



Writing the Future

EMILY LEPROUST, PH.D., CEO and CO-FOUNDER



Legal Disclaimers



This presentation contains forward-looking statements. In particular, statements regarding Twist Bioscience Corporation's "Twist" expectations regarding its future financial performance, the impact of the COVID-19 pandemic on Twist's future financial performance, Twist's ability to address the challenges posed by the business and economic impacts of COVID-19 pandemic, diversification and revenue growth across all product categories, introduction of new products, expectations to announce new partnerships in 2020, and expectations and objectives of management constitute forward-looking statements. Forward-looking statements can be identified by the fact that they do not relate strictly to historical facts and generally contain words such as "believes," "expects," "may," "will," "should," "seeks," "approximately," "intends," "plans," "estimates," "anticipates," and other expressions that are predictions of or indicate future events and trends and that do not relate to historical matters. Although the forward-looking statements contained in this presentation are based upon information available at the time the statements are made and reflect management's good faith beliefs, forward-looking statements inherently involve known and unknown risks, uncertainties and other factors, which may cause the actual results, performance or achievements to differ materially from anticipated future results. Important factors that could cause actual results to differ materially from expectations include, among others: the risks and uncertainties of the duration, extent and impact of the COVID-19 pandemic, including any reductions in demand for Twist's products (or deferred or canceled orders) globally or in certain regions; the ability to attract new customers and retain and grow sales from existing customers; risks and uncertainties of rapidly changing technologies and extensive competition in synthetic biology could make the products Twist is developing obsolete or non-competitive; uncertainties of the retention of a significant customer; supply chain and other disruptions caused by the COVID-19 pandemic or otherwise; risks of third party claims alleging infringement of patents and proprietary rights or seeking to invalidate Twist's patents or proprietary rights; and the risk that Twist's proprietary rights may be insufficient to protect its technologies. You should not place undue reliance on these forward-looking statements, which speak only as of the date hereof. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. Factors that may cause actual results to differ materially from any future results expressed or implied by any forward-looking statements include the risks described in the "Risk Factors" section of our Annual Report on Form 10-K for the year ended September 30, 2019, and our Quarterly Report on Form 10-Q for the three months ended March 31, 2020, as well as those set forth from time to time in our other SEC filings, available at <http://www.sec.gov>. We do not undertake to update or revise any forward-looking statements after they are made, whether as a result of new information, future events, or otherwise, except as required by applicable law. We do not undertake to update or revise any forward-looking statements after they are made, whether as a result of new information, future events, or otherwise, except as required by applicable law.

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Neither we nor any other person makes any representation as to the accuracy or completeness of such data or undertakes any obligation to update such data after the date of this presentation. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

By attending or receiving this presentation you acknowledge that you will be solely responsible for your own assessment of the market and our market position and that you will conduct your own analysis and be solely responsible for forming your own view of the potential future performance of our business.

