

Nanotechnology for Authentication, Brand Protection and Anti-Counterfeiting Markets



Doug Blakeway
Chairman & CEO

CEOCFO: Mr. Blakeway, Nanotech Security has a long history - 20 years. What is your focus today?

Mr. Blakeway: What we do is help Companies and Countries solve the problem of identity.

In September 2013 we started our reorganization. Our focus today is on nano-optical imaging and optical thin film with a specialized background in two business divisions or units of the company, one being in surveillance and the other being in high-level security features specializing in bank notes and ID documents.

CEOCFO: How do you work in both of those areas?

Mr. Blakeway: We have two separate divisions. Those two divisions operate as independent business units. In surveillance, we operate out of Holmes, which is just outside Philadelphia, PA in the United States. We design, manufacture and distribute surveillance equipment used in countermeasures for surveillance activities and officer safety. We sell finished goods developed through complete start to finish processes for use in state, local and federal policing as well as the military. The second business division we have is in security features and we operate out of Vancouver, BC and Thurso, Quebec in Canada. Again we build from the ground up, we do the research and development of images that are on a nano scale; as well we manufacture and design the images and we call this KolourOptik. Our Nanotechnology uses no inks, pigments or dyes to make our bright LED like color images. The image is made of nothing more than a matrix of billions of nano sized holes, making this a true green technology that cannot be replicated. We also make color-shifting foil that is used as a window or hidden threads in bank notes and secure documents. When you tilt the bank note forward, back, left or right, you see an image appear or disappear on the windowed thread. The thread color also changes from one color to another color and back. These threads are called color changing optical thin film.

CEOCFO: What is the competitive landscape? Are there many companies in both arenas with the experience and capabilities you possess?

Mr. Blakeway: We have a unique new product in the security features business division. The image is created using nano structures, which are very small, at one-billionth of a meter. In that, we have no direct competition, meaning that there is nobody in the nano space. What we are up against are holograms and those products would be classified as our competition in the market today. Our competitors are companies that work in the bank note space, and there are around 15 major suppliers in the world today, with the largest company being out of Europe, which is G&D, or Giesecke & Devrient. When talking about holograms, they would have somewhere around 60 percent of the world's banknote, passport and identification card market.

CEOCFO: Why is yours a more secure and better offering?

Mr. Blakeway: We like to say it is virtually impossible to replicate. As with anything, it is not impossible to replicate if you have the clean rooms, sophisticated equipment, and are willing to invest massive amounts of time and a considerable amount of funds, but even with those items it would be extremely hard to replicate. We create an image we call ghosting. Ghosting is where you see the image at all times in this ghost-like faint background. As you tilt it, the light catches the angle and a bright LED image pops up in any colour you want to specify. You can also see the image from a long distance away. You can see it across the room or across the street. It gives a bright LED light effect that turns off and on as the viewing angle changes. When you lift it up and look at it in transmission as the light comes through the substrate, the

colours change completely and they stay on all the time. They do not turn off. You have a defined image on a product that changes appearance in several ways, and there is nothing like it in the world today.

CEOCFO: *How does cost compare with the holograms in general?*

Mr. Blakeway: It is basically the same or less. You can run our images on the same platforms as holograms, meaning you can use the same type of machinery or the same type of processes. We can apply it directly to any substrates or put them onto something and then stick them to something, for example, films. In the case of metal, we could stamp it directly on to such things as a coin or onto the metal shell of a computer case, and you have your image there that you want to see pop up and display the color image showing it is authentic or for brand recognition.

CEOCFO: *How do people resist?*

Mr. Blakeway: We are just coming out of R&D with our commercial launch at present. We began with a strategy to acquire companies that were in the marketplace we wanted to do business in, allowing us a fast track route to the market. A year ago September, we started to implement that strategy and reorganize the company. We started by buying the two private companies that had researched the technology at Simon Fraser University, where it originated. Then a year later this past September, we acquired another company, Fortress Optical Features, which supplies the optical thin film used as threads in banknotes around the world. That was the entry point we needed. We have just changed from being a pure R&D company to a commercial supplier as of September this past year. We are a new player in the bank note market; we already have contracts, and are delivering to issuing authorities in the world for bank notes.

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CEOCFO: *Has the industry been looking for a better way?*

Mr. Blakeway: Yes, the industry is always looking for a better way. Bank note issuing authorities are always looking for new technologies that they can incorporate into banknotes, so it is not just a single security feature used in a bank note, but is a series of security features that they look for. They are always looking to add something new into a banknote. The same with secure documents such as a passport, driver's license or military cards. They are always looking for new security features that would be easier to see, easier to use and easier to explain.

CEOCFO: *What is the potential global reach?*

Mr. Blakeway: The global reach looking in the bank note industry is somewhere around \$250 million in revenue. When we talk about the holographic industry, replacement of those with a new design, we are about \$2.5 billion. With counterfeit goods in the world, it was estimated in 2013 that authentication or fraudulent activities were about \$650 billion per year and climbing.

