


 FAMILY OFFICE INSIGHTS
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R E P O R T

Q&A with Craig Bouchard

Chairman & CEO of Braidy Industries.

Principle Series:

Please join Family Office Insights for this evening gathering on Tuesday, September 25th, 2018 from 12PM-2PM. If you care to join us, please email admin@familyofficeinsights.com.



Family Office Insights sits down with Craig Bouchard the Chairman & CEO of Braidy Industries to discuss their new greenfield project, located in the South Shore region of Greenup County in Eastern Kentucky, that will be a boon to the local economy, providing hundreds of long-term, high paying jobs to the region. Bouchard has spearheaded the use of efficient, eco-friendly aluminum alloys that are lighter yet stronger. Braidy Industries innovations are leading the generational shift in materials science.

Family Office Insights is a voluntary, “opt-in” collaborative peer-to-peer community of single family offices, qualified investors and institutional investors. If you care to learn more, and perhaps join the community, you are welcome to visit us here at FamilyOfficeInsights.com

Q: Tell us about your background and your company, Braidy Industries.

A: My background: I was a professional banker for 19 years – in the beginning of my career I worked at First Chicago, where I spent the first ten years financing deals, mergers and acquisitions of communications and media companies, etc. The last half of my banking career was spent in trading. I was the global head of derivatives trading, quantitative research, and the head of institutional sales for the company. I had roughly 1000 employees and six trading rooms, and managed one of the largest derivatives trading houses in the world at that time. Then I left banking and ran a software company called NumeriX, a company that develops software for risk management of financial derivatives. They are still a very successful company and a leading provider of innovative technology solutions and real-time intelligence capabilities for trading and risk management.

In 2003, I teamed up with my little brother and went entrepreneurial. We bought a small, nearly bankrupt steel company whose revenues at the time were \$4M, with only 22 employees. Just four years later we grew to 4,000 employees, and sold the company for an enterprise value of \$1.25B with revenues of almost \$4B. We accomplished this after ten acquisitions, and a hostile takeover of a Nasdaq company. The company (Esmark:ESMK) was sold to AO Severstal, the large Russian steelmaker. Esmark became the fourth largest American steel company. For that full year, 2008, our stock was the highest appreciating stock on both the NASDAQ and The New York Stock Exchange.

From there, I observed a two-year non-compete. When it expired in 2010, I founded a company called Shale-Inland. I named the company after both my daughter Shale, and my father's company, Inland Steel. Our revenues at the beginning were \$10M. I bought a small stamping operation in Chicago when I founded the company, and 18 months later we had about 30 active facilities around the country and our revenues were almost \$1B. We accomplished this organically, as well as through acquisitions. Shale-Inland became publicly traded in the bond market, not in the stock market, and it continues today as Flo-Works International.

In 2013, I orchestrated a hostile proxy for a publicly traded company called Signature Group Holdings. Signature Group had one big asset and one small operating business that had revenues of about \$40M per year. Its significant asset was a \$1B net operating loss carryforward from a prior bankruptcy, which carried forward. It was publicly traded over-the-counter and I led a team that proxied to remove all the directors. This became a fairly visible battle. It was successfully settled and I took over as the Chairman and CEO. At the time, its market cap was about \$40M; I built it up in 18 months to a market cap of about \$275M with revenues approaching \$1.5B.

I resigned from that board to start Braidy Industries, about two years ago because starting Braidy Industries was my ultimate vision. The Signature Company, which has since been re-named Real Industry is in the aluminum recycling business with 24 plants in six countries. I observed an aluminum mega trend, and I was determined to take advantage and invest into it. The

