

Transforming PacBio 40th Annual J.P. Morgan Healthcare

Christian Henry | President and Chief Executive Officer

Safe harbor statement

All statements in this presentation (and any accompanying oral presentation) that are not historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended, and the U.S. Private Securities Litigation Reform Act of 1995, including statements that generally relate to future events or our future financial or operating performance, future applications and availability, release dates, uses, accuracy, advantages, or quality or performance of, or benefits or expected benefits of using, our products or technologies, and the suitability or utility of our products or technologies for particular applications or projects. Such statements are based on management's current beliefs, estimates, assumptions and projections and on information available to management as of the date of this presentation. Forward-looking statements include, among other things, statements regarding our preliminary financial and operational results for the fourth quarter and full year ended December 31, 2021, including our expected revenue, cash balance, number of installed instruments, growth in SMRT Cells, growth relative to previous periods, data generated from Sequel II/IIe usage; rates and amounts of potential commercial opportunities and growth, including estimated sizes and penetration of certain markets; ability of HiFi Viral products to sequence viral genomes, including all circulating variants of SARS-CoV2; sequencing completeness and accuracy of our products and technology, including our HiFi and SBB technologies; estimates regarding our being the only company with both leading long read and short read technologies; expected purchases by certain customers upon future product release; attributes and sequencing advantages of, and potential upgrades and improvements to, our products and technology, including potential research and diagnostic benefits; strategic plans and priorities; research and development plans, including expected improvements and updates; commercial collaborations and partnerships; and other future events. Accordingly, you should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties, changes in circumstances and other factors that are, in some cases, beyond the Company's control and could cause actual results to differ materially from the information expressed or implied by forward-looking statements made in the presentation. Factors that could materially affect actual results can be found in our filings with the Securities and Exchange Commission, including our most recent reports on Forms 8-K, 10-K and 10-Q, and include those listed under the caption "Risk Factors." The Company undertakes no obligation to revise or update information in this presentation to reflect events or circumstances in the future, even if new information becomes available.

The COVID-19 pandemic and efforts to control its spread have affected our financial results for the three and nine months ended September 30, 2021 and will likely continue to adversely impact our revenues for the fourth quarter of 2021. Due to the uncertain scope and duration of the pandemic, we cannot reasonably estimate the future impact to our operations and financial results. Even after the COVID-19 pandemic has subsided, we may continue to experience an adverse impact to our business as a result of its global economic impact, including any recession that has occurred or may occur in the future.

A faint, grayscale background image showing a microscopic view of a cell or tissue structure, possibly a cross-section of a biological specimen, with various circular and elongated features.

ENABLING THE PROMISE OF GENOMICS TO BETTER HUMAN HEALTH

We create some of the world's most advanced sequencing technologies.

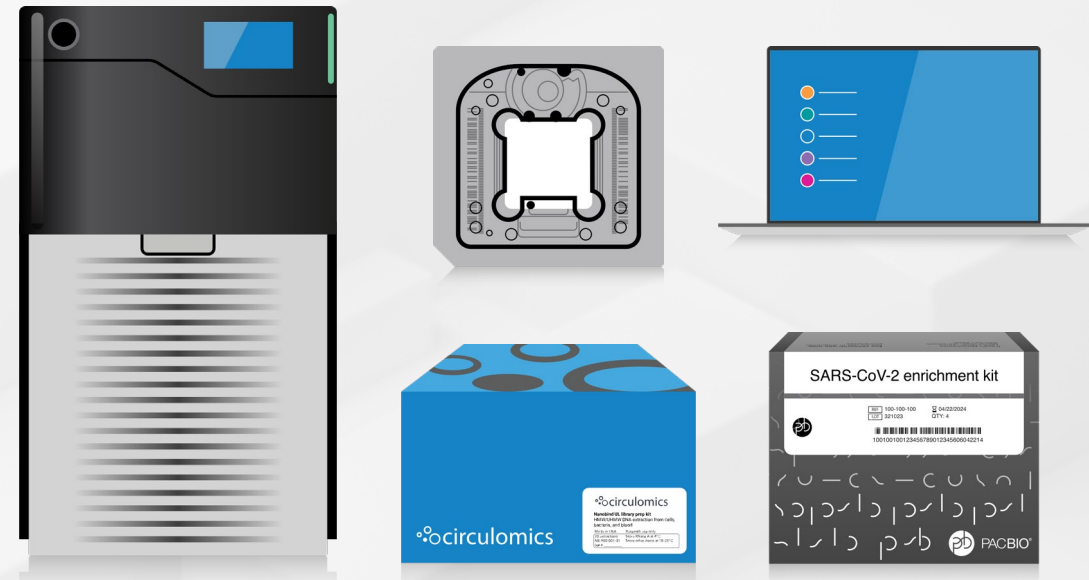
Only company with both leading long-read *and* highly accurate short-read tech¹

Three highly differentiated core technologies focused on accuracy, quality + completeness:
HiFi, Nanobind, and SBB

50+ Products spanning
entire genomics workflow

700+ Global employees

\$40B+ Total addressable market²



PacBio HiFi technology recognized as the **most accurate + complete**

Association of Biomolecular Resource Facilities

nature biotechnology

Article | Published: 09 September 2021

Performance assessment of DNA sequencing platforms in the ABRF Next-Generation Sequencing Study

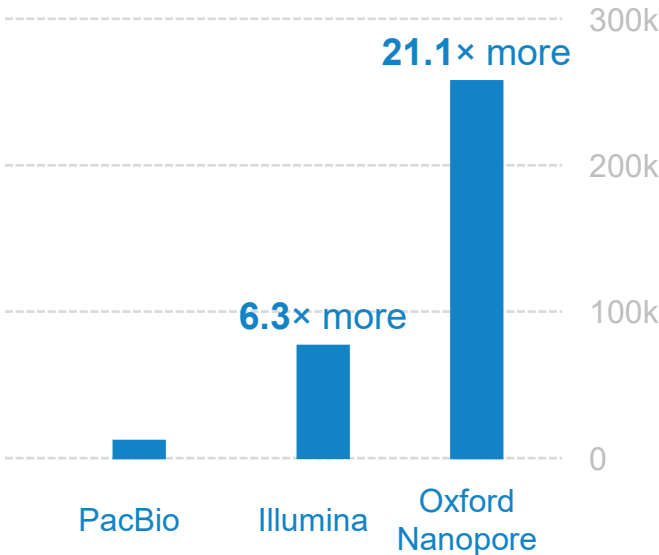
Jonathan Foox, Scott W. Tighe, [...] Christopher E. Mason

Abstract

Assessing the reproducibility, accuracy and utility of massively parallel DNA sequencing platforms remains an ongoing challenge. Here the Association of Biomolecular Resource Facilities (ABRF) Next-Generation Sequencing Study benchmarks the performance of a set of sequencing instruments (HiSeq/TruSeq/paired-end/100 bp chimeric)

