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Fluidigm Corp at Jefferies Healthcare Conference

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PRESENTATION

Brandon Couillard *Jefferies Financial Group - Senior Analyst*

All right. So we'll go ahead and get started. Thanks. Good afternoon. Welcome to Jefferies 2019 Global Healthcare Conference. I'm Brandon Couillard. I cover the life science tools and diagnostic sector here at Jefferies.

Very happy to have Fluidigm with us at the conference this year. And here to share the overview of the company, CFO, Vikram Jog; and as well as Agnes Lee, who heads up the IR in the audience.

I'll turn it over to you, Vikram.

Vikram Jog *Fluidigm Corporation - CFO*

Thanks, Brandon, and thank you, Jefferies, for inviting us to this conference one more year. I'm really glad to have the opportunity to talk to you about Fluidigm and the significant progress that we have made over the last one year.

During this presentation, I will be making forward-looking statements, and discussing GAAP and non-GAAP financial information; all of which can be found and reconciled to one another on the investors section of our website.

Fluidigm is a leading tools and consumables provider focused on powering future healthcare insights. Our company in 2018 delivered $113 million in revenue. We are headquartered in Sotuh San Francisco, California, and we have more than 500 employees and more than 2,500 scientific publications that on many of our platform show broad, widespread adoption geographically.

We have three manufacturing sites in South San Francisco, California; Toronto, Canada; and Singapore; and sales offices in Europe and in Asia. We have more than 700 issued or pending patents related to our CyTOF and microfluidics technology platforms, and they have strong gross margins. We have been generating significant operating leverage. And while not on the slide, in Q1 of this year, we delevered our balance sheet by exchanging $150 million of convertible debts.

We have a point of view on the life science industry, and the questions related to the immune system and immune response are some of the most important and arguably some of the most complex questions that scientists and physician scientists are trying to tackle. Immune response weeds its way to the threads of hundreds of different diseases and disorders, and everything from cancer, which gets a lot of attention today, in immuno-oncology field and cancer writ large. The chronic inflammatory diseases, autoimmune disorders, and infectious disease, trauma, preterm labor, vaccine response, et cetera, all of these have signatures that appear to be mediated by the immune system. Understanding these responses, the off-target effects through channels that are hidden, the inflammatory responses, and other tissues that are activated all seem to be important questions related to disease manifestation, treatment, and recurrent base testing.

We're really impacting healthcare insights in three different ways. First, we're helping to provide new insights into the manifestation and progression of diseases and conditions mediated by the immune system that we talked about in the prior slides. Second, we are identifying meaningful biomarkers, new signatures that are potentially guiding therapeutic decision-making, patient stratification, testing, segregation-based models, as well as exclusion criteria and druggable targets. And third, we are accelerating the development of more impactful therapies. The need to have multi-modal detection tools to deliver the correlates in clinical studies and clinical trials. We think it's an ever more important question that needs to be addressed. And we have one of the unique sets of tools to do that in multi-omic manner.

So, why invest in Fluidigm? First off, we play in large markets. We're targeting the over $6 billion Immunome market. There's a large opportunity to address analytes of the Immunome. More on that in the next few slides. We are seeing growing adoption across all

research categories, discovery, translational, and clinical research including immunology and immuno-oncology. Second, increasing focus for tools that can provide multi-omic points of view; points of view on DNA, RNA, and protein detection as researchers use our multi-omic capabilities across multiple disease areas. This need in our view will require the use of a variety of technologies to build a composite picture of the Immunome.

Secondly, we have proprietary and innovative technologies to analyze three basic elements of the Immunome: firstly, cell repertoire, which is the cell-based phenotypes and cellular expression information; second, tissues, looking at tissue and its spatial context in the tissue micro environment is a rapidly emerging big question; and thirdly, bulk or cell-free analytes, i.e., free-circulating biomarkers.

And lastly, we are accelerating growth with recurring revenue. We are focused on driving revenue growth and revenue streams,and accelerating those against a growing installed base of instruments. In doing that, we have multiple applications, new workflows, and software packages; and we are striking to drive more consumable-based partnerships.

