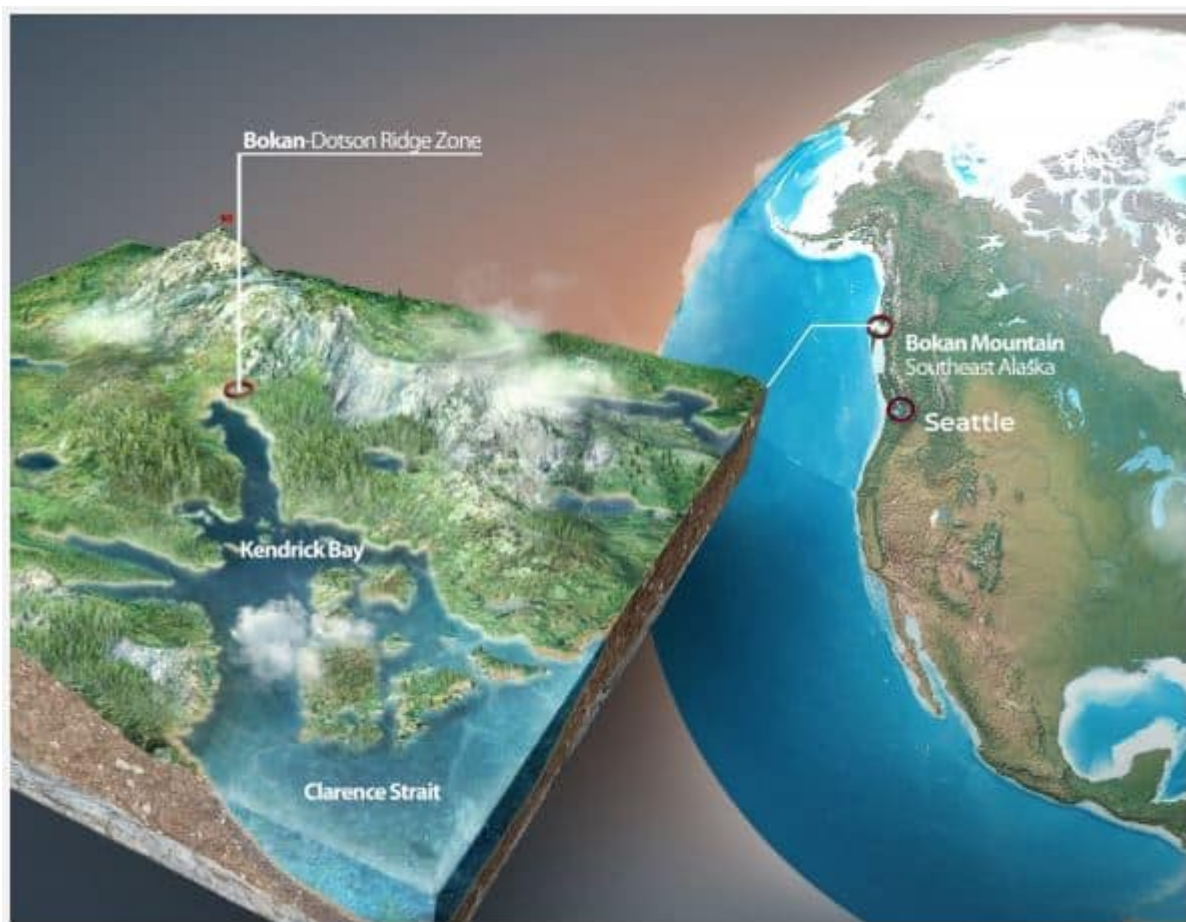


Looking back at Bokan Mountain, Kozak ask whether Ucore can indeed move forward.

In the 1950s, the US government commissioned surveys looking for sources of uranium for civilian and military uses during the Cold War. One of these identified locations was Bokan Mountain, at the head of Kendrick Bay on Prince of Wales Island (the southern-most island in the state of Alaska).



Source:

Enter Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF) who acquired the property at Bokan Mountain (Bokan-Dotson Ridge) in 2006 looking for uranium. Approximately one mile away from

the Ucore property, the Ross Adams open pit/underground uranium mine operated sporadically from 1957 to 1971. Other than a gravel road from the head of Kendrick Bay past the Ucore property, there is no longer any infrastructure to speak of. Notwithstanding old uranium mine workings, Ucore quickly realized the potential for rare earths.

