

## Imaging Systems for Cell Biology Analysis



**Alnoor Shivji**  
CEO & Chairman

### **About Azure Biosystems**

Azure Biosystems, an innovative life science platform company that designs, develops, and markets state-of-the-art technologies to support research in the life science community. Founded in Dublin, California, Azure Biosystems is developing a series of instruments for image capture and analysis.

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

### **CEOCFO: Mr. Shivji, what is the concept for Azure Biosystems?**

**Mr. Shivji:** The concept is to develop instruments for the life sciences. Mostly what we are focusing on are areas where the incumbents have not spent a great deal of R&D, and essentially where there is a need for second or third generation innovative solutions that are more cost effective and provide better performance and value. That is our focus, and our initial focus is on imaging systems for cell biology analysis.

### **CEOCFO: Why is that an area that has been somewhat neglected?**

**Mr. Shivji:** The reason is that it is not a huge market. It is not a \$5 billion market; it is probably a \$1 billion market, which is large enough for a small company like Azure Biosystems. The vendors are putting R&D dollars in other upcoming areas. This is an area where customers need a better solution; however, most of the vendors do not feel necessary to come out with a new version. The Azure Biosystems team has developed the first and second generations of similar products in previous companies, so we have very good insight on the needs of the customers, and we have listened to what they are saying. What customers are telling us is that they want systems that can really scale and that are smaller, easy to use, and more cost effective. This is what we have done. We have brought out a series of products, which allow customers to scale easily. They can start out with a smaller version just with chemiluminescence, support and ultimately grow their system to IR support as well instead of buying two or three different instruments, which take up space and are expensive.

### **CEOCFO: Would you explain in laymen's terms what the machines are measuring and how your machines are doing it better?**

**Mr. Shivji:** Essentially, what we have applied are the latest innovations in imaging, including LED technology and IR technology in filters and in cameras. Essentially, what the product does is images cells and provides imaging information. It analyzes that image and provides you with the information. By utilizing the latest innovative technology, we can provide better performance, more features, scalability, ease of use, and better value for the product.

### **CEOCFO: When would people be using the system?**

**Mr. Shivji:** Primarily life science researchers in university labs as well as clinics, biotechs, and pharmas use the system. They would use it for doing cell biology analysis. If you are doing research on a particular protein, you would actually take a section of a cell and analyze that, and that is what this does. It allows you to do chemiluminescence, or fluorescence, or IR imaging. Various techniques exist that essentially all they are doing is helping you get better results for the proteins that you are looking at.

### **CEOCFO: Is the industry aware of your products? Do people who should know about Azure know about you?**

**Mr. Shivji:** Yes, we launched the product at the end of last year, and we demonstrated the product first in Germany at Biotechnica. Subsequently we have presented the product in a number of industry conferences

and shows, with the most recent one being AACR. The products are being received very well, and we have already started selling the products. We have a number of customers including UC Berkeley, MD Anderson and several others outside the US.

**CEO CFO: *Are you selling directly or are you working with distributors? What is the business model?***

**Mr. Shivji:** We use a hybrid model. In most countries, we have distributors in Europe and Asia, and we will expand to other countries such as the Middle East and South America. In Canada, we also have a distributor and in the United States currently we are selling directly. We may at some point also partner with someone, but at the current stage, we are selling directly in the US. In other countries, we have distributors.

**CEO CFO: *Your site indicates you have a number of different models and it looks like they can be upgraded as time goes on?***

**Mr. Shivji:** That is correct. The best part is that the upgrade does not require any changes by the customer or distributor, but we can do that mostly through software changes. There is one release from the very low end to the next release that requires changing the camera, but once you are in the mi- level to the higher level, there is very minimal change required to support more features.

**“Azure Biosystems is focused on the development and commercialization of state-of-the-art technologies to support research in the life science community with easy to use, flexible, reliable, and best price performance platforms in the industry.”**

**- Alnoor Shivji**

**CEO CFO: *What might be some of the added features and when might a user decide to upgrade?***

**Mr. Shivji:** Typically, people may only want to do fluorescence imaging or chemical luminescence imaging, or maybe the gel documentation. Depending on the level that they want to be comfortable at, in most cases it is really the budget that determines what features they could have because most of the scientists will at some point need to do fluorescence, chemical luminescence and maybe IR. IR is something that perhaps not everyone may need, but in the current market, essentially you have dedicated IR machines and separate machines for gel doc and separate machines for fluorescence and chemical luminescence. What we have done is provided a single product that can actually incorporate all of those technologies into a single compact platform.

