

Recognized Worldwide for their Advanced Imaging Systems and Technology that Enable Computed Tomography, Ultrasound, Digital Mammography, MRI and Aviation Security, Analogic Corporation is Focused on Market-Driven Technologies that Enable their Customers to Thrive

**Healthcare
Medical Technology
(ALOG-NASDAQ)**

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**James W. Green
President and CEO**

BIO:

Jim Green joined Analogic Corporation on May 21, 2007, as president and CEO. Jim has over 25 years of experience in engineering, product development, commercialization, and general management in the medical technology field. Before joining Analogic, Green led the California Division of Quest Diagnostics (recently acquired Unilab Corp) providing full line laboratory diagnostics from sample collection through test-

ing, billing and collections, serving approximately 70,000 patients a day. Prior to Quest, Green served as senior vice president and general manager of computed tomography (CT) for Philips Medical Systems, and senior vice president, product development, for Marconi Medical (acquired by Philips). Jim earned a bachelor of science degree in electrical engineering from the University of Missouri, and a master of science degree in computer engineering from the University of Southern California and subsequently completed the Stanford Executive Program (SEP) at Stanford's Graduate School of Business.

Company Profile:

Analogic provides leading-edge healthcare and security technology solutions to advance the practice of medicine and save lives. We are recognized around the world for advanced imaging systems and technology that enable computed tomography (CT), ultrasound, digital mammography, and magnetic resonance imaging (MRI), as well as automated threat detection for aviation security. Our CT, MRI, digital mammography, and ultrasound transducer products are sold to original equipment manufacturers (OEMs), providing state-of-the-art capability and enabling them to enter new markets and expand their existing market presence. Our market-leading BK Medical branded ultrasound systems, used in procedure-driven markets such as urology, surgery, and anesthesia, are sold to clinical end users through our direct sales force. For over 40 years we've enabled customers to thrive, improving the health and enhancing the

safety of people around the world. Analogic is headquartered just north of Boston, Massachusetts, with operations in Denmark, Montreal, Pennsylvania, Colorado, and Shanghai.

**Interview conducted by:
Bud Wayne, Editorial Executive
CEOCFO Magazine**

CEOCFO: Mr. Green, how long have you been with Analogic and what was the reason for them bringing you on as CEO?

Mr. Green: I have been with the company now for just about five years, although I knew Analogic for many years. I am an electrical engineer by training and had worked my way up to the technical side of things with design and control systems, flight systems and industrial control systems. I moved to the medical side in the 1980s, designing high-speed blood analyzer systems and implantable devices. At one point, I became the head of engineering and moved into running engineering for non-interventional imaging type of devices, like computed tomography, magnetic resonance imaging and ultrasound. At the time, I was running what was the third largest commercial lab in the country out on the West Coast and it recently had been acquired by the largest US laboratory business. They were doing something on the order of 70,000 patients a day from taking the sample, running the test, delivering the results, billing the patient and billing insurance. My family and I were loving the California sunshine, and one day I got this phone call asking if I was interested in moving to Boston to take over as

CEO at Analogic. Leading an innovative publically traded medical technology business, how could I pass that up? The company had been around for probably thirty-five years, and the reason I knew Analogic going way back as an electrical engineer, is I had actually designed electrical circuits and control circuits using the analog-to-digital conversion technology that Analogic pioneered. Therefore, I knew at the very base level where the company had come from. Analogic is known for very-high-precision analog signal processing and the conversion of those signals to digital signals so that they can be used by computers. Analogic had parleyed that technology and moved it from basic signal processing into higher levels of processing doing image processing for diagnostics.

Analogic had worked with and developed some of the very first designs for computed tomography systems, also known as CAT scan machines. They teamed with companies like Siemens, Philips, GE, and Toshiba, the big names that you see in medical diagnostic imaging today. Analogic was often a part of what put them into the medical CT business. They were working on some of the advanced image processing, data collection and image reconstruction subsystems. Analogic was one of a small number of companies that had developed the ability to design, manufacture, and field a full computed tomography system. Today computed tomography is very well known. It is the gold standard for diagnostic imaging, meaning that if something goes wrong and you need to go to the hospital, they do not have to cut you open anymore to see inside. They typically do not just do an X-ray. Now, you go through a CT machine and within a few seconds it is clear exactly what is going on inside your body. That same CT technology is also used at the airport. Although you don't see what is happening behind the scenes, when you check your bags at the airport, computed tomography machines scan what is inside your bags in real time at very high speed. These systems can tell if there

is some kind of potential threat to the aircraft in your checked luggage.