“PacBio [HiFi] provides the lowest error rate out of all technologies.”¹

precisionFDA



Total errors
(SNV + indel + SV)²

Telomere-to-telomere Consortium

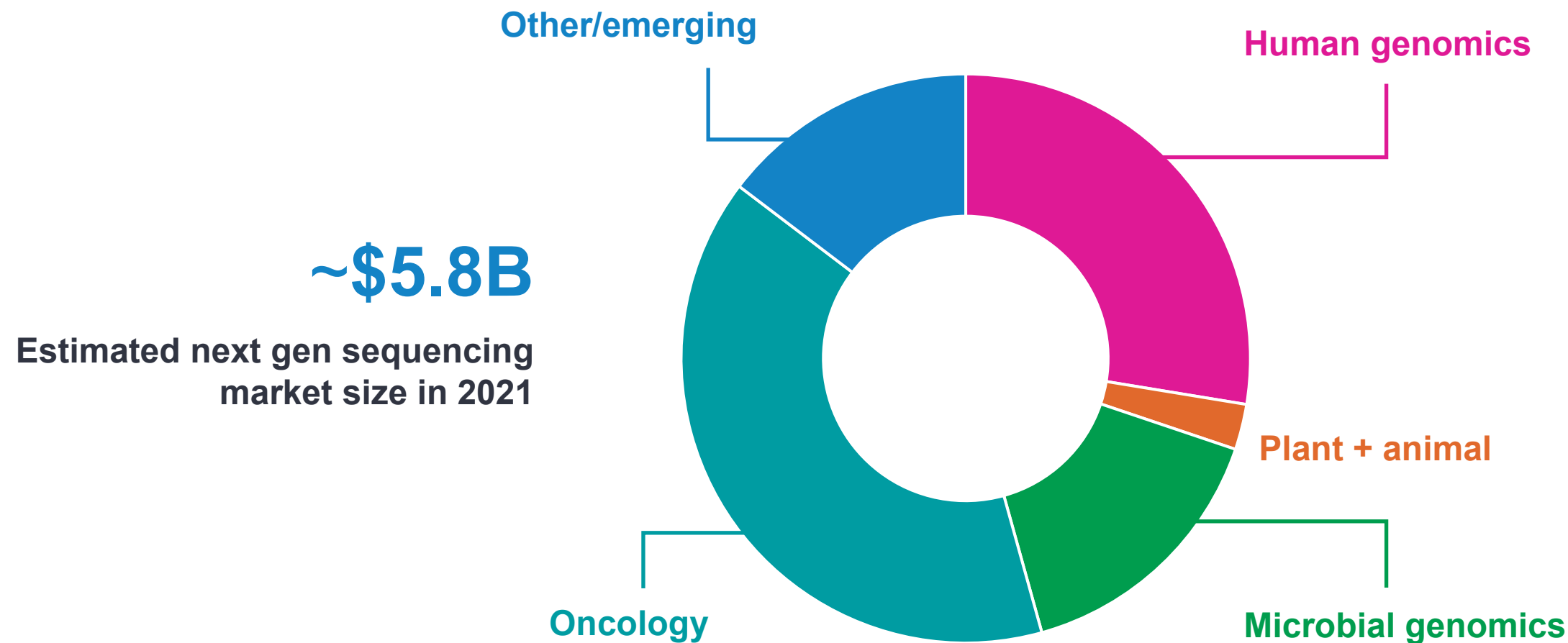
The complete sequence of a human genome

Sergey Nurk^{1,2}, Sergey Koren^{1,2}, Arang Rhie^{1,2}, Mikko Rautiainen^{1,2}, Andrey V. Bzikadze², Alla Mikhchenko³, Mitchell R. Vollger⁴, Nicolas Altomonte⁵, Lev Uralsky^{6,7}, Ariel Gershman⁸, Sergey Aganezov⁹, Savannah J. Hoyt¹⁰, Mark Diekhans¹¹, Glennis A. Logsdon¹², Michael Alonge¹³, Stylianos E. Antonarakis¹⁴, Matthew Borchers¹⁵, Gerard G. Bouffard¹⁶, Shellee Y. Brooks¹⁷, Gina V. Caldas¹⁸, Haoyu Cheng^{19,20}, Chen-Shan Chin²¹, William Chow²², Leonardo G. de Lima²³, Philip C. Dishuck²⁴, Richard Durbin²⁵, Tatiana Dvorkina²⁶, Ian T. Fiddes²⁷, Giulio Formenti^{28,29}, Robert S. Fulton³⁰, Arkarachi Fungtammasan³¹, Erik Garrison^{32,33}, Patrick G.S. Grady³⁴, Tina A. Graves-Lindsay³⁵, Ira M. Hall³⁶, Nancy F. Hansen³⁷, Gabrielle A. Hartley³⁸, Marina Haukness³⁹, Kerstin Howe⁴⁰, Michael W. Hunkapiller⁴¹, Chirag Jain^{42,43}, Miten Jain⁴⁴, Erich D. Jarvis^{45,46}, Peter Kerpedjiev⁴⁷, Melanie Kirsche⁴⁸, Mikhail Kolmogorov⁴⁹, Jonas Koriach⁵⁰, Milinn Kremetzki⁵¹, Heng Li^{52,53}, Valerie V. Maduro⁵⁴, Tobias Marschall⁵⁵, Ann M. McCartney⁵⁶, Jennifer McDaniel⁵⁷, Danny E. Miller^{58,59}, James C. Mullikin^{60,61}, Eugene W. Myers⁶², Nathan D. Olson⁶³, Benedict Paten⁶⁴, Paul Peluso⁶⁵, Pavel A. Pevzner⁶⁶, David Porubsky⁶⁷, Tamara Potapova⁶⁸, Evgeny I. Rogae^{69,70,71}, Jeffrey A. Rosenfeld⁷², Steven L. Salzberg^{73,74}, Valerie A. Schneider⁷⁵, Fritz J. Sedlazeck⁷⁶, Kishwar Shafin⁷⁷, Colin J. Shew⁷⁸, Alaina Shumate⁷⁹, Yumi Sims⁸⁰, Arian F. A. Smit⁸¹, Daniela C. Soto⁸², Ivan Sovic^{83,84}, Jessica M. Storer⁸⁵, Aaron Streets^{86,87}, Beth A. Sullivan⁸⁸, Françoise Thibaud-Nissen⁸⁹, James Torrance⁹⁰, Justin Wagner⁹¹, Brian P. Walenz⁹², Aaron Wenger⁹³, Jonathan M. D. Wood⁹⁴, Chunlin Xiao⁹⁵, Stephanie M. Yan⁹⁶, Alice C. Young⁹⁷, Samantha Zarate⁹⁸, Urvashi Surti⁹⁹, Rajiv C. McCoy¹⁰⁰, Megan Y. Dennis¹⁰¹, Ivan A. Alexandrov^{3,7,51}, Jennifer L. Gerton¹⁰², Rachel J. O'Neill¹⁰³, Winston Timp¹⁰⁴, Justin M. Zook¹⁰⁵, Michael C. Schatz¹⁰⁶, Evan E. Eichler¹⁰⁷, Karen H. Miga¹⁰⁸, Adam M. Phillippy¹⁰⁹