DNA is Changing the World

Synthetic DNA Is the Future of Everything



CHEMICALS
Sustainability



FOOD
Food Security



THERAPEUTICS
Health

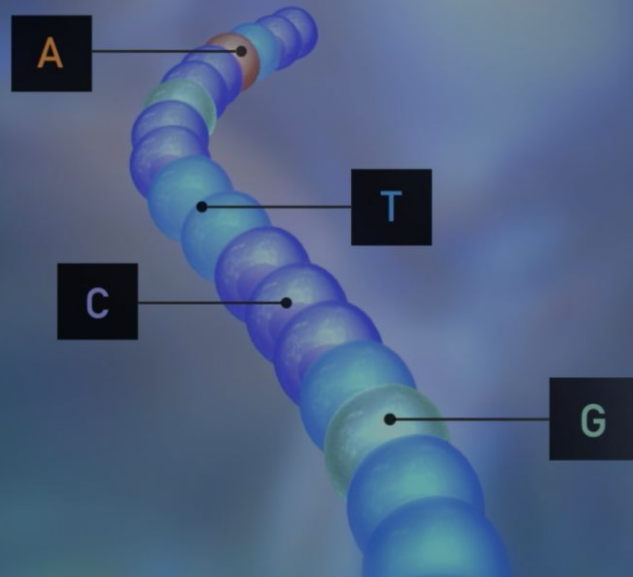


DIAGNOSTICS
Precision Medicine



DATA STORAGE
Preserving Heritage





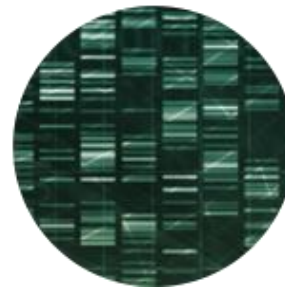
Writing the Future

Our silicon-based DNA synthesis platform is fueling a world of applications



Miniaturization

10^{3-6} less volume of required reagents



Throughput

20M oligos/month capacity



Low cost

Driving adoption



We are Building a Diverse Portfolio of Businesses



Drug
Discovery

Data
Storage

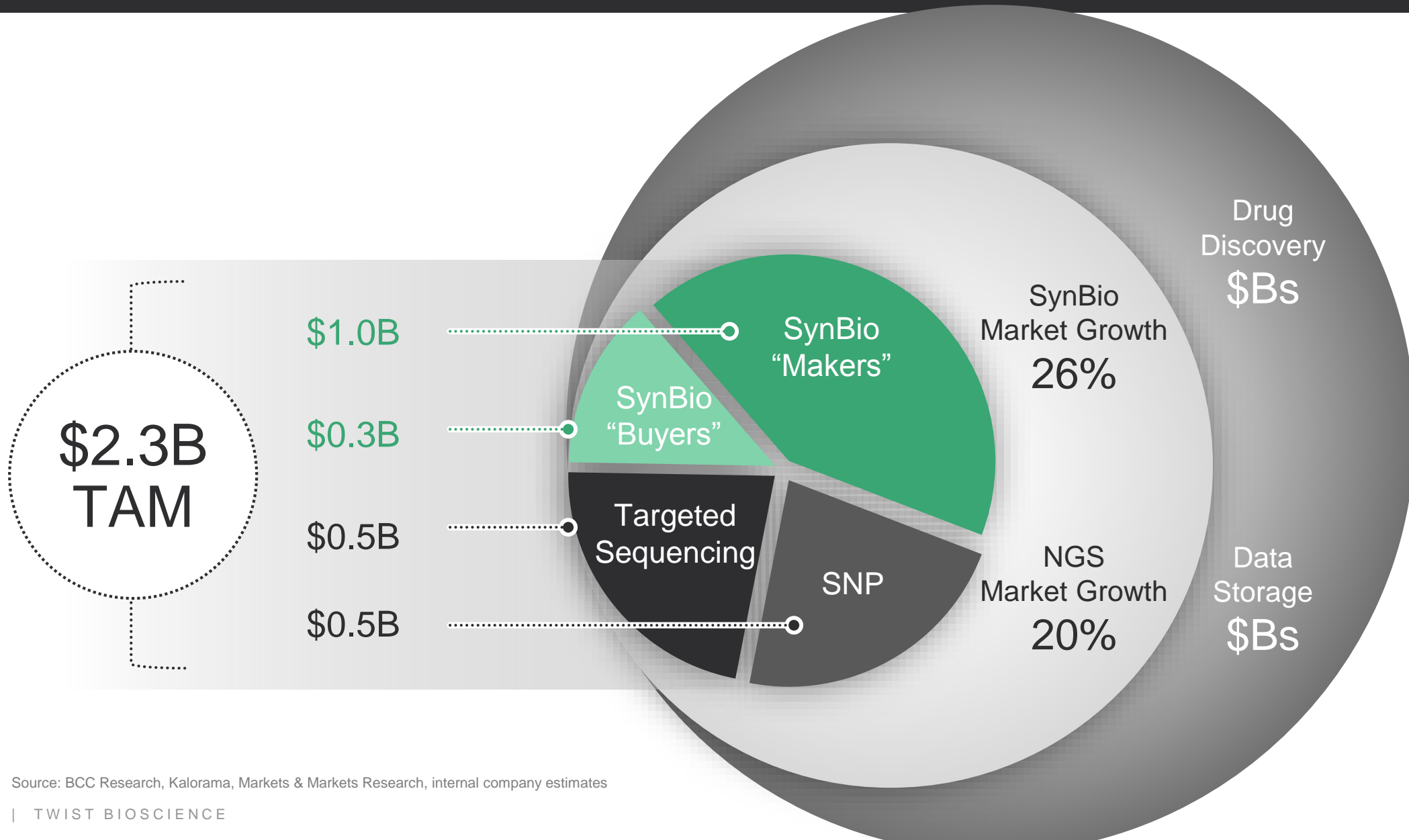
**High-value
solutions**
Future upside

Tools
High-growth
revenue today

Synthetic
Biology

Next-Gen
Sequencing

Large and Expanding Addressable Market

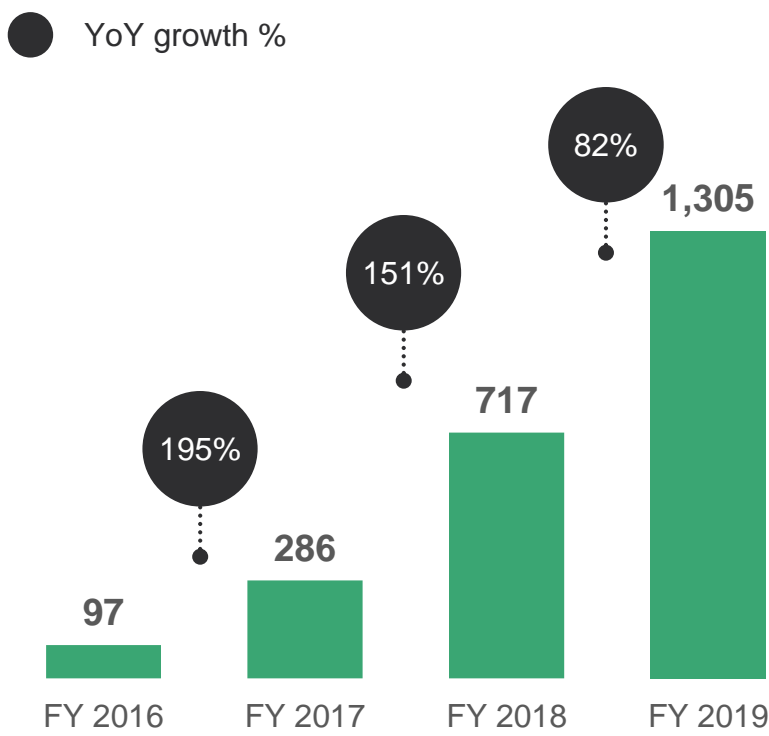


Source: BCC Research, Kalorama, Markets & Markets Research, internal company estimates

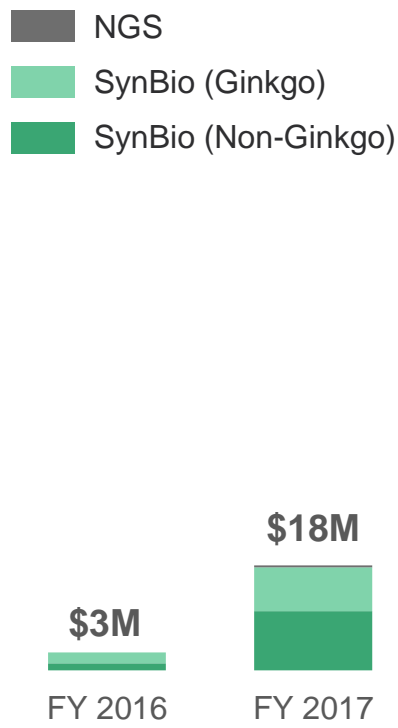
NGS Contribution to our Core Business



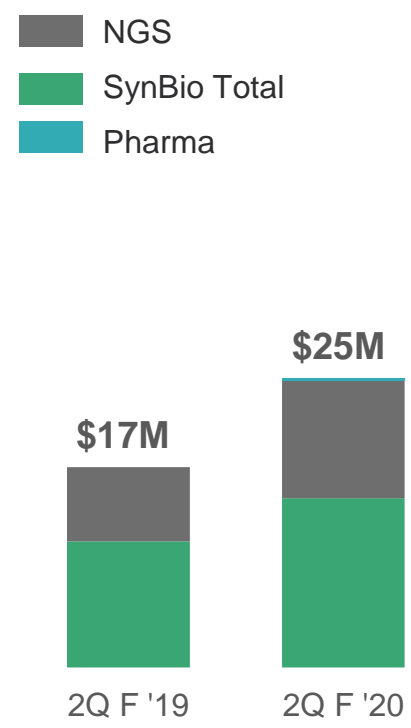
Total Customers (SynBio & NGS)



Orders



Orders

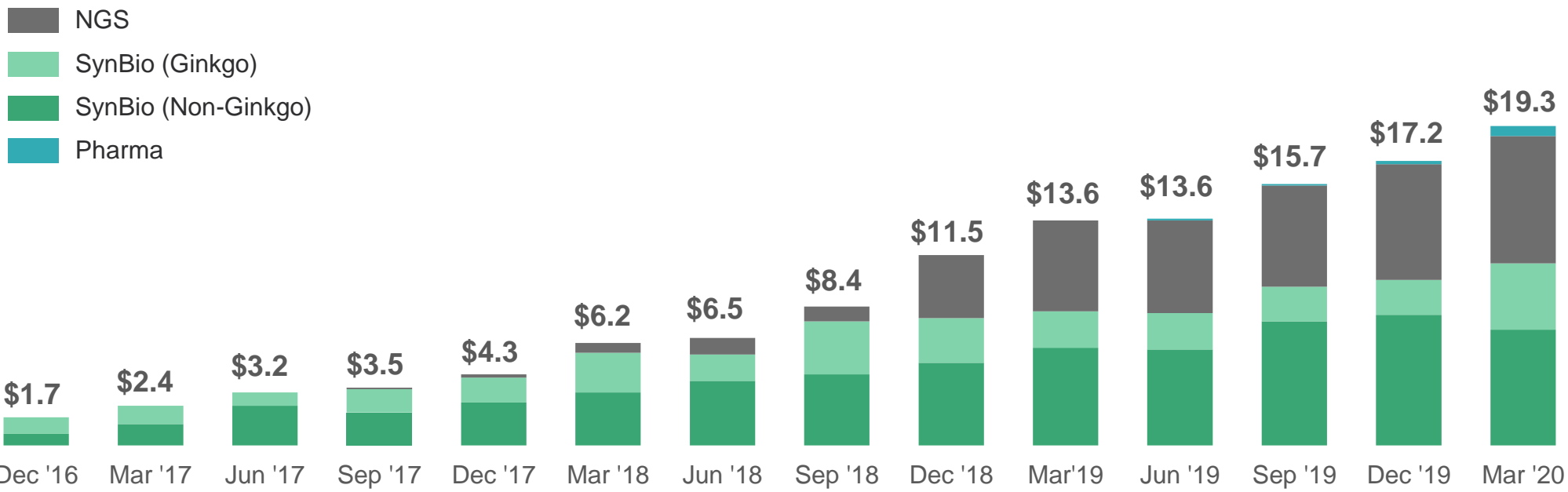


FY Ends September 30

Quarterly Revenue Growth



Revenue (\$M)