The benefit of having a mine that close by is the extensive geologic mapping that was done – beneficial in identifying the Ucore rare earths deposit. Prior to the preparation of an NI 43-101 report in 2011, the company conducted field work through 2008 (drilling for uranium), 2009 (soil and silt geochemical testing) and 2010 (drilling to delineate rare earths deposit plus trenching) to confirm the potential.

The Bokan-Dotson Ridge project is 100% owned by Ucore and has a mix of both light and heavy rare earths. While the NI 43-101 report is now 10 years old and the Preliminary Economic Assessment is now eight years old, there is no question of the potential to mine rare earths from this site. Management of Ucore is of the belief that the project can be “near shovel ready” (engineering complete and permitting well underway) for construction in less than 30 months after receipt of development funding. But to make this a reality, Ucore has a significant capital requirement, estimated in 2013 at approximately US\$220 million. There is much more work yet to be done on the project.

In the interim, not satisfied with just being a mining company, Ucore management has diversified into the value-add chain of rare earths. Of note is the 2020 acquisition of private Canadian company Innovation Metals Corp. (IMC) who are the developer of a proprietary rapid solvent extraction technology (RapidSX). The technology is being commercialized for the cost-effective bulk separation and purification of both heavy and light rare earths. The process is touted as an advanced, accelerated solvent extraction process. Theoretically, it is less expensive to operate than

conventional solvent extraction of rare earths.

RapidSX could be a key step in becoming a low-cost producer of rare earths but is currently not exclusive to Ucore. IMC is in numerous advanced-stage negotiations for RapidSX Technology Testing Agreements with current and near-term rare earths producers in US-allied jurisdictions.

Ucore is also taking advantage of the US location of the project and the support of the Alaska state government to help facilitate moving forward. In 2014, the Alaska State Legislature authorized the Alaska Industrial Development and Export Authority (AIDEA) to issue bonds (up to US\$145 million) to finance certain infrastructure costs for the Bokan rare earths project.

The company has also put together a plan entitled Alaska2023 with respect to creating a rare earths business in Alaska. It includes US-allied feedstock (outside of the Bokan mine), technology and market development as part of the “not-in-China” rare earths supply chain. A key part of this plan includes a Strategic Metals Complex in Ketchikan, Alaska to process US-allied heavy and light mixed rare-earth concentrates into commercial purity rare earth oxides, specifically for rare earths permanent-magnet applications.

In October 2020, Ucore and AIDEA commenced preliminary due-diligence process regarding a prospective US\$3.5-million investment for the development and commercial-scale operation of the Strategic Metals Complex.

Miner, Processor or...?

There are a lot of elements in the company’s plans to execute on, not the least of which is developing a mine. Can they do it? That really is the question, as they are very ambitious. Ucore is only one of many nascent rare earths companies intent on being part of the supply chain solution. There are many pieces of the puzzle that Ucore has yet to put in place,

especially the funding.

At September 30, 2020, the company had approximately \$2.7 million of debt and \$2.0 million of cash. For the nine months of 2020, the company had expenses of \$4.2 million (including \$0.65 million amortization). Ucore recently closed on an equity financing of \$6.7 million, so that should fund them through much of 2021.

“Is Ucore up for the challenge? Just watch us” Pat Ryan, Ucore Chairman & Interim CEO is quoted as saying in the company’s January 2021 investor presentation.

Belief or bravado? Only time will tell.

As Chinese rare earths’ stock prices rally, pressure rises for the rest of the world...

Rising US-China tension has resulted in some rare earths’ stock prices rising sharply, particularly those in China. Given the recent US moves to introduce critical materials legislation it seems likely that the non-Chinese rare earth stocks will also rally strongly this year, particularly if the new bills and financial support are passed.

