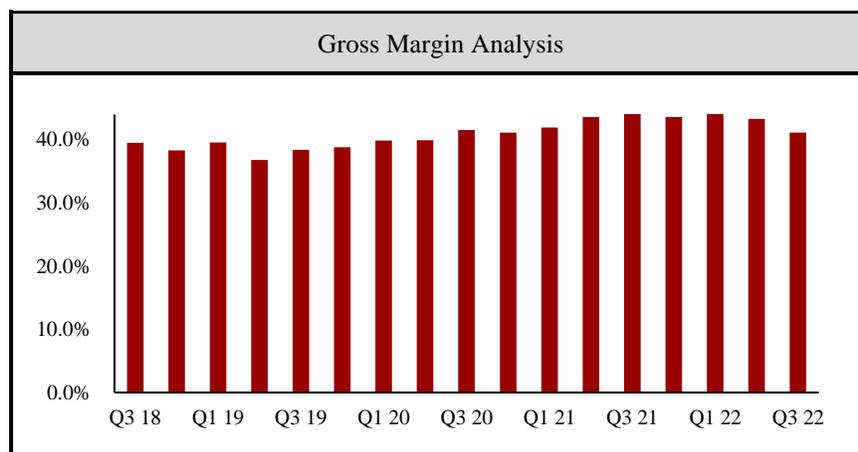
What we have seen is customers who need to kind of look at their world and **as they order early** and then need to kind of look at their world and say, okay, **I might tweak this a little bit. I might have to change these orders. And so we've been cognizant of that**. (CEO Ms. Cheryl Beranek, Q1 22 Conference Call, 01/27/22) [emphasis added]

Reluctance To Pass On Cost Inflation Highlights Lack Of Pricing Power, In Our View

Gross margin pressure due to “absorbed” cost inflation highlights limited pricing power, in our view: In Q3 22, gross margin declined 310 basis points year-over-year (220 basis points sequentially) to 41.1%. In its Q3 22 10Q, the Company attributed gross margin deterioration to component cost inflation “absorbed by the Company.” In our view, the commentary suggests the Company may be unable and/or unwilling to pass on input cost inflation

through price increases and margin pressure may persist given persistent input cost inflation.

The decrease in gross profit margin for the quarter was primarily due to component cost increases **absorbed by the Company** due to the inflationary economic environment, increased facility costs from our expanded Mexico manufacturing and Minnesota distribution center operations, and increased freight and transportation costs. (Q3 22 10Q) [emphasis added]



Reluctance to pass on input cost inflation heightens our concerns: Previously, on its Q1 22 Conference Call, the Company guided to keep prices “flat” and avoid increasing prices to end customers. On its Q3 22 Conference Call, the Company guided for prices to remain steady despite the adverse impact higher real estate, component, and shipping costs had on gross margins during the quarter. **The Company’s reluctance to pass higher input costs on to customers despite cost increases and strong demand (i.e. backlog at the highest level ever reported) suggests Clearfield may have limited pricing power and heightens our gross margin pressure concerns.**

We're hoping to be able to actually hold prices most of the way through in a partnership with our service provider customers. **So any increase in revenue from us won't be because of price increases** there. Some place we'll need to, but as a statement kind of across the platform, we're going to hold it where we can. (CEO Ms. Cheryl Beranek, Q3 22 Conference Call, 07/28/22) [emphasis added]

Disclosure highlighting inability to pass on certain higher costs highlights our lack of pricing power concerns: In its FY 21 10K, the Company disclosed it was “generally unable to pass [a]long” tariff-driven higher input costs to customers. In our view, the disclosure highlights Clearfield’s inability to pass on higher costs and limited pricing power.

Tariffs increase the cost of the materials and components that go into making our products, but we are **generally unable to pass long these increased costs to our customers.** Accordingly, **these increased costs adversely impact the gross margin that we earn** on our products. (FY 21 10K) [emphasis added]

Competitor purchasing power advantage may exacerbate margin pressure and extended lead times: In its FY 21 10K, the Company disclosed raw materials and supplies used in its production processes were also used by other companies in their production processes. In addition, Clearfield represented it may be at a competitive disadvantage relative other companies with “greater purchasing power.” In our view, the commentary highlights the risk the Company is unable to secure adequate supply of production components to meet demand (i.e. backlog). To the extent supply constraints persist, Clearfield’s ability to secure supply may become more challenging and/or compel the Company to take alternative actions to secure adequate supply to reduce lead times (i.e. place more competitive bids to suppliers offering to purchase components at higher prices). Accordingly, we are concerned lack of purchasing power may exacerbate margin pressure and drive further lead time extensions.

