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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM 8-K**

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**CURRENT REPORT  
Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported)  
November 27, 2018**

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**Twist Bioscience Corporation**

(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction  
of incorporation)

**001-38720**  
(Commission  
File Number)

**46-205888**  
(I. R. S. Employer  
Identification No.)

**455 Mission Bay Boulevard South  
Suite 545  
San Francisco, CA 94158**  
(Address of principal executive offices, including ZIP code)

**(800) 719-0671**  
(Registrant's telephone number, including area code)

**Not Applicable**  
(Former name or former address, if changed since last report)

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Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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**Item 7.01 Regulation FD Disclosure.**

Twist Bioscience Corporation (the “**Company**”) is furnishing this Current Report on Form 8-K in connection with the disclosure of information, in the form of a PowerPoint presentation (the “**Presentation**”), to be used by the Company at various meetings with certain investors. This information may be amended or updated at any time and from time to time through another Current Report on Form 8-K, a later company filing or other means. A copy of the Presentation is furnished herewith as Exhibit 99.1 and is incorporated into this Item 7.01 by reference.

The information contained in the Presentation should be considered in the context of the Company’s filings with the Securities and Exchange Commission and other public announcements the Company may make by press release or otherwise from time to time. The Presentation speaks as of the date of this Current Report on Form 8-K. By furnishing this Current Report on Form 8-K and furnishing the Presentation, the Company makes no admission as to the materiality of any information in this Current Report on Form 8-K, including without limitation the Presentation. The Company does not have, and expressly disclaims, any obligation to release publicly any updates or any changes in our expectations or any change in events, conditions, or circumstances on which any forward-looking statement in the Presentation is based.

The information furnished in this Item 7.01, including Exhibit 99.1, is being furnished and shall not be deemed to be “filed” for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section, nor shall it be deemed to be incorporated by reference into any registration statement or other document filed pursuant to the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such filing.

**Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits.

<b>Exhibit No.</b>	<b>Description</b>
99.1	<a href="#"><u>Presentation slide deck dated November 2018.</u></a>

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: November 27, 2018

Twist Bioscience Corporation

/s/ Mark Daniels

Mark Daniels  
Senior Vice President, Chief Legal Officer,  
Chief Ethics and Compliance Officer, and Secretary



# Powering the Synthetic Biology Revolution

November 2018

@TwistBioscience #WeMakeDNA



This presentation contains forward-looking statements. In particular, statements regarding future economic performance, finances, 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: our estimates of the size of our market opportunity; our expectations regarding our ability to increase gene production, reduce turnaround times and drive cost reductions for our customers; and our ability to enter new markets. You should not place undue reliance on these forward-looking statements, which speak only as of the date hereof. 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.