Let’s start with a recap of the recent US support highlights for rare earths:

- May 18, 2018 – The US declared a list of 35 critical materials. A large part of the list includes rare earths.
- May 2, 2019 – U.S. Sen. Lisa Murkowski and others

submitted the American Mineral Security Act

- In mid May, 2020, Senator Ted Cruz submitted the Onshoring Rare Earths Act – the ‘ORE Act’
- On May 28, 2020 US Representative Michael Waltz submitted the American Critical Mineral Exploration and Innovation Act of 2020

The ORE Act focuses on six critical materials – **Rare earths**, scandium, lithium, cobalt, graphite, and manganese. The Critical Mineral Exploration and Innovation Act directs the U.S.G.S. to complete updated resource assessments for each critical mineral. It has been reported that there will be a focus on **rare earths** and other so-called strategic minerals.

Then just last week rare earths expert and Technology Metals Show host Jack Lifton stated exclusively to InvestorIntel: “The US Defense Department has announced last week that it will seek \$1.7 billion for rare earths purchases in the 2021 National Defense Authorization Act that means the budget for fiscal 2021. In addition they will ask for another \$300 million (**a total of \$2 billion**), for rare earths for specialized weapons which they name as hypersonic missiles...”

Given all of the above proposed support to the rare earths sector, it is abundantly clear that the US is now finally moving rapidly to secure critical rare earths supply, particularly from US deposits, where possible. Current rare earths producers and listed rare earths stocks stand to be beneficiaries. Especially if they have US rare earths projects, but quite likely any non-Chinese rare earth juniors that can achieve funding and production should find very strong western demand for their products. Most of the western world is now looking to diversify their supply chains especially after the trade war and COVID-19 problems of the past 2 years.

Some rare earth miners with US projects include:

- MP Materials (private)
- Rare Element Resources Ltd. (OTCQB: REEMF)
- Texas Mineral Resources Corp. (OTCQB: TMRC)
- Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF)

Some miners with US rare earth processing potential include:

- Energy Fuels Inc. (NYSE: UUUU | TSX: EFR) recently stated their White Mesa Mill in the USA could be used in future for rare earths processing.
- Lynas Corporation (ASX: LYC) has received US support for a planned US rare earths processing facility.
- Peak Resources (ASX: PEK) plan to have a US rare earths processing facility.

Some rare earth miners with Canadian projects include:

- Avalon Advanced Materials Inc. (TSX: AVL | OTCQB: AVLNF)
- Appia Energy Corp. (CSE: API | OTCQB: APAAF)
- Search Minerals Inc. (TSXV: SMY)

Some rare earth miners with Australian projects include:

- Alkane Resources Ltd. (ASX: ALK | OTCQX: ALKEF)
- Scandium International Mining Corp. (TSX: SCY)

Rare earths are vital ingredients for modern technology



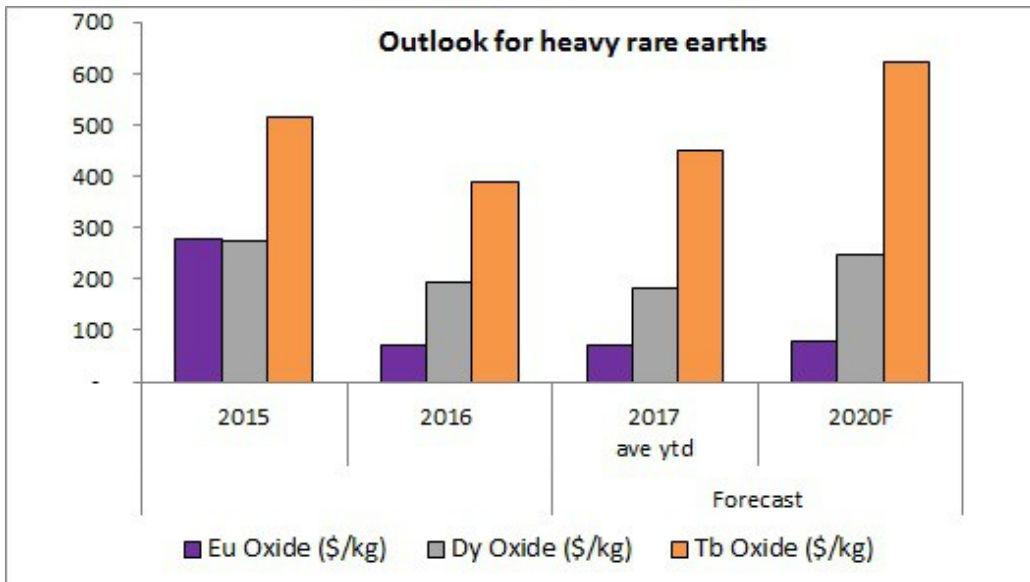
Closing remarks

The massive recent news of two new rare earth/critical materials related Acts and a proposed “US\$2 billion towards rare earths in 2021”, appears to have been somewhat missed by the market. The Chinese rare earths stocks have already bounced leaving the potential rest of the world rare earth miners to play catch up.

