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SCHEDULE 14A INFORMATION

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Securities Exchange Act of 1934

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Definitive Proxy Statement

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Pacific Biosciences of California, Inc.

(Name of Registrant as Specified In Its Charter)

Illumina, Inc.

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The following is a transcript of an investor and media conference call and webcast presented by executives from Illumina, Inc. and Pacific Biosciences of California, Inc. on November 1, 2018.

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PRESENTATION

Operator

Hello, and welcome to the Illumina and Pacific Biosciences conference call. My name is Myesha. I will be your operator for today s call. (Operator Instructions) Please note this conference is being recorded.

I will now turn the call over to Jacquie Ross. Jacquie Ross, you may begin.

Jacquie Ross Illumina, Inc. - VP of IR

Good afternoon, everyone, and welcome to our conference call to discuss Illumina s agreement to acquire Pacific Biosciences. If you ve not had a chance to review today s release, it can be found in the Investor Relations section of our website at illumina.com.

Participating for Illumina today will be Francis deSouza, President and Chief Executive Officer; Sam Samad, Chief Financial Officer; and Omead Ostadan, Executive Vice President of Products and Operations. We also are pleased to welcome Mike Hunkapiller, Chief Executive Officer of Pacific Biosciences. Francis and Mike will share some prepared remarks, and then we ll open the call for some questions.

This call is being recorded, and the audio portion will be archived in the Investors section of our website.

It is our intent that all forward-looking statements regarding our financial results and commercial activity made during today s call will be protected under the Private Securities Litigation Reform Act of 1995.

Forward-looking statements are subject to risks and uncertainties. Actual events or results may differ materially from those projected or discussed. All forward-looking statements are based upon currently available information and Illumina assumes no obligation to update these statements.

To better understand the risks and uncertainties that could cause actual results to differ, we refer you to the documents that Illumina files with the Securities and Exchange Commission, including Illumina s most recent Forms 10-Q and 10-K.

Additionally, please note that today s presentation does not constitute the solicitation of a proxy vote. The information discussed today is qualified in its entirety by the proxy statement that Pacific Biosciences will be filing with the SEC in the future. The shareholders of Pacific Biosciences are urged to read the proxy statement carefully when it becomes available because it will contain important information about the proposed transaction.

With that, I will now turn the call over to Francis.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Thank you, Jacquie.

Good afternoon, everyone, and thank you for joining our call on such short notice and in the middle of earnings season.

As you have seen from our press release, Illumina just announced that we ve signed an agreement to acquire Pacific Biosciences for a total purchase price of approximately $1.2 billion or $8 per share subject to satisfying closing conditions, including regulatory approvals. This acquisition will be Illumina s largest since Solexa in 2007, and I appreciate the opportunity to share our rationale and excitement around the combination of the 2 companies.

In the decade since our acquisition of Solexa, Illumina s short-read SBS-based technology has transformed the landscape of genomics with the delivery of large-scale and increasingly economical sequencing. Illumina s SBS technologies have played an integral role in helping researchers push the frontiers of genomics across a breadth of applications, including whole-genome sequencing, non-invasive prenatal testing, liquid biopsy, rare and undiagnosed genetic disease and immuno-oncology.

With the innovation headroom SBS has, we expect Illumina s SBS technologies to remain the platform of choice for the majority of sequencing applications moving forward as our combination of scalability, accuracy and affordability will remain unmatched.

It s also clear to us that highly accurate long-reads play a complementary and important role in elucidating certain aspects of the genome, which is why we are excited about the promise of Pacific Biosciences technology and its roadmap. Specifically, Pacific Biosciences accurate native long-reads averaging 15 to 30 kilobases provide valuable insights around long-range rearrangements, structural variants and haplotypes, which can be challenging using short-read technologies. Accurate long-reads can range across longer portions of a genome, helping to resolve ambiguity in assembly and, thereby, providing a more comprehensive view of these classes of variance. For that reason, accurate long-reads have been adopted for applications where access to complex regions is more important than cost or scalability, for example, in de novo assembly and pharmacogenomics.

Historically, the challenge for long-read technologies has been accuracy and cost. However, Pacific Biosciences recent technology breakthroughs have demonstrated an unparalleled level of accuracy for native long-reads, which, when coupled with an impending release the company s 8M SMRT Cell, will substantially improve the utility and affordability of these technologies.

These innovations drive our enthusiasm for bringing our companies technologies together now. Specifically, backed by its latest system update released last month, including the Version 3.0 chemistry and Version 6.0 software, these new protocols, regions and algorithms doubled the previous output of the current Sequel System, backed by its recent demonstration of a unique workflow that generates the highest skewed accuracy of any long-read platform. With this level of accuracy,

researchers will be able to create complete genome assemblies at Q50 consensus quality to comprehensively and accurately detect all classes of variance. Importantly, PacBio s improved workflow will obviate the need for large quantities of high molecular weight DNA, which hinders other long-read technologies.

These advances, coupled with the 8M zero-mode waveguide, or ZMW chip, expected to be available early next year, will increase output and reduce cost per base of the Sequel System by an order of magnitude, enabling more economical and scalable approaches to discovery.