I knew Analogic very well from the very early days of signal processing. Then as I moved my career into the medical side, I was the head of R&D for a company called Marconi Medical, which was later acquired by Philips. My team designed the medical CT systems and we worked with Analogic. Philips teamed with Analogic in the development of some of its computed tomography and magnetic resonance imaging systems, and I knew the company very well; I knew the markets, the applications and the clinical applications of the product. Therefore, it was natural that I would be one of the people that Analogic might want to talk to. I knew the technology and the people and the breakthroughs Analogic had designed, developed and fielded over

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the years. Analogic had tremendous untapped value.

CEOCFO: What is the vision for Analogic today?

Mr. Green: Our vision is to be the most trusted technology solutions provider. Through continuous innovation and engineering excellence, we will advance market-driven technologies that enable our customers to thrive. Our innovations will improve the health and enhance the safety of people around the world.

When I came to Analogic, what I found was an engineering oriented company. It had tremendous technology with tremendous engineers, scientists, and physicists. They were working on incredibly interesting uses and applications of high precision imaging technologies. However, it was in many different areas. The company had a "build it and they will come" attitude. When you operate like that, you find yourself doing lots of diverse

things. So, there really was not a strategic plan and a focus where Analogic really had a competitive advantage in the market place, both technically and through strategic relationships that were developed over the years either with other businesses or directly with the medical community or for that matter with the aviation security industry.

We set about developing a strategic plan that would focus the company on exploiting its core competencies and serve the markets where we had a competitive advantage. We went about reorganizing the company to focus on three key business areas. Those three areas are high-end medical imaging, which are systems and subsystems for computed tomography, magnetic resonance imaging, and direct conversion X-ray detector plates for high-resolution digital mammography. One of our other business segments is our security segment, which is the application of automated computed tomography, specifically, checking for potential threats inside of checked bags in airports around the world. A third business area is ultrasound

where we sell procedure-driven ultrasound systems through our direct sales channel. If you think about those three business areas, what is unique about them is that they are the areas where Analogic had very distinct competitive advantages. In addition, they are areas where a very small number, maybe a handful of companies, are able to do what Analogic does. To me, those are the fundamental barriers that we built the business around. So, we reorganized the business along those three business lines. If you look below the foundation of what allows us to operate in these big segments, it goes right back to the fundamental engineering, science, material science, signal processing and capturing what is going on in the analog world, converting it to signals that you can operate on digitally and then developing the applications off of that base technology. Then that technology is applied through medical imaging, through security for threat detection and

through ultrasound.

CEO CFO: What is the greatest focus for Analogic?

Mr. Green: The two areas of focus are areas where we control the complete value chain specifically in computed tomography and ultrasound. That means beginning with the raw material that collects the signals, whether it is photons for CT or sound waves in ultrasound that are then converted into high-resolution images. So, our value proposition starts from the raw material, through the design and processing, through the image reconstruction and all the way to the application of what you do with that image. The other particular area where we maybe do not have the full chain of control, but where we have a unique position is with the steering amplifiers in MRI systems, and the X-ray detection plates for high-precision digital mammography systems. Therefore, the two areas where we make the highest investment are in ultrasound and computed tomography. MRI and digital mammography are more specialized in the unique subsystem advancement.

CEO CFO: Analogic recently announced some new products, such as the new BK Medical ultrasound systems that incorporate the groundbreaking Quantum™ Technology. Would you first explain the technology, how it is groundbreaking and then how it would enhance your products?

Mr. Green: Quantum Technology is a new market-changing development in ultrasound. Quantum Technology incorporated in our BK Medical branded ultrasound systems provides excellent image quality at depth for the next level of performance for urology, surgery and general imaging. It started just a few years ago, when we started to see the move of micro robotics into the medical surgical field. In the past if you were to have a procedure, let's say something such as the removal of a cancerous lesion in your kidney, the best places in the world to get that dealt with would be a handful of cancer centers. What we see happening today is the use of robotics. The surgeon, operating the robotic arm, can go inside the body to really see ex-

actly what is going on and treat very small lesions without having to open the body up. Therefore, the body is not exposed to all the risks of open surgery such as infection and trauma. We are seeing a rapid adoption of unique and highly critical surgical procedures being done now with robots.