Companies with more resources than us may have a competitive advantage in obtaining raw materials and supplies due to greater purchasing power. (FY 21 10K)

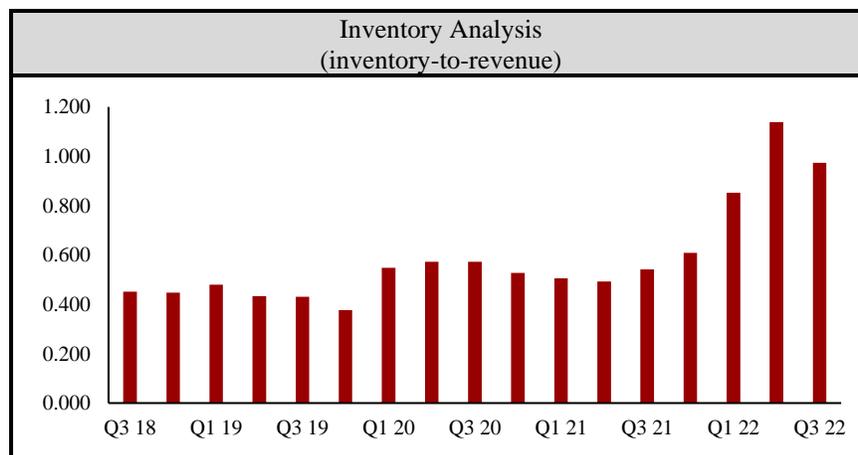
National Carrier customer expansion heightens our margin pressure concerns: In Q3 22, National Carrier customer revenue surged 186.1% year-over-year to \$10.7 million. On its Q3 22 Conference Call, the Company attributed the increase to a “single carrier” and guided for National Carrier revenue to remain strong as a “significant part” of backlog related to the national carrier. However, Clearfield guided for investments in National Carrier business expansion to pressure margins in the near future. While we acknowledge National Carrier expansion may drive revenue growth (discussed herein), we believe the commentary suggests National Carrier growth may exacerbate margin pressure. Our limited pricing power concerns are heightened given national carriers likely have substantial pricing power.

Our strategic investment in our **growing national carrier business will negatively affect margin** for the near future. (CEO Ms. Cheryl Beranek, Q3 22 Conference Call, 07/28/22) [emphasis added]

Elevated Inventory Levels Heighten Our Margin Pressure Concerns

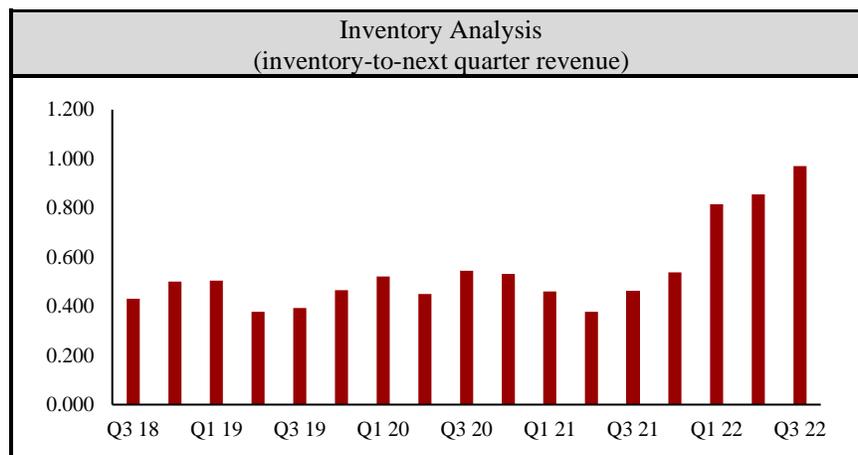
Elevated inventory levels despite supply constraints highlight potential margin pressure, in our view: In Q3 22, inventory increased 230.5% year-over-year to \$69.3 million, while revenue increased 83.9% to \$71.3 million. Accordingly, inventory-to-revenue surged 79.7% to 0.973, the second highest level in at least five years (highest was Q2 22). In its Q3 22 10Q, the Company attributed elevated inventory levels to increased backlog and safety stock to meet anticipated demand amidst long component lead times. In addition, the Company guided to maintain inventory above historical levels throughout FY 22. While we acknowledge securing inventory to meet strong demand in an uncertain environment may be prudent, we believe expected demand may not fully rationalize the inventory build (discussed next). In our view, a safety stock buildup despite extended lead times suggests certain vital components required to complete customer orders may be constrained and/or delayed while certain unconstrained components may be overbuilt. To the extent orders are cancelled/rescheduled and/or demand deteriorates, we would be concerned inventory in unconstrained component categories may be materially overbuilt and margins may be pressured.