PacBio s significant reduction in cost per gigabase, improvement in accuracy and faster turnaround time make long-read technologies accessible to a much larger user base. This is consistent with Illumina s long-standing commitment to democratize sequencing, enabling customers of all sizes to gain access to highly accurate sequencing technology with the broadest scope of applications.

Bringing together Pacific Biosciences highly accurate native long-reads with Illumina s highly accurate and economical short-reads will uniquely position us to broaden and accelerate the use of sequencing across broad range of existing and emerging applications and move closer to delivering a more perfect view of the genome, one that is accurate, complete, fast and economical. We are, therefore, very excited about the opportunity to combine with PacBio for several strategic reasons.

First, we expect the combination will expand our addressable market by broadening the opportunities in de novo assembly in plant and animal, functional genomics, tissue transplant and pharmacogenomics. These applications often require uniform, unbiased coverage in highly repetitive regions which long-reads are best suited to provide. We believe that the total opportunity for these long-read applications is approximately $600 million in 2017 and growing to about $2.5 billion in 2022, a CAGR of about 30%.

Second, the power to improve structural variant and CNV analysis enables improved studies and potentially accelerates discovery in areas like rare and undiagnosed diseases, oncology and clinical microbiology that often involves phased genomes without access to a reference.

Third, Illumina is committed to bringing the best sequencing solutions to market, and we believe the combination will allow both companies technology roadmaps to accelerate as we make the most of our combined expertise, infrastructure and discoveries to shorten time-to-market for innovations that address critical customer needs, continue cost reduction and integrate workflows. And finally and importantly, both companies share an unwavering commitment to innovation and to the creation of highly accurate products.

In the near term, we will broaden access to PacBio s portfolio through Illumina s global sales and support channel. In addition, our global quality, operations and regulatory capabilities will enhance product performance, optimize customer experience and explore regulatory clearance for PacBio s products in multiple geographies.

Over time, we will provide more seamless integration of the workflows and analytical pipelines to allow customers easier access to the combined power of the 2 technologies. We expect that together these benefits will allow broader market access, enabling faster growth. Together, we will provide more researchers, more physicians, more patients and more consumers a more perfect view of a genome.

With that, I d like to hand the call over to Mike for a few remarks.

Michael W. Hunkapiller Pacific Biosciences of California, Inc. - Executive Chairman, CEO & President

Thank you, Francis.

I m very pleased with the announcement of our planned combination with Illumina and to be sharing with our employees, customers and investors that we will be joining the Illumina family. I m extremely proud of the work that the PacBio team has accomplished as a standalone company, and I believe that as part of Illumina, we can continue to innovate our SMRT Sequencing capabilities and reach more customers and address more applications substantially faster than we could do as a standalone enterprise.

As Francis has mentioned, not only do the 2 companies share a commitment to accuracy, supporting scientific and clinical markets with quality products and to customer-focused innovation, but we also share a similar culture that we think will enable us to integrate quickly and continue to deliver on our technology roadmap that substantially broadens the addressable opportunity for our complimentary long-read platform. We look forward to serving our customers as part of Illumina in the future.

In the meantime, we remain committed to executing on our product roadmap and continue to target early access of the 8M SMRT sequencing chip during Q1 2019 with a broader launch of the chip in the second quarter.

With that, I ll hand the call back to Francis.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Thank you, Mike.

I know I speak on behalf of the whole team when I say that we are looking forward to integrating short-read and long-read technology solutions to offer our customers even more capabilities and innovations over time.

I ll open up the call to questions momentarily, but first, of course, I should remind you that the transaction is subject to the approval of PacBio s shareholders and the satisfaction of customary closing conditions, including applicable regulatory approvals.

In the meantime, it s business as usual for both companies who will continue to operate as completely independent entities, and I know you will appreciate that after today, we will not be sharing too many details until such time as the transaction closes.

In summary, today s announcement is a testament to Illumina s commitment to deliver the broadest and most accurate portfolio of sequencing capabilities for our clinicians, patients, consumers, labs and researchers. Together, Illumina and PacBio will grow the market, support new discoveries and accelerate technology roadmap. Together, a more perfect view of the genome is insight.

Operator, we are ready to begin the Q&A.

Operator

(Operator Instructions) Our first question is from Tycho Peterson with JPMorgan.

Tycho W. Peterson JP Morgan Chase & Co, Research Division - Senior Analyst

Congrats on the deal. I guess first question is why now? Was this in reaction to somebody else approaching the company? Is there any risk somebody comes in over the top? And then, Francis, can you comment on FTC antitrust risk here and also dilution? I think PacBio was going to lose about $80 million next year, so how should we think about that? And then just lastly, I m curious - your comments on the clinical opportunity, how important is that in the consideration here given the context of the Roche deal previously? I m just curious as to whether you re more enthusiastic on that opportunity.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Thank you, Tycho. That s a lot of questions in one, so let me work my way through them. The biggest driver around the timing was frankly the exciting innovations that have come out of PacBio over the last few months and that are planned to come out over the course of the next year. If you look at the roadmap they ve laid out in the last few months or the improvements in their chemistry and their software, the increase in output, they ve been able to dramatically improve the accuracy of their offering as well as the total output from their sequencer. And as we look into next year, with the coming of the 8M ZMW chip, we believe that, that makes this long-read technology at this extremely high-level of accuracy more broadly accessible than it s ever been. And so as we look to the roadmap and we look to what s coming out of next year, we feel the time is right to offer that technology to our customers. And then, frankly,