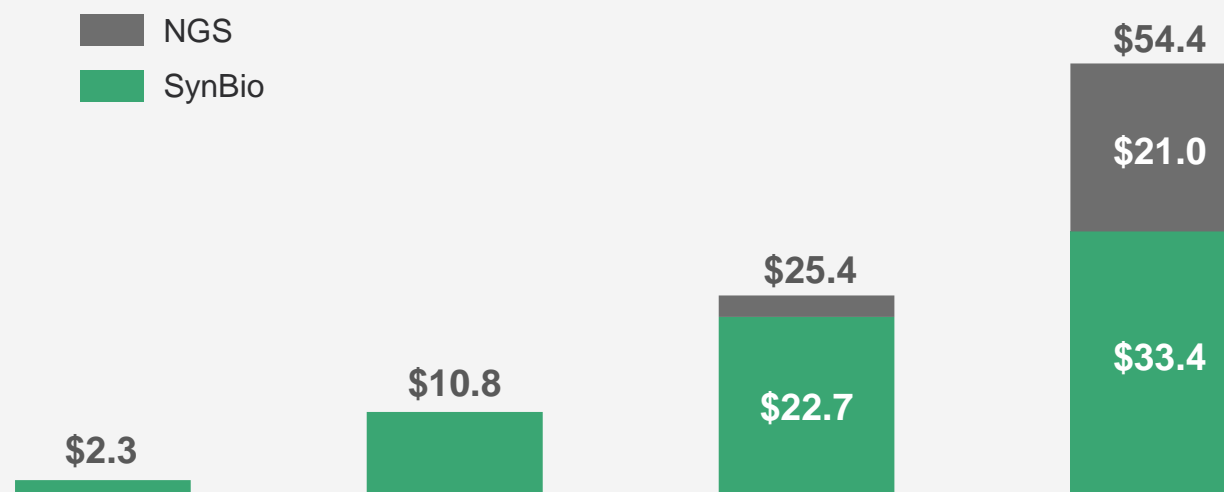
	FY 2017					FY 2018				FY 2019			1H FY 2020	
QoQ Growth	--	44%	31%	9%	24%	43%	6%	27%	37%	18%	0%	15%	10%	12%
YoY Growth	--	--	--	--	153%	158%	106%	139%	167%	120%	109%	87%	49%	42%

FY Ends September 30

Strong Revenue Growth and Increasing Gross Margin



Revenue (\$M)



- Strong 1H FY2020 Revenue of **\$36.5M**
- Strong 1H FY2020 Orders of **\$49.4M**
- 1H FY2020 GM of **25%**
- **No FY2020 Guidance**

	FY 2016	FY 2017	FY 2018	FY 2019
Gross Profit (\$M)	(\$7.2)	(\$13.3)	(\$6.8)	\$7.0
Gross Margin %	N/M	N/M	N/M	13%
Net Operating Loss (\$M)	(\$43.7)	(\$58.5)	(\$70.6)	(\$108.9)

FY Ends September 30

Important Coronavirus Products



Twist offers products in several key areas that enable rapid, efficient research into tools to combat pandemics like the new coronavirus, 2019-nCoV

1. Producing SARS-CoV-2 RNA positive controls

- Allows researchers to verify and validate tests

2. Making SARS-CoV-2 and custom NGS enrichments panels

- Allows researchers to track the virus and target specific segments of the virus they'd like to study

3. Making specific genes and gene mutants of interest

- Enables researchers to study a wide array of genes associated with the virus, as well as mutants, develop new potential treatments, diagnostic tests

4. Discovering competitive antibodies to SARS-CoV-2 S1 spike protein and ACE2 cellular receptors

- Could potentially be used for diagnostic tests or therapeutic treatments



We are Building a Diverse Portfolio of Businesses



Drug
Discovery

Data
Storage

**High-value
solutions**
Future upside

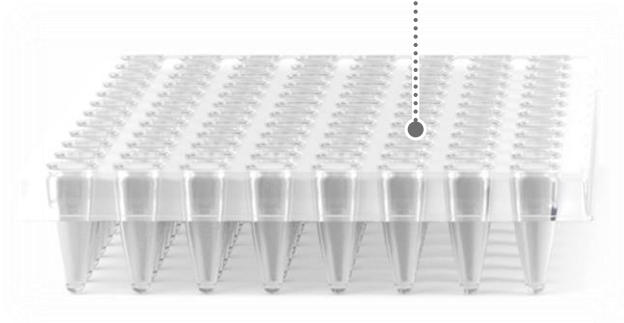
**Synthetic
Biology**

**Next-Gen
Sequencing**

Tools
High-growth
revenue today

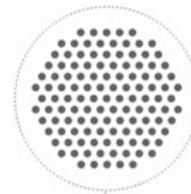
Everyone else

1 oligo per well



96 Well Plate
makes 1 gene

T W I S T
BIOSCIENCE



1M oligos per chip



TWIST Silicon Platform
can make 9,600 genes

Up to
10,000x
more scale &
throughput



State of the art commercial infrastructure

.....

- Proprietary software
- Robotics
- Integrated ecommerce
platform with
order tracking
- Manufacturing
execution system

Synthetic Bio: Largest Selection of DNA Offered



Today



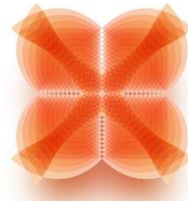
Genes

Clonal
Non-clonal
Fragments



Oligo Pools

sgRNA



Variant Libraries

Site saturation
Combinatorial

Roadmap

DNA preps*

IgG

Clonal-ready
gene fragments

*Recently launched

Innovative Online Ordering



T

M

CLONAL GENES

My Genes Project

OVERVIEW > GENE IMPORT > PRICING & SCORE

Change Vector + Flanks Optimize + Genes + Custom Vector

Q

#	<input type="checkbox"/>	NAME ↓	SEQUENCE	BP	VECTOR	SCORE ⓘ	PRICE
1	<input type="checkbox"/>	gene-001	ACTCGACTGACTAGC...	1264	Select Vector ▼	●	\$113.76
2	<input type="checkbox"/>	gene-002	ACTCGACTGACTAGC...	1014	Select Vector ▼	●	\$91.26
3	<input type="checkbox"/>	gene-003	ACTCGACTGACTAGC...	978	Select Vector ▼	●	\$88.02
4	<input type="checkbox"/>	gene-004	ACTCGACTGACTAGC...	848	Select Vector ▼	●	Fix it
5	<input type="checkbox"/>	gene-005	ACTCGACTGACTAGC...	1200	Select Vector ▼	●	\$108.00
6	<input type="checkbox"/>	gene-006	ACTCGACTGACTAGC...	1124	Select Vector ▼	●	\$101.16
7	<input type="checkbox"/>	gene-007	ACTCGACTGACTAGC...	1200	Select Vector ▼	●	Fix it
8	<input type="checkbox"/>	gene-008	ACTCGACTGACTAGC...	1087	Select Vector ▼	●	\$97.83
9	<input type="checkbox"/>	gene-009	ACTCGACTGACTAGC...	1200	Select Vector ▼	●	\$108.00

32 GENES • 26,400 BP

All (240)

● Easy (24)

● Difficult (4)

● Error (2)

● Not Possible (2)