The Company increased stocking levels of inventory during the quarter ending June 30, 2022 to support the Company’s **increased sales order backlog, as well as provide for safety stock for anticipated demand** considering current long lead times for components and transportation within the global supply chain. We expect to maintain higher than historic stocking levels through fiscal year 2022. (Q3 22 10Q) [emphasis added]



Elevated inventory-to-next quarter revenue suggests anticipated demand may not rationalize inventory build: As of the date of this publication, Q3 22 inventory-to-next quarter revenue (Q4 22 revenue consensus estimate) surged 109.3% year-over-year to 0.971, the highest level in the past five years. As discussed, the Company attributed elevated inventory levels, in part, to support increased backlog. Given elevated inventory relative to next quarter revenue expectations, we believe expected near-term backlog conversion may not rationalize the inventory

build. Accordingly, we are concerned (1) inventory may be overbuilt and/or (2) inventory may be related to longer-term orders which we believe may have a higher risk of cancellation/rescheduling (discussed heretofore).



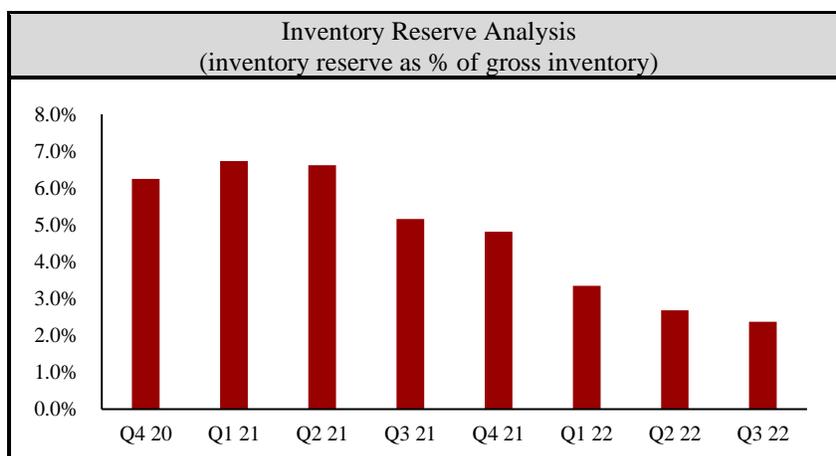
Limited long-term supply agreements may have compelled the Company to build inventory, in our view: In its FY 21 10K, the Company disclosed it was exposed to material and component cost inflation because it operated on a “order-by-order” basis without long-term supplier contracts. We believe limited long-term supply agreements and an uncertain supply environment may have compelled Clearfield to secure supply ahead of demand and our concerns about overbuilt inventory are heightened.

New risk factor disclosure highlights elevated uncertainty and inventory carrying risk, in our view: In its FY 21 10K, the Company added a new risk factor disclosure highlighting long lead times and elevated inventory obsolescence risk. Specifically, the Company represented long lead times and increased demand may impact its ability to accurately forecast production requirements and may result in “certain component inventory” becoming “excess or obsolete.” To the extent anticipated demand does not materialize (i.e. customers cancel/reschedule orders), we would be concerned the Company may be compelled to write off excess/obsolete inventory and margins may be pressured.

Long lead times for certain components, as detailed above, along with increased demand for our products may impact our ability to accurately forecast our production requirements. As a result, **certain component inventory purchases may become excess or obsolete,** which could have an adverse effect on our financial condition and results of operations. (FY 21 10K) [emphasis added]

Background on inventory reserve: In its FY 21 10K, the Company disclosed an inventory reserve was established for excess, slow moving, and/or obsolete inventory by considering factors such as inventory levels, expected product life, and forecasted sales demand. Prior to its FY 20 10K, the Company did not disclose the inventory reserve. Accordingly, we analyzed inventory reserve relative to gross inventory for all periods disclosed (i.e. Q4 20 to Q3 22).

Inventory reserve level decline may be unwarranted and provided an unsustainable margin benefit: In Q3 22, the inventory reserve increased 47.4% year-over-year to \$1.7 million, while gross inventory increased 221.1% to \$71.0 million. Accordingly, the inventory reserve as a percent of gross inventory declined 280 basis points to 2.4%, the lowest level since Q4 20. In our view, the inventory reserve decline (1) may be unwarranted given potentially overbuilt inventory levels, (2) may have provided an unsustainable margin benefit (discussed next), and/or (3) margins may be pressured to the extent revenue fails to meet expectations and the Company is compelled to write down inventory and/or increase the inventory reserve.