that was the biggest driver around timing. As we look at the clinical market, what we re hearing from our customers is that there are segments of the clinical market where long-read technologies do add value substantially. So if you look at - in rare and undiagnosed genetic diseases, for example, being able to identify structural variants does help improve the diagnostic yield associated with the rare and undiagnosed genetic diseases. Similarly in clinical areas like tissue transplant, being able to sequence through the HLA regions does have a benefit. And so there are a number of segments in the clinical market where we believe there is value in bringing the long-read technology, and we re excited about that. We ve heard about that from our customers. It s too early in the process for us to talk about the specific impacts on dilution, and so you can expect to hear more from us as we work through this process.

Operator

Our next question is from Doug Schenkel with Cowen.

Doug Schenkel Cowen and Company, LLC, Research Division - MD & Senior Research Analyst

Congratulations to all of you on the announcement. So a handful of questions. First, Francis, and this is really just a follow-up to Tycho s, I think, it was first question. As you noted, PacBio just launched a new chemistry and there s a lot of enthusiasm about the 8M chip. That said, there are still questions about the ability of PacBio s - PacBio s ability to manufacture to scale on the time lines conveyed to the investment and scientific community. And with all due respect to the PacBio team, they ve not always been able to successfully fulfill commitments to the community unexpected time lines. So going back to the question of why now, what diligence have you been able to do on the new chemistry and the ability to manufacture the 8M chip on the time lines that PacBio has shared with The Street? And are there ways that Illumina can help Pac at this stage of development? So that s really for you, Francis. And for Mike, can you talk about the process? You did a financing just last quarter, so not that long ago. You were clearly enthused about the outlook for the 8M launch and the potential, not just to complement Illumina, but over time to actually maybe even compete more with Illumina. So I guess it s the same question for you, why now?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. So maybe I ll start, and then I ll turn it over to you, Mike. I ll start by saying that obviously we ve been following the long-read market and we ve been following the technology, innovations that have been coming out of PacBio and the rest of the market for a while now. So we were familiar with the progress that was being made. And then over the last few weeks, we ve been able to spend a lot more time more deeply at the technology at PacBio. And so we are confident in the roadmap that PacBio has laid out. Our team understands what it takes to get from here to having a product out in the market. I ll leave it to Mike to talk about the specific time frames, but our team feels really comfortable around what s left between here and actually getting a product into market. In addition, our team is especially excited about the combination of our teams. That there are strengths that we love about the PacBio team around chemistry, for example, around experience with single molecule. And on the other hand, we have experienced with global operations and manufacturing and distribution and support. And so we think that the combination strengthens the roadmap that PacBio has and strengthens the go-to-market motion around the offerings that they re bringing to market next year.

Michael W. Hunkapiller Pacific Biosciences of California, Inc. - Executive Chairman, CEO & President

Yes, I mean, I think we actually had, from our perspective and the customers perspective, a pretty good track record of having laid out a roadmap and met the roadmap development time lines. We ve done it in relatively incremental ways historically, and we ve done that a couple of times a year. We had a hiccup, which we ve admitted, when we introduced the first version of the Sequel chip. As we moved into a much more complicated consumable product and the development of that, along with the fabs that we work with, took a lot longer than we anticipated, particularly transferring from our development partner in Europe to our production partners in Asia. That was part of the reason that we had a fairly conservative plan relative to how quickly we re going to roll out the second generation of that chip, even though it s very similar to the first one. And we ve been very careful about keeping it to a small number of early-access customers in the beginning next year followed in Q2 as we build up a supply of those chips to a somewhat broader audience, and then by the second half of the year really going all out and being able to support it. And we feel very comfortable with the time line. We ve had it in place that we ve given to our customers since really the beginning of last year. And we ve had marginal, if any, changes to that schedule over that time. So we ve shared that with Illumina over the last few weeks in detail, and I think they and we both feel comfortable where we are.

Operator

Our next question is Bill Quirk with Piper Jaffray.

William Robert Quirk Piper Jaffray Companies, Research Division - MD and Senior Research Analyst

Certainly add my congratulations to the teams as well.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Thank you.

William Robert Quirk Piper Jaffray Companies, Research Division - MD and Senior Research Analyst

So a couple of questions, Francis. I guess following on Tycho s question regarding the consensus net loss forecast for 19. There s also a revenue expectation for about $120 million. And in light of - thinking about, obviously, timing of deal close as well as your broad commercial reach, I d love to hear your comment on your thoughts there. And then if memory serves, at one point, you had a long-read internal program. I believe it was nanopore based. What does this announcement today, if anything, should we be reading into that regarding that program?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. So thank you, Bill. Clearly, at this point, we re not going to comment on the analyst consensus revenue estimates for PacBio. And the deal isn t expected to close until the middle of next year. So until - even though when the deal will close, it s not possible to talk about 2019 revenue at this point. So let me start with that. We do believe, though, that there is obviously a lot of value in terms of bringing the PacBio portfolio into our commercial organization, both from a sales perspective and giving it to our global sales teams. I know that when we shared this information with our commercial organization there was a huge amount of excitement because if you go to a lot of our large customers labs today, you will see a PacBio machine next to their Illumina machines. And so our team is excited about the potential about having this portfolio, especially given the breakthrough the technologies that are coming out in 2019. And we love bringing deep innovation to our customers, and our customers are excited about that, too, we expect. And so we do expect synergies from a go-to-market perspective with bringing their technology into our sales force.