Typically surgeons use the tactile feel of their fingers to locate tumorous lesions. Surgeons can tell that the lesions feel different than normal tissue, so they know where to make incisions to remove the cancerous tissue. In addition, they would take out a certain amount of good tissue around it, just to make sure that they did not pierce the lesion and potentially spread it. That is why having a really good surgeon is so important. Now with the surgical robots you can really be precise with what tissue you are taking out. But you cannot see beyond where you are cutting. You still have the same limitations and if you are using the robot, you also do not have your fingers to get that tactile feedback of where the tumor is, how deep you should cut and how much anatomy you are going to need to excise. However, with our BK Medical branded technology, we worked with the world leader in robotic-assisted surgery and we developed the ability to look at those lesions in real time from within the body. We not only look at them from front to back and scan through them, but also show them as a three-dimensional image. The technology allows the surgeons in real time, while they are working on the lesion, to see not just where they are removing something, but beyond. They can make sure to avoid critical structures, nerve bundles and things that might be close to the lesion. They can make sure that they leave the right amount of margin of healthy tissue around it, so that they do not risk opening up the cancer cells and spreading them around the body.

As an analogy, if you were a pilot flying an airplane, you could only see what is ahead of you, but you could not see very far. With radar, you can see a lot farther and you can see what is behind the clouds; maybe there is a mountain behind those clouds. With our ultrasound technology, you can

see the lesions, you can operate appropriately and you can make sure that you do not take out things that you should not be taking out. That is a very exciting new area and application of our real-time ultrasound imaging technology. We sell this product and technology directly through our BK Medical distribution channel. We are a market leader in surgical ultrasound and now with this new entry of robotic ultrasound, we have a very good early-mover advantage.

CEO CFO: Do you have a branding strategy, or do you reach your market through OEMs?

Mr. Green: That is a great question. Ultrasound is our largest direct business and that is where we have a very strong brand in procedure driven ultrasound, BK Medical. You will find it in high-end surgical suites for very precise surgeries. You will also find it in urology suites where they are treating prostate cancer and other kinds of cancers where they might be implanting radioactive seeds. You will see Analogic Ultrasound under the BK Medical product name. BK Medical was very well known in ultrasound for many years and had developed a way to image from inside the body not just outside the body as in general ultrasound. Most of our probes and the technologies we build were based on imaging from inside of the body, whether a probe is inserted in various orifices or if it is physically dropped down into the operating field and used to obtain very precise imaging of what you are looking at, before you excise the lesion. Our new Quantum Technology brings Analogic the ability to have world-class imaging from outside the body looking deep into the body. Historically, our BK Medical products have been known for high-resolution real-time image guidance from inside the body. Now with the introduction of Quantum, we can look at deep lesions from outside the body at the same time, so when you put those together you have an outstanding real-time intra-operative environment.

Our other products sell as an OEM sale branded as Analogic, where we will either do the critical subsystem, maybe the imaging system of a CT or

the controls for an MRI. In that case, we tend to be more like the Intel inside, where we will work with the company we sell to, to develop and field the product. Because we typically are needed for very high-precision imaging, we're usually the brains of the system, not seen on the outside of our OEM customer's products, although more recently we are delivering nearly the entire system and private labeling it for our customers. For example, in security we will design, build, manufacture and ship the full product and we will private label it for our partner. They then do the installation and field service. We focus on the advanced technology, the design and building of a technology. We are not wired to have thousands of service people around the world knocking on doors. In our OEM business model, we team with companies that give us a full reach around the world. When you look at our customers, like Siemens, GE, Philips, L3, Toshiba, and Smiths, we have a worldwide reach for our technologies. We focus on advanced technology and breakthroughs in these areas and then we work to enable various OEM companies. We are starting to put our branding on more of what we do. We will often put our Analogic logo on products that we private label. Maybe it will say something like 'Powered by Analogic' under their logo. So, it is a bit of a mix. We are also happy just to be quietly on the inside enabling somebody to penetrate the world market. But in areas where we are focusing directly, as with our BK Medical brand, we put our name on the product.

CEO CFO: How do you reach your customers; is it through your own sales force, distributors or a mix?

Mr. Green: In our ultrasound business, we have a direct sales force for most of the world, including the US and most of Europe. In some countries, we will work through distribution networks because we just cannot afford to put a lot of highly trained technical medical imaging sales reps there. So, we will work with distributors who will have sales folks cover the various geographies in various countries where we do not have somebody working. On the OEM side,

it is more of an account manager structure where we have worked with these companies for many years. From the presidents down to the engineers, there are long-term relationships that have developed where we collaborate on the fielding of a new technology or a new device that is going into a new diagnostic imaging suite.

On the security side, it is a smaller piece of our business, but this is a very fast-growing piece, because there are issues and concerns about safety of the air traffic fleet. We are one of a very small number, maybe one of two or three companies in the world, that can automatically scan checked baggage for explosives and potential risks to an airplane in real time at very high speed. Real-time automated scanning is a position where our technology fits very nicely, but again, we are not really sized and wired to put people around the world in all these airports. Therefore, we work with companies like L3 Communications for the large high-speed automatic imaging electronic detection systems. Fairly recently, we entered into an arrangement to work with Smiths Detection, who is also a very large provider of equipment and services in airports around the world.