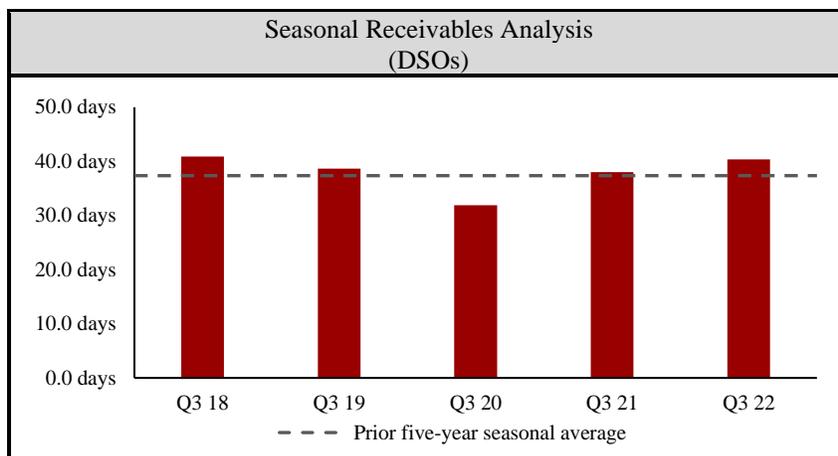
Depressed inventory reserve level provided an unsustainable margin benefit, in our view: As mentioned, we believe the depressed inventory reserve level may have been unwarranted and provided an unsustainable margin benefit. Assuming the inventory reserve level (i.e. inventory reserve as a percent of gross inventory) remained stable year-over-year, we estimate the inventory reserve level decline provided a 90 basis points benefit to Q3 22 trialing-twelve-month operating income. Accordingly, we estimate baseline operating income (margin) would have been \$48.9 million (22.1%), 4.0% (90 basis points) below reported operating income (margin).

12M Ended Q3 22 Baseline Operating Income/Margin Analysis (\$ in millions)	Operating Income	Operating Margin
Operating income (as disclosed)	\$50.9	23.0%
Less: inventory reserve benefit (Voyant estimate)	(\$2.0)	(90 bps)
Baseline operating income (Voyant estimate)	\$48.9	22.1%
<i>Baseline above (below) disclosed operating income</i>	<i>(4.0%)</i>	<i>(90 bps)</i>

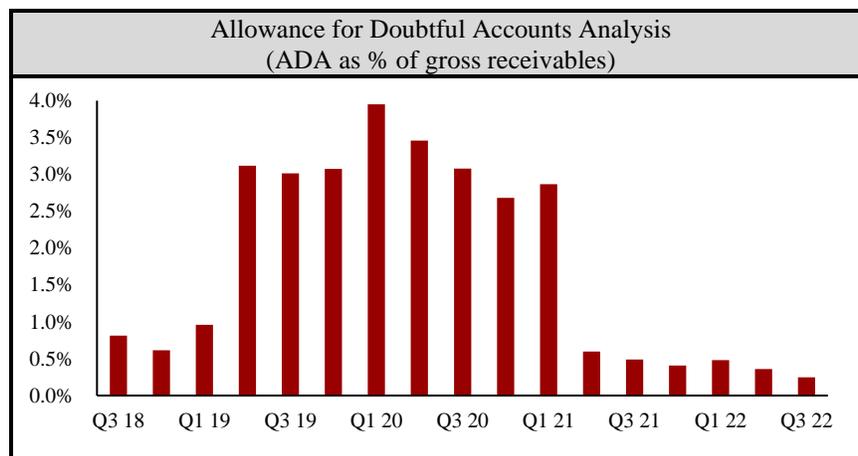
Elevated Receivable Levels Highlight Potentially Elevated Channel Inventory, In Our View

Receivable level increase suggests channel inventory may be elevated and revenue may be pressured: In Q3 22, accounts receivable increased 95.2% year-over-year to \$31.6 million, while revenue increased 83.9% to \$71.3 million. Accordingly, days sales outstanding (DSO) increased 6.1% to 40.4 days, the highest seasonal level in four years. The Company attributed the receivable increase to revenue growth and payment timing. Given the uncertain supply environment, we believe certain Clearfield distributor customers may have built buffer stock inventory. Accordingly, we are concerned channel inventory levels may be elevated and revenue may be pressured as supply constraints ease and distributors reset inventory levels.

The increase in accounts receivable is due to increased sales in the most recent quarter as well as timing of payments from customers. Accounts receivable balances can be influenced by the timing of shipments for customer projects and payment terms. (Q3 22 10Q)