Jacquie Ross Illumina, Inc. - VP of IR

And the second question?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

In terms of our internal development program, and I touched on this earlier. I think one of the things that we are especially excited about that we get as part of this acquisition is an enormously talented technical team, and specifically, an enormously talented technical team that has a lot of single molecule expertise, including expertise with nanopores. And I think that will be very helpful in terms of the work that we re doing internally and making sure that we stay at the forefront of what s possible.

Operator

Our next question is from Derik De Bruin with BofA Merrill Lynch.

Derik De Bruin BofA Merrill Lynch, Research Division - MD of Equity Research

I m just very curious on - we spending a lot of time emphasizing the accurate long-read commentary. And not being as close to the PacBio story and the updates, what s sort of like consensus sequencing accuracy right now? And sort of what s the long-read accuracy going on the platform?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Mike, you want to take that?

Michael W. Hunkapiller Pacific Biosciences of California, Inc. - Executive Chairman, CEO & President

I ll take that. So the consensus accuracy depends on the sample. But we ve initially targeted for simple organisms well above Q50. And for larger, more complex genomes greater than Q40 accuracy, 99.99% on average. One of the breakthroughs that we ve made - because we started off with sort of single molecule reads in the sort of 85% to 90% single-pass accuracy. And with the read length improvements that we ve seen with our latest chemistry release, it allowed us to actually get CCS-level accuracy on long molecules in the 10 to 20 kb range. And those accuracies at the single molecule level are averaging around Q30 to start with. And that s a sea change versus the Q20 or Q10 accuracy that you ve got before with any of the long-read technologies. And that s enabled us to have a much different look at what you get with long-reads in terms of overall genome accuracy, along with the coverage that we ve gotten before when you get even to very, very complex genomes.

Operator

Our next question is Ross Muken with Evercore ISI.

Ross Jordan Muken Evercore ISI Institutional Equities, Research Division - Senior MD and Head of Healthcare Services & Technology

Congrats is what I was saying, anyhow. So I guess as we think about the market sizing, as you gave it for long-read, can you help us understand in terms of going today from the hundreds of millions to billion-plus over time, what are the big components in terms of what are the big subsegments where we ll see the most substantial expansion that will be enabled by some of the technical advancements that are going to happen with the new chip and further iterations? So what are the big market subsegments? And then secondarily, competitively, how do you see sort of the landscape? Obviously, nanopore came up before as sort of something that was viewed as a comparator here. Although, it s a very different technology and has other challenges. And so as you thought about this as kind of your premier asset in that space, potentially, how did you think about it versus what else is currently competing against PacBio today and may in the future?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. So why don t I start by asking you, Mike, to talk about the TAM and the components of that $2.5 billion TAM by 2022, and then I ll come back and talk about how we thought about the rest of the landscape maybe with some comments from you, Omead.

Michael W. Hunkapiller Pacific Biosciences of California, Inc. - Executive Chairman, CEO & President

So well, there are many aspects of it, but one is getting the cost per sample down along with the kind of coverage inaccuracy that we ve been able to improve upon allows us to serve sequencing efforts that are larger than isolated samples because we have a lot of customers who would like to scale up in the past that just couldn t because of the cost per sample. And that s true in all of our markets. If you start even in the plant and animal space, where we ve done quite well, where there s a big need for de novo assembly to just get a good first reference genome. It s clear that a lot of the customers there, who frequently are commercial, want to look at a broader range of diversity within the species that they re dealing with. And they re very desirous of scaling up the number of samples that they run in a single species. And so that s one of the drivers that we see for increasing our business that we re very familiar with. But in the human space, which is even much more cost competitive, the ability to get at some of the things that Francis mentioned, delivering structural variant analysis, looking at regions that are somewhat refractory just because of the complexity of gene families and the repetitive elements that are around them make short-reads not ideal for working there. We can do that quite well. And if the cost is down, people can afford to do that on much larger cohorts of samples. And so it s just keeping the quality up from our perspective, maybe even raising it quite a bit from an

accuracy perspective. And driving the cost down, we think, is probably the biggest single driver in all of our markets, but in particular, in the plant and animal space and in the human space.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Then Omead, start with the landscape that we looked at in terms of long-read technologies and how this compares.

Omead Ostadan Illumina, Inc. - EVP of Operations and Products

Sure. I think for us, I ll start with that, and I think one of the points that Francis emphasized several times in the script is accuracy. I mean, Accuracy has been one of the primary hallmarks of our sequencing - or Illumina s SBS sequencing technology and is probably the parameter that mattered most to us. And I think Pacific Biosciences recent advancements that Mike talked about put the accuracy that you can now achieve with long-read technologies essentially on par with what you can achieve with SBS short-read technologies. And for us, that was critically important because the majority of the markets

that we re interested in, the majority of the markets that we are looking to expand all require that level of accuracy being 1 to 2 orders of magnitude. Below that level of accuracy is just a nonstarter. And so for us, that was the threshold. You have to be able to get to roughly about a Q50 consensus accuracy for the technology to fit within the portfolio of what we re looking to do. And from our perspective, Pacific Biosciences was the only long-read technology that met that threshold. And that really was fundamentally what drove the rationale, coupled with what Francis said earlier, which is our view that given the complexity of genomes and just the complexity of human disease, in general, we feel that we re going to need both long- and short-read technologies at the highest level of accuracy in order to really propel the level of discovery that I think - that we think lies ahead. And combination of these 2 technologies, now that the accuracy is there and the scalability is to come, made a whole lot of sense at this point.