# Experienced Management Team



**Emily LeProust, PhD**  
President, CEO, Co-founder



Director, Applications  
and Chemistry R&D—Genomics



**Bill Banyai, PhD**  
COO, Co-founder



VP Hardware Engineering



**Bill Peck, PhD**  
CTO, Co-founder



Director Fluidic Systems



**Jim Thorburn**  
CFO



Chief Sales Officer and Co-Head of International



**Aaron Sato**  
CSO, Twist Pharma



Chief Scientific Officer



**Ray Tabibiazar**  
SVP Corporate Development



Founder and Executive Chairman



**Patrick Finn, PhD**  
VP Sales and Marketing



VP Sales



**Patrick Weiss**  
VP Operations



President and CEO



**Paula Green**  
VP Human Resources



VP Human Resources



**Mark Daniels**  
GC, Chief Ethics and  
Compliance Officer



VP Law and Deputy Chief Corporate  
Compliance Officer



## Writing Synthetic DNA on Silicon Platform

### KEY ADVANTAGES OF WRITING DNA ON SILICON



**MINIATURIZATION**  
10<sup>-6</sup> less volume of  
required reagents



**THROUGHPUT**  
20M oligos/month



**LOW COST**  
Driving adoption and new  
applications

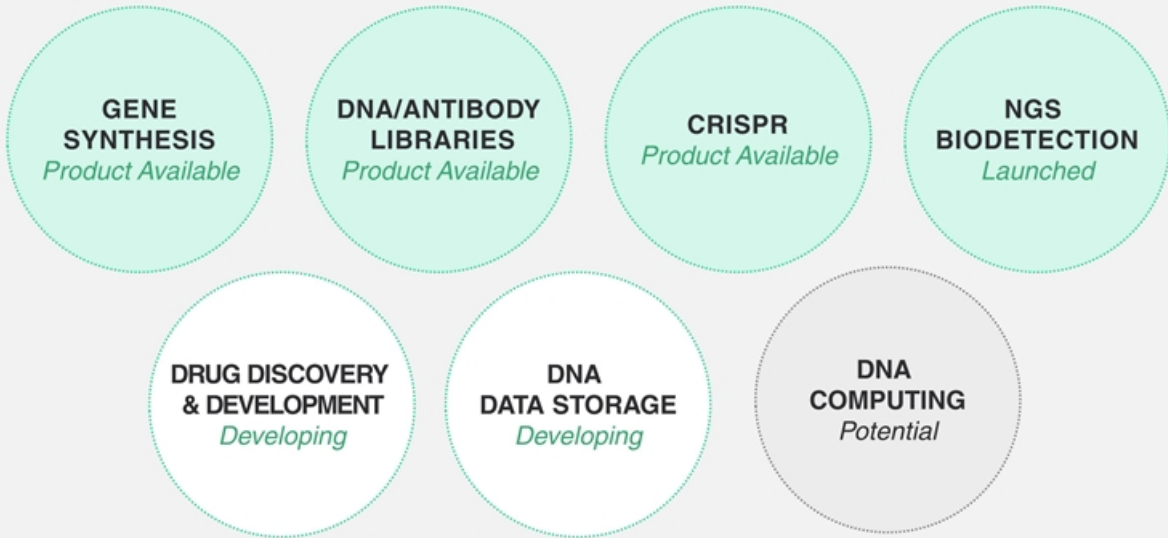


**VERSATILE PLATFORM**  
Broad applications

# Our Versatile DNA Synthesis Platform Has Broad Applications



Twist's versatile DNA synthesis platform has broad application across many enabling synthetic biology products, and we are just beginning...





# Our Strategy



SYNTHETIC BIOLOGY: GENE SYNTHESIS

GENOMICS: TARGETED NGS

OPEN NEW MARKETS

*Near-term strategic priorities*

*Long-term initiatives*

- Lead the Buyer market
- Convert Makers into Buyers

## Twist's advantages in...

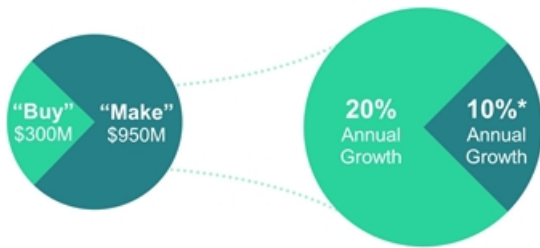
### Exome

- Performance
- Customization
- Full kit

### Custom

- Turnaround time
- Affordable pilot and scaling
- NGS QC on all probes

- Augment our product offering to meet the growing needs of our existing and potential new customers
- Expand into adjacent addressable markets
- Leverage our platform and industry partnerships to create new market opportunities for our products



\*Source: Markets and Market Molecular Biology (2014)  
BCC Research (2017)



DRUG DISCOVERY



DATA STORAGE

# Twist Bioscience Pipeline



MARKET OPPORTUNITIES	EXPLORATION	PROOF OF CONCEPT	BETA	COMMERCIAL	NEXT STEPS
<b>Synthetic Biology:</b> Synthetic Genes, DNA Libraries and Oligo Pools <sup>1</sup>					<ul style="list-style-type: none"> <li>• Continue to drive growth</li> <li>• Expand market adoption</li> </ul>
<b>Genomics:</b> Targeted NGS <sup>2</sup>					<ul style="list-style-type: none"> <li>• Drive adoption of our NGS products</li> <li>• Launch NGS e-commerce platform</li> </ul>
<b>Biological Drug Discovery and Development<sup>3</sup></b>					<ul style="list-style-type: none"> <li>• Validate GPCR library and Ab optimization solution</li> <li>• Establish partnerships</li> </ul>
<b>Digital Data Storage in DNA</b>					<ul style="list-style-type: none"> <li>• Continue to develop partnerships to explore digital data storage in DNA</li> </ul>

<sup>1</sup> Products addressing this market include clonal, non-clonal genes (gene fragments), oligo pools and DNA libraries

<sup>2</sup> Products addressing this market include NGS exome capture and NGS custom capture

<sup>3</sup> Products addressing this market include custom DNA libraries, our proprietary GPCR-targeting antibody library and our antibody optimization solution

# Twist's Platform Technology Addresses Multiple Large Market Opportunities



**\$1.3B**

## SYNTHETIC BIOLOGY

- Competitive Turnaround Time
- Lower Cost
- High Throughput
- High Quality

**\$0.5B**

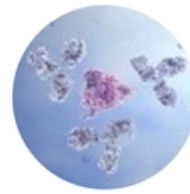
## GENOMICS: NGS ENRICHMENT

- Fast Customization
- Performance
- Full Kit
- High Quality

SHORT TERM GOAL  
Grow Revenue

Source: BCC Report (2017), Markets and Markets (2014) DeciBio (2015)

