CEO CFO

DVS Sciences

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An Analytical Equipment and Reagents Development Company, DVS Sciences, Inc. Is Committed to Developing Robust, Innovative Instrumentation, Reagents and Applications that Accelerate Medical Research and Transform Drug Discovery

Healthcare
Biological Research

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Joseph Victor
President & CEO

BIO: As President and Chief Executive Officer, Mr. Victor sets the corporate strategy for DVS Sciences. Mr. Victor has more than 25 years of experience fostering product innovation and building value for customers, shareholders, and employees. Most recently, Mr. Victor was President and CEO of Applied Precision Inc., a manufacturer of high end microscopy systems for life sciences research and drug development acquired by GE Healthcare in 2011. Before that he drove significant sales growth, new product development and overall profitability of the Applied Precision business in the roles of President, Sr. VP Life Sciences, VP R&D and Operations, and VP R&D. Prior to Applied Precision, Mr. Victor held various executive management and technical positions in the aviation, high technology, and energy markets. Mr. Victor holds an MBA from UCLA and MS and BS degrees in engineering from the University of Washington. Mr. Victor is based in the company headquarters in Sunnyvale, CA and is also a Director of DVS.

About DVS Sciences, Inc. (DVS):
DVS is an analytical equipment and reagents development company that produces and markets the CyTOF® 2 instrument - a high throughput mass cytometer for individual cell analysis based on a novel elemental mass-spectrometry detection technology; MaxPar® system of reagents and consumables.

The DVS products and the underlying technologies are covered by an extensive patent portfolio of over 50 worldwide Patents and Patent Applications.

With over 20 years of proven innovation in atomic spectroscopy, the Founders of DVS conceived and patented the technology while working at MDS Sciex with its joint venture partner PerkinElmer Health Sciences, Inc.

From 2005 through 2010, the Founders continued their innovation and further developed the CyTOF and MaxPar technology platform at the University of Toronto in collaboration with researchers and academic leaders in multidisciplinary fields. Continuing the evolution based out of dedicated facilities in early 2011, DVS is committed to developing robust, innovative instrumentation, reagents and applications that accelerate medical research and transform drug discovery via massively multi-parametric bio-analysis.

Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

CEOCFO: Mr. Victor, would you explain the mission at DVS Science?
Mr. Victor: DVS was born out of a mass spectrometry technology expertise in a company in Toronto Canada called MDS Sciex, and in that company the technology was being deployed for environmental areas and other areas not related to single cell analysis. Our founder Scott Tanner and his co-founder colleagues from MDS Sciex recognized the single cell market opportunity and spun it out, and then integrated it at the University of Toronto with a vision of taking atomic time of flight mass spectrometry and applying that to single cell analysis, what we call "Mass Cytometry". Our vision is to use Mass Cytometry to transform single cell analysis for Life Sciences Research, Drug Development, and potentially Diagnostics.

CEOCFO: How is the analysis done now and how will mass cytometry change in the future?
Mr. Victor: Our primary market today is Flow Cytometry and the current state of the art is using a technology

called fluorescence detection. This idea of using fluorescent proteins as probes for cells was discovered many years ago and the inventors won the Nobel Prize. These fluorescent proteins are bound to cells and imaged or analyzed using Flow Cytometers or in some cases automated microscopy. This is a multi-billion dollar industry today, but technical limitations in fluorescent detection practically limit the simultaneous number of parameters that can be analyzed to 12-15 parameters per cell. Our Mass Cytometry technology uses inert metal probes (i.e. Lanthanides and noble metals) instead of fluorescent probes and then uses atomic mass spectrometry as the detection method. By doing this, we can now up the ante and do single cell analyses with 30-40 or even up to 100 simultaneous probes, which will transform the industry and allow researchers to investigate a single cell with orders of magnitude more information.

CEOCFO: Please explain in depth about investigating single cells.
Mr. Victor: It is a very wide application area, with everything from basic fundamental cell biology research to drug discovery and even Translational or Clinical areas. In the past, people were limited with their tools and could not do "deep probing" of single cells. In the last 20 years, it has been practically limited to 5, 10, or perhaps 15 parameters per cell, and even with that there are still researchers who combine large groups of cells and look at the analysis in aggregate rather than at a single cell level approach. The industry is clearly trending to the realization that the heterogeneous behavior of cells is vitally important to understanding the root cause of disease or drug efficacy: the behavior of the group does not provide the granularity achieved by looking at the individual, responsive cells. What has come out of this is single cell analysis tools released in the last 10-20 years and their use in applications for drug discovery or fundamental research areas like immunology have become very important, allowing the segregation of populations by how they appear (phenotypical segregation) or how they act (functional segregation). Today, with 10 or 12 parameters available via fluorescent flow cytometry, you might look at these characteristics in different experiments and then try to group the experiments together, but assuming equivalency misses important information since you are not looking at the response with enough parameters or in a simultaneous way. We can do this same analysis but with 30 or 40 parameters simultaneously, and it allows researchers to look at phenotypical or functional responses completely and simultaneously in one experiment. This has been very powerful in key areas such as cancer research, biomarker discovery for translational research, and drug discovery**.**

CEOCFO: Would you be doing the testing or are you selling mass cytometers?
Mr. Victor: We design and build our instruments at our facility in Toronto, Ontario. We have one instrument today called the CyTOF 2 released a few weeks ago which replaced our original CyTOF instrument and that instrument has an average selling price of 650-675,000 dollars. We also manufacture all of the reagents to do the experiments on our instruments, kits to apply the metals to cells, conjugated antibody products (for which we have already bound the metals to the antibodies making the experiments more plug and play). We also sell specific application related panels enabling high parameter "out of the box" experiments. We are the only manufacturer for most if not all these reagent consumable products used on the instrument to do single cell analysis.