So a little bit about the markets. We're seeing the science transitioning to looking at more than genomics or proteomics or specific analytes and specific modalities. Rather, we see a comingling of these technologies or a multi-omic approach. And if we look beyond technology platforms, it's really about the big healthcare type of questions we're trying to look at. We think one of the biggest ones right now is the Immunome, which is understanding immune response and immune dynamics within biological tissue as well as cell-specific observations and circulating markers.

There's a need to do a protein detection, gene expression, and DNA analysis on all three of these. We are sitting in the mix of a more than $3 billion immuno-market opportunity growing at 14% annually. Driven largely by immuno-oncology in line with broader genomics and proteomics market trends with multiple genomics and protein-based biomarkers, multiple technologies are being used to interrogate the cancer Immunome; and other therapeutic areas including autoimmune disease progression, vaccine monitoring, infectious disease treatment, and basic cell biology. Of the $3 billion market, the total addressable portion for Fluidigm is approximately [north] of $1 billion. And we are well positioned to grow at a multiple of the underlying market.

Most of us talk about market opportunities on a technology basis. We talk about what's the value proposition of mass cytometry or imaging or gene expression or geno-typing or sequencing. But effectively, many scientists and researchers are using many different technologies to try to understand and create a composite picture of the Immunome. And that's why you're seeing these big immune profiling programs being stood up and why immune cores are being stood up around the world. And we also see these massive investments occurring in drugs that are immune-response related drugs.

With two powerful technology platforms across genomics and proteomics, Fluidigm is well positioned to exploit the increasing use of multiple technologies to create a composite picture of the Immunome. Fluidigm's technology platforms have unique advantages compared to other competing technologies. In microfluidics, reaction volumes are in order of magnitude smaller and thousands of experiments can be conducted in a one-square centimeter space. While, the CyTOF mass cytometry technology resolves the technical challenge of fluorescence-based technologies for high-plex biomarker signatures for both suspension and novel high-plex tissue imaging. We have the premier tools to address immune function with microfluidics and CyTOF technology.

Our product portfolio of instruments empowers actionable insights from tissues, cells, and bulk-free analytes. Starting from left to right, on the slide, the imaging mass cytometry performed on the Hyperion Imaging System using proprietary metal-tagged antibodies empowers simultaneous imaging of up to 37 protein markers at a time. And this brings together a high-parameter CyTOF technology with imaging capability. The system enables deep interrogation of cellular phenotypes in the spatial context of the tissue micro-environment to uncover pathology insights, new biomarker correlations, and cell-to-cell interaction.

Next one from the left, mass cytometry by time of flight or Helios empowers researchers to interrogate more than 40 markers simultaneously on millions of individual cells to unveil new cell sites, functions, and biomarkers in immunology, cancer, stem cells, and more; and enable groundbreaking and cost-effective experiments that reveal systems-level biology at single-cell resolution.

And then moving on to our single-cell and microfluidics franchise. Using single-cell applications, researchers are able to identify

differences between individual cells in a seemingly homogeneous population. And Fluidigm microfluidic technology enables highly parallel RNA and DNA analysis from samples containing only a few hundred cells by integrating and simplifying multiple steps in the single-cell workflow. Individual cells can be rapidly and reliably isolated, processed, and profiled for multiple genomics applications.

And lastly, the Biomark and Juno systems provide high performance solutions for robust processing of samples in nanoscale volumes. And this enables quick and reliable SNP genotyping gene expression, digital PCR, and targeted Amplicon library preparation.

Over the next few slides, I'll provide some proof points of the leadership position that our technology platforms have established. Our mass cytometry technology is in more than 50% of comprehensive cancer centers in the U.S. And we also have significant penetration in other countries around the world like China, Japan, Switzerland, and the U.K. And this is a target that we had set for ourselves.