“PacBio’s recent HiFi circular consensus sequencing...has resulted in unprecedented assembly accuracy...”³

1. <https://doi.org/10.1038/s41587-021-01049-5>
2. <https://doi.org/10.1101/2020.11.13.380741>
3. <https://doi.org/10.1101/2021.05.26.445798>

Sequencing is multi-billion-dollar opportunity across diverse set of markets



2021 was focused on building the foundation for growth

1. EXPAND COMMERCIAL REACH



2. DRIVE PRODUCT DEVELOPMENT PIPELINE



3. MARKET LEADERSHIP IN WHOLE GENOME CLINICAL SEQUENCING



Expanded leadership team focused on driving growth



Christian Henry

PRESIDENT + CHIEF EXECUTIVE OFFICER
25+ years | Prior CCO at Illumina



Susan Kim

CHIEF FINANCIAL OFFICER
20+ years | Prior Tech CFO



Mark Van Oene

CHIEF OPERATING OFFICER
20+ years | Prior CCO at Illumina



Peter Fromen

CHIEF COMMERCIAL OFFICER
20+ years | Prior head of PopGen at Illumina



Catherine Ball

SVP, RESEARCH
25+ years | Prior CSO at AncestryDNA



Richard Shen

SVP, RESEARCH & DEVELOPMENT
25+ years | Prior President at Omniome



Kelvin Liu

VP, TECHNOLOGY DEVELOPMENT
15+ years | Prior founder/CEO of Circulomics



Neil Ward

GM, EUROPE, MIDDLE EAST, AND AFRICA
20+ years | Prior Europe Sales Director at Illumina