Operator

The next question is from Dan Arias with Citigroup.

Daniel Anthony Arias Citigroup Inc, Research Division - VP and Senior Analyst

Francis, when you look at where Illumina s expertise lies, anything earlier that you can say about what your R&D team thinks there may be a road to a - to more of a benchtop architecture akin to what you guys have now? And then maybe as a follow-up, I mean, you guys obviously are doing a lot about cancer genomics. I m just curious how important you think copy number and structural variation information might be in the clinic in the coming years. Obviously, it s a big research application, but I m just curious whether you think this information will begin to make it into the patient-phasing process at some point?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. I ll start by saying that we - the integration planning is still all in front of us. We are very excited, though, to imagine sort of a benchtop version of the offerings that PacBio has on the market. But all that planning is in front of us, as you can imagine. From our perspective, we do believe that there are clinical applications that will leverage long-read technologies to deliver benefits to patients. I talked a little bit earlier about the potential of using long-read phased whole genomes in the rare and undiagnosed disease space. That there are conditions that are caused by structural variants, for example, that can only be diagnosed using long-read technologies. And so we think it will be a nice add to bring that capability into the clinical market and drive up the diagnostic yield there. In addition, there are other clinical markets. Clinical markets, for example, like tissue typing, where we think long-read technologies bring a unique advantage by working through some of the more problematic areas of the genome. In addition, you look at areas like pharmacogenomics. We think that s another area that is uniquely suited to long-read technologies. And so there are certainly markets where we believe - clinical markets where we believe long-read technologies will bring a lot of value.

Operator

Our next question is Joe Munda with First Analysis.

Joseph P. Munda First Analysis Corporation - Analyst

Real quick, I just wanted to touch on the timing of the deal. It s not expected to close mid - until mid-next year. Perhaps you could give us a little more color. It seems aways out. I m just curious on that. And I ll follow up with another question.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. Obviously, our teams are going to work to close this deal as quickly as possible. And to get to close, there are number of things that ll need to happen. And our anticipation is the long pole is going to be to make sure that we get all the relevant regulatory approvals around the world. And that s what we think will cause it to not close until the middle of next year. But we re going to be working to close it as fast as we can.

Operator

Next question is from Puneet Souda with Leerink Partners.

Puneet Souda Leerink Partners LLC, Research Division - Director, Life Science Tools and Diagnostics

First of all, congrats on filling a product feature that Illumina customers had to seek outside of Illumina so far. So just first, Francis, on how do you view cost per gigabase? Sort of for longer-term, clearly, it s converging? Could you provide us any sort of time lines or timing on that? And then how should we think about a unified platform potentially that where both short- and long-reads can be run in one shot? Anything you can share there? And then just lastly in terms of the form factor. Does form factor really matter? If the competitor has a more attractive form factor, do you think you can address that longer term as well?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

All right. So let me start with the cost per gigabase. I think from an Illumina perspective, you ve seen our trajectory over the last few years. You ve heard the announcements we ve made around the trajectory we re pursuing over the next few years in terms of driving the cost per gigabase down and in terms of driving the cost per whole human genome down. And we said that our long-term trajectory is to take it even to $100 for a whole human genome. You ve also seen a similar sort of commitment to cost reduction on the PacBio side. And if you look at what they ve been able to do, even over the course of this year in terms of driving the cost of a whole human genome down from $12,000 to $7,000, and talking about what s capable next year. You can see that on both sides, there is a commitment to continue to drive the cost per gigabase down. We think there is going to be a market for people to pay a higher cost per gigabase and more for a whole genome that s phased that s generated through long-reads. And so we think there will continue to be just a gap in terms of the cost of a whole genome that s done using SBS short-read and that s done using PacBio s long-read technology. And I think that will be good market prospective. I think the market will be okay with that given what they re getting with the long-read technology. What s the second part of the question?

Jacquie Ross Illumina, Inc. - VP of IR

Integrated platform.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

The integrated platform. One of the things that we are excited about is the potential to integrate the data that comes off the 2 machines and give customers this, frankly, unique-in-the-world view across the genome by combining the data from the PacBio machines as well as the Illumina machines. Today, customers have to manually stitch it together to gain the insights they want. And I think it will be particularly enabling for our customers if they could get that automatically. And with this combination, we are going to be uniquely capable of doing that. So that s probably the first thing to look for in terms of integration from the 2 technologies.