PRICING SUMMARY ⓘ

NAME	QTY	COST
Easy Genes	24	\$2,376.00
Cloning Fee	24	\$1,300.00

DELIVERY FORMAT

☒ Plate: 96 Well, Horizontal

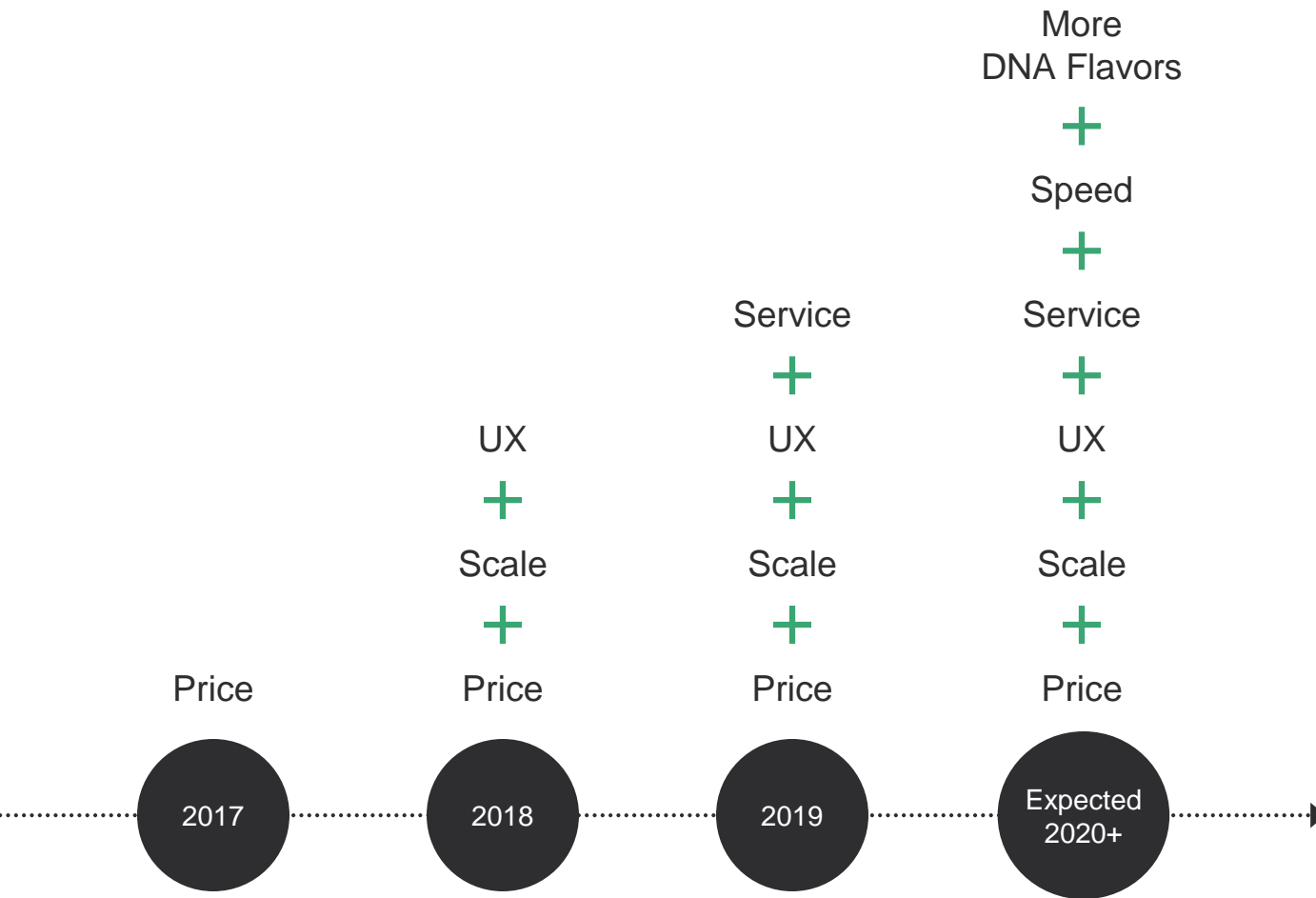
☐ Tube [Edit](#)

Total

\$3,676

Checkout

Synthetic Bio: Why We Win



We Deliver

- High quality DNA
- Competitive turnaround
- Affordability
- Fast throughput
- Unique customer experience
- Innovation



1,000+
Customers

8B
Bases shipped

288K
Genes shipped

98%
Orders via ecommerce

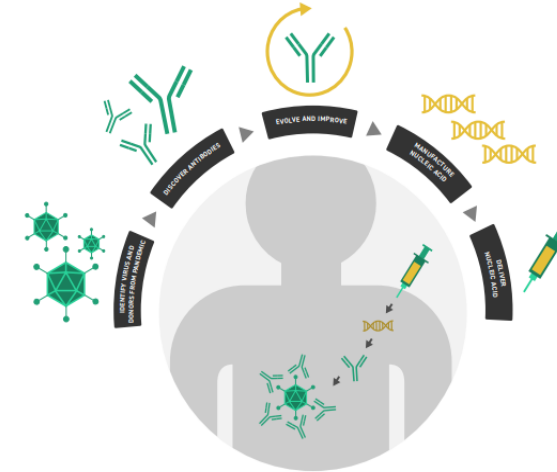


VANDERBILT
UNIVERSITY
MEDICAL
CENTER

Case Study

P3 PANDEMIC PREVENTION PLATFORM

Rapid response to help medical workers
fight viral diseases in the field



Twist delivered hundreds of genes in 9 business days for first DARPA sprint

“Twist’s very high-throughput platform allowed us to quickly and efficiently examine thousands of possible antibodies in order to select the best results faster than ever before.”

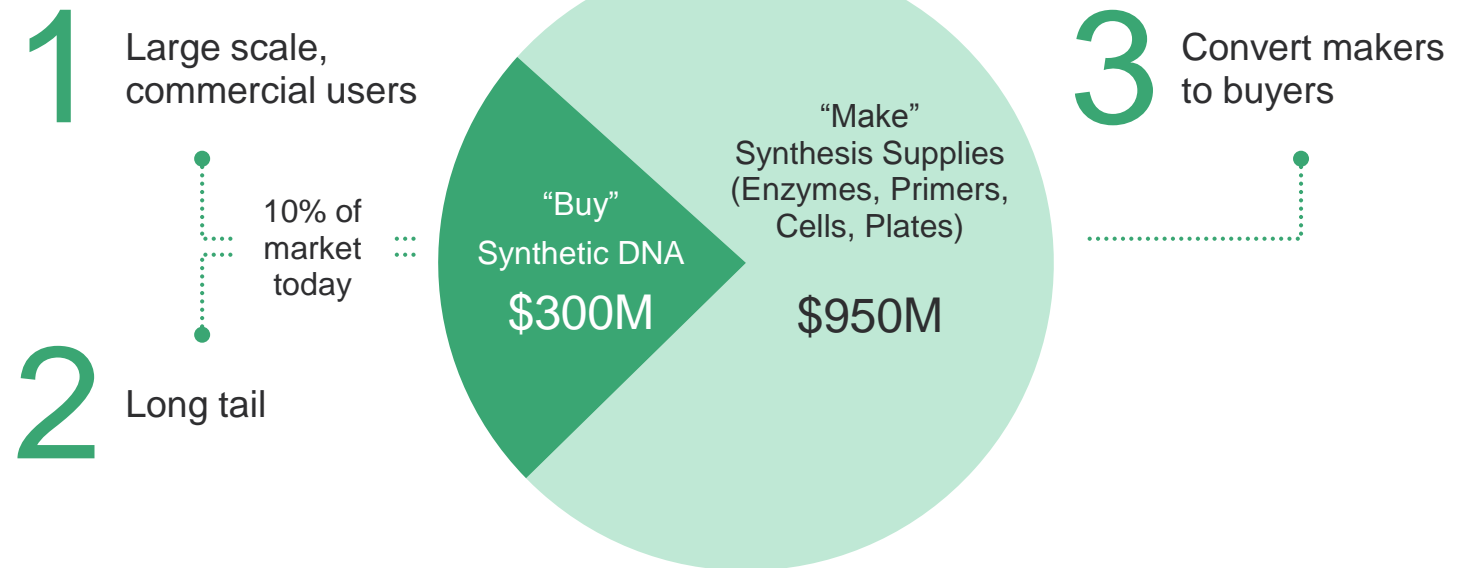
Robert Carnahan, Associate Director, Vanderbilt Vaccine Center