News flow in future months should continue to be extremely promising for the rare earths sector following on from the tremendous news from the last few weeks.

Investors should not wait too long as any further increased US-China tensions, threats of China supply loss, or passing of rare earths related Bills, will likely send non-Chinese rare earth miners stock prices higher.

**Ucore Wins Department of
Energy Award for Molecular
Recognition Technology
Process**



Outlook for Selected Heavy Rare Earths

Source: *Core Consultants' June 2017 Rare Earth Monthly*

The seventeen rare earth elements (REEs) have become an increasing necessity in the manufacture of today's portable devices, and predictably, demand continues to climb year-on-year. Somewhat surprisingly, however, REEs are incredibly common, but they appear in such miniscule quantities that willing diggers must sift through colossal amounts of material to arrive at even small piles of concentrate, and while prices have been in decline for some time now due to massive supplies out of China, the discovery that a considerable proportion of these operations were permitting hazardous waste to enter the ecosystem has rocked the eastern supply chain and prompted a potential price recovery.

In order to survive until payday, producers must have both high-grade resources and efficient processing technologies to boost yield and reduce costs to an absolute minimum. Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF) ("Ucore") is a near-term development-phase company focused on the extraction and processing of rare metals with real potential for production, growth and scalability, and boasts ownership of the highest grade heavy REE deposit in the USA; combine this with a cutting-edge metallurgical process, and you've got

yourself a winner.

Traditional processing methods involve large volumes of solvents that typically require multiple passes to arrive at a concentrate of sufficient purity, creating vast amounts of waste in the process, which, if not properly disposed of, results in poisoned rivers and some very sick children. The necessary chemicals can actually be disposed of fairly easily, it's just that the illegally operating miners haven't been doing it. Still, the costs of maintaining a supply of these materials presents a massive problem for today's REE producer, and remaining competitive requires a technological edge.

Ucore's pilot plant utilises molecular recognition technology (MRT), which is based on green chemistry principles and generates minimal waste. No organic solvents are used, and the few necessary chemicals are as benign as can be. Energy requirements are minimal, and crucially, a recovery rate of over 99% can be achieved with a single pass-through. As a result, operating costs are far below what would normally be expected, and the environmental impact is incredibly low.

Additionally, when compared with solvent extraction, an MRT system requires considerably less equipment and floor space, resulting in a significantly cheaper plant construction. Ucore has already built a pilot plant in Utah based around the IBC SuperLig® technology, an MRT process for which the company owns a controlling interest in the exclusive rights for rare earths and multi-metallic tailings applications in North America and associated world markets, and has even signed a MoU to process further offtake from Commerce Resources.

A discussion with Ucore's VP of Business Development, Mark MacDonald, revealed what he is most excited about the company and its prospects:

"I am excited that Ucore is able to play a key role in securing the supply of critical metals for the North American

industrial complex in partnership with the US Department of Energy.”

MacDonald was speaking following Ucore award of \$1m by the US Department of Energy, as part of a consortium comprised of IBC, Equinox and PSI to source, beneficiate and separate rare earths using the company's MRT technology process.

Ucore's own high-grade Bokan project is located in the mining-friendly jurisdiction of Alaska, and has the unanimous support of the Alaska State Legislature. Having a world-class deposit in addition to intensely competitive metallurgy makes this company well-poised to ride the REE recovery and enter the supply chain with a responsible product at minimal cost, and as such represents a safe investment for both the short and long-term.

Izatt on how the SuperLig technology (and molecular recognition) is critical to green technology in the mining industry

✘ *May 24, 2016 – Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF) partner IBC Advanced Technologies, Inc. is a privately held corporation headquartered near Salt Lake City in American Fork, Utah. IBC was founded in 1988 by, and named after, three distinguished professors, Reed M. Izatt, Jerald S. Bradshaw, and the late James J. Christensen who possess*

prominent international reputations and experience in macrocyclic chemistry, selective metal ion separations, and Molecular Recognition Technology (MRT).