CEOCFO: *How will you be using the funding from September?*

Mr. Blakeway: Our main purpose of funding in September was to acquire Fortress Optical Features Ltd., and we expended most of that money in doing that transaction. The balance will be used for general working capital in our business operations.

CEOCFO: *Would you tell us about your other division?*

Mr. Blakeway: Our other business division is Tactical Technologies Inc. Tactical is a wholly owned subsidiary and our division that is in surveillance. It builds such things as officer safety devices. If an officer is going in to a potentially dangerous situation, they have an alarm attached to them that is covert, or hidden. If they feel under duress, they can hit a panic button or trigger the alarm and the alarm goes out to other officers who come in and help them. This officer safety technology goes into all sorts of different types of equipment for military and law enforcement personnel. There is also the surveillance side or countermeasures, such as audio and video surveillance. We design and build the equipment from the ground up. In this area, we make such things as surveillance vans and campers where you have a van that looks like a standard street vehicle but inside it is a complete surveillance operation. It is like what you would see in the movies,

CEOCFO: *With the state of the world, do you see an increase in the security side?*

Mr. Blakeway: Crime is ever increasing and getting more sophisticated, but it is moving from one area to another. As technologies develop in the world, crime goes hand in hand with that. You find new activities that the criminals do, whether it is different sets of drugs or different types of crime. We have seen things moving from drug crimes that are

extremely profitable for the smugglers or people doing illegal activity to credit card and ways that you file your taxes on the internet and other “cyber” crime. Another change we have seen is law enforcement departments used to work independently of each other. A local sheriff’s department would operate with a set of parameters and be able to use his or her equipment in the context of talking to their officers, but the next county would not be able to use the same equipment and they would have a different frequency. The two counties cannot talk to each other. Since 9/11, there has been a mandate called a P25 protocol that allows all departments to talk to each other in a time of emergency. Communications is occurring between all the different state, local and federal departments. We manufacture this type of equipment.

CEOCFO: *Tell us a little bit about the manufacturing side.*

Mr. Blakeway: On the surveillance side it is lower production runs using personnel to do the assembly as opposed to machinery. It is labor intensive and you need to have very technical people who are trained to do it. We have a very technical team who have been with us for a long time. When you get into the security features side with thin film and nanotechnology, what you have is very sophisticated machinery and technical team. What we do is take the equipment that works on a basic level and computer generate a lot of our programs to go with it. Our computer programs, which have allowed us to take the machinery, run it at much faster rates and do more things with it. You can have an older piece of equipment updated by new manufacturing techniques added to it or for new software platforms to allow it to be staying up to date.

CEOCFO: *You have been involved with many ventures over time. What have you learned?*

Mr. Blakeway: I think one of the biggest things you do is you always push the envelope and try for new things, and you think outside of the cube. You don’t think of it as a one-dimensional object but something that you have to go through to look at it completely different. In pushing that envelope, you make mistakes, and you certainly learn by your mistakes very quickly. I do not think you are successful unless you have made mistakes in your projects while you are trying to push that envelope.

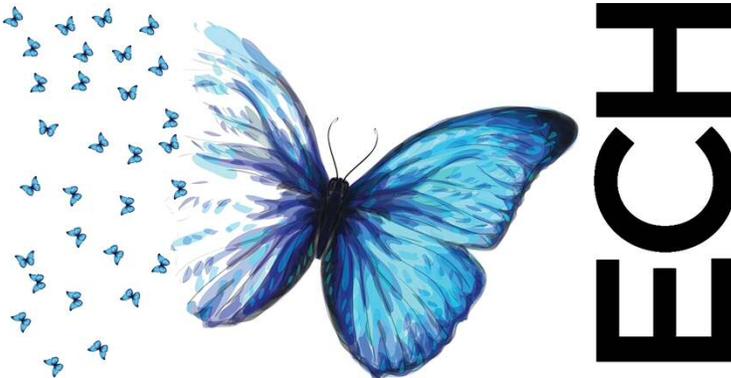
CEOCFO: *Put it all together for our readers. Why pay attention to Nanotech Security?*

Mr. Blakeway: We see ourselves as the up and coming new player in the industries. Our business strategy is to develop a company based on acquisitions and new exciting technology research and discoveries. The acquisitions have to be able to hold up individually and then also layer or combine with our technology for new products and technology. We are going to become a larger company and very well known in the security features and the surveillance industry.

CEOCFO: *Final thoughts?*

Mr. Blakeway: These are fun times for the company. We really see the growth right now and we are expanding in all our business divisions. We are now located in Philadelphia, Pennsylvania, Thurso, Quebec and Vancouver, British Columbia. We see opportunities for our products as we are called on by Countries and Companies to create new and unique technologies used in both the surveillance and security features market.

Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine



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