Michael W. Hunkapiller Pacific Biosciences of California, Inc. - Executive Chairman, CEO & President

Yes. Could I add a little bit to that? So one of the things that we ve seen once we ve shown people the ability to get highly accurate individual molecule reads is that they can use the same kind of informatics tools that have been developed for Illumina-type reads. And they re really finding that very attractive because it makes it that much easier to integrate data sets, which has been somewhat of a trial and error method for a lot of them who don t necessarily have great informatics expertise themselves. And that certainly is going to be a key element of what we do getting together.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Yes. And I ll ask Omead to comment on the form factor question for me.

Omead Ostadan Illumina, Inc. - EVP of Operations and Products

Sure. I would say you ve seen Illumina sequencers and you know what their form factors look like. And the Sequel System is somewhere within that range of the form factors. So for us, the way the market is played out, it s more about what you get out of the sequencer and what you want to do with the sequencer and how much it costs you and how reliable it is. That tends to be the predominant drivers of customer selection. That s not to say form factor isn t important. It s one of the areas we do focus on and we ve, over the course of time, obviously, improved upon it. And our sense is looking at the core aspects of PacBio s technology is that there s a tremendous amount of headroom in many areas of developing that technology, including form factor. And so without getting into greater detail, here s what I ll tell you is I m really comfortable that we ll have the degree of freedom we need to be able to drive this technology development to hit the parameters that are going to matter the most to customers, including form factor. But we feel very comfortable with what we can do with this technology moving forward.

Operator

Next question is from Steve Beuchaw with Morgan Stanley.

Stephen Christopher Beuchaw Morgan Stanley, Research Division - Equity Analyst

Just wanted to touch on a different direction on a couple of things that have been referenced here in the Q&A. First is, circling back to just something that Tycho referred to. I wonder if you can give us a sense for whether this was a competitive process and your confidence in this being a true conclusion, if you will, in terms of the potential deal that we re considering here. Is it possible that we might see other folks who are interested step in? And secondarily, in defining the $2.5 billion TAM, I wonder as you size up that market, was this entirely incremental to what you might have been thinking about in the short-read TAM? Are there areas where you said, Hey, actually, the technology from PacBio has become so accurate and so efficient that there might be areas where we think we can probably actually extract more price because of the unique characteristics of that long-read data within what was previously considered a part of our short-read TAM?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. I ll start by saying that look, we have stayed close to what s been happening in the long-read market for a very long time now, including some investments in the space, and so we were very aware of the progress that was being made in the market. And so what that meant was, as we looked at what PacBio has delivered over the last few months and we looked at the roadmap for the next few months, we were able to move and move quickly. And so what that meant was we were able to go through this process without it being a competitive process. It s just that we knew the space, we knew the players, we knew the - what the technology had achieved and what it could achieve. And so this was not a competitive process. This was a - we ve been in touch, and we sensed that the time was right for us to move. And so that, I think, addresses the rest of your questions, given - around the competitive nature of this, given that - we estimated the time is right. We were able to move quickly. We re probably able to move earlier than, frankly, anybody else who might

have been interested in this technology. And given our experience in sequencing, given the history we have here, we are probably especially qualified to make an assessment around what s real, what has headroom. And I m more confident in making moves when we think the time is right. In terms of the TAM, the $2.5 billion TAM that I talked about in 2022 is a PacBio TAM. And so we ve had a chance to look at it at a top level and understand the top level, what s in it. Things like applications in there that are especially suited to long-reads. And so while there may be some overlap, it s clear to us that a lot of it is accessible to long-read technologies. But I ll let Omead maybe talk a little bit more about that.

Omead Ostadan Illumina, Inc. - EVP of Operations and Products

Sure. And reiterating your point, obviously, we are going through the process of, if you will, sort of converging models and comparing and making sure that all the assumptions are consistent. But generally speaking, I think I agree with Francis that we feel that the majority of that market opportunity is complementary and supplemental to what we would have otherwise been able to directly access with our short-read sequencing technology, which is why we re very excited about the combination is that it does give us, certainly, opportunities to access a broader market set and to be able to do that in perhaps a more unique and accelerated way, which are the other 2 drivers of the deal. But we feel the majority of that is actually supplemental to what we would otherwise access.

Operator

Our next question is from Sung Ji Nam with BTIG.

Sung Ji Nam BTIG, LLC, Research Division - Director

Congratulations as well. Was curious about maybe the regulatory hurdles, how we should think about that. Francis, Illumina is the largest player in this market and PacBio, Mike, is the larger of the remaining handful of competitors in the space. So how should we think about that being a potential significant hurdle?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. So obviously, some of the work over the next few months is to work through the regulatory approval process in countries around the world. The way we think about it is we are the largest player, and we provide - we serve the short-read market in sequencing. And the segments we serve are complementary to the segments that are served by the long-read players in the sense that we are uniquely qualified for the segments that we play in, and we have a set of competitors in our short-read segment. And frankly, we don t really play in some of the long-read segments at all. So if you look at de novo sequencing, for example, that s really well suited to the long-read players. And there are a set of players in that market, and it s a vibrant market. And so that s how we do it. We re very complementary. It adds value to our customers for us to look at a player in the long-read segment. But PacBio doesn t compete in the short-read segment, we don t compete in the long-read segment.

Operator

Next question is from David Westenberg with CL King.

