

Duos Technologies Group, Inc

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Duos Technologies wants to put the railroad industry on the fast track

The railroad industry has connected people and goods across great distances since the 19th century and has been responsible for taming the Wild West and providing opportunities that led to the rise of business tycoons like Cornelius "Commodore" Vanderbilt and Collis P. Huntington.

As the time of industrial pioneers gives way to the railroad system of the 21st century, who is responsible for seeing that the industry continues to thrive safely and efficiently for years to come?

Duos Technologies Inc (OTCQB:DUOT) is one of the modern-day companies serving the US\$60bn North American rail market.

The Jacksonville-based company specializes in automated systems with a focus on the protection of critical infrastructure and the automation of complex mechanical inspections of rail assets. The company says that it shies away from the "one size fits all" approach, preferring to individually assess the needs of a system and build a turnkey solution for its customers.

Duos is led by Gianni Arcaini, a thirty-year veteran of the tech space. The company's chief architect is the brains behind much of the company's technology with 14 patents or patents pending.

Arcaini, who began his career in Europe, called together a group of European investors in 1990 to found Environmental Capital Holdings Inc, a company that transferred technology from Europe to the US. The company soon acquired Duos Engineering B.V., a Dutch engineering company, and then formed Duos Engineering USA Inc as a fully owned subsidiary.

In 2002, the subsidiary was spun off to expand into security-focused technology, thus Duos Technologies was born.

Adrian Goldfarb, the company's CFO, is no stranger to the tech world either with a career spanning more than 35 years, including time spent at IBM as a financial specialist in an IT solutions-focused group.

The company saw its ability to fill a need in the railroad industry over 15 years ago. In 2001, the company designed a remote-controlled drawbridge automation--the country's first of a kind--and has since evolved its technology to its current-day rail inspection systems.

Getting back on track

The US Federal Railroad Administration estimates that there are currently more than 1.5 million freight cars traveling along 140,000 miles of Class 1 track, a category defined by speeds of 70mph for freight and up to 180mph for passengers. This plus short line, train yards and industrial spur trackage add a further 100,000 miles of active rail tracks in North America alone.

Price: US\$0.73

Market Cap: US\$17.98M

1 Year Share Price Graph



Share Information

Code: DUOT

Listing: OTCQB

52 week High Low
\$1.02 \$0.38

Sector: Software & Computer Services

Website: www.duostechologies.com

Company Synopsis:

Duos Technologies, Inc. provides a broad variety of sophisticated, technology-based applications to a growing range of clientele. The company specializes in automated systems with an emphasis on intelligent digital video and integrated smart Command and Control centers that combine both new and existing equipment and a broad range of smart sensor systems.

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The growing challenge is how to maintain a safe rail network and cargo delivery without slowing down the system. So, as usage of the rail network expands and trains become longer, more and more safety and mechanical inspections are needed.

Duos Technologies aims to significantly streamline the in-yard physical inspection practices with an automated process that can be done before the trains enter the yard, while they are travelling rather than while stationary.

The Federal Railroad Administration mandates that all rail cars and locomotives undergo a mechanical inspection before leaving a rail yard. Current practices have inspectors conduct a visual and physical inspection of the cars' mechanical components by walking along both sides. The process is time-consuming, taking between three to four hours per train, all the while the train is immobile in the yard.

As with any job involving a human component, the ability to perform the inspection depends on any number of factors, including personal expertise and weather conditions. Safety also dictates that certain areas cannot be effectively reviewed such as underneath or on top. Duos' systems provide technological solutions that simplify and accelerate the inspections by reducing dwell times (the amount of time that the trains are inactive) while significantly improving safety, efficiency and accuracy. The inspection system provides Yard inspectors with "heads-up" information of mechanical defects, which enables inspectors and repairmen to significantly improve remedial times and procedures.

Duos offers proprietary technology to both freight and transit railroads including its Railcar Inspection Portal, a 360-degree modular intelligent visualization system.

Simply, the technology takes detailed, real-time, full-picture images of railcars traveling at speeds of up to 120 mph.

Its Linear Panorama Generator "scans" the top, bottom and sides and pieces them together like a puzzle, showing a complete picture of the railcar and producing a very high-definition picture of the entire train from end to end (called a "consist").

The panoramic view can detect oil leaks, damaged parts, open doors and open and missing hatches, alerting inspectors of the issue and showing them the location of the problem. Sophisticated algorithms also identify more complex issues that are difficult to detect by simple visualization, including brake hose geometry and missing bolts from couplings to cite just two examples.

The technology can also spot illegal riders on the side of the train, sharing their location on the train along with an alert.

Safety First

As automation increases, in the rail industry and beyond, the ongoing fear that robots will take the place of humans rears its head; however, the company views its rail inspection service as a complement to railroad workers, not a way to replace them.

There have been seven railroad employee fatalities so far in 2018, as per the US Federal Railroad Administration's data. The inspection portals may be a way to increase safety as well as efficiency.

Major contract

Duos was recently awarded a multi-million-dollar contract with a major Canadian railway.

"This industry is going places and the only way that we can really play a major role, other than organic growth, is we need to grow by partnerships," said Duos CEO Gianni Arcaini.

Canadian National Railway (NYSE:CNI), a leading Class-1 transportation and logistics company, signed an initial contract for four complete rail inspection portals and machine-learning algorithms.

The company's proprietary Vehicle Undercarriage Examiner ("vue") system is embedded between track rails, scanning the undersides of the railcars and producing high-resolution images with multiple perspectives. Similar to the rail

inspection portal, the images are pieced together to give a comprehensive view of the railcar's undercarriage.

Images and collected data can be accessed via any web browser using Duos' proprietary Enterprise Information Management software system, which the company has named centraco.

The four systems, which will be installed in the Winnipeg, Manitoba, area can withstand extreme cold and train speeds of up to 70 mph.

Investing in the rail system

One of all-star investor Warren Buffett's largest acquisitions was the purchase of a railway company.

Buffett's Berkshire Hathaway Inc (NYSE:BRK) acquired Burlington Northern Santa Fe Corp (BNSF) in 2009 in a deal valued at around US\$44bn.

"Our country's future prosperity depends on it having an efficient and well-maintained rail system," said Buffett in a press release.

He referred to the deal as an "all-in wager" on the economic future of the US. BNSF is also a client of Duos Technologies.

At the height of rail construction, railroads issued their own banknotes to fund construction projects.

The company has a track record that spans two decades, going public in 2006.

With around a US\$10mln market cap, the microcap has little to no debt on its books.

The company saw marked improvements in its first quarter, seeing a 10% increase in revenue to US\$1.1mln from the same period a year earlier. Its net loss dropped dramatically, to US\$0.04 per share from a loss of US\$1.21 per share compared with the corresponding quarter a year ago.

The company expects total revenue for fiscal 2018 to be around US\$9.3mln, more than double its reported revenue of US\$3.9mln in 2017. The guidance is based on the contracts currently in backlog and additional awards on the horizon.

And with new contracts in the works, Duos sees more growth as it rolls down the tracks.

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