**CEO CFO: *As to ease of use, is there much training involved or is it fairly intuitive?***

**Mr. Shivji:** There is training involved, but it is a very easy product to use. We have trained the distributors and typically, they will provide the training. For the very low-end machine, there is no training involved, but the higher-end machines require some training. We actually provide very intuitive and easy to use software with the system.

**CEO CFO: *Development and commercialization are typically expensive endeavors. Are you funded for the next steps or will you be seeking partnerships or funding?***

**Mr. Shivji:** Yes, at some point, we may bring in partners or strategic investors. So far, I have been funding the company, and we probably will bring in additional investors for developing newer products, not the current product.

**CEO CFO: *Can you talk at all about what is in the pipeline or what you are thinking about?***

**Mr. Shivji:** It is a little too early but we are very focused on the life science imaging space. The current focus is on cell biology analysis. The team has a great deal of experience on the genetic analysis space as well. I founded a genetic analysis company called Wafergen Biosystems in the past and there is a possibility that we may endeavor at the low end in the genetic analysis area, but those are things that still have not been fully determined.

**CEO CFO: *What have you learned on the business side from earlier experiences that has been helpful as you are developing Azure?***

**Mr. Shivji:** That is a great question. I have founded several technology companies including an enterprise software company OSWare (sold to Infonet now part of British Telecom), optical switching company Fiberlane

(split into Cerent sold to Cisco for \$6.9 billion and Siara Systems sold to Redback for \$4.3 billion), optical switching company Cyras Systems (sold to Ciena for \$1.5 billion) and genetic analysis platform company Wafergen Biosystems. The key success factors with all the companies were having a team with deep market knowledge besides great technical capabilities, and the ability to change with market. At Wafergen, we initially developed a high throughput qPCR platform for discovery and validation. However, the market shifted quickly to using sequencing for discovery yet the company was not able to change the products fast enough. The company has subsequently released new products that the market wants but this took some time. Another lesson is making sure that the burn rate is low, and not carrying a large sales force. Thus for a single product, it is usually more cost effective to utilize an indirect channel rather than building a large internal sales force. These are all lessons that have been useful for Azure Biosystems.

**CEO CFO: *Why does Azure stand out?***

**Mr. Shivji:** I believe Azure is gaining momentum, and people like the product and the idea of actually listening to customers. That is essentially, what we have done with our products. We have a team that has built the same kind of product in two previous companies and now this is obviously the next generation built from scratch with the latest technological innovations. People like that we actually have listened to them and are giving them what they need, and that is our philosophy – to be very close to the customers and provide a cost effective solution to them.

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**BIO:** Mr. Alnoor Shivji serves as Chief Executive Officer and Chairman of the Board of Azure Biosystems, a silicon valley based biotechnology firm and a General Partner at Global Asset Capital, a Palo Alto based Venture Capital firm. Mr. Shivji is a co-founder of life science diagnostics and tools company WaferGen Biosystems and served as its Chief Executive Officer and President from April 2003 until October 2011, and as Chairman of the Board since October 2002. Between December 2003 and July 2006, he was the Investment Director at VPSA, Inc. in Paris, France, focusing on telecommunication and networking, semiconductors, and enterprise software at the VC firm. Prior to that, he co-founded Cyras Systems and served as its President and CEO until it was acquired by CIENA for \$1.5 billion in March 2001. He also co-founded Fiberlane Communications, which changed the face of the networking communications industry when it split into Cerent (acquired by Cisco for \$6.9 billion) and Siara Systems (acquired by Redback Networks for \$4.3 billion, now part of Ericson). Mr. Shivji also co-founded OSIware, a communications software company that was sold to Infonet, a value added service provider now part of British Telecom. Mr. Shivji has been in the industry for 28 years and has extensive experience in starting, investing and managing high-tech/biotech companies. In all the companies he founded and led, Mr. Shivji was instrumental in the vision, design, and execution of the product. He has been advising and investing in Silicon Valley startups like Involver/Oracle, Lara Networks/Cypress Semiconductor, Lightlogic/Intel, Canesta/Microsoft, and Appshop/Oracle for several years. Mr. Shivji currently serves on the boards of WaferGen and Menlo Biosystems, and has served on several boards in the past as an investor including Involver/ Oracle, OneAccess, Silecs, Redwave, Neophotonics (NYSE: NPTN), and Zytera. Mr. Shivji has been a Charter member of several entrepreneurial organizations like TiE, ASVC Wireless, AAMA, SVForum, and OPEN. Mr. Shivji holds a B.S. degree from the University of British Columbia.

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## **Azure Biosystems**

**6773 Sierra Court, Suite B**

**Dublin, CA 94568**

**925-307-7127**

**[www.azurebiosystems.com](http://www.azurebiosystems.com)**