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FLDM - Fluidigm Corp at Barclays Global Healthcare Conference

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PRESENTATION

Jack Meehan - *Barclays Bank PLC, Research Division - VP and Senior Research Analyst*

Good afternoon, and welcome to the Barclays Virtual Health Care Conference. And our final presentation for the day, which is Fluidigm. We're joined by CEO, Chris Linthwaite. And Chris, I'll turn it over to you and let you kick it off.

Stephen Christopher Linthwaite - *Fluidigm Corporation - President, CEO & Director*

Thanks, Jack. As always, interesting times, and thank you very much. I want to thank you, both Barclays and you, Jack, for the introduction and the invitation, to have an opportunity to participate in the Barclays Global Health Care Conference. Next year, certainly, I hope that we can resume in South Florida and enjoy the presence and company of each other.

So I joined Fluidigm as CEO, a little over 3 years ago, and I want to walk you through first. And I think I didn't queue with you or double check, but I believe we -- do I need to tell you to advance the slides? Or will they have access to the slide show, Jack?

Jack Meehan - *Barclays Bank PLC, Research Division - VP and Senior Research Analyst*

I think it'll advance, but I'll check on that as you go.

Stephen Christopher Linthwaite - *Fluidigm Corporation - President, CEO & Director*

So when I need to tell a page, turn like next slide or anything like that? We didn't synch on that. Okay. I'm going to assume that you're going to help everyone catch up and in the first case, I'll --

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Jack Meehan - *Barclays Bank PLC, Research Division - VP and Senior Research Analyst*

Yes, I'll catch on it as you go.

Stephen Christopher Linthwaite - *Fluidigm Corporation - President, CEO & Director*

No problem. So our -- this presentation today will include some forward-looking statements as well as non-GAAP financial information. And so I would suggest that you come visit our website to have a full list of disclosures. And as you advance to Slide 2, you'll see a shortened summary of some of those disclosures that I've listed in front of this presentation.

So the essence of Fluidigm and Fluidigm's story is really about improved -- and this is a transition over the last 3 years. It's really been moving towards a message of how we, Fluidigm, are uniquely positioned to help improve life through comprehensive health care insights. And breaking that down into really, we look at the world in 3 ways: One, there's a huge need for the discovery of new insights into health and disease; the second is there's an ever unquenchable need for -- thirst for identifying meaningful new biomarkers; and finally, these biomarkers, which can be used both for making decisions on patient stratification or drug targets, also are positioned to help accelerating our technologies, hand in glove with them,

are in position to accelerate the development of more impactful therapies. So we think we -- are really attacking on 3 different vectors, both assisting or driving the discovery of new insights, identifying meaningful biomarkers and ultimately, accelerating the development of impactful therapeutics.

I'll ask you to advance the slide. So the really key investment highlights, I'd like to submit 6 overarching summaries or key investment highlights from the Fluidigm opportunity. One, there's a flywheel effect. Our business model is -- we believe we have -- we know we have the market-leading mass cytometry franchise. This franchise is augmented in the form of a unit of heavy consumables-based portfolio. So we place units in high-value customer segments and we drive recurring revenue streams, and we'll elaborate more on that later. That's the fundamental crux of our business model.

We're the leader in a very high-growth, underpenetrated, in our perspective, a $3 billion market plus immunome-market, which is a very unique definition, which I have a breakdown in a few minutes, which essentially constitutes what we believe are some of the fastest-growing elements of the life sciences tools space on a technology perspective, and we're providing a series of solutions that help give a composite picture of the immunome, and that's what constitutes the immunome market. We also have applications outside of that, but we're extremely well positioned in this -- and we're underpenetrated in this very large and fast-growing market.

In addition, we're benefiting from the tailwinds of global investment in immuno-oncology. And so we'll present some evidence about a significant -- a very significant amount of exposure we have to IO-based companies in the IO pipeline. So there's a big macro shift of spend into areas in which we have increased competitive differentiation and strength.

In addition, our -- people using our technology have demonstrated through strong clinical research and publications, real-world utility. And this is creating a virtuous cycle of adoption and placement of our technology for new investigators to run experiments on our platform, to publish and then transition those publications into clinical trials.

