

From: [John West](#)
To: [Carol Tillis](#)
Subject: Personalis Board meeting preview
Date: Tuesday, September 4, 2012 7:15:28 AM

Hi Carol,

Can you please send this with the slides this morning, as we discussed ?

Please distribute your slides, the Solexa investor list, your financing scenarios and my Market Data slides.

Rich & Christian are close on their slides and those will also likely be send-able this morning. I will complete my slides later today.

Thanks,

John

Dear Jonathan, Rowan & Chris,

Our Board meeting is tomorrow morning 9-11am, but I am sending this to give you a preview / summary. You will also receive slides electronically today and printed Board books tomorrow. We will have some breakfast available at Personalis starting at 8:15am tomorrow in case it works for you to arrive early.

Our biggest news is that our R&D team completed our prototype product on schedule at the end of August and we expect our first purchase order (\$100k) in the next few days. It is from a group researching the genetic cause of a rare brain disease. We will sequence exomes from 130 clinical samples and analyze them using our state of the art case/control software. We expect to complete the project by December. This is an example of our plan to begin revenue in the research market. We had actually planned to begin our beta testing with non-paid collaborations, but as we have included in-house sequencing of the samples, proposed that they pay our cost of the sequencing reagents. They have agreed to that and understand that, were this not a beta test, the price would be over \$300k. As part of our development, we also completed an exercise of processing 25 whole genome data sets in 25 days, and a separate project using Stanford data from super-centenarians (≥ 110 years old).

Other meetings we have held with prospective customers include researchers in ALS and Alzheimers, and the Genomic Medicine Institute at El Camino Hospital.

As we can show you when you visit tomorrow, our labs are now up and operating. We have conducted sequencing runs on both our MiSeq and HiSeq instruments and have been pushing their limits (e.g. 500 base-pair single-reads and 2x300 paired-end reads). We have also filed formally for both CLIA & CAP accreditation and expect to complete those in the first half of next year. We are hearing increasing interest in CLIA sequencing for research applications, particularly in pharma, so we expect CLIA certification will be an advantage for us even before we offer anything for real clinical use. We have also begun planning development of our "Exome-Plus" product. It is intended to provide better accuracy and exome coverage than a standard exome, and using our proprietary database content, will also target key functional regions outside the exome. In discussions with prospective customers, we have found a lot of

interest in our ability to provide sequencing of their samples, in addition to the genome sequence analysis. They like our potential for fast turn-around time (Illumina and Complete Genomics are currently 3-4 months to deliver and many core labs are the same) and the fact that we offer exomes (neither Illumina nor Complete do). They also understand that if they have higher quality data going in to the analysis (in addition to better analysis) the overall result is likely to be much more reliable.

Based on this customer feedback, we are proposing to pull in the purchase of our second HiSeq sequencing instrument, originally planned for early next year, and will ask your approval of this (approx. \$540k) CapEx item at the meeting. We anticipate that we can achieve reasonable margins on exome sequencing and on our Exome-Plus offering. We should do better than breakeven on fast-turnaround-time whole genomes (currently \$10k from Illumina), so we can use this capacity to draw early customers, though that's not where we want to go longer term margin-wise. As a market benchmark, we note that exomes now represent 50% of all human sequence submissions to the US government database (SRA) and that percentage is increasing. Whole genomes (mostly very low coverage) are 20%. Full coverage whole genomes are still quite rare in the SRA. Long term, we expect whole genomes to take over, but it has already taken much longer for that to happen than expected and products like our Exome-Plus will bring more and more of the whole-genome advantage to the exome price category. When we do offer whole genomes, we expect that some of our Exome-Plus accuracy advantages will carry forward, letting us offer a differentiated whole genome sequencing service.

Our message about DNA sequencing accuracy has also been reaching the FDA. After I presented at the Institute of Medicine (Washington, DC) in July, Elizabeth Mansfield of the FDA came up to me, commented on how positive what we are doing is, and invited me to attend a meeting they were co-sponsoring at NIST in August. I presented and met her again at the NIST meeting, and we have tentatively planned to make a Personalis presentation at the FDA late this year. Although our plans do not include any formal filings with the FDA in the near-term, I think it is important to be building their recognition.

We have also begun mapping out some scenarios for a Series B financing in early 2013. Carol will circulate those. I have also put together a list of 44 former Solexa investors which will be provided as part of the Board meeting material. I would appreciate your input about their potential for this round. Several of them have already contacted me, having heard through the grapevine about the new company.

On the theme of Big Data, we are expanding. Our in-house storage capacity is now above 300 Tbytes. There are also now two groups proposing government funding for sequencing projects of a million whole genomes. The VA has already piloted their project and funding is being sought for a separate cancer-focused project. At about 0.5 Tbyte / genome, these projects together could use almost a zeta-byte (10 to the 18th bytes). While these will take a couple of years to ramp up, it does give an idea of the scale people are now considering.

At 8/31, our cash level was about \$500k above the projection of our July budget, and even further above the projection from our February budget. This is primarily due to hiring running slightly behind plan, as we have continued to be very selective. We have been growing, but just not quite at the rate originally projected.

I have put together some slides with current market data and these will be circulated as part of

the Board meeting material. We will not have time to go through all of it at the meeting, but you may find it helpful background.

I hope this gives you a helpful preview for the meeting, and I look forward to seeing you tomorrow.

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