## LARGE MARKET OPPORTUNITIES



## LARGE MARKET

### DRUG DISCOVERY/ DEVELOPMENT

- High Quality Diversity Hits / Leads
- Shorter Time and Cost from Target to IND

MID TERM GOAL  
Develop novel therapeutics



**\$35B+**

## DATA STORAGE

- Permanence
- Density
- Ease of Copying
- Universal Format

LONG TERM GOAL  
Enter technology market

Source: LDC Market Analysis, LTO Program Technology Provider Companies

# Synthetic Biology is a Rapidly Growing \$4B Opportunity



## NEEDS

## NEW APPLICATIONS FOR SYNTHETIC DNA



### Healthcare

- Better drug development tools to lessen time and lower costs
- More effective diagnostic tools for DNA extraction to lower costs (i.e. NGS)

- **Antibodies / TCR**
- **Vaccines**
- **Immuno and Cancer Therapies**
- **Small Molecule Drug Manufacture**



### Industrial

- Increased population growth impacting the sustainability of finite resources
- Industrial production to address the needs of civilization

- **Specialty Chemicals**
- **Advanced Property Materials**



### Agriculture

- Global population growing with decrease in per capita arable land
- Food security and increased nutrition

- **Self-fertilizing crops**
- **Oil-Free Fertilizers**
- **Drought Solutions**
- **New Disease Protection**

We need a new type of DNA supplier to meet demand

Source: BCC Research

# Gene Synthesis Market: Buyers and Makers

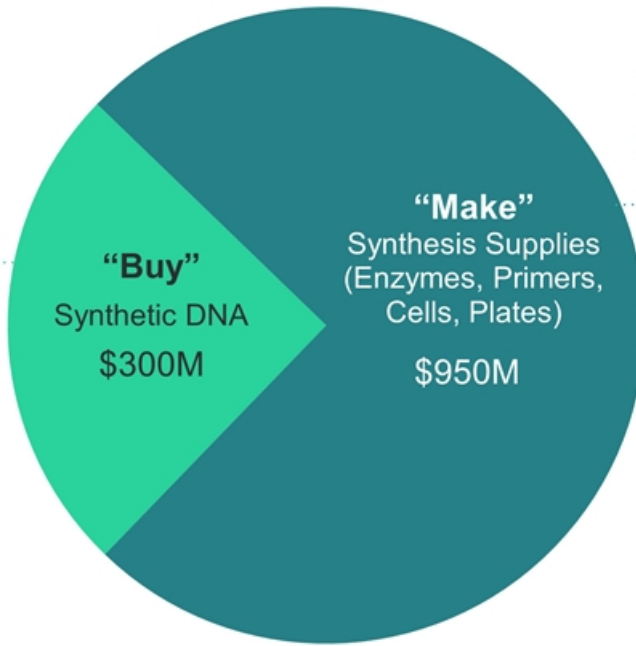
\$1.3B / Year



## Large Scale, Commercial Users

Value: Speed, Throughput and Quality

“ **Can’t get what I need** ”

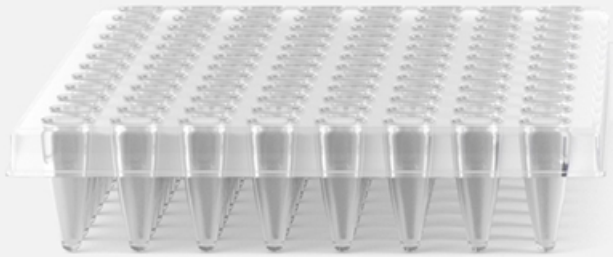


## Small Scale, Academic Users

Price-Sensitive

“ **I Hate Cloning** ”

Source: BCC Report (2017), Markets and Markets Molecular Biology (2014)



**96 WELL PLATE**  
*makes 1 gene*



*121 devices per cluster*



**TWIST SILICON PLATFORM**  
*can make 9,600 genes*

.....●.....●

**Developing **Game-Changing** Throughput and  
Cost through Quality and Speed at Scale**



**HIGH QUALITY**

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**UNIQUE CUSTOMER EXPERIENCE**

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**LOWER COST**

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**UNPRECEDENTED THROUGHPUT / SCALE**

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**CONSISTENT RELIABILITY**

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**COMPETITIVE TURNAROUND TIME**