We're driving utilization of a system platform. We'll give some statistics on a little bit about the size of our installed base, and we'll talk about the strong consumables profile related to each one of the technologies that we sell. And then from a total business perspective, we're weaving in or layering in operational efficiencies, and we have a very clear eye and focus on long-term revenue growth. So our concept is smart growth, generating top line revenue growth with operating leverage. And that operating leverage can include both OpEx, operating leverage, as well as improvements in our gross margin profile.

Slide, please. In summary, we're really the leading provider of, we believe, of indispensable tools and consumables, with more than 550 employees and $117 million of annual turnover last year. We have attractive gross margins on a GAAP basis of more than 55%, non-GAAP greater than 65%. Based in South San Francisco, so just south of San Francisco, with manufacturing operations in Singapore and in Canada. And we augment that within a contract manufacturing supply chain in other geographies.

We have more than 1,000 mass cytometry publications alone, which is a 59% growth rate over the prior year. And so we've been on a spectacular rise of more publications and more impactful publications highlighting the differentiation of our technology. And we're patent-rich. We have moats to defend these market positions, with more than 670 issued or pending patents worldwide.

Next slide, please. Immunology is a market in which we've -- is an area in which we have focused a tremendous amount of our effort. Our tools and our technology, which we'll introduce in a few additional slides from here, is applicable across many different application areas. But we see a unifying principle and a huge market unmet need around immunology and the insights related to the immune system and immune response in particular. Immune response is a question that weaves its way through hundreds of different diseases. On the slide in front of you, we give some examples in cancer, of leukemia, lymphoma, carcinomas, et cetera, in which the immune system plays an important role. There's of course, the chronic inflammatory conditions, and those are a wide spectrum of disorders, autoimmune diseases, including infectious disease, which is a, certainly a topic du jour today. More than a -- we think about 6% of the publications in place that currently published -- already published have or are powering infectious disease research. And that's certainly an appropriate topic for today, and that's a category we're seeing strong growth in. So we certainly have a value proposition there.

The list below you is kind of an example of some of the pictures and images of our various technology stack. And so the items in blue are generally oriented on the genomics market. And so we'll walk through each of these in just a few additional slides.

The number of immuno-oncology clinical trials that incorporates biomarkers, so if you reflect on the big overarching principles that are driving value for Fluidigm, is biomarkers and the discovery and deployment of biomarkers. Over the last 8 years, we've seen an explosion in the number of biomarkers that are mentioned or integrated into clinical trials, and in particular, immuno-oncology clinical trials. So on a cumulative basis, there's more than 9,000 trials that are including biomarkers. And so as we add more biomarkers, the system throughput and plexity that our technology stack enables is working hand in glove with this macro demand, of this quest or thirst for more biomarkers. We have a unique position in which we can incorporate these additional biomarkers and develop a screening and support tools that could be added as arms into clinical trials or clinical studies.

Slide, please. Shifting a little bit to markets and the size of markets. Historically, the market has been defined as proteomics tools companies or genomics tools companies. From a proteomics tools perspective, we believe that market is, at least approximately $9 billion, growing in the high single digits. The genomics market, by coincidence, is approximately that same size, perhaps growing at a faster market rate, closer to high 9% to 10% on a per annum basis. These are -- within the proteomics and the genomics space, there are multiple technology tools or approaches that can answer proteomic questions or genomic questions. Those lines are getting blurrier over as the years are progressing. And there -- I'm going to give you some examples of how our technology actually can straddle both the genomics market and the proteomics market. But looking at -- from the market need, we see that the immunome -- so questions related to immune health, immunophenotyping, immune response, that is actually inherently a multi-omic problem. And so it incorporates things like gene expression signatures, digital PCR signatures, immuno-PCR, these are technologies, multiplex tissue imaging, mass cytometry, flow cytometry. These are all technologies that contribute to that picture of the composite immunome market, which we peg at about $3 billion. So in the Venn Diagram of the $18 billion between proteomics and tools, $3 billion of it, we think, is exposed or used for immunome-based research. And that's probably, we think, one of the fastest-growing segments of those 2 markets. On a cumulative basis -- on an aggregate basis, about 14% annualized growth potential for that $3 billion market.