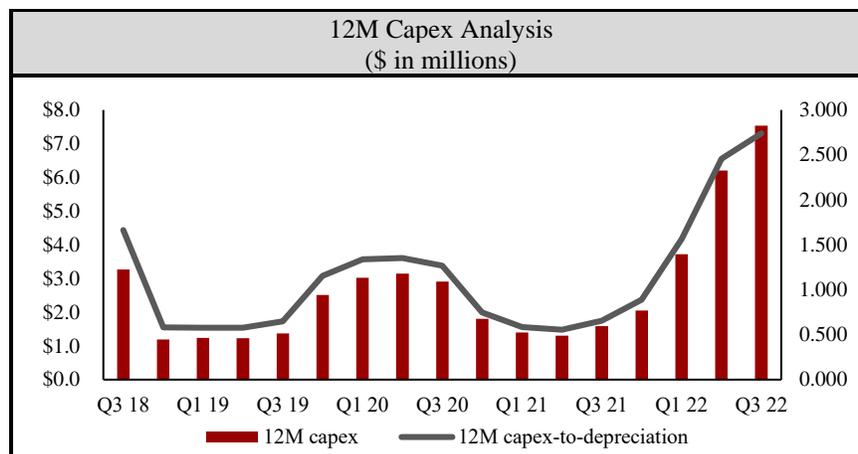
Allowance for doubtful accounts level decline may be unwarranted and/or portend margin pressure: In Q3 22, allowance for doubtful accounts (ADA) declined 0.6% year-over-year to \$0.1 million, while gross receivables increased 94.8% to \$31.7 million. Accordingly, ADA as a percent of gross receivables declined 20 basis points to 0.2%, from a materially depressed base period (declined 260 basis points in Q3 21). In our view, the historically depressed ADA levels (1) may be unwarranted given elevated receivable levels, and (2) margins may be pressured to the extent collectability fails to meet expectations and the Company is compelled to write-off uncollectible receivables and/or increase the allowance for doubtful accounts.



Elevated Capital Expenditures Suggests Depreciation Ramp & Pressure Margins

Capital expenditure surge may portend depreciation ramp, in our view: In the twelve months ended Q3 22, capital expenditures increased 375.4% year-over-year to \$7.5 million, while depreciation increased 13.6% to \$2.8 million. Accordingly, capital expenditures-to-depreciation surged 317.8% to 2.740, the highest level in at least five years. On its Q3 22 Conference Call, the Company guided for additional capital spending to fully utilize two new facilities (a manufacturing facility in Mexico and a distribution facility in Minnesota) that came online in Q2 22. Given elevated capital expenditure levels, guidance for capital spending to remain elevated, and the recent start-up of two facilities, we are concerned depreciation may ramp and pressure margins.

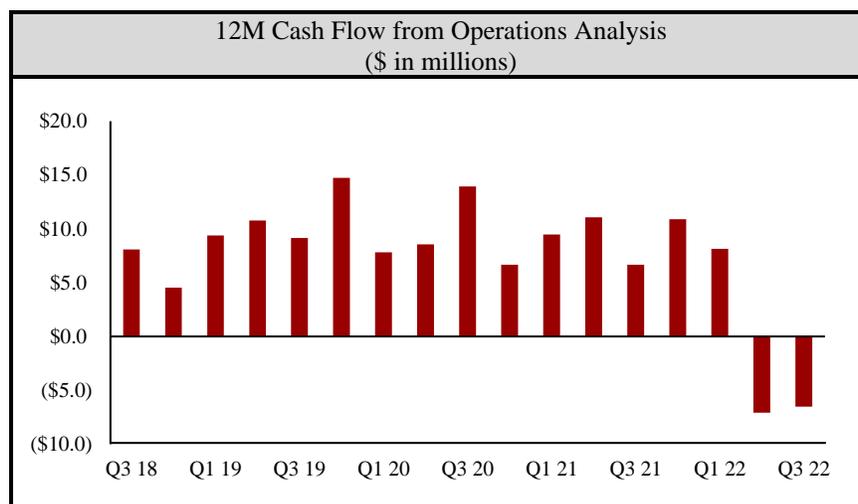
We didn't build this facility for 1 year. We built it for this generational infrastructure development. There's more CapEx that's required to fully utilize the building. (CEO Ms. Cheryl Beranek, Q3 22 Conference Call, 07/28/22)