Jason Kang

GM, ASIA PACIFIC
20+ years | Prior sales leadership at Illumina



Lara Toerien

GM, AMERICAS
20+ years | Prior sales leadership at Illumina

Significant commercial investment enables us to reach more customers

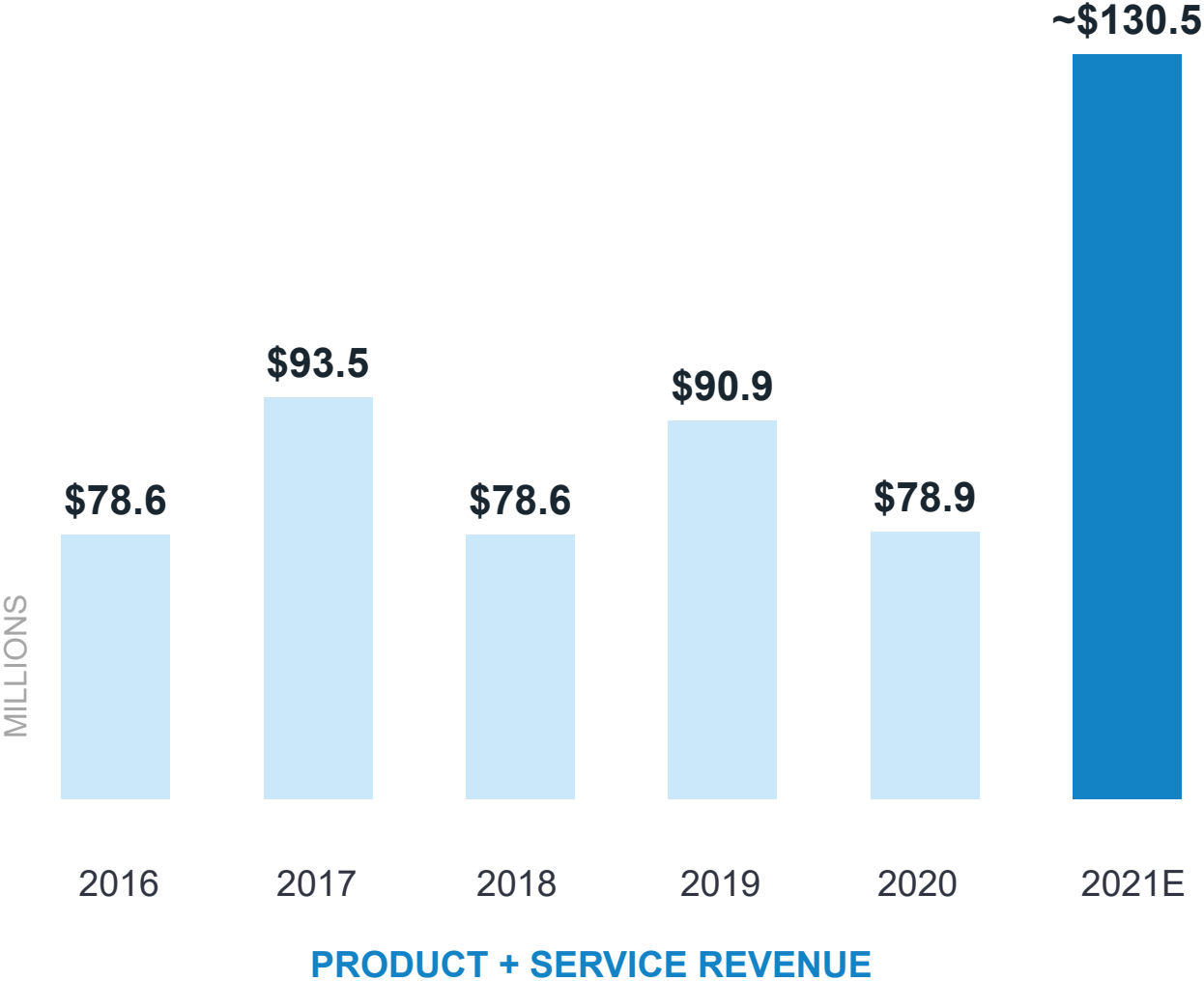


6
Global locations

>200
Commercial employees
66 service + support staff
48 quota-carrying reps

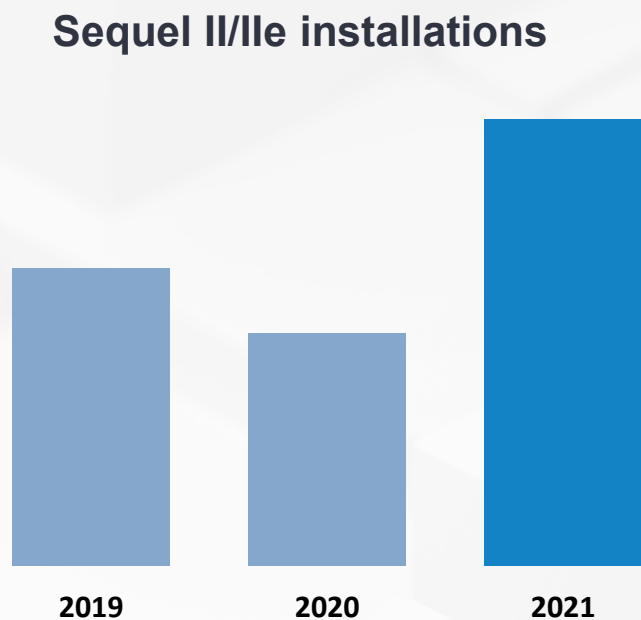
>40
Countries

Commercial focus and new products drove breakout performance in 2021

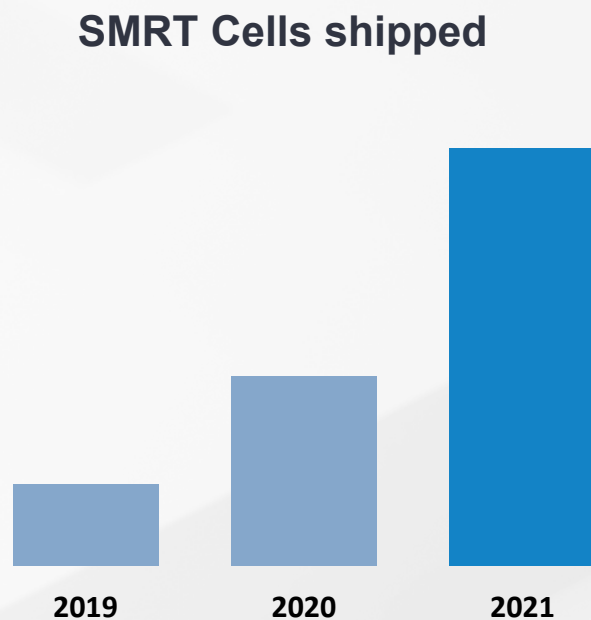


2021 REVENUE	~\$130.5M
YEAR-OVER-YEAR GROWTH	~65%
2021 SEQUEL II/IIe INSTALLS	171
SEQUEL II/IIe INSTALLED BASE	374
CASH BALANCE	~\$1.0B

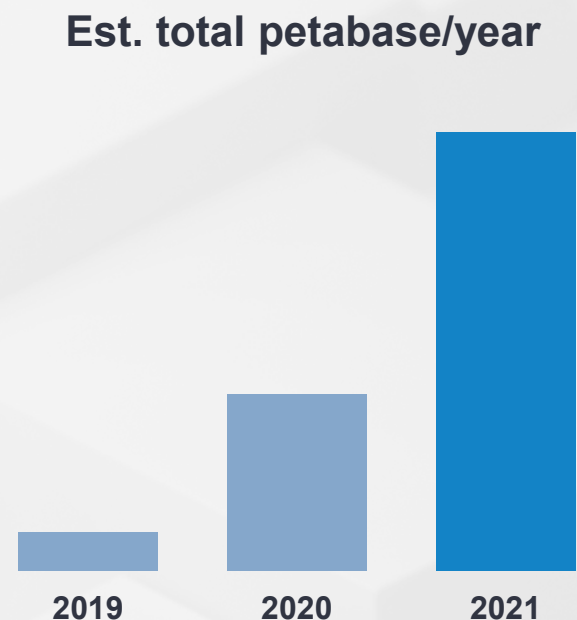
Record performance for Sequel II/Ile platform in 2021