Next slide, please. So shifting to -- from a Fluidigm perspective. So if the -- of the $3 billion that I've described in the overall immunome market, Fluidigm today can address about $1 billion of that potential market size. Fluidigm's technologies can actually also cover other markets, so other in the more traditional proteomics and genomics markets. So our current addressable market size is $3.6 billion, of which about $1 billion of it is exposed to that immunome market, growing at about 14% per annum. We believe that our exposure, our specific technology exposure, we're very well positioned to grow our -- so if the underlying market for the immunome is growing at 14%, we'd be -- the Fluidigm component of that can grow much faster. So we believe we can -- the immunome, we could grow it up to 18%. And so for us, the total Fluidigm potential market is north of $6 billion over the coming 10 years. And our overall market segments, the classic genomics and ag bio and other areas, is growing at about 12%. So that, that should reach the Fluidigm total market potential of about $10 billion over the coming decade, with an addressable market in the immunome market of about $6 billion.

Moving to the next slide. At our core, we harnessed the powers of 2 twin technologies to deliver multi-omics-based solutions. On the one hand, we have a technology called CyTOF, which is a hybridization of flow cytometry and mass cytometry using time of flight, or mass spec based time-of-flight technology. We've innovated and identified a method that combines only the best elements of the 2. So you can do single cell-based resolution, and you can measure signatures and assign very specific atomic weights or atomic masses for isotopic metals. These rare metals are linked to antibodies. These antibodies allow you to design -- these exquisite identified channels allow you to preconfigure or to build high multiplex panels with a high level of sensitivity and enables rapid iterations of panel design and avoid many of the pitfalls.

Avoids many of the pitfalls related to immunome and immunofluorescence.

So the other technology stack is -- and we -- and on the CyTOF technology, we'll have 2 versions of that, one that works in suspension. And then we've also done a market expansion into the imaging-based market starting in 2017. And we'll come onto that in another slide in just a moment.

The other technology stack is microfluidics-based. And so it miniaturizes reactions. Reaction volumes, historically has been in the genomics space for DNA or RNA analysis. But on a single cell basis, we enable proteomic detection as well as through a partnership with a company called Olink that we can do bulk proteomic biomarker detection on our microfluidics technology. But it allows many different sample types to be measured

simultaneously and many different questions asked and these are miniaturized through a microfluidics architecture on an automated system. So we offer both the chips and an instrument platform and then content on top of that. And these tools are really the hardest to define the immunome.

On the next slide, which is titled Empowering Actual Insights, we give a spectrum. We give a spectrum of both -- the systems that we commercialize sit on the top of the slide, the Hyperion Imaging System, the Helios CyTOF system, the C1 system and the Juno and Biomark systems. And what's important here is that the immunome is really an interesting situation in which you need to understand individual single cell-based analysis. You need to look for bulk or bulk cell signals in what we call so-called free analytes, and there's also a need for spatial context. So in the context of the tissue we'd like the study, instead of disaggregating it, to be able to ask questions in its -- with spatial context in its inherent state, in the slide state.

Fluidigm provides a very and somewhat very unique in the world in which we can straddle the needs for tissue-based analysis, single cell-based analysis and bulk and free analyte analysis across DNA, RNA and protein. So we're the unique tools provider that can look at all 3 major modalities and biological signature types. And this is really the technology stack that's powering the Fluidigm difference.

Moving to the next slide, which is titled Strong Adoption Across New Markets. So what this shows is a waterfall of, in this case, of mass cytometry, and starting specifically with our suspension-based mass cytometry. Starting in 2011, we introduced this novel disruptive technology. And in the early days, we were really focused on methods development and working with the kind of tech pioneers to work out the key elements of how this analytical method needed to be validated and prepared and assessed for robustness. As that milestone was achieved, we iterated the technology platform. We're currently on our third generation of the CyTOF suspension-based technology. And over the years, we've begun to move this down to reduction of practice. We can -- made it very achievable to integrate this in the flow cores and shared use environments. You saw beginning and steady acceleration in the number of publications, and an increase in the size of the addressable markets that we could go after, including flow cores, translational, principal investigators and biopharma discovery work.