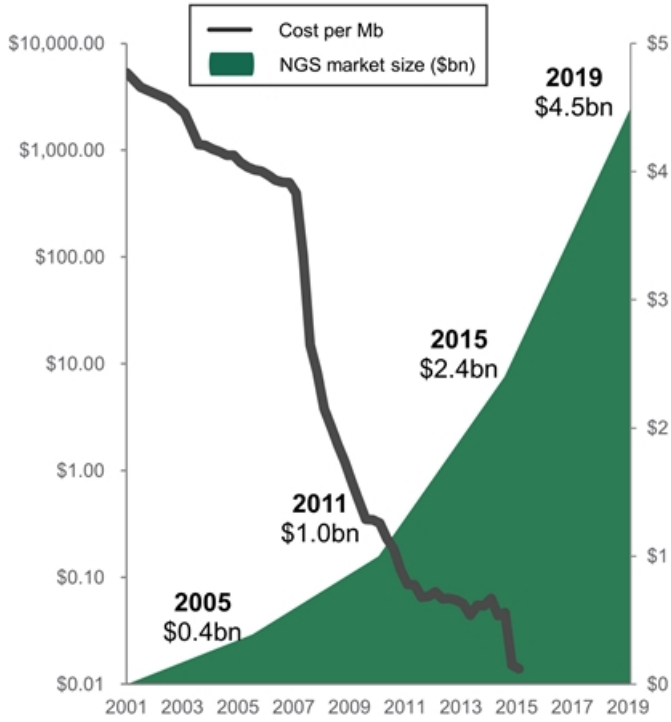
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**COMPREHENSIVE PRODUCT OFFERING**

# Our Disruptive Technology is Enabling New Markets and Applications

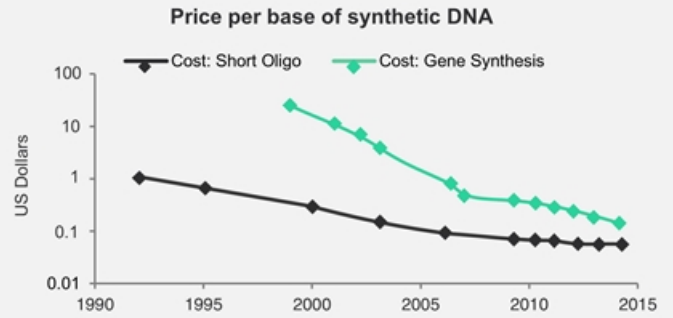


## Cost per base pair vs NGS market size



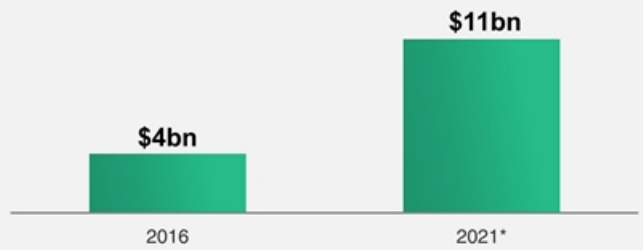
Source: Equity research, company filings  
 Note: NGS market data taken from U.S. DNA Sequencing Technology Markets - 2006 from Cowen and Next generation Sequencing market size, growth and trends (2011-2019) report from DeciBio

## Synthesis cost per gene vs Synthetic Biology market



Source: Rob Carlson, February 2014, www.synthesis.cc

## Global value of synthetic biology market



Source: BCC Research \*Expected growth



# A Market Leader in Gene Synthesis



## Over 700 customers served in FY 2018<sup>1</sup>

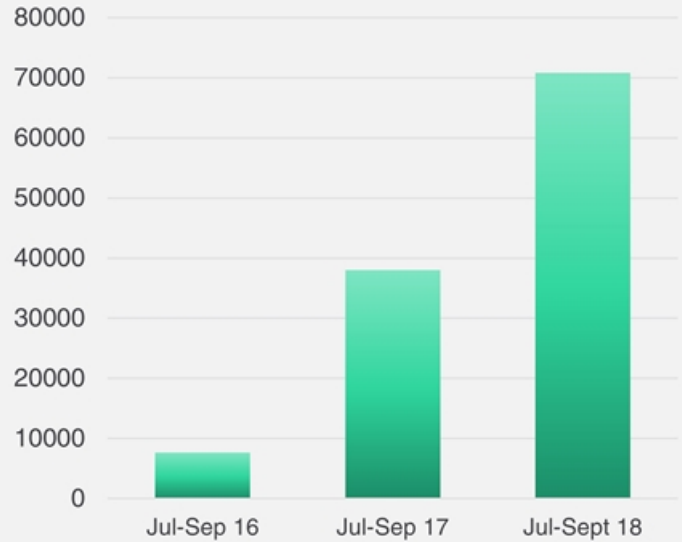
### INCLUDING:

- Seven of the top 20 pharma companies by revenue
- Ginkgo Bioworks - Contract for up to 1.3B base pairs over four years
- Three of the largest agricultural biotechnology companies that use synthetic biology
- >100 academic research institutions worldwide
- Microsoft - For use of DNA as a digital data storage medium



<sup>1</sup> Includes preliminary estimated data for the three months ended September 30, 2018