84%
Growth in
installed base

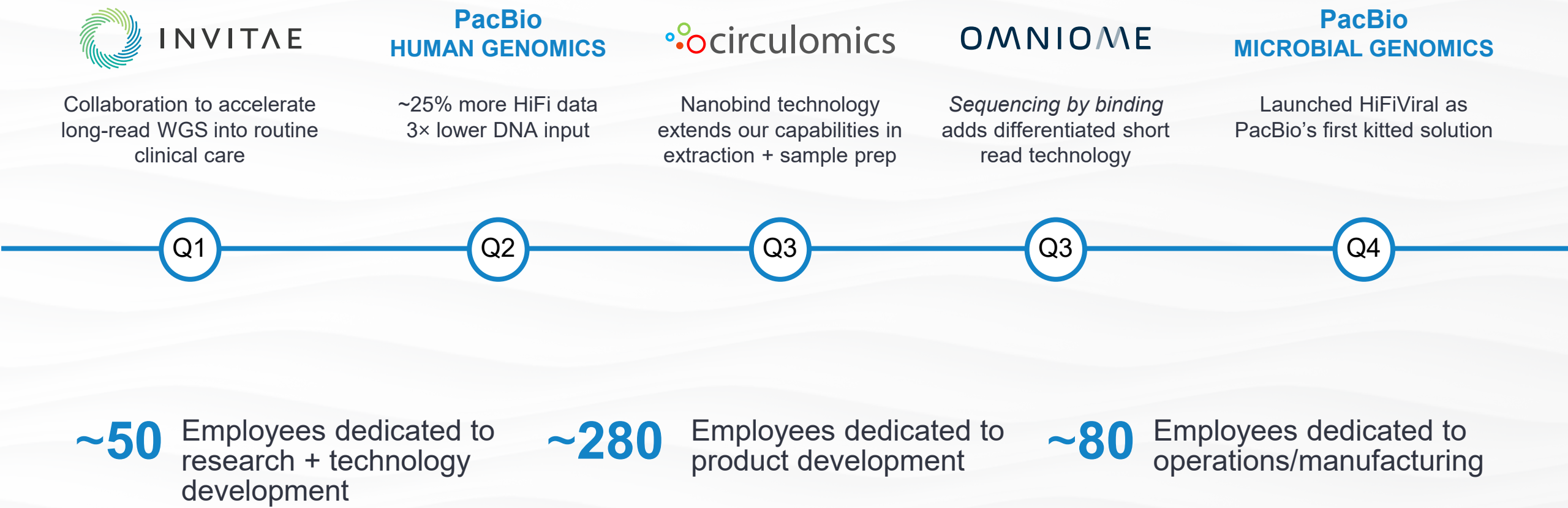


220%
Growth in
Sequel II/e SMRT Cells



250%
Growth in data generated
from Sequel II/Ile

Most productive year in PacBio history

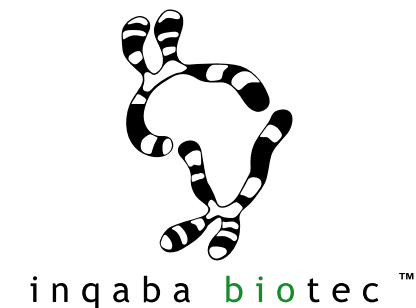


HiFiViral delivering complete SARS-CoV-2 genomes for all circulating variants

>\$2M Revenue related to kit sales¹

> 16K Samples shipped

20 Global customers



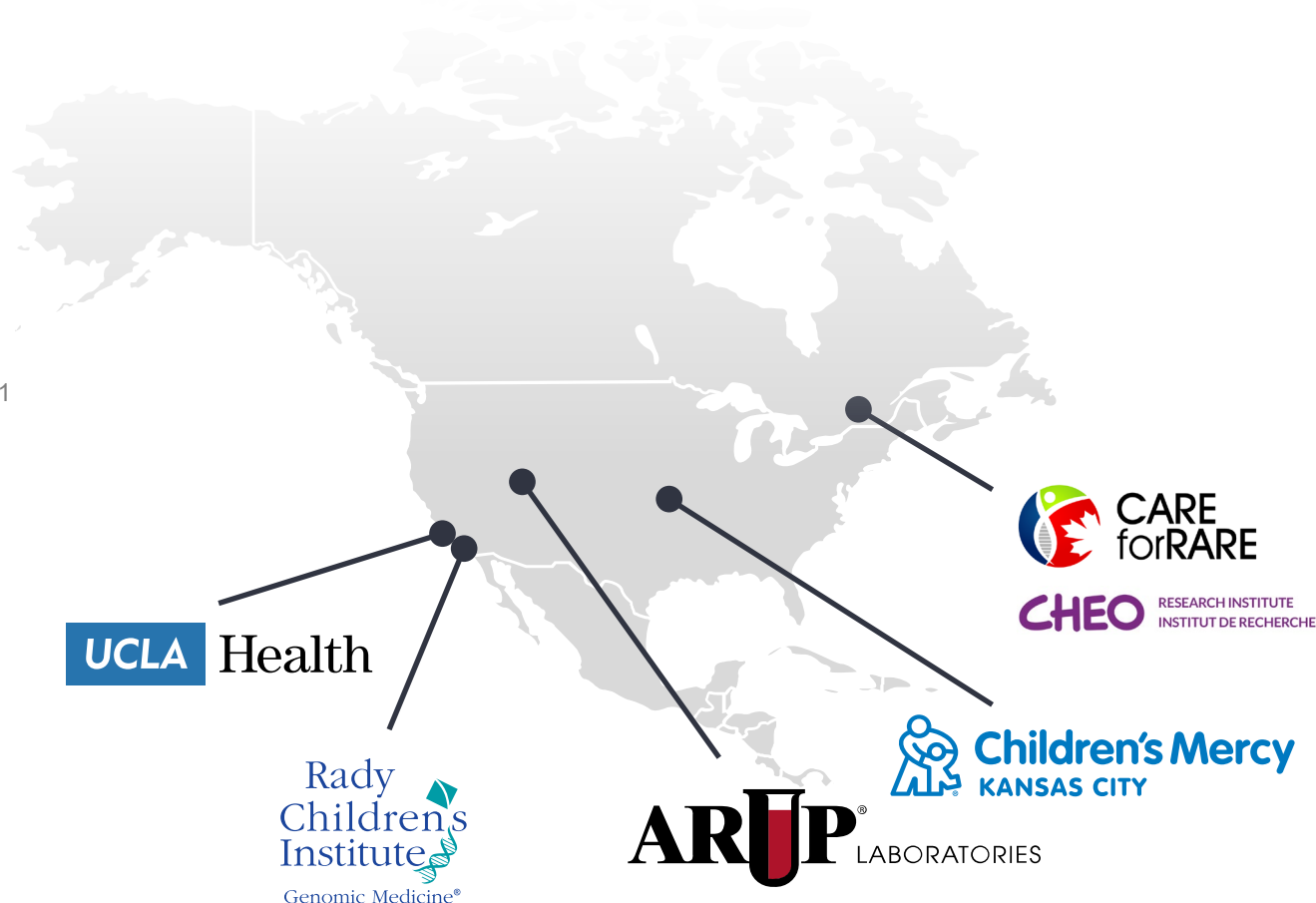
Collaborations demonstrating increased potential of HiFi in clinical research

*“Incorporating structural variants (SVs) from genome sequencing (GS) added up to 13% of new diagnoses in previously unsolved cases. **HiFi-GS yielded increased discovery rate with >4-fold more rare coding SVs than short-read GS.**”*

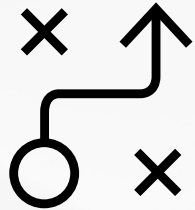
– Genomic Answers for Kids/ Children’s Mercy Kansas City¹

*“Long-read sequencing can identify numerous variants, both small and structural that are not readily detectable by short reads. **The number of small coding variants in disease genes missed by short reads is of particular concern** and may impact the overall diagnostic rate for critically ill children.”*

– Matthew Bainbridge, Rady Children’s Hospital²

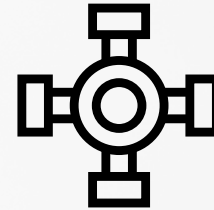


2022 strategic priorities build on our 2021 successes



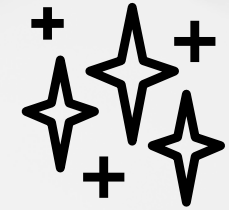
Execution matters

Leverage commercial investment to drive continued HiFi and Sequel II/IIe adoption



Progress product pipeline

Demonstrate SBB as differentiated short-read offering + drive future HiFi platform development