We've now entered a third wave of expansion for our business opportunities. And in this area, in this stage, we've begun to offer more standardized applications and workflows. We've added software. We've added large libraries of pre-conjugated antibodies. And so this is really powering the expansion into areas such as National Cancer Center, or NCI-designated cancer centers, expanding the use beyond early clinical research to translational and large consortia, because the technology has content that's reproducible at different sites and different operators.

And so we think we're approaching the cusp of the next phase for the CyTOF technology and suspension, which is the potential move into routine use, which represents a significant increase in the total addressable market for our technology. And that's where you'll see -- beginning to see the announcements related to contract research organizations and the number of clinical trials that we're participating in, which is now north of 75 clinical trials.

Next slide please. As we're moving closer to the clinic, and it's been really part of a deliberate part of our business model, is that we knew that academic medical centers -- and the large academic medical centers, both in this example in North America or in the United States, there's similar versions in Europe and Japan and elsewhere, that we've been driving a deliberate penetration model into these centers. And we've now achieved greater than 50% penetration, both in the United States and Europe, for these high-value medical centers. On the backs of that, you're seeing a steady growth in the number of publications. That's why we have -- we talked about north of 1,000 publications. And now -- and where that early -- the early clinical trials work, the preclinical and the Phase I and Phase II studies are often done at those academic medical centers. So it's been very important for us to penetrate into those centers. And now we're beginning to see the lift off that's occurring because we have good penetration. We have ample opportunity for radiation. So adding more incremental systems to penetrate in the academic medical centers, but we are truly seeing now these clinical trials begin to blossom and progress. And with that, you're also seeing publications come forward that are highlighting the important disease insights, that are begetting more clinical trials that want to have methods related to the findings from those publications. Such that's the crux of our business model, and we're really making fantastic progress in this area.

We're not standing still, and it will be a misnomer to consider us -- so the next slide, New Applications, to consider us an instrument-only business. So along the way, we've also been driving, and we know it's important to drive recurring revenue streams. So in that context, we've been adding both content, software and expanding our workflows and simplifying our workflows and near adjacencies to increase our share of wallet, and ultimately, the amount of total pull-through that comes in the value per system placement. We've had examples over the last 18 months in which we've had more than -- simply had 6 content strategies. Many of them are immune-profiling related. So our Maxpar Direct Immune Profiling assay,

which is the first one on the list, was awarded just this past year as from the life sciences, receiving a Life Sciences Award, a Gold Award for the most impactful new cell biology product of the year. And in fact, we won in a category that's often dominated by new instrument placements. And we'll talk about what the technology does in just a minute. But you can kind of get a sense for, at least the Maxpar area is the ones that are associated with mass cytometry. And our Advanta brand name is content that we're adding for our microfluidics portfolio. And see a steady stream of new products that are coming out to take advantage of our installed base and to also motivate new instrument placements in microfluidics.

In software, we've had a number of announcements and developments that are a combination of organic and inorganic or partnership-based activities. And along the way, you can get a picture of how we're expanding our workflows, and we'll have a couple of examples of that. Actually, one important example here about how we're expanding our addressable elements of our workflow. And I'll give you an example of that here in just a moment in mass cytometry.

The next slide, please. Just the past week, we announced the expansion, addressing a pain point in our mass cytometry workflow. So all cytometry, whether it's flow cytometry or mass cytometry, has an important step for sample prep, in which the samples need to be stained and prepared for entry, or introduction into either the flow cytometer or the mass cytometer. What this represented for us was introducing a best-in-class mass cytometry sample prep workstation that can sit and complement our 292 CyTOF placements that we have in place today and also help new users that are higher volume users, to have an automated solution to feed into their workflow. This is an attractive $1.3 billion sample prep market, which actually is larger than mass cytometry alone. So it actually covers flat -- flow cytometry as well as mass cytometry and it's growing in double digits. We believe this product is going to be uniquely positioned to service both markets. So we're bringing it to market as a mass cytometry solution, but it also has a flow cytometry application. And so it's a $225 million serviceable market. And we believe it will be accretive to earnings in 2021. It's already being used by 10 customers around the world, and we're going to have a full-scale launch next quarter.