And why are we doing this? Well, part of it is this is where the leverage points for pre-clinical and phase 1 trial developments are. And this is the leverage point in which a lot of the immuno-oncology work is being done in practice where the patients are. And so, it's very important for us to be in those cancer networks or in those comprehensive cancer networks in order to get exposure as correlates in trials. And we're seeing publications and papers come out now as a reflection of this penetration strategy.

And now, we're moving from penetration to radiation, which is to determine how many potential instruments we could place in an account. And currently, we appear to have a lot of headroom to place additional systems at top-tier cancer centers around the world.

In addition, we are included in standards. The NCI and 11 biopharma companies are part of a partnership that is funded by the Cancer Moonshot Program. Fluidigm has two different assays; one in mass cytometry and the other in microfluidics that are designated as tier-one assays under this program. We're obviously pleased with the acceptance of our technology at the highest levels as part of the Cancer Moonshot Program. These programs have similar versions in other geographies, and this is something else that's driving adoption of our technology.

In addition, you're seeing the technology being adopted in cell therapy applications. At the PEGS, Protein Engineering Summit, that was held in Boston in May of 2018, scientists talked about the application of our technology in improving their biomarker characterization of their CAR T cell drug products by combining high dimensional mass cytometry with gene expression analysis.

We think this shows a lot of the promises on where our technology can be used as an analytical tool for the quality of CAR T as well as for patient site selection. CAR T cell drug development and recent publications have also discussed the use of mass cytometry to answer specific questions on immune function to better fight cancer tumors.

Overall, we are seeing market adoption of our CyTOF technology in the series of phases. The first generation CyTOF was released about 2010, 2011 timeframe. In the very early days, this was very disruptive technology. The people that tend to buy technology at this stage are so-called innovators, the super docs, the [double docs], PIs with the richest labs that pride themselves on having one of every new instrument that comes out. We like to talk about them in presentations like this because they characterize the system's strengths and weaknesses, and publish on these analytical methods. That's useful but it doesn't drive big markets.

The second phase is reduction to practice when the first core labs begin to adopt the technology and make it available for PIs to run studies. And as they get insights, then they go and market those insights to other people in their community and start generating business to feed into their cores.

What we're seeing right now is the third phase, which is -- and with each of these steps in much larger addressable market in terms of instrument placement opportunity and consumables. So the third phase is application expansion. This is now when there's the potential for standards to emerge, and in multiple consortia we're actually a critical tool now being used in immuno-oncology. Consortia that are related to diabetes like an 11-center trial in Health~Holland that is tied to the CyTOF platform, technology where they use one single standard measurement and then recreated across multiple instruments. And this has significantly increased our addressable market beyond the innovators; for example, the cancer centers that we mentioned earlier.

The promise for us in Phase 4 is routine use, and that is an area that we've been thinking a lot about. And it's not part of the narrative today, but we're thinking about how our technologies can be bridged into recurrence-based monitoring in the coming decade. And I think we have made a good foundation for that.

One last thing on biomarkers, which is a story I don't think is fully appreciated. Outside of CyTOF, we actually have a second biomarker play and that is built on our microfluidic platform. We're often asked how we are going to grow our microfluidics franchise, and that story is built on three things. We're building more of our own fixed content and taking that to market. Number two, we are attracting more OEM partners to get the word out around our technology. And thirdly, we are servicing big volume accounts better when we're going after market share.

This particular slide, though, is an example of an OEM relationship with the company called Olink Proteomics. It's a private company based in Sweden. They've harnessed the power of our microfluidics technology with real-time PCR readout to use a Proximity Extension Assay to link it to an antibody. And they have built marker sets of up to 1,100 different markers that are useful for cardiology, cancer immunology, neurology, and inflammation. They're using that to screen many different sample matrices from blood, serum, urine, et cetera.

In the remainder of the presentation, we're going to talk about the business and growth drivers. We give updates on our active installed base once a year. At the end of 2018, just this past year, we updated our installed base on mass cytometry instruments by 20%. At the same time, which is very important about where we're driving for recurring revenue, we increased our guidance of pull-through of between $73,000 to $78,000 per systems per year, which is also a 20% increase over the guidance for 2018.