## GENES SHIPPED >240,000 genes shipped in FY 2018<sup>1</sup>



### MONTHLY AVERAGE IN

2016 Jul-Sept	2,544 genes shipped
2017 Jul-Sept	12,675 genes shipped
2018 Jul-Sept	23,611 genes shipped



TWIST BIOSCIENCE TO PROVIDE

# 1.3 Billion\* Base Pairs of DNA

to Ginkgo Bioworks to Support Expansion into New Industries



## Rapidly expanding product portfolio

Supply includes genes up to 5kb

\* Up to 1.3 Billion



## Power of Scale

Takes advantage of Twist's gene production capacity: 10,000 genes per month and still increasing

# A Unique Way to Order your DNA Online ...



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 ▾	<span style="color: green;">●</span>	\$113.76
2	<input type="checkbox"/>	gene-002	ACTCGACTGACTAGC...	1014	Select Vector ▾	<span style="color: green;">●</span>	\$91.26
3	<input type="checkbox"/>	gene-003	ACTCGACTGACTAGC...	978	Select Vector ▾	<span style="color: green;">●</span>	\$88.02
4	<input type="checkbox"/>	gene-004	ACTCGACTGACTAGC...	848	Select Vector ▾	<span style="color: red;">●</span>	Fix it
5	<input type="checkbox"/>	gene-005	ACTCGACTGACTAGC...	1200	Select Vector ▾	<span style="color: blue;">●</span>	\$108.00
6	<input type="checkbox"/>	gene-006	ACTCGACTGACTAGC...	1124	Select Vector ▾	<span style="color: green;">●</span>	\$101.16
7	<input type="checkbox"/>	gene-007	ACTCGACTGACTAGC...	1200	Select Vector ▾	<span style="color: black;">●</span>	Fix it
8	<input type="checkbox"/>	gene-008	ACTCGACTGACTAGC...	1087	Select Vector ▾	<span style="color: green;">●</span>	\$97.83
9	<input type="checkbox"/>	gene-009	ACTCGACTGACTAGC...	1200	Select Vector ▾	<span style="color: green;">●</span>	\$108.00

32 GENES • 26,400 BP

All (240)
● Easy (24)
 ● Difficult (4)
 ● Error (2)
 ● Not Possible (2)

### PRICING SUMMARY ⓘ

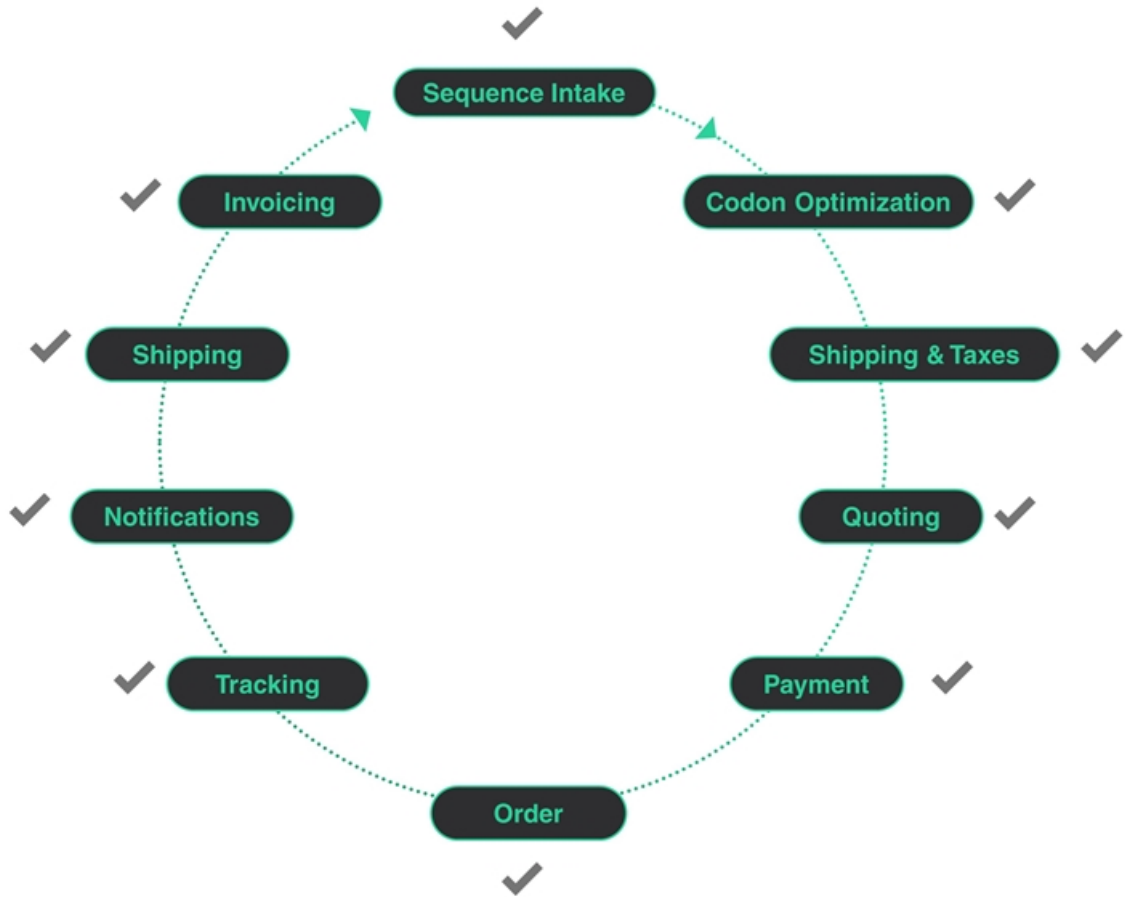
NAME	QTY	COST
Easy Genes	24	\$2,376.00
Cloning Fee	24	\$1,300.00
<b>Total</b>		<b>\$3,676</b>

