BELL TOWER ASSOCIATES

Monthly Biotech Focus – January 2015

Applied DNA Sciences (APDN)

Technology

APDN marks our first biotech subject company whose product is not directly related to the field of medicine. Applied DNA Sciences has a number of products, but their technology is all centered around the use of botanical DNA imprinting in order to implement high-quality security measures. The company takes strands of botanical DNA, or the genetic coding that is unique to each living thing, and rearranges the components of these strands to produce a DNA "coding" that cannot be reproduced or de-coded (as is the case with traditional DNA) due to the fact that the components have been mismatched and encrypted. To protect its encoding process, the company currently holds over twenty-one patents. The result of this technology are DNA strands that can be imprinted onto numerous goods or integrated into existing security measures in order to prevent such crimes as smuggling, counterfeiting, and theft.

Products

We will focus here on two particular products that we believe hold the most potential for Applied DNA and that form, in our opinion, the basis of its value. The first is what the company calls its SigNature DNA product. The company can imprint goods that are shipped around the world, from raw materials to finished products, with a unique DNA marker. The company's preferred example is textiles such as cotton. One may consider an article of clothing produced with Egyptian cotton; there is, absent any DNA marker, no way for any retail purchase of the clothing to know that it is indeed made of Egyptian cotton.

The clothing manufacturer may well purchase cotton from Egypt, but it cannot verify that the cotton that arrives by ship from Egypt is the same cotton that was purchased in Egypt and had not been altered or counterfeited in any way. However, if the cotton at the time of purchase is marked with DNA, this DNA marker can be scanned or lab-tested at any number of points along the manufacturing process, from its arrival at the factory to its shipment to retail stores. The DNA marker remains intact throughout the entire process, so that even the final product will maintain the DNA marker proving that it is made with Egyptian cotton. The company has, furthermore, recently introduced handheld scanners that (once produced by Applied DNA Sciences and formatted to detect the proprietary DNA marker) will remove the necessity of sending products to lab testing to verify their authenticity. Authenticity will be verifiable immediately upon arrival of any good or product. In particular, this technology extends to military equipment such as silicon products and other computer chips, which are often the subject of counterfeiting and, if counterfeited, could pose serious risks if poor-quality or incorrect chips are mistakenly used in the manufacturing of military weapons such as missiles and rockets.

The second product is the use of the DNA marker as a measure of theft prevention in the form of Applied DNA Science's SmokeCloak DNA. Already, this technology has been applied in banks and other businesses, particularly in the UK, where it has been used to significant effect. When a robbery attempt is made on an establishment with this protection, a thick smoke can be released which, apart from providing protection for the employees, carries with it a DNA marker that immediately attaches to the skin and clothing of the intruders, as well as the items in the store or establishment. This DNA marker can then be used to assist law enforcement in apprehending the criminals. Furthermore, the very notice that this technology is in use acts as a deterrent to possible criminals. Theft markers applied in UK cash-in-transit firms and in Swedish electricity plants (to protect their supplies of copper) have resulted in 55% and 85% reductions in thefts, respectively.

Probability of Success

We believe that Applied DNA Sciences, given its products, has two significant indicators of success. Firstly, by holdings over twenty-one patents and, among them, the

patent to use this DNA technology, Applied DNA Sciences has essentially monopolized this field. Their success is thus tied to the ubiquity (or at least tipping-point level) of their technology in the future; at the point at which their product goes into general use by companies and governments, they will see enormous success. Secondly, their product will be, we believe, a *necessity* for government defense departments into today's modern world of warfare. The company already has deals, though small and trial-offer based, with the U.S. Department of Defense. The counterfeiting of computer chips has become a massive problem for the military, as a single incorrect or faulty chip can redirect the direction of a missile or other automated military weapon to devastating effect. This type of counterfeiting is become more commonplace, as there is much to gain from selling a specifically-designed computer chip but delivering only a cheap and useless look-alike. DNA imprinting technology would protect this process at all levels and will at some point become necessary for all defense contractors, we believe. Already, in its trial-testing, the Applied DNA Sciences was able to successfully mark and track computer chips for the defense department. Given this, we consider it only a matter of time before either Applied DNA Sciences begins to acquire significant funding or else is purchased by a larger defense contractor.

Insider Holdings

Applied DNA Sciences also shows some excellent signs in terms of insider holdings. 23% of all its shares are held by insiders and 5% owners, showing high insider interest in the company. The company has also been recently listed on the NASDAQ exchange followed a reverse stock split. In fact, the most recent insider transactions were threefold and all positive in nature: a purchase of 77,000 shares by its officer James A. Hayward, a purchase of 77,000 shares by its director John Bitzer, and a further non-open-market acquisition of 315,000 shares by James A. Hayward. Insider confidence in a company is always something of which to take notice.

While the stock price has seen a recent fall in performance, the fact that this was based not on any fundamental change in the company's position but on a quick fall following its entry into the NASDAQ exchange, suggests that the company may now be

ideally priced. Its fundamentals remain unchanged and, while its revenues remain low and it shows net losses as expected for a company with such new technology and no upcoming "medicinal trials" to boost interest, its technology and patent positioning are such that it is in prime position to take control of a vital and as-yet-untapped market.

Applied DNA Sciences (APDN) Relevant Statistics

Market Capitalization[1]	**72.09M**
Property and Equipment[2]	**576,000**
Cash and Cash Equivalents	**1.39M**
Total Assets	**3.51M**
Total Liabilities	**4.98M**
Total Cash Flow (Operating Expenses)[3]	**(8.5M)**
Change in Cash and Cash Equivalents[4]	**(4.98M)**

The firm is relatively small in terms of market cap. Its liabilities come mainly from short-term operating expenses. The company operates (as expected) from a position of negative cash flow from operating expenses, and its liabilities are greater than its assets. It does, however, have a fair amount of cash and cash equivalents to allow it to survive for another six months as it continues to prove the efficacy of its product. With no clinical trials as with a medicinal company, there is no single date to which the company would need to survive; it is merely a matter of finding further clients for its already successful technology. We believe, given the efficacy and need for their technology, that the company can survive until it attains further sales or is purchased by a defense contractor.

[1] As of 2/8/2015
[2] All other data as of 9/30/2014.
[3] For period ending 9/30/2014
[4] For period ending 9/30/2014