lightweighting megatrend is driven by the CAFE standards in the U.S., which dictate that the car companies reach a 54 miles per gallon average of the small cars through light truck portfolio – recently amended by the Trump Administration to 39 miles per gallon. Anyway, those CAFE standards created a megatrend in the auto industry, which involves replacing steel with aluminum, making cars lighter and using less carbon. I thought the only way to do that efficiently, effectively, and economically, was to build an aluminum rolling mill in Ashland, KY. This was the idea. In the last 35 years there has not been a Greenfield rolling mill built in the United States. The last one was Logan Aluminum. I looked at the competition of companies that provide high quality exposed aluminum sheet to the automotive space – and those are Kaiser, Arconic, Novelis, Aleris and Constellium. Logan is the newest of the mills; it is 35 years old. The oldest is Arconic Knoxville, which is 99 years old. The others are all in the middle and they all operate at extremely high cost. This high cost is because they are almost all unionized, have high maintenance capital expenditures each year, have environmental remediation, legacy union costs, and many of them are in poor locations. On top of that, they are all in facilities that were built to service the food and beverage industry, meaning cans, with a new building next to many old ones, added to make auto sheet aluminum. So with the competition, (in my opinion) being weak, high-cost, and old, my proposed Greenfield seemed the right idea. I asked a few of my friends to join Braidy Industries, and they all said yes. Thus, we began with the task of building a \$1.6B rolling mill in Ashland, KY.

Braidy Industries is essentially a holding company with three subsidiaries. The first is the aluminum mill, which we refer to as Braidy Atlas. It will be an LLC in legal form. The second is Braidy Labs, which is our research and development. MIT Technology is a huge component and supporter of this company, and plays a vital role in the success of Braidy Industries because of our third, and last subsidiary, a company called Veloxint. We purchased them a few months ago, after working for about a year to incredible result. It is now a 100 percent owned subsidiary of Braidy Industries. Veloxint was incubated at MIT – with its development led by Dr. Alan Lund and Dr. Chris Schuh – who today, is the chairman of the Department of Material Science, and a member of our board of directors. MIT benefits by the revenue creation of Veloxint because we have acquired the intellectual property that was developed there. The original patents were owned by them and acquired in the acquisition, along with another 20 that we have applied for, so we have protected the IP and the ownership in every way possible.

Perhaps the most important thing to note is that Veloxint is in the business of nanocrystalline powder metallurgy, which is the process of reducing metal to a powder and returning it to a metal. This patented technology physically changes metal's composition. We are creating some of the strongest metals ever made by man. Stanley Black & Decker is a co-development partner, and as shareholders – they are one of perhaps 20 parties that we are in co-development negotiation with, and with some companies among the best in the world. I am talking about car companies, aerospace companies, some of the largest makers of electronics, NASA and other space related tech companies. Veloxint won this year's bronze Edison Award for space technology, as well as the S&P Global Platts Award for the breakthrough solution of the year in all metals, and it could be THE breakthrough in metals that we have seen in our lifetime. So on top of our huge and hyper efficient mega industrial facility play, we are launching a new game-

changing alloy into the marketplace – one which we'll be selling alongside our most affordable aluminum to an already built-in sales pipeline to future clients that have signed a pre-sale MOU.

Q: Who is your target audience?

A: Our mill is the first rolling mill in the world designed specifically for the automotive industry, using technology that applies to aerospace as well. However, the main design is for auto and our founding customers are seven of the largest car companies in world – all who have signed pre-sale memos of understanding. The deal is: we supply them with aluminum for the first seven years of our plant's existence. The MOU is a non-binding agreement, but it is a written contract that, in essence, has us providing a five percent discount to market to car companies and aerospace companies, in return for a committed volume purchase and acceleration of our certification to supply them with high-quality aluminum.

In addition to those transportation companies, the large metal service center companies that are mostly publicly traded have all signed the same MOU. They are purchasing aluminum from us to supply indirectly into the supply chain of the auto companies. These are some of the best publicly traded service centers and really great companies. So we have about 25 founding customers and we have the mill nearly 200 percent sold out for the first seven years.

Q: What are some of the challenges you face in your industry?

A: The scale of this project is vast. The building that we are constructing will be the 13th largest building in the world when it's completed. That is 40 acres under one roof and some of it is 10-stories high. The inside will contain about \$580M of brand new equipment manufactured specifically for our mill. Most of it is coming from Germany and Austria. I spend time worrying about execution; building on time, and on budget. Considering the scale of this project, there is also a necessity for hiring quality talent. Whether it be bringing in people, or hiring contractors and consultants, it is all about having a world-class experienced group of people that have done all of what we are doing before.

Our budget is \$1.6B and construction accounts for roughly \$1B of it. The cost of the equipment is \$580M and the balance is working capital required to start it up: the purchase of fuels and this and that, etc., and that money is being spent now. As we speak, we probably already spent \$15 million prepping in engineering costs, legal costs, accounting costs, hiring costs, permitting cost, etc.