Ecommerce-centric Velocity Sales GTM

- Growing sales team
- Expanding digital marketing
- Leveraging new product offerings

Strategy for Large Market

\$1.3B / year



Source: BCC Research, Markets and Markets Report, internal company estimates



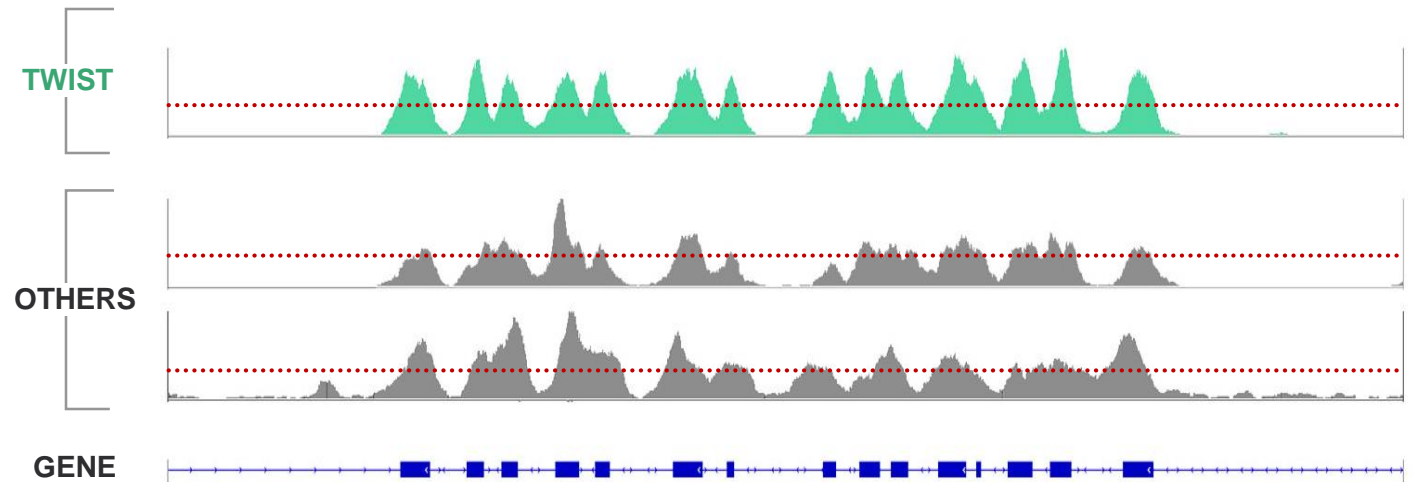
Targeted Sequencing

is powering new applications

- Liquid biopsy
- Rare disease
- Oncology
- Population genetics

Twist NGS Delivers Strong Uniformity in Double-Stranded DNA

EXON COVERAGE: GENE REGIONS OF INTEREST



NGS: Broad Offering with Expanding Capabilities



Today

Human Core Exome Kit
Human Comprehensive Exome Kit
Pan-Viral
Mouse Exome
Human RefSeq
Mitochondrial DNA
Custom Panels
Library Prep Kits
Fast Hyb & Wash Kit
Universal Adapters

