FBR Ltd. (ASX:FBR or OTCMKTS:FBRKF) is an Australian robot maker serving the construction industry. The company is now emerging from its development phase and journeying to its profitability phase—quite literally. Its key innovation, the Hadrian X robot, has been loaded onto a ship in Perth, Australia, and is expected to arrive in July at a port in Florida, where after clearing customs it will be tested via the building of up to 10 homes.

But here's the thing investors would be wise to consider. The robot has already been amply tested in Australia, where home-building conditions do not meaningfully differ from the U.S. And because this genuinely revolutionary product is a) patent-protected, b) has no current peer and c) serves a purpose for which there is a desperate need d) in a market that is enormous and e) benefits from a strong financial backer with a market-leading presence in the U.S., FBR stock, now priced at 0.02 per share, has nowhere to go but up, and substantially so, with the Florida-testing catalyst close at hand. A key additional point is f) the product's profitability.

FBR's Hadrian X robot is a bricklaying plant mounted on a truck; large blocks are loaded into an opening in the back of the truck, If necessary it also has an internal saw capable of cutting the bricks precisely, Then a conveyor belt conveys to the end of the truck's boom. After a 3D CAD model signals the precise design, Hadrian X gets to work like only a robot can, disrupting a craft that has not changed in 6,000 years of bricklaying because of human physical limitations that have required a slow pace of work. Hadrian X can precisely lay about 300 bricks per hour, about seven times the rate of an average bricklayer. Because it is stronger than a human and starts with the large blocks, Hadrian X achieves an output rate of 24 times that of an average bricklayer.

In fact, the machine is designed to work with still larger blocks that are not yet on the market, And in the future when materials companies start producing them (and Hadrian X will encourage such production), the robot would outperform the average bricklayer by 46 times. So what a bricklayer accomplishes in assembling the walls of an average house in two months, Hadrian X can complete in one 9-hour shift. In business, time is money, and reducing construction time to such an extreme degree releases resources for other projects, while lessening insurance and other frictional costs of doing business. Relatedly, FBR utilizes a special glue instead of the traditional mortar to achieve a faster drying time so that the machine can maintain its rapid pace of bricklaying.

A. FBR Has Heavily Invested in Developing and Protecting its Intellectual Property

Each new FBR patent gives the company up to 20 years years to gain a stronger competitive edge—enough to place a very wide moat between it and rival builders. The company already owns 131 exclusive patents and has 127 patents pending. FBR has shown no signs of fatigue in its efforts to refine and safeguard its technology and is continuously registering new patents.

B. No Need to Fear the Competition

FBR is not the only company trying to disrupt traditional bricklaying, but its competitors have nothing to brag about. These competitors boast alternative business models, but when closely examined it is apparent that FBR is lightyears ahead of them.

One attention-getting model is that of 3D printing. ICON leads this field. But it takes them a few days to set up the infrastructure and then a few weeks to build the home, after which it must dismantle the infrastructure. This doesn't save much on building costs but does cut the amount of time by about 30 percent. FBR, in contrast, can complete the construction of a home in a single day, saving enormously on both homebuilding costs and time. Before ICON has finished setting up the infrastructure, FBR is already deep into its next home. And in terms of the product's quality, 3D-printed houses have a lot more problems than the standard brick houses that FBR builds.

A company called Construction Robotics has developed a robot called SAM, short for "semi-automated mason." Building only straight walls, and limited to just small blocks, and with a speed of 200 to 300 small blocks per hour, SAM is not in the same league as Hadrian X. Construction Robotics has also developed MULE, a separate tool designed to lift heavy blocks, which is already a part of Hadrian X's repertoire.

A Czech company has developed a small robot called "zdicirobot." This robot is currently in its early stages of development. As of today, it achieves a speed that is twice that of a normal builder, Which puts them far behind.

Dutch start-up Monumental has an impressive website explaining its new construction technology. The only thing is it has no product yet.

For now (and given its solid inventions and patents, for a long time to come), FBR has a commanding edge in advanced construction tools and technology.

C. The Global Construction Market Desperately Needs Hadrian X

The incumbent construction-industry players who make the bricks, mortar, concrete slabs and other masonry products in a trillion-dollar per annum global market require a robotic solution soon because of a shortage of bricklayers that grows more acute over time.

The average age of a bricklayer today is around 50. Young people are not eager to enter this profession. The shortage is mainly filled by foreign workers and the quality of work is in decline, while wages—because of the labor scarcity—are going up. (Although, at the rate of foreigners entering the U.S., it may be possible to rely on foreign workers in this matter.)

Environmental and safety regulations are also a growing concern. Governments are trying to reduce air pollution in general, and in this industry specifically. Hadrian X reduces pollution very significantly. And the construction industry is an extremely dangerous industry, and the stage of construction involving the laying of large blocks is one of the most dangerous stages because of falls and dust inhalation. Hadrian X's robotic strength allows it to lift blocks that are not a comfortable weight for humans to carry, thus allowing it to achieve faster and safer home completion. With these various labor, wage and regulatory pressures, and without a robotic solution, construction companies face survival risk as the world goes of necessity to prefabricated walls and 3D printing.

For all these reasons, FBR's biggest supporters are block manufacturers such as Australia's Brickworks, which has purchased close to 20% of FBR's shares, and Dublin-based CRH, a huge player in the U.S. market that is conducting the upcoming demonstration in Florida and will purchase FBR robots based on how the test goes.