There is a schedule of very defined expenditures, through the rest of this year, and through 2019 and 2020. Our company is managed on the Hoshin Kanri Six -Sigma Toyota production system, which is the leading Six-Sigma project management system. We have a boardroom at our headquarters in Ashland, Kentucky, where every period of the next two years is planned. We've accomplished over 1000 tasks during the past year. Through our six-sigma effort, we have about 700 projects being worked on at this time. It is a lot to manage.

Q: How are you different from your key competitors? Who are your key competitors?

A: If we break it down into segments starting with the aluminum mills, there are five: Arconic, Aleris, Constellium, Kaiser and Novelis. We are entering that set of competitors in North America. Obviously, it varies in Europe and Asia. They all manufacture what we will be manufacturing. However, if you take the cash conversion cost of making aluminum, we will be coming out roughly 50 percent of the cost per ton lower than nearly all of our competition. We are able to do this because our energy costs are lower, our resource costs are lower and our logistics are absolutely perfect. We are within 250 miles of 50 percent of the US automotive capacity, and within 2 hours of 70 percent of US auto making capacity. This means we can load up our trucks in the morning with coiled aluminum going to the car companies, deliver midday, and load up with scrap. 40% of our coil turns into scrap. We will then have that scrap back in our furnace the same night, delivering it to them again a day or two later. We are both in the business of aluminum production and recycling. We are the only mill ever built in where EPA issued a low emission air permit. Meaning we are the greenest mill in North America, and that aspect of how we conduct business matters to a lot of people. This sets us apart from our competitors.

All of our equipment is new and all of our competitors are old so our maintenance costs are a fraction of everybody else's. If I take Arconic Davenport, the biggest aluminum rolling mill in North America, as an example, they have roughly 60 sales related employees. That is an SG&A cost. We have only one salesperson and we are 200 percent sold out for seven years. Our headquarters can compare to Arconic's in a number of quality ways, but our lease is \$5 per square foot locked in for seven years. Our competitors have large capital costs that they've expended over the decades. Their solution to what we are doing in the auto industry is to put a new building on the end of a very old building, because they already have large investments they can't forsake. This means that they generally are far from being efficient. If they were to build a brand new greenfield mill when they are already producing the same material in an older facility, they would be cannibalizing themselves by doing so.

The most important factor, serving as our unique competitive advantage, is the fact that on the mills side our competitors are mostly all unionized. This means they are incapable of building a nonunion rolling mill in the US because of their collective bargaining agreements.

On the Veloxint side, there is no other company in the world producing metal as strong as we are, therefore we literally have no strong competitors to what we are doing.

Q: How are you changing the landscape of your industry?

A: We are producing some of the hardest metal known to man that will also be used to lightweight cars and other transportation vehicles. We are spearheading a revolution in material science, and that is something few of any of our competitors can say.

Q: Who is your ideal investor?

A: Our ideal investor is one that wants to make a difference in Appalachia and in the world. Could be strategic or financial.

Q: What's your mission?

A: Our principle mission is to rebuild Appalachia with technology. That is #1. We aspire to create the world's top company light-weighting the transportation sector. On a larger scale, our mission is much bigger than building an aluminum mill. It is about revitalizing cities across Appalachia, creating jobs and hope.

Q: What's next for you?

A: On the aluminum mill side, we will be ordering structural steel as soon as this round is completed and making down payments on equipment. Then, begin the hiring of program for the mill. I see us spending \$100M in the 4 months following the raise.