Transitioning one more story around how we're advancing the immune for the -- the immunome market through our Maxpar Direct Immune Profiling assay. What our technology is enabling is 37 populations of cells that want to be studied, putting those into a single tube, and into a distilled or to a lyophilized format, in which you can literally just add blood, and we've matched it with the world-leading best-in-class informatics solution, that does 5 minutes -- and within as little as 5 minutes, to have your data analyzed and a 17-page report characterizing that immune population. We think this is very well poised to be part of a significant part of future clinical trials and integration potentially into other recurring testing.

Another contrast in our microfluidics, the next slide, is the Advanta RNA-Seq NGS library prep kit. So in this case, in the Q3 time period of 2019, we announced a new solution for the -- for a market that's growing at more than -- it's a $1.2 billion RNA sequencing market, growing in double digits, in which more than $300 million of that market is library prep. And what that market is missing is an integrated automated solution that allows many samples to be prepared and loaded simultaneously and prepared for sequencing work downstream. And so our Advanta RNA-Seq product on our Juno platform is very uniquely positioned, we believe, for long and sustained success in meeting a very unique market need.

Moving to the final slide or the next slide, the -- our active installed base for these technologies is quite significant. So on the mass cytometry side, we have more than 2, or -- as of the end of last year. For the last reporting cycle, an active installed base of 292 mass cytometry systems. And in addition, we've added -- or we have, of those 292 systems, 85 of them have been enabled for imaging. So we offer a very unique value proposition in which you can acquire flow cytometry or mass cytometry tech -- a suspension-based analysis, and you can modularly use it for both suspension-based analysis or through the addition of a HTI unit or a laser ablation module. You can complete -- you can also add imaging capabilities. And so many customers either use only the suspension mode, others like to have the flexibility to use both modes, and then another group is purely interested in imaging.

On the microfluidics side, our Biomark platform has more than 500 systems in place. And our Juno and Access Array, which helps the preparation station to either go into real-time PCR or into next-generation sequencing experiments. We have more than 100 -- or we have 188 units in our active installed base.

You can look over the next slide about our revenue profile. We do have a very significant instrument profile, and we continue to place a significant number of instruments on an annualized basis. But we are steadily increasing our consumables and recurring revenue streams, particularly in our

mass cytometry business. So over the last few years, we've seen a steady shift of acceleration in our mass cytometry portfolio, which is growing at now more than 23, it was -- grew at 23% the last year, and has had enjoyed multiple years of multi -- or double-digit growth in that time period.

We are significantly exposed to the research market, but that research market is in the most translational-oriented segments. And so we're also increasing our exposure to the applied market segments and which is biopharmaceutical companies and CROs. And we have a very significant portion of our revenue that comes from outside of the Americas. And you can see them -- well, more than half of our revenue comes from Europe or Asia Pacific.

So our core business model is really the flywheel effect or this -- the gears model of operational efficiencies, driving productivity to reduce our cost of goods, looking for new ways to generate OpEx leverage. And meanwhile, we spend more than $30 million a year in new innovation, which begets more instrument placements and recurring revenue streams. And we're augmenting all of that through partnerships, such as the partnership we announced last week with NGD, which is a next-generation diagnostics group, which is using the Biomark platform -- correction, the Juno platform, to develop sequencing, whole genome sequencing, for pathogen detection in a hospital setting.

So I think we're very well poised over the long-term to drive recurring revenue growth. We have a significant instrument placement cycle underway. And we think that will continue for quite some time, but we are going to seek continued acceleration in consumables and services over the long-term growth, with long-term growth opportunities for our combined portfolio.

With that, I thank you, and have a good day.

Jack Meehan - *Barclays Bank PLC, Research Division - VP and Senior Research Analyst*

Thank you, Chris.

Operator

This concludes today's conference call. You may now disconnect.