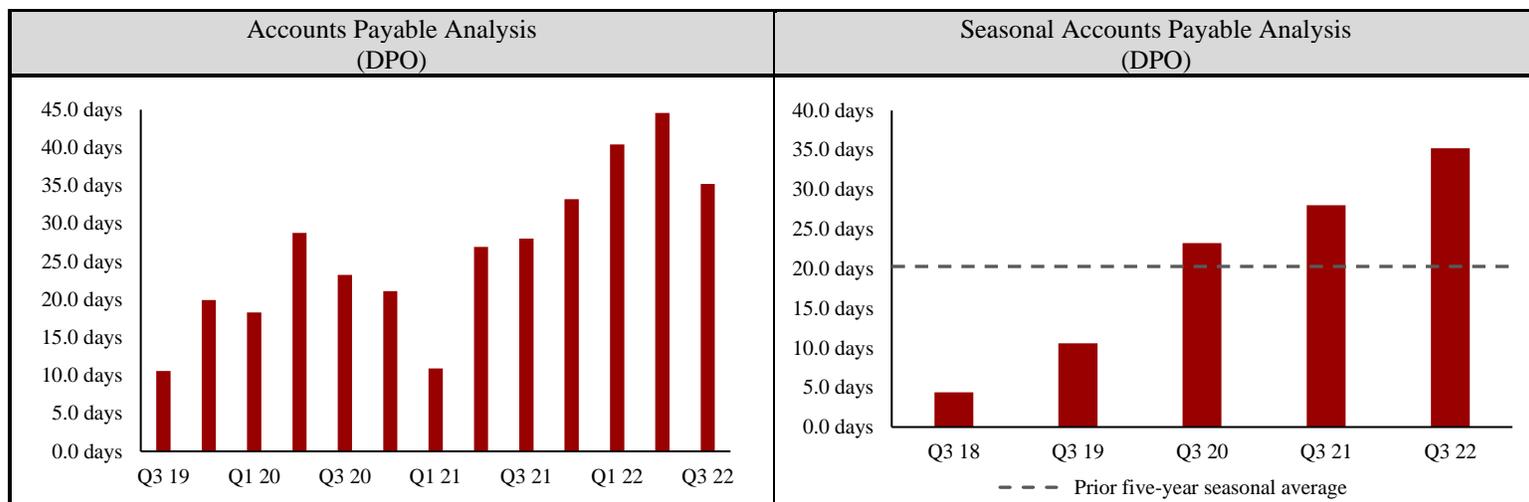
Cash Flow Deterioration Heightens Our Earnings Sustainability Concerns

Working capital driven cash flow level deterioration heightens our earnings sustainability concerns: In the twelve months ended Q3 22, cash flow from operations declined \$13.2 million year-over-year to negative \$6.5 million. Inventory (receivables) consumed \$48.4 million (\$15.4 million) of cash, while payables provided \$13.4 million. The Company highlighted it used its cash position to acquire the “necessary inventory” to meet the “high” demand for its products. Given the material cash flow level decline driven by inventory and receivable cash consumption despite the potentially unsustainable benefit provided by payables (discussed next), our earnings sustainability concerns are heightened.

In terms of our balance sheet, we had \$1.9 million in capital expenditures, mainly to support increased capacity and new facility build-outs and increased our inventory \$8.4 million to \$69.3 million in the third quarter as we utilize our cash position to acquire the necessary inventory to meet the high demand for our products as represented in our sales order backlog. (CFO Mr. Daniel Herzog, Q3 22 Conference Call, 07/28/22)

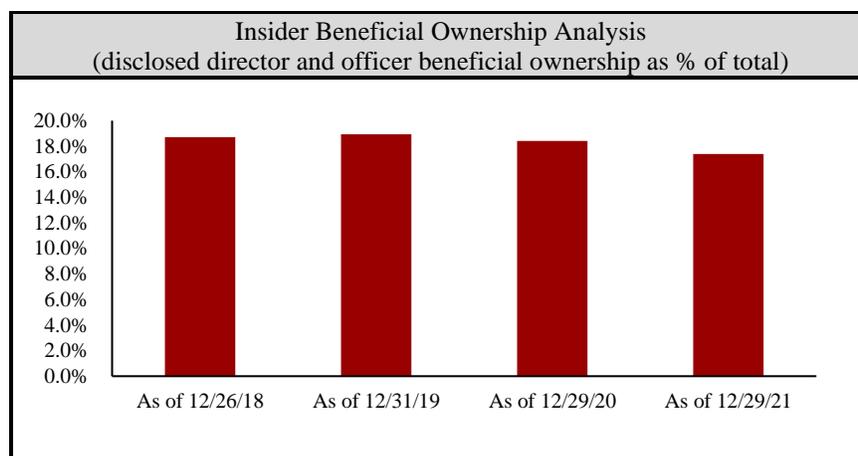


Elevated accounts payable may have provided an unsustainable cash flow benefit, in our view: In Q3 22, accounts payable increased 144.3% year-over-year to \$16.2 million, while cost of goods sold increased 94.2% to \$41.9 million. Accordingly, days payable outstanding (DPO) increased 25.8% year-over-year to 35.2 days, the highest seasonal level in at least five years. In our view, persistent payable extensions may have provided unsustainable cash flow source and our earnings sustainability concerns are heightened.



Other Observations: Beneficial Ownership Decline, Insider Sales, & Non-Big Four Auditor

Director/executive beneficial ownership decline heightens our earnings sustainability concerns: In its Proxy Statement on 01/12/22, the Company disclosed shares beneficially owned by all directors and officers as of 12/29/21 as a percent of total declined 100 basis points to 17.4%, the lowest in at least five years. The executive and director relative beneficial ownership declined despite including the impact of two additional director/officer beneficial owners as of 12/29/21 (the Company had eight disclosed directors/officers as of 12/29/20 and ten as of 12/29/21). In our view, reduced director and officer beneficial ownership levels highlight reduced shareholder/management incentive alignment and heightens our earning sustainability concerns.