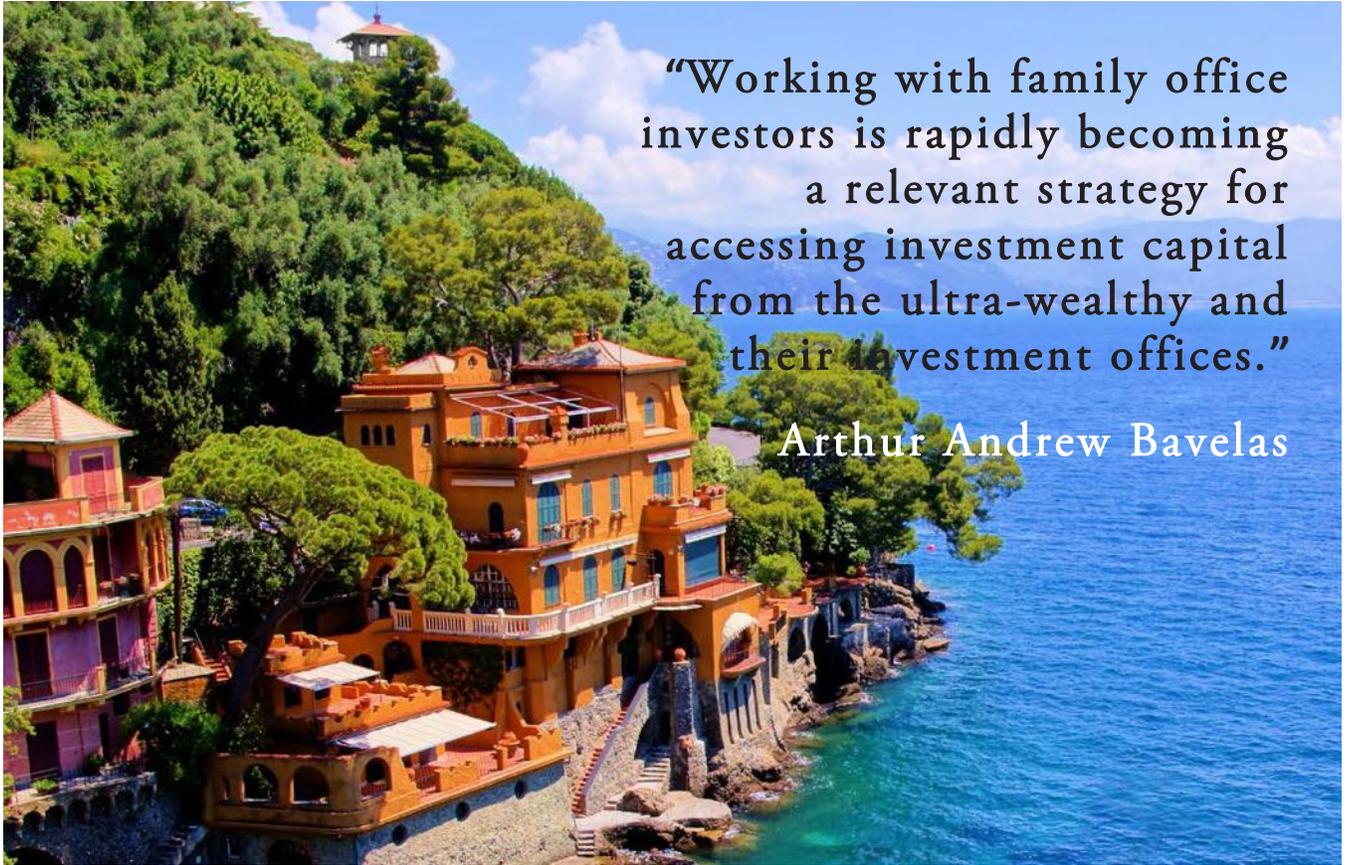
Through 2019 we will be in the active process of hiring 600 employees and Kiewit will be hiring 1500 construction workers. This is a major industrial project that begins to unfold with the closing of this private round. Visit netcapital.com/braidy for more information about this investment opportunity.



Craig Bouchard, Chairman and Chief Executive Officer of Braidy Industries, is a strategist and industrialist who successfully built three billion-dollar public companies within the past decade and was responsible for the highest-appreciating stock across all U.S. exchanges in 2008. Bouchard is a noted expert on Lean/Six-Sigma and capital allocation, and is a New York Times bestselling author of “The Caterpillar Way.”

Craig holds a Master’s Degree in Economics from Illinois State University and an MBA from the University of Chicago. He is currently a member of the leadership board of the Department of Athletics, Duke University. Craig is an alumnus of Leadership Greater Chicago and was a finalist for the Ernst and Young Entrepreneur of the Year Award (Illinois) in 2005.

If you have any questions, please contact Julie Kavanaugh at jkavanaugh@braidyindustries.com.



“Working with family office investors is rapidly becoming a relevant strategy for accessing investment capital from the ultra-wealthy and their investment offices.”

Arthur Andrew Bavelas