Delight our customers

Deepen customer collaboration in clinical and a growing list of new applications

Significant improvements in efficiency + usability to Sequel IIe in 1H 2022



**SMRTbell
prep kit 3.0**

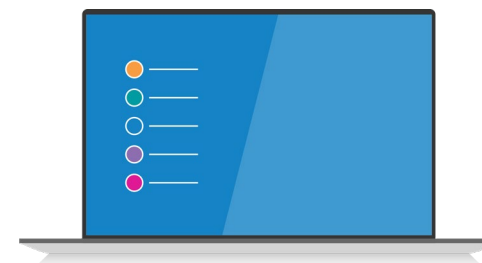


**Template binding
kits 3.1/3.2**

40% less DNA required

>60% reduction in hands-on time

>30% fewer tubes required



**SMRT Link
v11.0**



**5-methylcytosine
detection**

Methylation calling on instrument

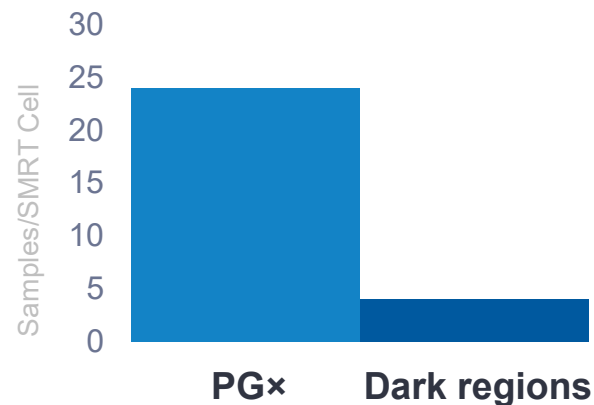
Gene editing QC workflow

High-throughput sample setup

Expanding ecosystem enables customers to achieve more with Sequel II/IIe

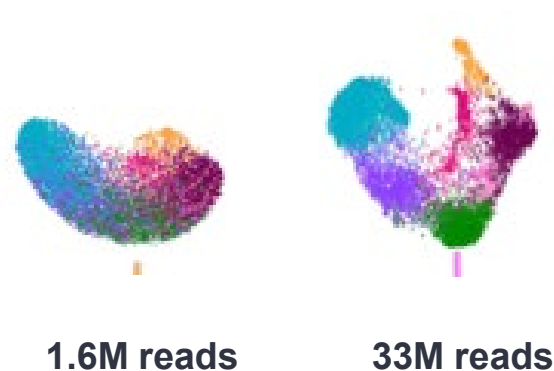
More samples

Community panels



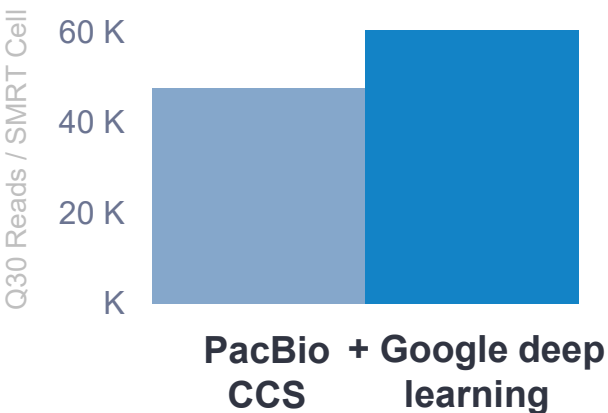
More reads

Single-cell Iso-Seq



More data

Deep learning technologies



Partnership to help the 75%¹ of families with unexplained rare disease cases after short-read sequencing



“This study represents our continued commitment to the 100,000 Genomes Project participants, and also to our quest to seek out the benefits of new disruptive technologies.”

Parker Moss

Chief Ecosystem & Partnership Officer, Genomics England



Berry Genomics partnership to purchase 50+ desktop systems at launch



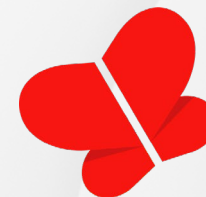
Announcing development of first **desktop HiFi-based** sequencing platform



Makes HiFi sequencing **more accessible** to new labs for targeted assays and panels



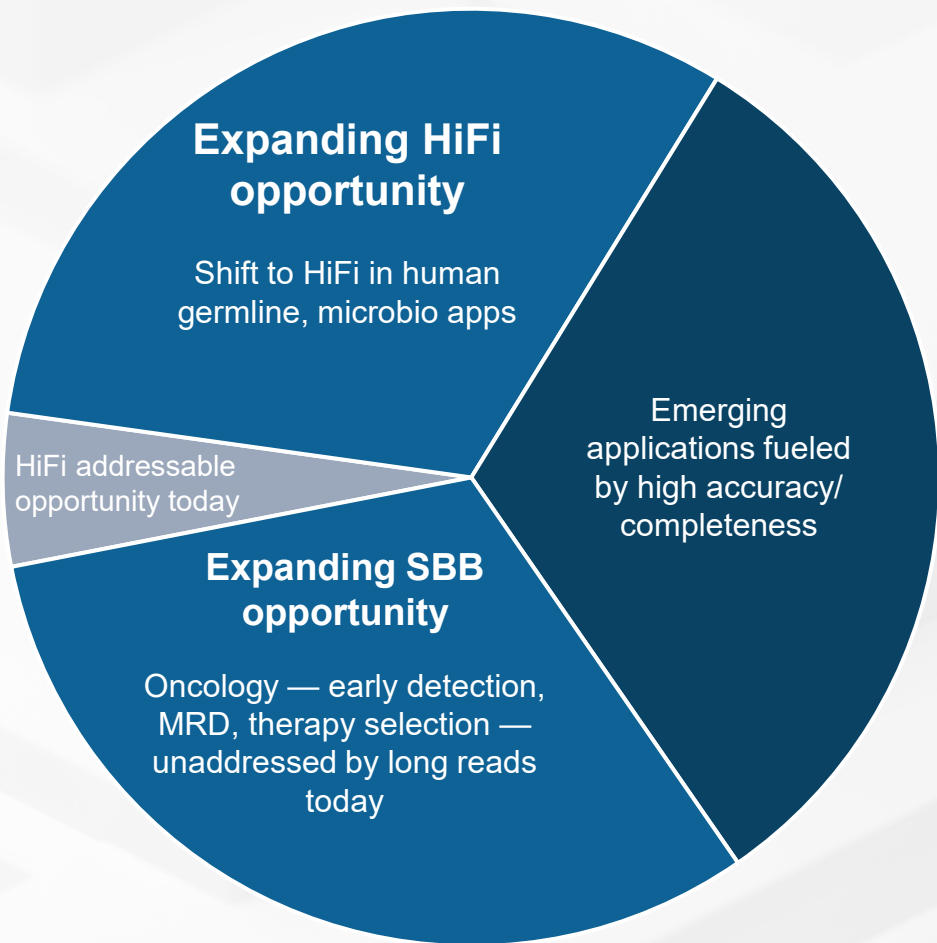
Initial focus on **Chinese distributed market** through NMPA but will be **commercialized globally**