DELIVERY FORMAT

Plate: 96 Well, Horizontal

Tube [Edit](#)

Checkout





# Targeted NGS value chain



## Library Prep

- Enzyme, Buffer, Primers, Barcodes
- Kappa (acquired by Roche) has mind share

## Capture

- Oligos (10s to 100,000s, pooled, high quantities)
  - **Catalog: All Exome (~20,000 known human genes)**
  - **Custom: panels of 1 to 1,000s of genes, customer specific**
- Buffer, beads, enzyme

## Sequencing

- DNA sequencing
- Illumina dominant
- Ion Torrent, PacBio, ONT niche players

## Analysis

- Primary, secondary and tertiary analysis
- Standardized (GATK)

## Clinical Report

- Optional
- Biology intensive

## Applications

- Research
- Translational
- Molecular Dx
- Microbiology
- Applied Markets

←  
**\$0.5B  
SAM**  
←



## **PERFORMANCE / COST**

High Uniformity  
Low Sequencing Costs

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## **CUSTOMIZATION**

2-3 Weeks Design to Production  
On Custom and Exome Panels

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## **FULL KIT**

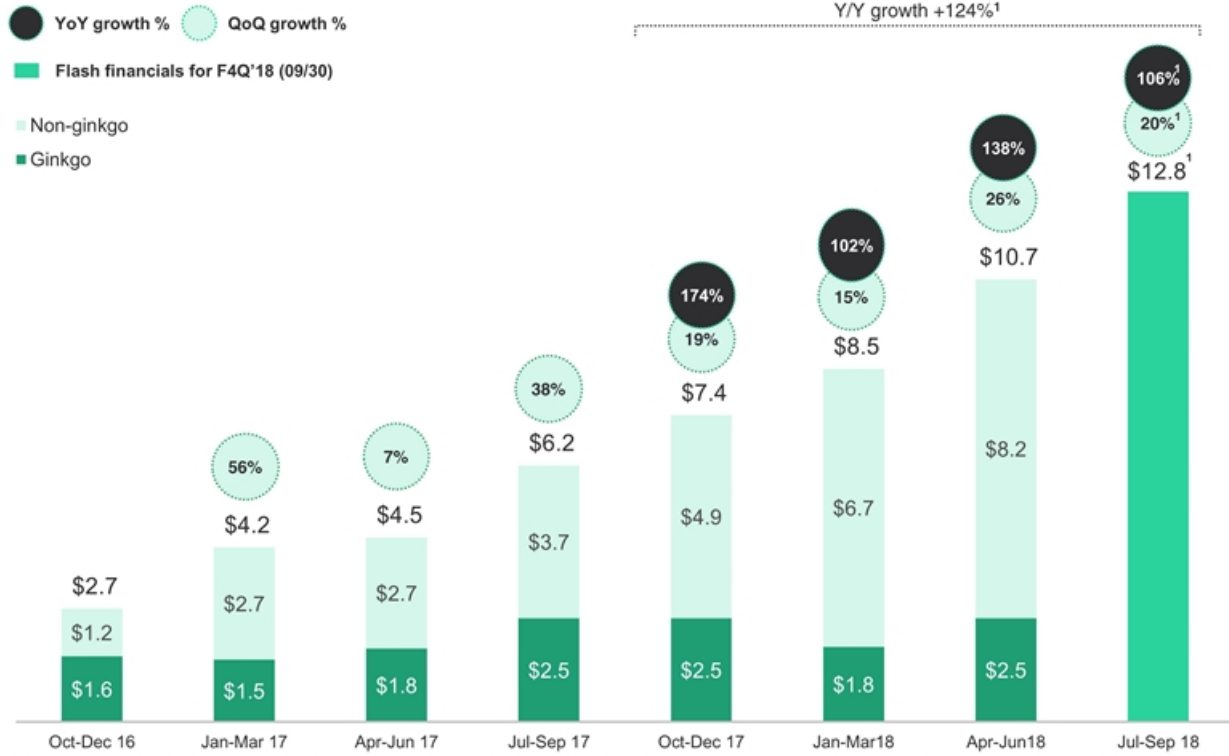
All Consumables From One Provider



# Strong Orders Growth



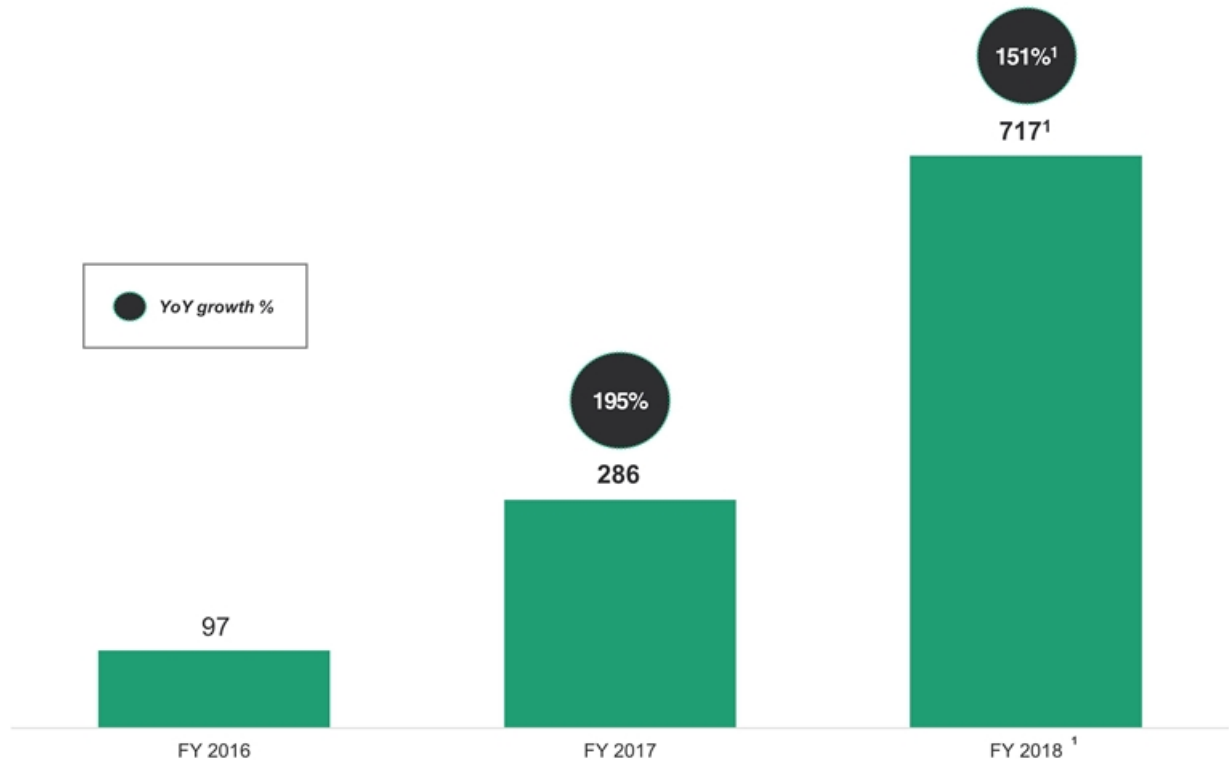
## QUARTERLY ORDER VALUE (\$M)



<sup>1</sup> Preliminary estimated data for the three months ended September 30, 2018. Our consolidated financial statements for the three months ended Sep 30, 2018 are not yet available. Accordingly, the information presented for this period reflects our preliminary estimates subject to the completion of our financial closing procedures and any adjustments that may result from the completion of the quarterly review of our consolidated financial statements. As a result, these preliminary estimates may differ from the actual results that will be reflected in our consolidated financial statements for the quarter when they are completed and publicly disclosed. These preliminary estimates may change and those changes may be material.