Recent CEO and COO divestitures heighten our concerns: From 08/07/22 to 08/21/22, CEO Ms. Cheryl Beranek and COO Mr. John Hill each sold 38,090 shares representing 8.4% and 20.2% of their beneficial ownership prior to the share sales, respectively. In addition, as part of the divestitures, Ms. Beranek and Mr. Hill exercised certain options set to expire on 11/13/25. Given the recent CEO and COO divestitures (including shares sold related to exercised long-dated options), our earnings sustainability concerns are heightened.

Insider Sales Analysis (from 08/08/22 to 08/21/22)	Shares Sold	B.O. as of 08/07/22	% of B.O. Sold
CEO Ms. Cheryl Beranek	38,090	453,240	8.4%
COO Mr. John Hill	38,090	188,691	20.2%
Total	76,180	641,931	28.6%

Non-big four auditor and low relative audit fee may highlight elevated accounting irregularity risk: In FY 21, total fees billed for audit services were 0.14% of revenue, 30 basis points below the IFAC 2020 survey average for firms with more than \$10.0 million of annual revenue. In addition, Clearfield was audited by Baker Tilly US, LLP. In our view and experience, a regional (i.e. non-big four) auditor and relatively low audit fees may increase accounting irregularity risk.²

Auditor Fee Analysis	Audit Fees as % of Revenue
FY 21 Clearfield, Inc. (CLFD)	0.14%
Average Russell 3000 Companies with revenue >\$10.0 million IFAC 2020 survey	0.44%
<i>Clearfield above (below) average</i>	<i>(30 bps)</i>

Conclusion

We are concerned long lead times, persistent supply constraints, and longer-term orders may delay backlog conversion to revenue. Our concerns are heightened given (1) a disclosure change highlighting an extended backlog conversion timeline, (2) persistent lead time extensions despite guided improvement, (3) customers' ability to cancel/reschedule orders, and (4) customers may have pre-ordered ahead of demand (i.e. over-ordered relative to internal expectations). In our view, limited pricing power and commentary suggesting the Company may be unable and/or unwilling to pass on input cost inflation suggests Clearfield may continue to "absorb" higher input costs and margin pressure may persist. Our margin pressure concerns are heightened given (1) elevated inventory levels, (2) exposure to input cost inflation driven by lack of supplier agreements, (3) unwarranted (in our view) depressed inventory reserve levels, and (4) elevated capital expenditures. Our inventory concerns are heightened given the build may consist of unconstrained components and a new risk factor disclosure highlights increased inventory obsolescence risk. Our earnings sustainability concerns are heightened given elevated receivable levels, depressed cash flow levels, and recent insider divestitures.

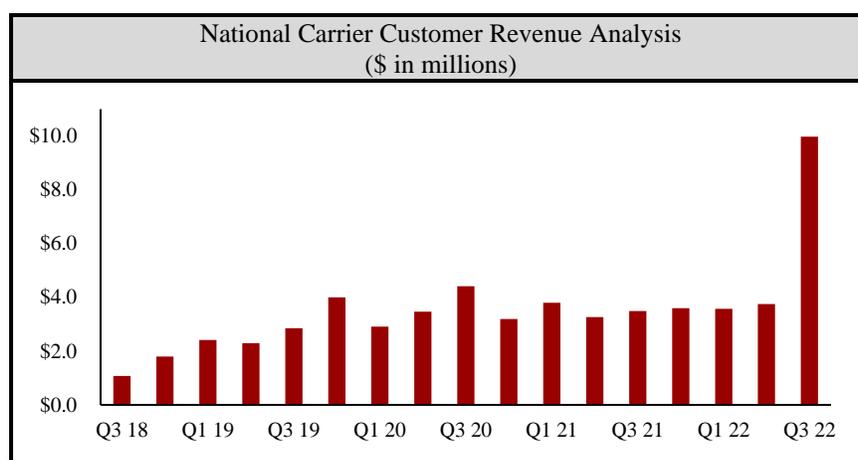
² <https://www.ifac.org/system/files/publications/files/IFAC-Audit-Fees-Survey-2022.pdf>