Large-scale MRT separation systems incorporate SuperLig® solid phase particles (~0.5mm) such as silica gel or polymer substrates to which the selective ligand has been chemically attached. The SuperLig® beads are packed into fixed-bed columns that are built in skid-mounted modular form, and are fully automated for continuous operation. The feed solution is passed through the column and the target specie is removed selectively from the solution.

In this presentation at the CleanTech and Technology Metals Summit, held in Toronto on May 10-11th, Steven R. Izatt of IBC outlined

- Development and use of molecules with structure-specific interactions of high selectivity.
- How these can strip off selected elements, e.g. dysprosium, and then the rare earth elements go to another column where another element is selected
- Why this science is critical to green technology
- And IBC's relationship with Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF)

Disclaimer: Ucore Rare Metals Inc. is an advertorial member of InvestorIntel.

Lifton says Ucore's rare

earth technology will be innovative and disruptive

Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF | FSE: U9U) is a development-phase company focused on rare metals resources, extraction and beneficiation technologies. On March 3, 2015, Ucore announced the right to acquire a controlling ownership interest in the exclusive rights to IBC SuperLig® technology for rare earths and multi-metallic tailings processing applications in North America and associated world markets. The company has a 100% ownership stake in Bokan-Dotson Ridge, the highest-grade heavy rare earth project within the United States, and with the emphasis being on the dysprosium, terbium and yttrium content.

April 26, 2016 – Last week, in Part 1 of a special interview, InvestorIntel spoke with technology metals advisor Jack Lifton, who explained how SuperLig® technology made Ucore “the company to beat” in the non-Chinese tech metals refining space. Now, in this second part, Jack elaborates on those points and talks about

- The “culling of the herd” – how only the real REE companies are left
- How it will be possible to recycle rare metals just as we do copper, lead and platinum
- How Ucore can make Western industrial nations competitive in the rare earth sector

Jack Lifton: Ucore’s output product in the rare earth area is immediately of great interest to the great industrial nations; the United States, Germany, Japan, Korea. None of them is currently producing rare earths from mines or processing rare earths in any way. Every one of them – added together 50% at least of the world’s rare earths go to those four nations. That’s your market. The industrialized nations for – majority

of course for consumer devices, but a significant minority for military.

There are two ways to look at the demand for rare earth permanent magnets or the materials to make them and we're – the reason I mention we're at permanent magnets, they're the overwhelming majority of end use of rare earths. There are two reasons to be optimistic. One is that China is using more and more of these materials every year and simply cannot produce enough to meet its own demand. But better than that is that there is no source of these materials for the rest of the world, none.

What's the demand? The demand is will people continue to buy cell phones? Will people continue to buy automobiles, washing machines, vacuum cleaners? Every one of them uses rare earth permanent magnets. They're manufactured in the United States, Germany, Japan, Korea. That's where they're really manufactured. Those nations produce most of them. Those nations do not have domestic supply or domestic self sufficiency.

You are bringing to the market a competitive edge for the western industrial nations. As an American, I'm proud to say you're going to be in Utah and it's going to help us get back to being self sufficient in production of consumer goods which we cannot be without plants like yours...to access the complete video, [click here](#)

Disclaimer: Ucore Rare Metals Inc. is an advertorial member of InvestorIntel.

Lifton on Liberating Global Markets from Chinese Dependence

nonApril 20, 2016 – In a special interview, InvestorIntel speaks with technology metals advisor Jack Lifton, about his insights on Ucore's SuperLig®-One rare earth separation pilot plant and its implications for the future of tech metals processing. Jack explains how SuperLig® technology make Ucore **“the company to beat”** in the non-Chinese tech metals refining space. Jack also touches on the broad capabilities of the technology to separate not only the rare earth elements (REE's, rare earths), but cleantech metals such as lithium, cobalt, tungsten, and many more. He qualifies the scale of the opportunity as global: “I'm sure that it won't be very long before there are these types of plants operated by your company around the world. Where the feed stock is, quite frankly, available in – from India, southeast Asia, Africa, South America and North America and Australia. In other words, the entire world.”