D. The Construction Market is Enormous

If theoretically—just to get a sense of the potential market—FBR would dominate the global home-construction industry, it would be building 3.3 million houses a year, built by 13,000 active robots, and the company would have a net annual profit of $50 billion. If FBR dominated the U.S. market alone, it would be building 1.2 million houses a year via 5,000 robots at a net annual profit of $19 billion.

These are fanciful figures, but it is within the scope of imagination to envision FBR capturing 10 percent of the U.S. market, which would require 480 active machines. That would give FBR annual revenue of $2.4 billion and profit of about $2 billion, which they would have to share in some way with their financier, a critical role CRH appears to be taking on.

E. In CRH, FBR Has a Very Resourceful Financial Backer

CRH is a large company that brings in about $40 billion in annual revenue, most of which comes from its North America business . CRH's Americas Division, sponsor of the upcoming Florida demonstration, made a sweet deal with FBR—Sweet because the financing of these robots, apart from the profit they will get from the partnership with FBR in revenue from the robots, it will also increase the company's income and help it stay relevant in the construction market that is looking for alternatives.

The contract gives CRH an option for a partnership of up to 300 machines. If the company wants to exercise its option but in a more cautious way, it can participate in 20 machines and then continue in stages. If the 20 machines reach a certain output stipulated in the agreement, another 40 machines will be ordered. If these 40 machines reach a certain output, another 40 machines will be ordered. These steps play themselves out if CRH chooses to exercise the option, after which CRH has the option to order another 200 machines.

Assuming FBR demonstrates Adrian X's capabilities successfully in Florida, as has long been established in Australia, it is very much in CRH's bottom line interests to fund the robots and enter into a profit partnership. Financing and partnership of all 300 robots should, in my estimation, yield CRH an annual income of 300 million dollars, with the investment amount not exceeding 500 million dollars. In addition, they will benefit from excess sales of their block products, which will increase their market share in the US. CRH's 300 active machines will account for approximately 5% of the US construction market.

CRH is going to make a lot of money from this deal—A very high return on their investment. But it is important to understand that FBR still acted wisely at this juncture in setting the minimum purchase at 20 machines because at this threshold FBR moves to a positive cash flow. And with this foothold in the market FBR will no longer need to bequeath to its investing partner such a high level of profitability but should be able to command more favorable terms in its future business dealings.

One cannot easily speculate on what happens after the agreement between CRH is executed, but it seems fair to surmise that CRH's competitors will be extremely concerned about the exclusive advantage their rival has obtained and will need to find their own equally good alliance (which is apparently unobtainable) or cut their own deal with FBR which, again, would be more to FBR's advantage this time.

F. Profitability

As noted, FBR's product bears advantages from an environmental point of view, but this is not a green company that prospers because of the support and subsidies it receives from governmental bodies or corporations incentivized to work with it. This product is super profitable. In fact, it is so profitable that, as noted above, it can cut in a partner like CRH to finance its costs and share in the profits, while providing itself a path towards positive cash flow and the achievement of significant growth.

According to data found in the company's presentations, which I assess as credible, it costs about $1 million to produce Hadrian X, whose annual maintenance costs $175,000. The machine has a life expectancy of 12 years.

Now let's do the math. The annual cost per machine (1M/12 + 175K) = $258,000. In addition, operation of the machine requires three workers; let us stipulate that that would cost $200,000, though it is probably less. Now we're up to $458,000 per machine per year.

(The company's strategy is to charge a price similar to the market price of a brick-and-mortar builder, despite the immense added value it already provides its customers. Again, this will presumably change with the increase in demand the future is likely to bring.)

Now assuming the construction of 250 houses per year with a conservative assumption of builder's fees of $20,000 per home (250*20K), the result would be income of $5 million. After deducting the expenses ($458K), an annual profit of $4.5 million is obtained for each active machine. (Note that in the calculation here, I did not include the additional costs any other business would have for advertising, operation, management. etc.) That's a return on investment of 1,000 percent annually, making FBR a highly profitable value proposition. And as has been noted, FBR's continued improvements in the robot's speed and capacity to work with larger blocks should further increase profitability.

Conclusion

FBR has pursued a clever business model, epitomized by its agreement with CRH. Lacking a sufficient current revenue stream, FBR has enticed a well-heeled partner to establish a Florida branch for a generous share of the profits. Time will tell whether the company will be financially resourceful enough to alter this model or whether it will choose to continue it indefinitely, but clearly FBR's product is so unique, so needed and so profitable that it can do this.

In my opinion, in perhaps two years, after they have thoroughly proven their product and its unique benefits, they will have very significant contracts with large block manufacturers. But the key catalyst in the company's trajectory should come In the coming weeks with FBR's demonstrating the construction of 10 houses in Florida. Investors can take comfort in

knowing that FBR should be easily able to perform this test well given that these are milestones they have already achieved, according to their corporate statements. FBR's success in Florida should also increase exposure to other construction companies and increase contract signing, and should give a commensurate boost to its share price.

FBR is at a point that I think is very attractive for investment. It has completed many years of development and has reached the point of a proven and ready product. The company is priced at a terribly cheap price that hardly reflects its potential. The company is small and unknown and therefore not properly valued yet it is currently in a significant leap-forward position, with very significant milestones in the near future.