Roadmap

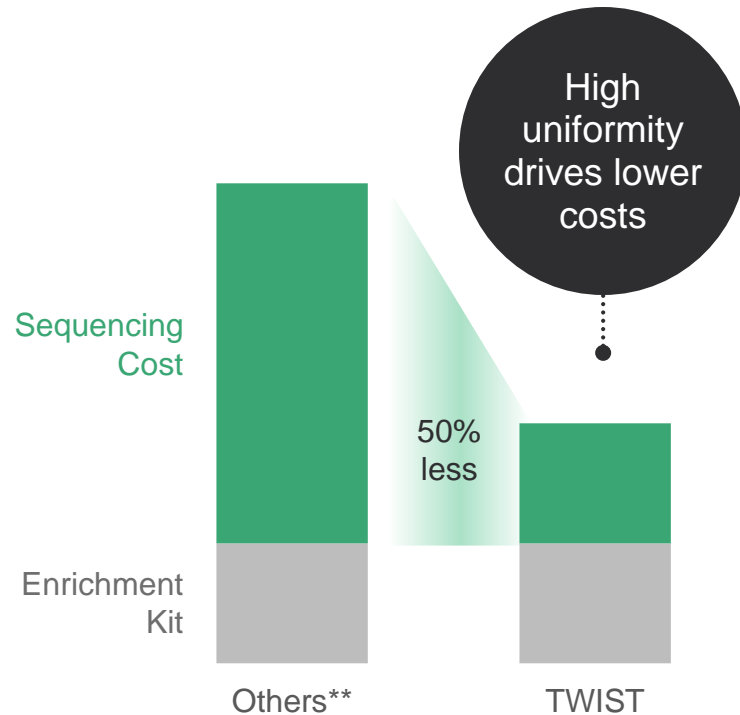
Targeted
Methylation*

Oncology

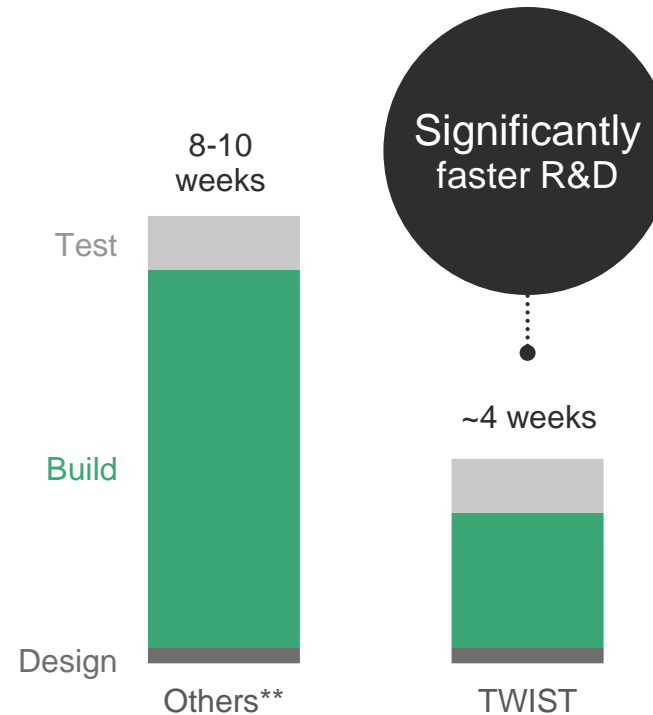
SNP Microarray
conversion to NGS

***Recently launched**

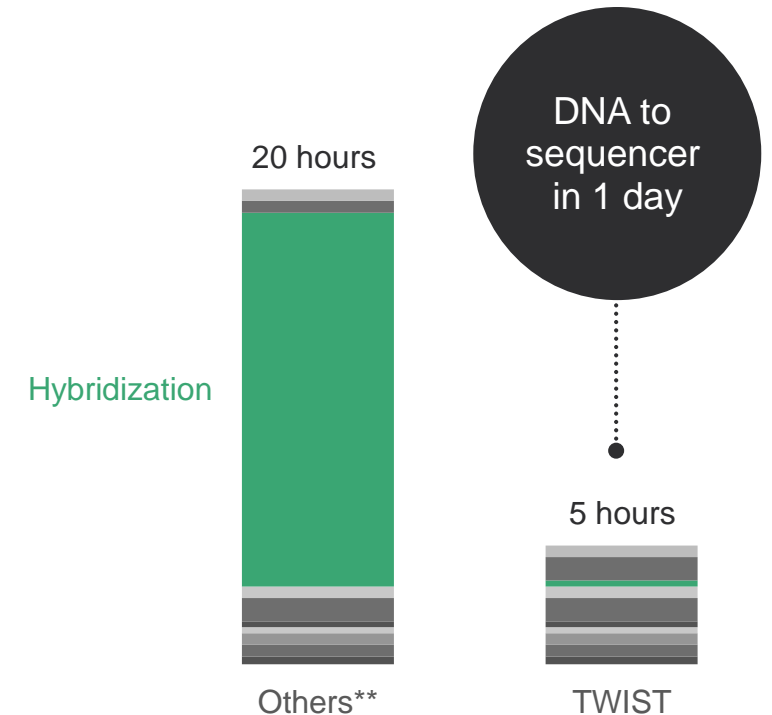
Low Cost per Sample



Rapid Customization



Fast Throughput*



*Includes pooling 1 & 2, pre-hybridization, hybridization, binding, wash steps, amplification, purification, target environment QC, and NGS prep

**Illustrative models based on company knowledge of competing technologies.

411

Customers shipped

43

in production

2

OEM partners

2

SNP microarray conversion

Exciting Use Cases



Liquid biopsy



Degraded DNA



SNP

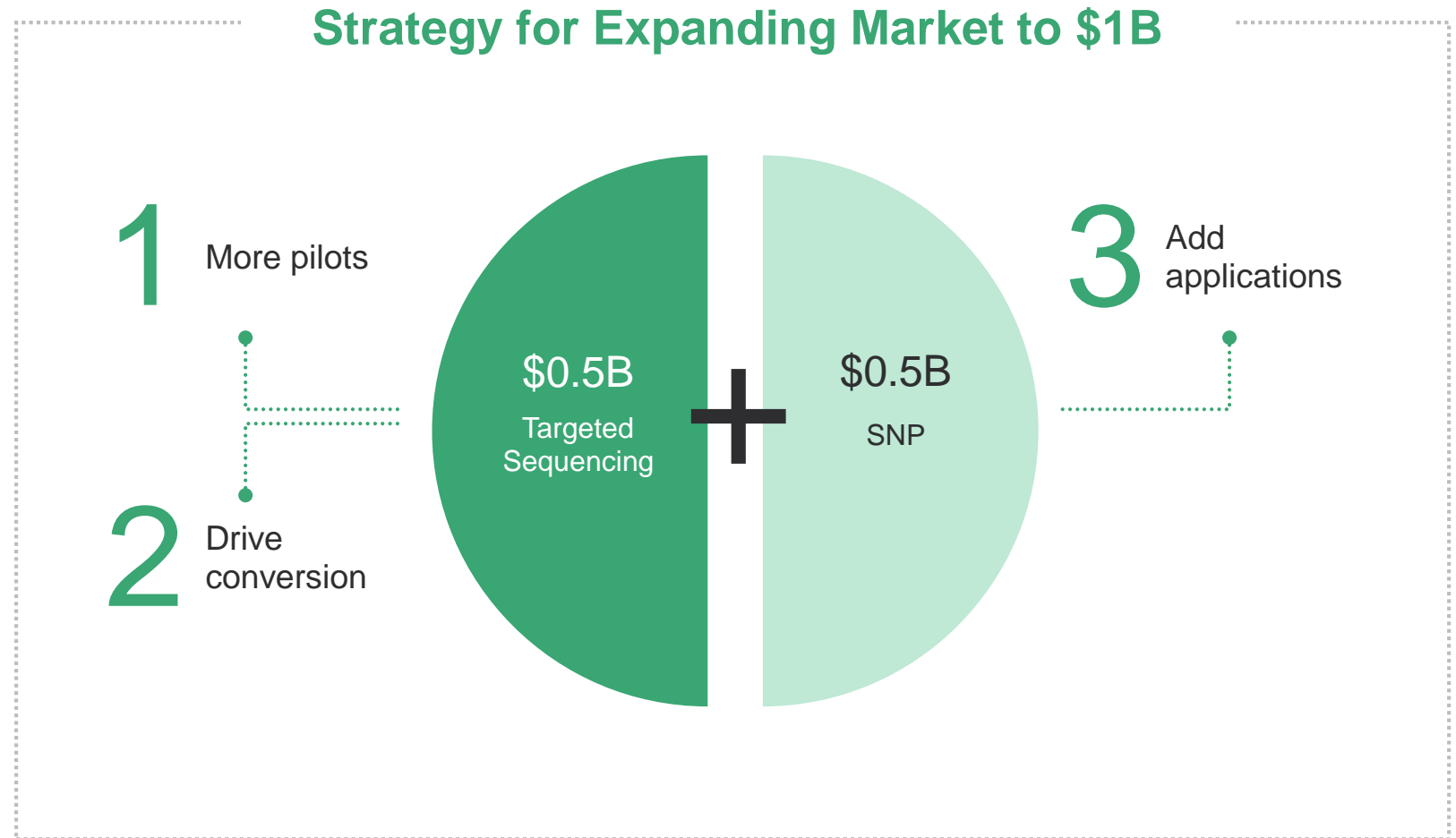
Blueprint
Genetics



Rare disease

Solution Selling GTM

- Growing sales team
- Adding OEM partners



NGS Products Addressing COVID-19



We are leveraging our DNA synthesis platform to launch new products for SARS-CoV-2 testing

Synthetic SARS-CoV-2 RNA Control 1 and Control 2

- Positive controls: NGS and (RT-PCR) assays
- QC for the development, verification and ongoing validation of diagnostic tests
- Included on the U.S. Food and Drug Administration (FDA) website as reference materials for SARS-CoV-2

SARS-CoV-2 Research Panel

- Target enrichment panel for viral detection & characterization of SARS-CoV-2
- Environmental monitoring and surveillance testing
- Track viral evolution and strain origin



BIO SAFETY



STORAGE TEMP



SPECIFICATION RANGE

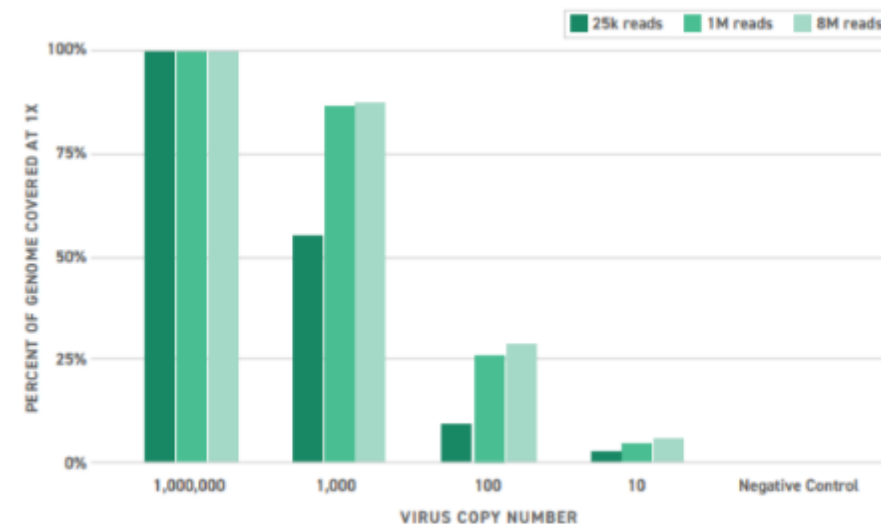


Figure 1. Coverage of SARS-CoV-2 genome at different viral copy numbers with varying total reads.



