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Graphene could be as crucial as plastics

In fact, scientists are just getting up to speed on how graphene can be used to improve existing technologies, or develop brand new products that are a quantum leap beyond what's now available.

Think how the development of plastics literally changed the world. And now consider the very real possibility that we're on the cusp of a revolution just as path-breaking.

Yet, for speculators who want upside leverage to graphene, the opportunities are limited. That's because we're still very early on in the development curve.

Indeed, most of the companies leading the way in graphene research are privately held. And there are few commercial applications ready for product launch.

But these circumstances are ideal for the handful of leading-edge innovators who achieve success and who are first to market.

One such company that hopes to ride the graphene wave is **Graphene 3D Lab Inc.** (GGG-TSX/VEN, \$1.42). Based in Calverton, N.Y., Graphene 3D was created to develop an application that would make the company a market leader.

After considering several opportunities, the company decided to find a way to integrate graphene with the transformative technology of 3D printing — itself an exciting and rapidly growing market.

Be that as it may, Graphene 3D is a prototypical tech story. It's a small outfit — one led by highly respected scientists who are racing to patent both new products and technology for a market



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whose growth potential is stratospheric.

In short, Graphene 3D is a classic high-risk, high-reward scenario — one that can return enormous gains for those folks lucky enough to get in on the ground floor.

Shortly after being listed on the TSX Venture Exchange, the company made news by applying for a patent on a new technology to fabricate graphene batteries using 3D printers.

The product allows complex, small-scale batteries to be designed that can be manufactured as an integral component in an electronic device.

Take a cell phone, for example. To make one, several parts need to be independently manufactured and then pulled together to create the final working unit.

Yet until now, there hasn't been a single process that can advance a high-tech application from raw materials to finished product.

But thanks to its breakthrough, Graphene 3D is able to develop a full system to create a functional product using several substrates.

The company, in other words, is able to put into one package the materials used in fabrication, the custom hardware needed to print the complex designs, along with the software required to control the precise molecular structure.

Turnkey on the way

Graphene 3D isn't only building a better mousetrap, but it's developing the turnkey system that will revolutionize the entire manufacturing process.

Still, it's difficult to put a rational value on this company. As

things now stand, it has few assets and no revenue, let alone profits.

Graphene 3D also faces many technological hurdles — and, thus, additional risk — before its killer app is ready for prime time.

Still, like many early-stage outfits, the company has shown enough potential to raise the necessary money to move things along the development curve.

Graphene 3D now hopes to speed up growth by getting a bigger facility. Not only will this give it manufacturing space, it will also bolster research and development.

Meanwhile, the company is working on getting a listing in U.S. stock markets, perhaps on the NASDAQ — something that would make it easier to get a bigger pool of investment capital.

But for now, the app's development is at the prototype level. Still just as computers were once bigger than office desks, further advances in technology will be needed to take full advantage of Graphene 3D's breakthrough. Yet, the company is well on its way to doing so.

Licensing will be needed

Moreover, the technology, if brought to fruition, will be so advanced and so attractive that bigger players will either have to license it, or buy the company outright. Either way, Graphene 3D will likely make pots of money.

In the meantime, this company's story is exciting enough that its stock can still post huge gains. Moreover, because its share structure is relatively tight, Graphene 3D will still probably be comparatively cheap even if its stock stages a big move up.

For its part, the company remains the only Canadian-listed

outfit with direct leverage both to graphene and 3D printing. This alone makes it attractive.

And although estimates vary, it seems credible that Graphene 3D will be able to grow more than 20 per cent a year for many years to come.

Again, think how the market for cell phones exploded as the device evolved from a clumsy — and, often unsightly — appendage to a mobile computer and entertainment device, one virtually *de rigueur* for the world's twentysomethings, as well as almost everyone else.

In the interim, the hype and expectation that characterize the cell phone sector will make Graphene 3D an appealing investment target.

Indeed, a big pool of potential stockholders could drive the shares on momentum alone.

Moreover, as the company matures and starts tapping into a revenue stream, some of its risks will be softened.

Then, too, Graphene 3D's leadership in research may yield other products, creating additional blue sky potential.

Admittedly, there are plenty of "concept" stocks out there for speculators who want an alternative to Las Vegas's gaming tables.

But even given the company's high risks, it's a very special opportunity — one with a true potential to deliver huge upside.

As such, it's worth holding a few of Graphene 3D's shares for the long term to see if the company can pull a rabbit out of its hat.

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