Excerpt from interview with Jack Lifton: “This pilot plan puts the U.S. and the rest of the non-Chinese world back on the scoreboard because what we have here is for the first time a new, much more efficient, more economic system of producing very high purity technology materials, metals and materials. And the reason the Chinese have dominated this field for so long is because they have the entire supply chain. And so we can, quite frankly, dig all the holes we want. It doesn't do any good because we can't process material.

✘ What this brings back to the market, American, domestic, whatever you want to call it, is the ability to be competitive. And so companies here, for example, that don't

want to make products with technology metals and materials because the only source is foreign and typically China and they can't get them except at the behest of the Chinese, now they have an option. They have an alternative. And I guarantee you this is going to create a great deal of investment in high tech because high tech is based on technology, metals and materials and that's what you're going to be producing.

At the moment there is no other place in the world outside of China that is capable of producing heavy rare earth metals in high purity form or midrange metals for that matter, rare earths. So you're adding value to the entire technology world outside of China. We're never going to be competitive unless people like you bring businesses like this into existence...to access the complete interview, [click here](#)

Disclaimer: Ucore is an advertorial member of InvestorIntel.

Ucore COO on the SuperLig®-One separation pilot plant for rare earths



April 7, 2016 – In a special InvestorIntel interview, Publisher Tracy Weslosky speaks with Ken Collison, COO for Ucore Rare Metals, Inc. (TSXV:UCU | OTCQX:UURAF) on the commissioning of the SuperLig®-One rare earth element separation pilot plant. They also discuss Ucore's Molecular Recognition Technology (MRT) and both the product and green competitive advantage of MRT. Ucore will be presenting at the

upcoming Cleantech & Technology Metals Summit on May 10-11th.

Tracy Weslosky: I'd like to start by congratulating you. You just recently announced the completion of construction of SuperLig® pilot plant number one.

Ken Collison: Yeah. It's been a real milestone for us. We did all the lab work for separating rare earths and scandium and made the announcement I guess about a year ago and so the next step was to build our pilot plant, SuperLig®-One. We're now well along the way. We're starting to commission it with water and then we're preparing pregnant solution right now from sorted ore from Bokan. SGS Lakefield is doing that in Ontario. Then we'll start commissioning it on PLS from Bokan and then we'll run it continuously for 2 or 3 weeks on PLS so big step for us.

Tracy Weslosky: And of course, Ucore Rare Metals is one of the few companies that have actually been doing very well in the rare earth sector. Your stock has moved very nicely. With the SuperLig®-One pilot plant you have a very exciting technology that you have the exclusive rights to worldwide. Is that correct?

Ken Collison: Yes we have and the nice thing about it's green. There's been a number of papers written on molecular recognition technology and the fact that it's green chemistry. You recycle the things you use and it's quite different than SX. You don't have to build a football field size plant and you don't have to spend \$200 or \$300 million dollars to do it and it's green.

Tracy Weslosky: Okay. So for everybody out there in InvestorIntel just in case you don't necessarily understand the molecular recognition technology process, would you mind just giving us a quick overview of why this will basically revolutionize the extraction of rare earths, is that correct and other technology metals?

Ken Collison: Yeah, other technology metals and other metals as well. One of the big reasons is it recovers 99% of them and it's clean and it produces very high-grade concentrates. It's a small unit so low capital costs, low operating costs compared to existing technology. That applies to rare earths, but also other metals and so there's real opportunity to, sort of, modernize the mining industry cause it really hasn't changed much in 100 years when it comes to separation of metals. That makes it exciting.

Tracy Weslosky: So Ken, of course, Ucore is going to be presenting at the Cleantech and Technology Metals Summit because of this cleantech revolution and you're a participant because of this technology. I think I'd like you to explain a little bit more about why this technology is green.

Ken Collison: Well, one of the main reasons is if you look at the traditional way of separating rare earths is solvent extraction. It uses a lot of solvents. There's a lot of potential environmental issues and existing environmental issues where with this it's designed so that it doesn't use a lot of solvents...to access the complete interview, [click here](#)

Disclaimer: Ucore Rare Metals, Inc. is an advertorial member of InvestorIntel.