Our microfluidic installed base at the end of 2018 was 550 systems for BioMarks and EP1s, and 200 Junos and Access Arrays. We've been focused less on how many new instrument placements we make and more about driving more consumables. You can see what the pull-through range is, which is quite attractive as compared to the average selling price for these instruments. And this gives you the averages but this is really a story on what the amplitude can be and the intensity.

So for our high-throughput users, we're able to generate a multiple of the average pull-through. In mass cytometry for instance, our top accounts tend to generate more than $130,000 per system and shows you that we're not really reaching the full theoretical capacity for those systems.

In microfluidics, we have potential of tremendous leverage. The example on the slide of $440,000 is a PCR-based sample ID application of the hospital research reference lab. We think every program that manages samples will need to have and would benefit from molecular identification tools and sample ID tools.

Also, we see new applications that are driving revenue growth. And looking back over the past year, we've had six major launches that we'll talk about on the next slide. We've also announced five to six different partnerships in software because we also need to have a whole ecosystem built around the detection platform. And we're building all these together to launch more and more complete workflows, which I think is really important to drive growth in recurring revenue.

We are executing on opportunities to grow recurring revenues and consumables on service by adding content, software to analyze the content, and improvements in workflows. Currently, recurring revenues are approximately 60% of our total revenue on an annual basis.

Starting with content, we have six content launches over the last one year; the last three of them within the last month or so. And in terms of content, we are focused on delivery of verified high content research panels from the impactful applications in immunology, cancer, and cancer immunotherapy; as well as an emphasis on PCR, targeted sequencing, and targeted NGS Library Prep.

In software, we are partnering to develop sophisticated end to end workflows for deep cell and tissue analysis in translational and clinical research applications, and new tools to explore and analyze biomarker identification and validation. The end goal here is to have end to end workflows that bring efficiencies and ease of use for our customers.

This is a product that was launched in late May and early April. It's called the Maxpar Direct Immune Profiling System. It's the first complete sample-to-answer solution for deep immune cell profiling. It's essential for investigating immune response and accelerating the development of new immunotherapies.

Developed for use with Fluidigm's CyTOF technology, the system empowers researchers to quantify 37 different immune cell populations from human PBMCs and whole blood using a simple single-tube workflow with automated five-minute results reporting. This highly multiplexed 30-marker antibody panel was developed with input from expert immunologists in academia and biopharma, and builds on panels designed by the Human ImmunoPhenotyping Consortium. And this assay provides the broadest single-tube view of the immune system from each precious sample without compromising study design due to the limitations of fluorescence chemistry.

And importantly, up to seven new antibodies can easily be added to support individual study goals. Because mass cytometry has limited channel crosstalk and a broad detection range, the expansion of high parameter panel is simplified, is significant advantage over fluorescence cytometry. The Advanta Solid Tumor and RNA Fusions NGS Library Preparation was launched in -- just last week, actually. And it provides for the detection of high value, low variant frequency somatic mutations in 53 genes associated with current oncology treatments.

Our products together allow us to fuel double-digit long term growth. And recurring revenue, as I said earlier, comprised about 60% of our total revenue. They're growing in double digits, and our instrument placements is running about 40% of overall revenue at the time. This is a virtuous cycle, instrument placement, with the focus strategy to drive consumables matched with service contracts people want to have. And we have very, very high attachment rates of multiyear service contracts associated with each of these systems.

So finally coming back to why invest in Fluidigm. This is a great opportunity for companies that are targeting large, multibillion-dollar markets with proprietary and innovative technologies, and accelerating growth with recurring revenues.

Thank you very much for your attention, and thanks, Brandon, for having me.

Brandon Couillard ***Jefferies Financial Group - Senior Analyst***

Thank you, Vikram. (Inaudible - microphone inaccessible).

Vikram Jog ***Fluidigm Corporation - CFO***

Yes. Thank you.