We are Building a Diverse Portfolio of Businesses



Drug
Discovery

Data
Storage

**High-value
solutions**
Future upside

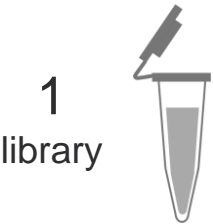
Tools
High-growth
revenue today

Synthetic
Biology

Next-Gen
Sequencing



Everyone else



Twist

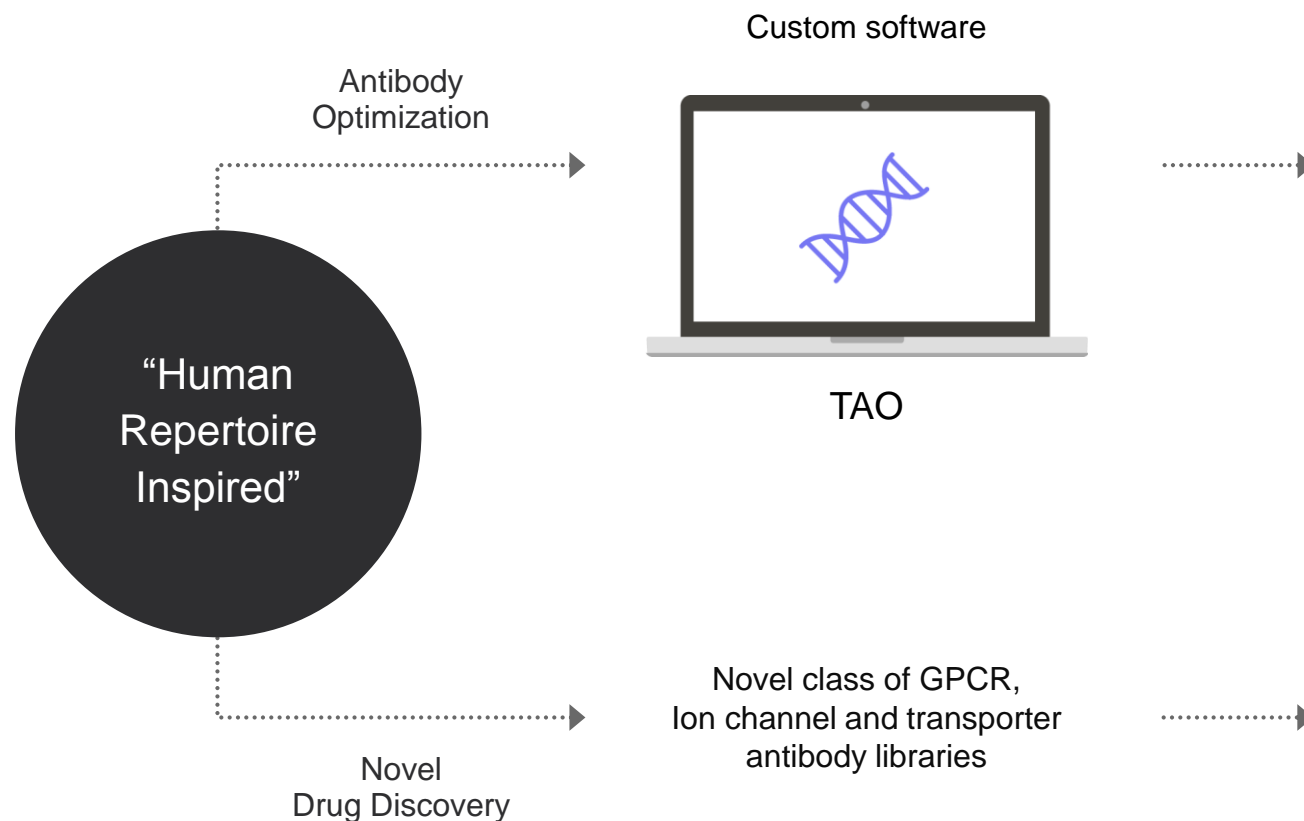
Pan hundreds
of antibody libraries
against every target

LIBRARY
OF
LIBRARIES

Random	DNA	Human repertoire
Low	SCALE	High
Manual	PROCESS	Automatic
100s	STAFF	10

We are working to monetize our investment by building royalty and milestone streams

Discovering Bio-Betters and Hard-to-Drug Targets



Bio-Betters

High Diversity, High Quality Molecules

- Affinity (pM)
- Half-life
- Expression
- Immunogenicity
- Solubility
- Druggability

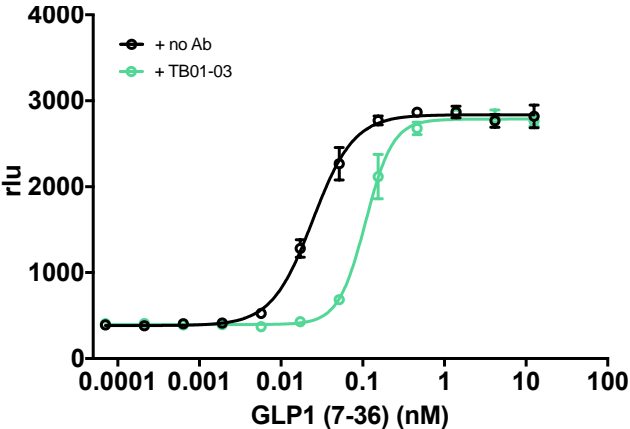
Hard-to-Drug Targets

Leveraging technology to develop novel therapeutics for promising targets

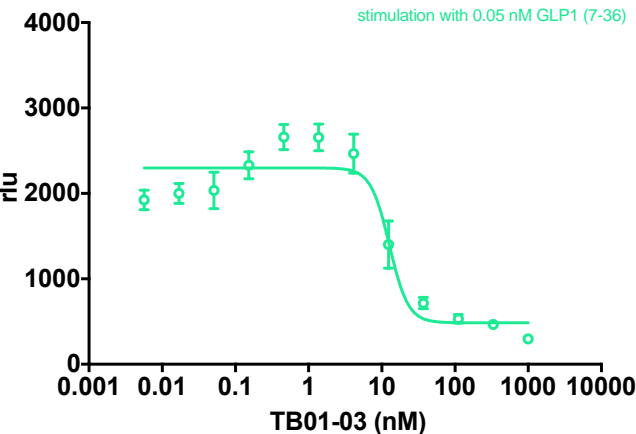
GPCR Development Candidate: TBO1-3 is Potent GLP1R Antagonist