CEO CFO: Do your products come through acquisition or development?

Mr. Green: The vast majority of our new products have come through organic development. We have made a few bolt-on acquisitions over the last few years, such as Copley Controls in 2008. However, over the last three years, 2009 to 2011 and this year, the vast majority of our growth, which has been substantial given the market conditions, has been organic growth based on the introduction of our innovative technology and products.

CEO CFO: What are your plans for growth; will it come through extending your reach, acquisitions, new products or all of the above?

Mr. Green: I would say all of the above, but the primary focus is on the ultrasound side, expanding our reach, taking our technology to market. In many ways, we have been way under covered as far as reaching all the

critical care centers and hospitals that need our kind of equipment. So, we have been adding sales reps pretty quickly. Soon we will have tripled the size of our sales force in the U.S. We expect to continue expansion over the course of the next few of years, getting to the point where we can compete in 80% to 90% of the opportunities in diagnostic imaging for these interventional procedures. That is one of our biggest growth drivers.

Our security business is also growing very nicely. There we do not have to add sales reps, as there are only a handful of big customers. If you look at all the equipment that was installed in the US for automatic threat detection after 9/11, almost half of it came from Analogic. However, that equipment is getting older, and this aging equipment is going to drive a replacement cycle. At the same time, the Europeans are adopting the same level of threat-detection standards that we have in the US for inter-Europe flights. That means the need around the world for high-speed automatic threat detection for all the airports around the world expands beyond just the US. The inter-European flights are going to be required to move toward a much higher level standard of detection, so that will expand our market opportunity as well.

CEO CFO: Do any of your products include a razor/razorblade component or is it straight sale?

Mr. Green: Today, it's mainly an equipment sale, however, there is a service component for parts that are consumed. Consumables are only a small portion of our business, but we would like it to be more.

CEO CFO: What is the financial picture for Analogic today?

Mr. Green: If I think back a little ways to when I started with the company, we had 1,500 employees and we were \$340 million in revenue and operating margins in the low-single-digit range. This year, the street has us at over \$500 million in revenues with double-digit non-GAAP operating margins and still 1,500 employees, so we are growing very nicely, again primarily around organic growth and fielding

the right products, and picking our battles on where we compete. Our outlook is public. Three years ago when things were looking ominous, I publically set a target for us that we would be at 10% operating margin in fiscal year 2012. The company historically had been essentially break-even, lots of great technologies, and a great place to work, but really had not delivered the kind of value to the company and shareholders and had not really put together a plan and built toward a long-term sustainable future. We have now. This year we are on target and I have reaffirmed that we expect to be at double-digit non-GAAP operating margins this year, and we continue to see solid year-over-year growth. We have had solid revenue growth coming up to now and we actually see improvement going forward, given these growth areas of ultrasound, CT for medical and CT on the security side.

CEOCFO: In closing, do you spend much time on reaching the investment community, going on road shows, presentations, and what thought would you like to leave potential investors with regarding Analogic.

Mr. Green: When I came to Analogic we had almost no interaction with Wall Street and shareholders, and I think there is a natural reason for that. I knew though that we needed to have our story better understood if we expected to have good long-term investors in the company. We are not a company that can operate just on a quarter-to-quarter basis. The products we deliver tend to run for years and years, and they are a major investment. Therefore, it takes the kind of shareholders that are interested in seeing a company like Analogic growing in what I think are the best markets you can possibly be in. These markets are driven by demographics and the need for improved healthcare. China has a billion people, India has a billion as well, and the US has always demanded quality healthcare. In addition, the use of these kinds of technologies is improving the quality of healthcare. These technologies can also be used to get better healthcare in places where they have very poor healthcare, so the basic fundamentals behind the growth in our market are there. On the security side, there are fundamental drivers for its expansion and the necessity for automatic secu-

rity type inspection, so we are very well positioned to take care of both of those markets with what we do.

With regard to reaching out to the investment community, Mike Levitz is our CFO. He joined me a couple of years ago and between us we now do quite a few road shows and investor conferences. Maybe not enough, but he has at least doubled our capacity to talk to investors. We have also brought in some really good people to work with us on the investor relations side, so we are getting our story out there now better than before.

In closing –

Analogic has innovative technology and a strong product portfolio to advance the practice of medicine and save lives. We have demonstrated strong financial performance with 14% revenue growth in FY 2011, reaching \$474 million, 37% non-GAAP EPS growth in FY 2011, reaching \$2.35/share, and we maintain a strong balance sheet with over \$174 million of cash with no debt.



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