BerryGenomics
贝瑞基因

Short-read sequencing is a multi-billion-dollar revenue opportunity for PacBio

SEQUENCING OPPORTUNITY



A more accurate short-read technology gives customers **flexibility**

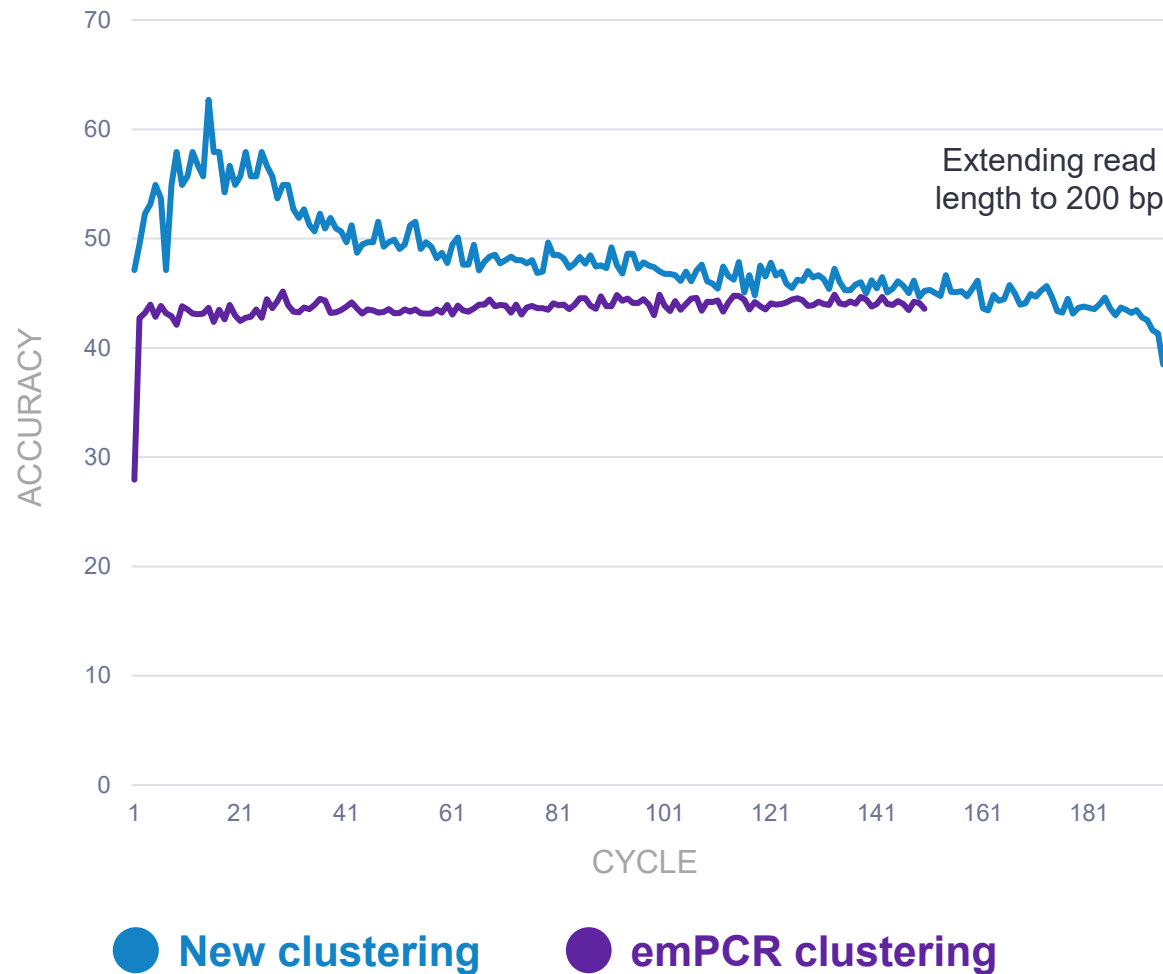


A more diversified product portfolio drives PacBio **scale**



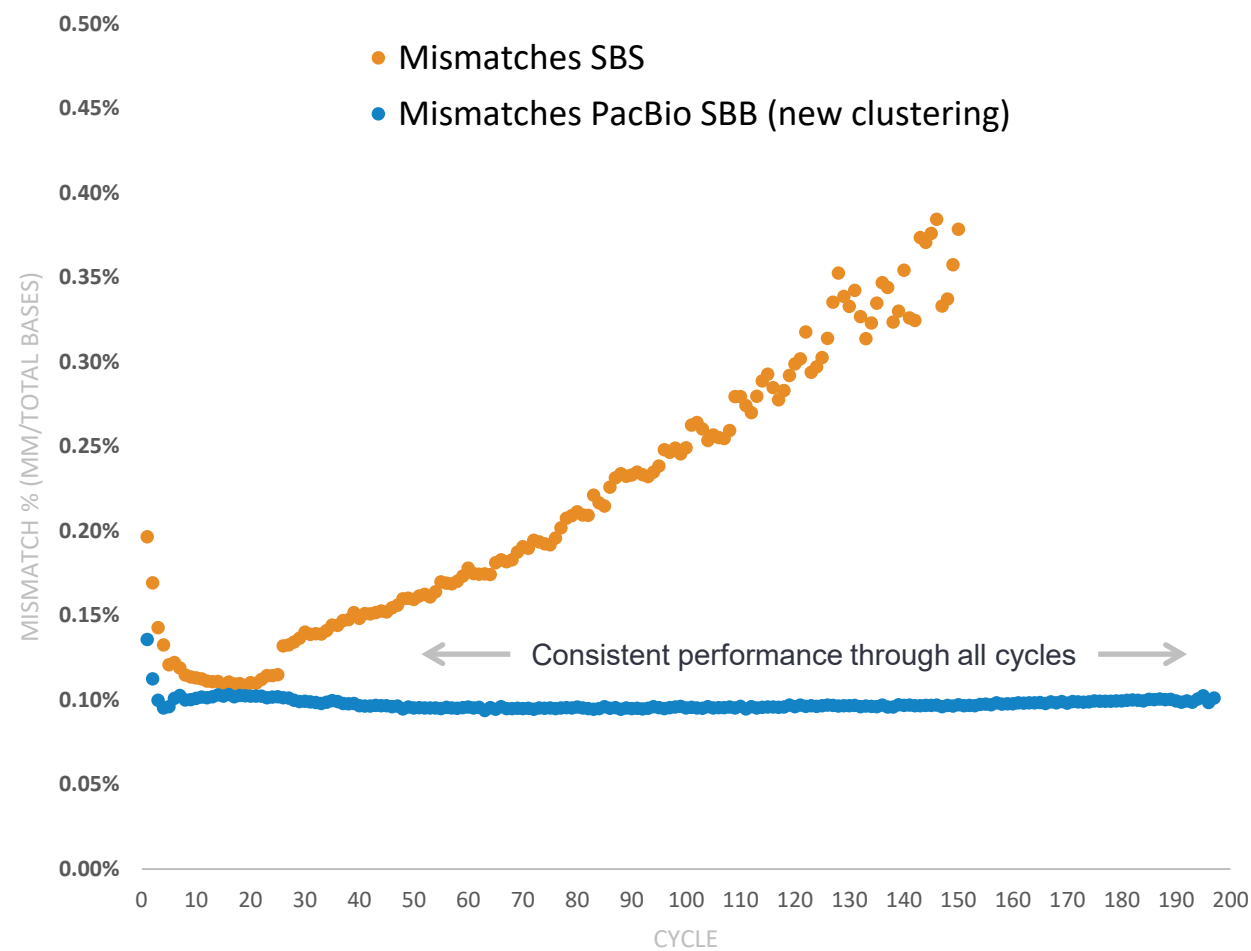
Ultimately allows PacBio to participate in highest growth short-read **clinical** applications like oncology

