

From: [John West](#)
To: [Carol Tillis](#)
Cc: [Eliane Sousa](#); [Richard Chen](#); [Christian Haudenschild](#)
Subject: Board slides from John West, ready to print
Date: Thursday, November 1, 2012 7:32:01 AM
Attachments: [CEO Overview 16x9 1Nov2012 v2.pptx](#)

Hi Carol,

I have 11 slides, attached.

They are ready to print. Hopefully that's not a problem with the 16x9 format.

Thanks,

John

CEO Overview

John West

Personalis, Inc. Board Meeting
November 1, 2012

Agenda

- Brief review of the company plan & where we are along it
- Plans for commercial organization
- Updates:
 - Finance
 - Expenditure approvals for recruitment & lab CapEx
 - Operations
 - Focus on early customers & pipeline
 - R&D

Key Intellectual Property & IP Potential Behind the Company

- Licensed from Stanford:
 - Databases (Source Lab) :
 - PharmGKB (Russ Altman)
 - VariMed (Atul Butte)
 - MendelDB (Euan Ashley)
 - Regulome (Mike Snyder)
 - Patent Applications :
 - Key accuracy IP - Improving allele choices in the human reference sequence
 - Copyrights & Trademark :
 - Aligned with the above
- IP Potential from Founders & Team:
 - Russ Altman - Pharmacogenomics
 - Atul Butte - Complex diseases
 - Euan Ashley - Mendelian diseases
 - Mike Snyder - Gene regulation
 - - Sequencing technology
 - John West - Family sequencing
 - - Sequencing accuracy

Two Complementary Target Markets

- Medical Research

- > 100k genomes / exomes / yr already
- Capacity growth: > 40% / year
- Total spending today on medically-related sequencing approx. \$1B / year
- 20-30% may be accessible with Personalis IP
- No regulatory or reimbursement barriers to market
- Technology needs refinement, validation & credibility from the research market, for clinical transition
- Build revenue & transition to profitability here first

- Clinical Diagnostics

- Long-term, a much larger market
- > 2,000 tests routinely reimbursed now, based on prior generation DNA sequencing technology
- Mendelian disease applications normal
- Pharmacogenomics building acceptance
- Pathologists press to “own” this wave
- Regulatory, reimbursement and adoption hurdles for new tests
- Potential for future diagnostics is a major motivator for current research funding
- Start early but spend modestly by leveraging work already being done for the research market

Business Model Choice to Commercialize Our IP

- Bioinformatics
 - Competing with culture of free exchange, government subsidized
 - Can't fully address the issues of data accuracy
 - Outsourced data generation currently very slow (3-9 months !)
 - Doesn't fit accepted clinical diagnostics model
- Lab assay + Analysis
 - Specialty sample preps implement our IP & link to algorithms
 - Fully address the issue of sequencing accuracy
 - Combination may offer patent protection advantages
 - Control turnaround time
 - Challenges in CapEx, margins, utilization, obsolescence, scalability
 - This is our primary choice, though we will work with just data if the customer already has it or we can't realistically generate it (large # whole genomes)

Service vs Product Business Model Choice

Typical factors are technical complexity & lumpiness vs IP concern with outsourcing

- Medical Research

- >60% of research sequencing is done by service organizations:
 - Primarily internal core labs and Genome Centers
 - Nominally non-profit
 - Sometimes subsidized
- Next gen sequencing has sprouted service businesses in both sequencing and informatics
- Personalis initial research market offering is a service:
 - From DNA to analysis

- Clinical Diagnostics

- A centralized CLIA lab (service model) is the standard for “high-complexity” laboratory-developed clinical diagnostic tests (esp. genetics)
- CLIA is the only realistic regulatory path until sequencing instrument providers achieve FDA approval
- CLIA becoming a quality surrogate in research studies, esp pharma
- Personalis initial clinical strategy is a CLIA-lab diagnostic service:
 - From blood sample to

report

Personalis EX2099
 Personalis™

Major steps planned in company development

- Research Market business:
 - Establish operations (Hiring, office & labs, establish processes)
 - Initial service products: “data analysis” with / without standard sequencing
 - 1st revenue
 - Initial service products with IP leveraged as a lab assay
 - Additional analysis products
 - Revenue ramp to profitability
- Clinical Diagnostic business
 - CLIA / CAP accredited lab established (vanilla capabilities – a foundation)
 - Initial clinical products, disease-area focused
 - Comprehensive genome interpretation as a long-term goal