CEOCFO: Are your customers typically replacing an old piece of equipment because it is old and they need something new or are they upgrading because of the functionality?
Mr. Victor: What we see is primarily new placements. Our Mass Cytometry technology is transformational and most of our sales have been customers that are adding new capabilities to their laboratories or research institutes. We now have over 50 customers worldwide in the US, Europe, and Asia Pacific and we find these instruments playing into research institutions, research hospitals, or bio-pharma companies.

CEOCFO: How do you reach potential customers?
Mr. Victor: We have a direct sales force in the US and Europe along with associated application scientists and service personnel, and we use distributors in the Asia Pacific region because of the diversity of coverage needed in those countries.

CEOCFO: When you speak with a potential customer, do they understand the need immediately?
Mr. Victor: In the last 10-20 years, people have learned about single cell analysis and multiple parameter analysis on a single cell using existing techniques like fluorescent flow cytometry. We have now come into the market with a transformational technology that plays into the same market and in some cases displaces existing solutions and in other cases augments. Because people are already doing these analyses despite the limitations discussed, it is not too hard to explain our technology and the advantages it brings and most of our customers or potential customers understand this right out of the gate. Our sales process includes technical discussions which are very useful and used to identify the specific applications the customers might want to do, and showing the customer how they can accomplish these objectives is key to our process. Each one of our customers is important and we spend considerable time working with them to ensure we can enable their application.

CEOCFO: How much of a factor is the cost? Does it play a big role when you are able to show the benefits or has it become secondary?
Mr. Victor: An instrument that is priced close to seven hundred thousand dollars in the life sciences space is an expensive tool, although there are some that are more expensive. Certainly that is something we are working on now and we have a few years' horizon work to provide lower priced

systems that will allow people with less funding access to our technology. Today, we are transformational and new, enabling capabilities no one else can do, and because of this we have not found price to be a significant barrier. In fact, we are exceeding our own sales projections (and these were already aggressive!) so we definitely do not see instrument price as a barrier today.

CEOCFO: What does the CyTOF 2 do differently than the earlier one?
Mr. Victor: It provides an incremental performance increase in several areas. We have a wider mass range, incrementally higher sensitivity, and the instrument is much more user friendly with a fully re-engineered and automated user interface and new cloud based analysis software.

CEOCFO: What is the timetable for the company?
Mr. Victor: The company was founded in 2004 and survived the first five or six years with grant funding. In early 2011, the company was funded by a great venture syndicate including 5AM Ventures, Pfizer Ventures, Roche Ventures, Mohr Davidow Ventures and the Ontario Institute for Cancer Research. This Series A round of funding started early in 2011 and was completed later that same year at just under 15 million dollars. We do not see the company requiring any more funding, and our plan is to reach positive cash flow by the end of this year. We plan on reinvesting all of our profits into the company for growth for the future. We are a venture-funded company, so there will be an exit event sometime in our future. This would be an IPO or a strategic acquisition or something similar. We are early into our venture investment time frame and completely focusing on growing the company with solid operational performance, growing our customer base and addressable market via ground breaking and transformational applications with our technology.

CEOCFO: You have considerable personal experience in the industry and you have degrees in engineering as well as an MBA. What have you learned in previous ventures that have been the most helpful to you here?

"DVS is committed to developing robust, innovative instrumentation, reagents and applications that accelerate medical research and transform drug discovery via massively multi-parametric bio-analysis."- Joseph Victor

Mr. Victor: People are hugely important. We have been very careful to build a great team out of our original facility near Toronto and our new headquarters and reagent manufacturing facility in Sunnyvale, CA. Our team has grown from about 20 people two years ago to over 70 today and we will be close to 80 by the end of this year. We have been very careful about hiring those team members and that selectivity has paid off I think the company is doing very well because of our great team coupled with market leading technology. I also believe that as we grow, we will need to continue to focus on the customer. One of the advantages of a medium sized company is the ability to focus on hearing the customer and providing a fast response. Speed is underrated in the life sciences industry so we want to be very quick in our response. We want to do it right as well as fast, so that we provide new and valuable capabilities for our customers as quickly as possible. This is key, as well as having a transformational, exciting technology as our base. Before I joined this company, I was CEO of a great company that was acquired by GE Healthcare and I was planning to take some time off but instead I cancelled those plans; when this opportunity came up, I could not turn it down! I believe the DVS technology is exciting and truly transformational in our markets and the entire DVS team is lucky to have the opportunity to make Mass Cytometry an important solution for our customers.

CEOCFO: Why should people be paying attention to DVS today and what might they miss when they look at the company that really should be understood?
Mr. Victor: We are transformational in life sciences markets and specifically cellular analysis. The study of cells on a single cell level is a huge and important market and the transformational impact of our technology is just starting to be realized. We plan to continue to be a high growth international company and we will be a key player in the market in the years to come.

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