Risks to Our Thesis & Valuation

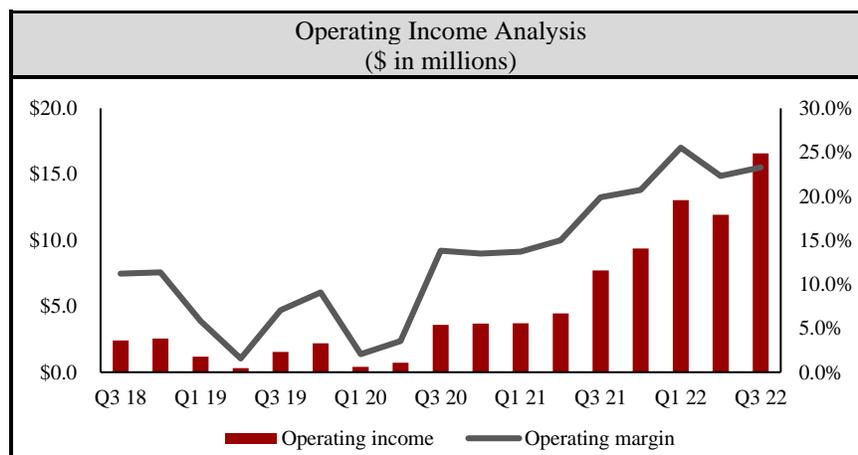
National Carrier Growth, Margin Expansion, Broadband Funding, & Raised Guidance

Revenue from National Carrier customer surge with potential for “ongoing” revenue: In Q3 22, National Carrier customer revenue surged 186.1% year-over-year to \$10.7 million. On its Q3 22 Conference Call, the Company attributed the increase to a “single carrier” and guided for revenue to be “ongoing” and the customer accounted for a “significant part” of backlog.

It is ongoing revenue that is being charged out for delivery on a monthly basis. And so, it is a significant part of backlog... We do sell to all of the national carriers in the wireless carriers as well, but the increase is predominantly related to a single carrier. (CEO Ms. Cheryl Beranek, Q3 22 Conference Call, 07/28/22)



Operating income surged to record high: In Q3 22, operating income (operating margin) increased 115.3% (340 basis points) year-over-year to \$16.6 million (23.3%), the highest level in at least five years. In its Q3 22 10Q, the Company attributed operating income growth to increased sales to Community Broadband, MSO, and National Carrier customers, partially offset by higher selling, general, and administrative expenses.



Broadband infrastructure funding programs and subsidies may drive long-term opportunity: On its Q3 22 Conference Call, the Company represented recent legislation passed in the US may open an opportunity for additional revenue capture. Specifically, Clearfield highlighted nearly \$6,500.0 million of funding was available

through the Infrastructure Investment and Jobs Act enacted in November 2021 with \$4,200.0 million of approved funds allocated to the Broadband Equity Access and Deployment (BEED) program expected to be distributed in late 2023 and early 2024.

FY 22 guidance raised multiple times as it experienced a “once-in-a-generation” opportunity: In its Q3 22 Earnings Release, the Company increased its FY 22 revenue guidance 16.1% to \$245.0 million at midpoint, reflecting an implied 74.0% year-over-year guided revenue growth. On its Q3 22 Conference Call, the Company attributed the revenue guidance increase to its strong execution, broadband industry tailwinds, and visibility into its backlog/sales pipeline. Further, the Company indicated it was experiencing a “once-in-a-generation” opportunity in its industry and it was “well positioned to capitalize.” The Company raised its FY 22 guidance each quarter since it initiated the guidance in its Q4 21 Earnings Release.

FY 22 Guidance Analysis (\$ in millions, at midpoint)	Non-GAAP Revenue
Initial guidance per Q4 21 Earnings Release	\$165.5
Revised guidance per Q1 22 Earnings Release	\$179.5
Revised guidance per Q2 22 Earnings Release	\$211.0
Revised guidance per Q3 22 Earnings Release	\$245.0
<i>Year-over-year change</i>	<i>74.0%</i>
<i>Change from prior guidance</i>	<i>16.1%</i>

Valuation Analysis

As of the date of this publication, Clearfield shares traded at 28.7 times next twelve-month earnings, 149.6% above its peer average of 11.5x.

Valuation Analysis	NTM P/E
Clearfield, Inc. (CLFD)	29.0x
Corning Incorporated (GLW)	13.5x
Nokia Corporation (NOK)	9.5x
Peer average	11.5x
<i>CLFD above (below) peer average</i>	<i>149.6%</i>

Disclaimer and Disclosure

This report was produced by Voyant Advisors, LLC (“Voyant”). The following Research Analysts employed by Voyant contributed to this report: Graeme Lazarus, Ryan DesJardin, and Michael Meehan. Voyant’s home office is at 15373 Innovation Dr, Suite 365 San Diego, CA 92128. The firm’s home office is where information about the valuations herein are located, unless otherwise indicated in the report.

At the time of this report, Voyant expects to provide updates on a quarterly or semi-annual basis depending on the frequency of when the above company discloses material financial results. We will cease providing updates if we are discontinuing research coverage as disclosed on the front page of this report in the Thesis Summary.

Voyant has not provided previous recommendations concerning the same financial instrument or issuer during the preceding twelve-month period.

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