Personalis at 12 months

1st non-CEO full-time employee started Nov 1, 2011

- Research Market business:
 - Establish operations (Hiring, office & labs, establish processes) **Done**
 - Initial service products: “data analysis” with / without standard sequencing **Beta**
 - 1st revenue **2 customers, \$870k, 1st “completion” by year-end**
 - Initial service products with IP leveraged as a lab assay **In development**
 - Additional analysis products **In development**
 - Revenue ramp to profitability **2013-2014**
- Clinical Diagnostic business
 - CLIA / CAP accredited lab established (vanilla capabilities – a foundation) **On track**
 - Initial clinical products, disease-area focused **In definition**
 - Comprehensive genome interpretation as a long-term goal

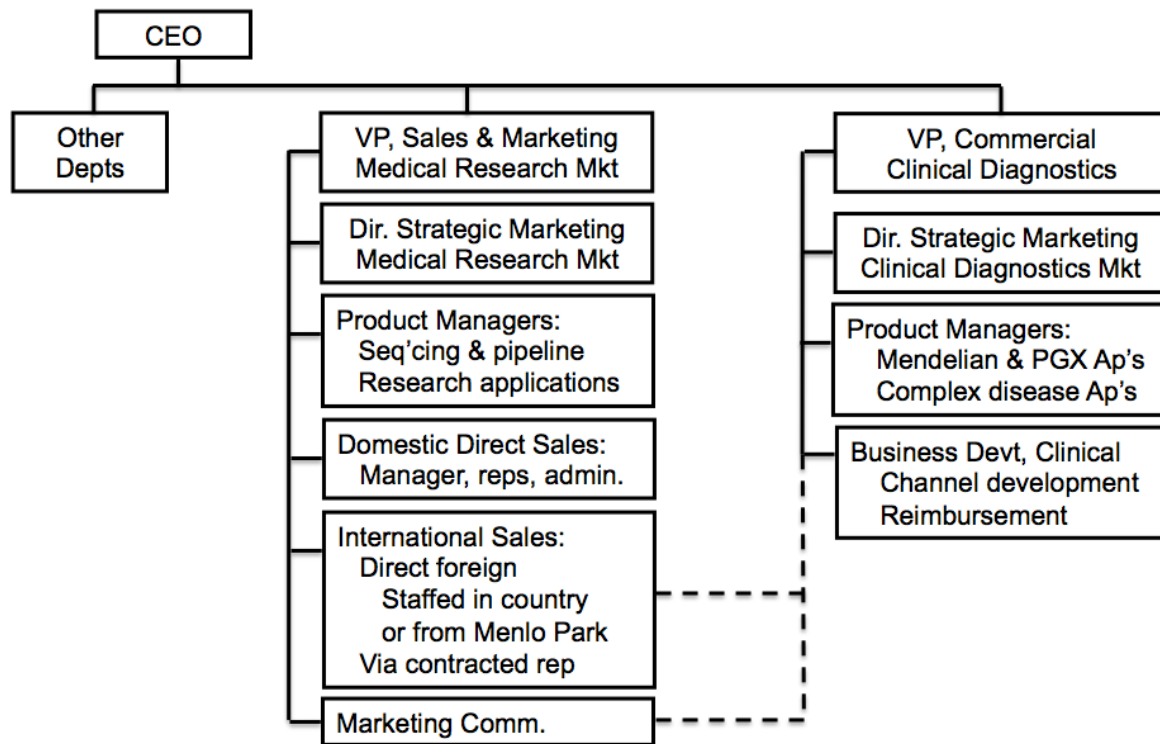
Personalis at 12 months

1st non-CEO full-time employee started Nov 1, 2011

Approx. 1/3 of Series A has been spent; Series B is in planning for H1 2013

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Draft Commercial Organization



Transition to Finance Update