David Michael Westenberg CL King & Associates, Inc., Research Division - Senior VP & Senior Equity Analyst

So one question is just on the difficulty in getting to the 8 million - well, chip. Do you think the time lines are valid? And if so, how - what do you think of the process, the puts and takes in getting there? And is there opportunity to scale maybe from there? I mean, what is the long-term potential you see in the technology? And then just something you just quickly touched on. Do you think that there is a general movement towards de novo genomes? And if that is the case, is that something that legacy Illumina might strive for?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

I ll start by asking Mike to comment on the 8M chip.

Michael W. Hunkapiller Pacific Biosciences of California, Inc. - Executive Chairman, CEO & President

Yes, I tried to go through that a little bit before. I mean, we feel comfortable with the time lines that we ve put out for a long time. And part of those - part of that area of comfort comes from the fact that we ve decided to go relatively slow early in the introduction of that chip. We ve made that aware to all our early access customers. We ve made - the customer group right after that, where - what our time line is. And we think we ve given ourselves enough of a buffer to be very confident in what we ve laid out to The Street.

Francis A. deSouza Illumina, Inc. - CEO, President & Director

All right. Thank you, Mike. And I ll ask Omead to talk about the de novo sequencing.

Omead Ostadan Illumina, Inc. - EVP of Operations and Products

Yes. Just - if I understood your question correctly. Just maybe taking a step back. I think we ve talked a lot about that, genomes and the applicability of PacBio s technology to genomes on a forward-going basis. Let s not forget that the majority of the areas where our sequencing is being used today is actually not on genomes. It s around interrogating much smaller fragments of the genome, whether it s amplicons or exomes or it s looking at things like ctDNA or non-invasive prenatal testing. And again, just keep that in context. So that s the largest part of the sequencing market today and is likely to remain that for the rest of it, where you re looking at genomes. Our view is that, look, customers are going to be looking at a variety of different experimental approaches, some of which will absolutely require, even

in the case of a human genome, essentially a de novo approach to it in the instances of rare and undiagnosed genetic diseases or oncology samples, and others, where it s going to be more traditional, purely re-sequencing approach. What we re - what we like about this combination is that we re going to be able to essentially have an array of tools for customers to be able to optimize the technology to their research endeavors. And so for us, it s not going to matter at that point whether they want to do a de novo approach or re-sequencing approach. We re going to have an optimal tool available for them in our portfolio.

Operator

Next question is Daniel Brennan with UBS.

Daniel Gregory Brennan UBS Investment Bank, Research Division - Senior Equity Research Analyst of Healthcare Life Sciences

Congratulations. I guess the first question is just on the competition from the synthetic long-read players, like the haplotyping. Maybe, Francis, how do you consider that technology as a threat towards PacBio s approach?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. Omead, I ll ask you to comment on that.

Omead Ostadan Illumina, Inc. - EVP of Operations and Products

Sure, I ll comment on it. And obviously, Mike knows a ton more about this basically than I. So Mike, please feel free to chime in. Here s our -- our view is that, look, all other things equal, people are going to want to be able to have the most complete information possible in the most economical way and in the easiest way possible. And that is what leads us to PacBio s approach as what we believe is likely to be a preferential method to interrogating and accessing information provided by long-read, especially if you layer in the accuracy and the scalability and economics. And one of the things we ve overlooked is the small amount of input material required with the CCS approach moving forward. Our sense is that, that is going to be the path of least resistance for acquiring long-range, genome-leveled information. That doesn t mean that people aren t going to use long-reads. We expect people are going to continue to long -- to use long-reads. And as I said, from our perspective, if it s a combination of a link long-read ahead of an Illumina sequencing one or it s just going directly at getting that information using PacBio s technologies, we re largely indifferent because what we re most interested in is making sure that customers have the optimal suite of choices for their experiments. Our sense is, though, that in the majority of the cases, given how much more information you get with accurate, native long-reads, especially with the economics that are going to be afforded by PacBio s technology improvement that the majority of researchers are going to opt for that approach.

Operator

Our last question is from Mark Massaro with Canaccord Genuity.

Mark Anthony Massaro Canaccord Genuity Limited, Research Division - Senior Analyst

Sorry if you addressed this earlier, I hopped in the call late. But Francis, can you speak to which incremental new opportunities PacBio will provide Illumina? Additionally, certainly, you have a very strong global commercial organization. In many respects, you can probably accelerate the pace with which PacBio would have grown with your large commercial organization. But I was hoping that you could maybe speak to which areas in particular you re most excited about, whether it s agriculture, oncology, infectious disease or other?

Francis A. deSouza Illumina, Inc. - CEO, President & Director

Sure. The exciting thing here is that nearly all the markets that PacBio plays in are not markets that we play in. And so as we look at what it brings to us, whether it s their presence in markets like de novo plant and animal or tissue typing, pharmacogenomics, all of those opportunities are opportunities that our customers have talked to us about, but frankly, we don t have something to offer and they look to PacBio to offer. And so those are all new opportunities as is the whole long-read market for us. And if we look at the numbers PacBio has put out, this is a market that s growing from $600 million in 2017 at a 30% clip to a $2.5 billion market by 2022. And so it s a complementary market to us. It s a market that has a good growth rate by those numbers. And so we re very excited about that. We re very excited, too, about the added value that comes from bringing the 2 technologies together, by stitching the data together in terms -- and giving customers a unique integrated view. We think that brings added value to customers beyond just 2

complementary technologies next to each other. The thing that s exciting is that the reality is that the sequencing that PacBio does in terms of new species very often unlocks the market for more production sequencing to be done on Illumina machines. And so there s a nice added benefit there that to the extent we can accelerate PacBio s instruments being placed into the market, that accelerates the market for our SBS instruments, too. And that s a nice effect.