Implemented novel clustering method to vastly improve SBB performance



Even lower error rate than original emulsion PCR method

SBB demonstrates greater accuracy + consistency vs current technologies



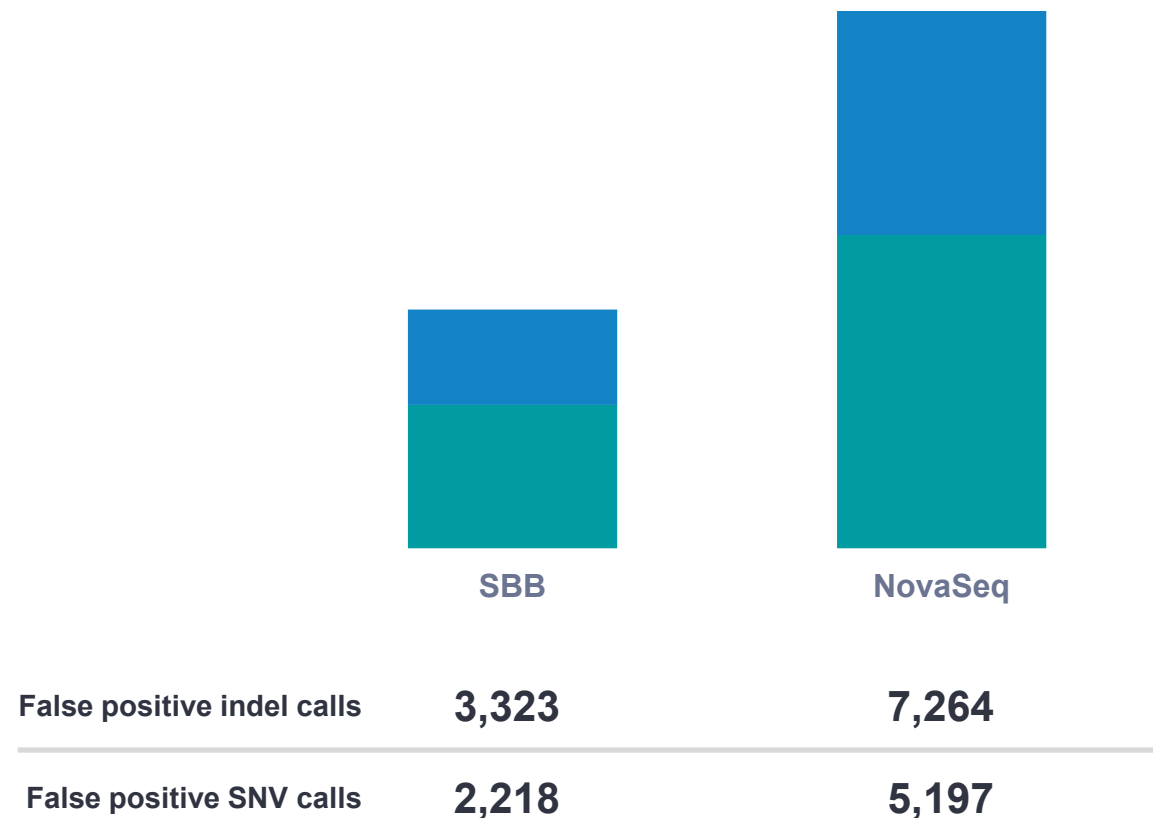
Even lower error rate than original emulsion PCR method



Reaches 0.1% “true variation level” between the sample and reference

Mismatch rate by cycle

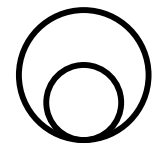
Higher accuracy translates to lower false positive base calls



Even lower error rate than original emulsion PCR method

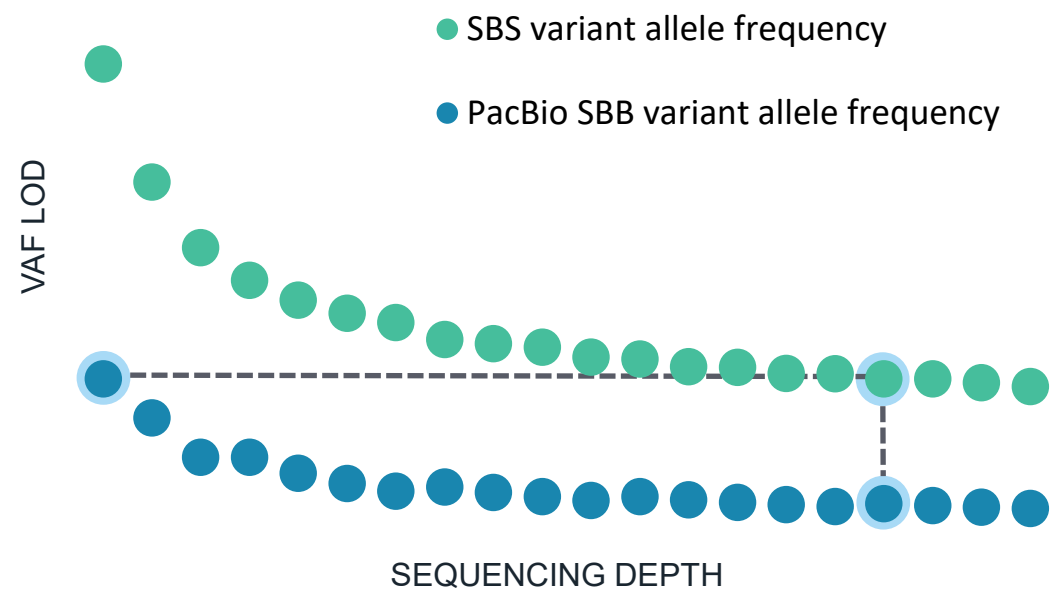


Reaches 0.1% “true variation level” between the sample and reference



SBB over 2× lower false positives than SBS

SBB accuracy will help realize the full potential of liquid biopsy



Higher
sensitivity



Detect even
lower VAF



Maximize use
cases (MRD, etc.)

Lower
depth



Lower compute
+ storage needs



Reduce complexity
(UMIs, etc.)

Customer collaborations accelerate SBB entry into liquid biopsy applications



INVITAE



Canexia
Health™

Key takeaways



Transformation in 2021 set the foundation for growth



Only company with both long- and short-read sequencing technologies¹



Our sequencing tech continues to lead the industry in both accuracy + completeness



Multiple platform development programs underway, which are expected to drive growth

PacBio

**We create some of the world's most
advanced sequencing technologies.**

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