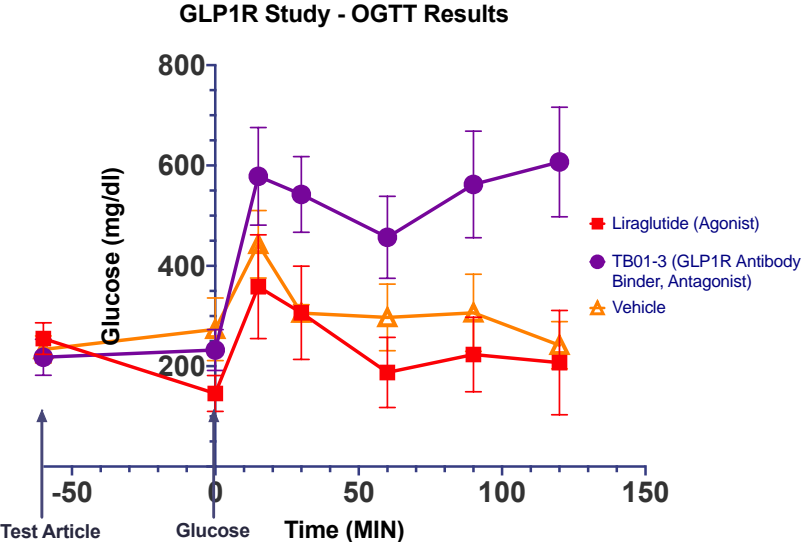
TBO1-3 Inhibits GLP1:GLP1R Signaling



Complete Inhibition at Higher Concentrations



In Vivo Efficacy with Glucose Tolerance Mouse Study



TB01-3 dosed animals maintain sustained high glucose levels after glucose administration, indicating GLP1:GLP1R signal blockade

Potential application for rare diseases such as severe hypoglycemia

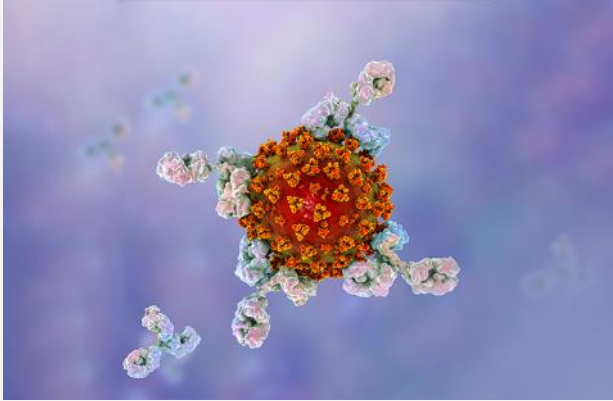
Pipeline of Functional Monoclonal Antibodies



GPCR TARGET	INDICATION
ADORA2A	Cancer
CRTH2	Asthma / inflammation
CXCR4	Cancer
CXCR5	Asthma / inflammation
FSHR	Infertility
GLP1R	Diabetes / rare metabolic diseases
V2R	Cancer

We are working to optimize these leads and leverage our platform for partnering discussions

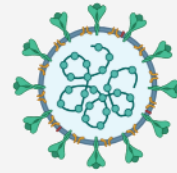
Antibodies for SARS-CoV-2 Diagnostics and Therapeutics Development



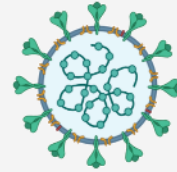
Identified dozens of monoclonal Abs

- Picomolar and nanomolar binding affinity
- From target to binders in 6 weeks
- Fully human and human-derived
- pM and nM affinity and strong competition to natural ligand

Anti-ACE2 Antibody



SARS-CoV-2 Virus

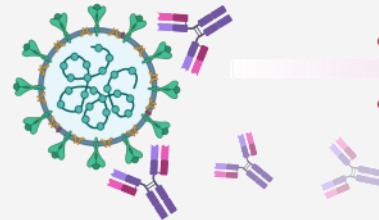


Infection




Epithelial Cell

Anti-S1 Protein Antibody



Biopharma Collaborations

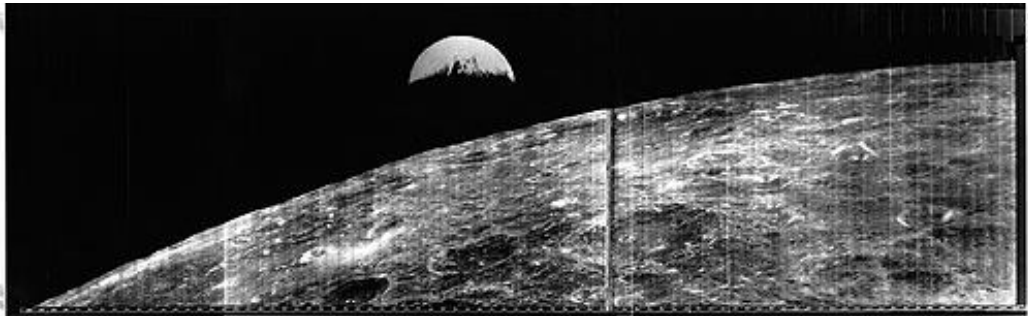


	 LakePharma <i>The Biologics Company</i>	 PANDION THERAPEUTICS	 SCHRÖDINGER	Undisclosed	Undisclosed
Focus	Co-marketing Twist services to their customers	Optimization of bispecific antibodies for autoimmune and inflammatory disease	Technology collaboration	Optimization of therapeutics	Cancer therapeutics
Economics	Shared economics	Per project	Collaboration on commercial opportunities	Per project	Milestones & Royalties

Twist **Data Storage**



Recovered from Lunar Orbiter 1 Tapes



**DNA for
Archival Storage of
Digital Information**

Permanence

Density

Random access

Universal format


Data Storage in DNA: How It Works



1 Coding

00	→	A
01	→	G
10	→	C
11	→	T


2 Synthesis



3 Storage



4 Retrieval



5 Sequencing



A G T T A C

6 Decoding

A	→	00
G	→	01
C	→	10
T	→	11

DNA Data Storage Non-Dilutive Funding



Twist Selected as DNA Synthesis Provider Under The Intelligence Advanced Research Project Agency (IARPA)

Collaborators



UNIVERSITY of
WASHINGTON



- Twist may receive up to \$9.15M
- Additional \$5.5 million designated to bolster DNA synthesis through new chip design, commercial implementation at Twist
- Significantly reduce the size, weight and power required for archival data storage
- Synthesize enough DNA per day to allow the cost of storing digital data to be as low as \$1/gigabyte
 - Ultimate Twist goal: Drive cost down to \$100/terabyte
- Bolster DNA synthesis through new chip design



I A R P A

NON-DILUTIVE
FINANCING

DNA Data Storage Estimated Roadmap



				vs. HARD DRIVE
Commercial Goal	\$1000 / Mb	\$1000 / Gb	\$100 / Tb	\$125 / \$25 / Tb
Engineering Goal	50µm	1µm	50nm	2nm / 3nm



Funding

Non-dilutive IARPA \$2.5M / yr

+

Twist \$2.5M / yr

Delivering on Our Plan



2019

What we said we'd do

- 5Kb gene, Twist API revenue diversification
- ISO certification, ecommerce platform, pilot conversion to full production
- Early POC, 2 collaborations
- Proof-of-concepts, increase density, CMOS chip
- Positive gross margin



SYNBIO

NGS

BIOPHARMA

DATA STORAGE

OPERATIONS

2020

Goals for 2020



Revenue growth and diversification, new products, enhanced ecommerce



Continued pilot, SNP conversion, products for liquid biopsy, oncology



Continued POC data packages, results for collaborators, 5-10 new collaborators



Execute on IARPA



Increased gross margin, completion of new writer introductions, improved TAT on genes



Writing the Future



Platform for writing DNA on silicon

Large, growing markets

Differentiated value proposition

Portfolio of high growth businesses

High revenue growth

Track record of execution and innovation