Operator

We have no further questions at this time. I d like to hand it back to Jacquie Ross for closing remarks.

Jacquie Ross Illumina, Inc. - VP of IR

Thank you.

As a reminder, a replay of this call will be available as a webcast in the Investors section of our website as well as through the dialing instructions contained in today s press release.

Thank you for joining us today.

Operator

Thank you, ladies and gentlemen. This concludes today s conference. Thank you all for participating. You may now disconnect.

Additional Information about the Merger and Where to Find It

This communication may be deemed to be solicitation material in respect of the merger of Pacific Biosciences with a wholly owned subsidiary of Illumina. Pacific Biosciences intends to file relevant materials with the Securities and Exchange Commission (the SEC), including a proxy statement in preliminary and definitive form, in connection with the solicitation of proxies for the merger. The definitive proxy statement will contain important information about the proposed merger and related matters. BEFORE MAKING A VOTING DECISION, STOCKHOLDERS OF PACIFIC BIOSCIENCES ARE URGED TO READ THE DEFINITIVE PROXY STATEMENT AND OTHER RELEVANT MATERIALS CAREFULLY AND IN THEIR ENTIRETY WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT PACIFIC BIOSCIENCES AND THE MERGER. Stockholders will be able to obtain copies of the proxy statement and other relevant materials (when they become available) and any other documents filed by Pacific Biosciences with the SEC for no charge at the SEC s website at www.sec.gov. In addition, stockholders will be able to obtain free copies of the proxy statement from Pacific Biosciences by contacting Pacific Biosciences s Investor Relations Department by telephone at (650) 521-8450, by mail to Pacific Biosciences, Attention: Investor Relations Department, 1305 O Brien Drive, Menlo Park, CA 94025, or by going to Pacific Biosciences Investor Relations page on its corporate website at www.investor.pacificbiosciences.com.

Participants in Solicitation

Pacific Biosciences and its officers and directors and Illumina and its officers and directors may be deemed to be participants in the solicitation of proxies from Pacific Biosciences stockholders with respect to the proposed merger. Information about Pacific Biosciences officers and directors and their ownership of Pacific Biosciences common shares is included in their SEC filings on Forms 3, 4, and 5, and additional information about Pacific Biosciences directors and executive officers is also available in the definitive proxy statement for Pacific Biosciences 2018 Annual Meeting of Stockholders, which was filed with the SEC on April 4, 2018. Information about Illumina s officers and directors is set forth in the proxy statement for Illumina s 2018 Annual Meeting of Stockholders, which was filed with the SEC on April 6, 2018. Investors and security holders may obtain more detailed information regarding the direct and indirect interests of the participants in the solicitation of proxies in connection with the acquisition by reading the definitive proxy statement to be filed by Pacific Biosciences with the SEC.

Safe Harbor for Forward-Looking Statements

This communication contains certain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 with respect to the proposed merger between Illumina and Pacific Biosciences that are not purely statements of historical fact. Forward-looking statements are statements relating to the future which are based on information available at the time such statements are made, including information relating to risks and uncertainties. Although we believe that the forward-looking statements are based on reasonable assumptions, the matters discussed in the forward-looking statements may be influenced by factors that could cause actual outcomes and results to be materially different from those expressed or implied by these statements. We identify the forward-looking statements by using the words anticipates , believes , expects , intends and similar expressions in suc statements. Investors are cautioned not to place undue reliance on any such forward-looking statements. Such risks and uncertainties include: the failure to obtain stockholder approval of the proposed merger; the possibility that the closing conditions to the proposed merger may not be satisfied or

waived, including that a governmental entity may prohibit, delay or refuse to grant a necessary regulatory approval; delay in closing the merger or the possibility of non-consummation of the merger; the occurrence of any event that could give rise to termination of the merger agreement; the risk that stockholder litigation in connection with the contemplated merger may affect the timing or occurrence of the contemplated merger or result in significant costs of defense, indemnification and liability; risks inherent in the achievement of anticipated synergies and the timing thereof; risks related to the disruption of the merger to Pacific Biosciences and its management; and the effect of announcement of the merger on Pacific Biosciences ability to retain and hire key personnel and maintain relationships with suppliers and other third parties. These risks and others relating to Illumina and Pacific Bioscience are described in greater detail in their respective SEC filings, including (i) as to Illumina, Illumina s Annual Report on Form 10-K for the fiscal year ended December 31, 2017, as well as in other documents filed by Illumina with the SEC after the date thereof, and (ii) as to Pacific Biosciences, Pacific Biosciences Annual Report on Form 10-K for the fiscal year ended December 31, 2017, as well as in other documents filed by Pacific Bioscience with the SEC after the date thereof. Illumina and Pacific Bioscience make no commitment to revise or update any forward-looking statements in order to reflect events or circumstances occurring or existing after the date any forward-looking statement is made, except as required by law.