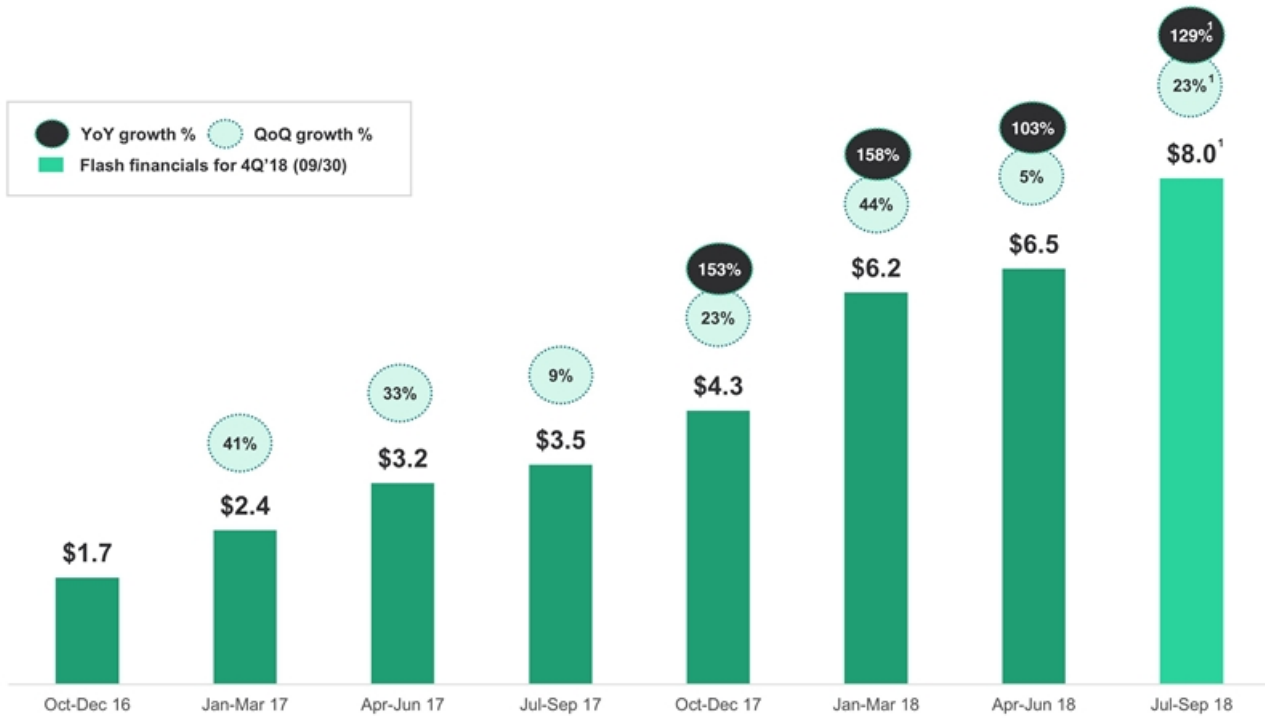


## CUSTOMER COUNT



<sup>1</sup> Customer count includes preliminary estimated data for the three months ended September 30, 2018

## QUARTERLY REVENUE RAMP (\$M)



<sup>1</sup> Estimates based on the low-point of the estimated range based on preliminary estimated data for the three months ended September 30, 2018. Our consolidated financial statements for the three months ended Sep 30, 2018 are not yet available. Accordingly, the information presented for this period reflects our preliminary estimates subject to the completion of our financial closing procedures and any adjustments that may result from the completion of the quarterly review of our consolidated financial statements. As a result, these preliminary estimates may differ from the actual results that will be reflected in our consolidated financial statements for the quarter when they are completed and publicly disclosed. These preliminary estimates may change and those changes may be material.

# Twist's Platform Extends to Other Growth Verticals



**\$1.3B**

## SYNTHETIC BIOLOGY

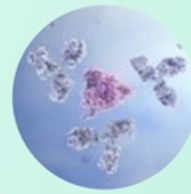
- Competitive Turnaround Time
- Lower Cost
- High Throughput
- High Quality

SHORT TERM GOAL  
Grow Revenue

Source: BCC Report (2017), Markets and Markets (2014) DeciBio (2015)

**\$0.5B**  
GENOMICS:  
NGS ENRICHMENT

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## LARGE MARKET OPPORTUNITIES

### LARGE MARKET

#### DRUG DISCOVERY/ DEVELOPMENT

- High Quality Diversity Hits / Leads
- Shorter Time and Cost from Target to IND

MID TERM GOAL  
Develop novel therapeutics



**\$35B+**

## DATA STORAGE

- Permanence
- Density
- Ease of Copying
- Universal Format

LONG TERM GOAL  
Enter technology market

Source: LDC Market Analysis, LTO Program Technology Provider Companies

# Novel Protein Libraries for Drug Discovery

To Enable Efficiency in Drug Discovery



## From **Needle** in a Haystack



- Random diversity
- Biased representation
- >99% inefficiency
- Lengthy optimization cycle
- Expensive process

## To **Stack** of Needles



- Explicit
- Even representation
- Human repertoire based
- Fast
- Affordable

Precise Introduction of Variants,  
Diversity that **Enables Screening**  
**Efficiency**



```
gt catctcAccc tActtg  
gt catctcGGcc ttGttg  
gt catctcCAcc tCAttg  
gt catctctTcc tGTttg
```



Gene Synthesis



Single Site



Multi-Site



Stretch

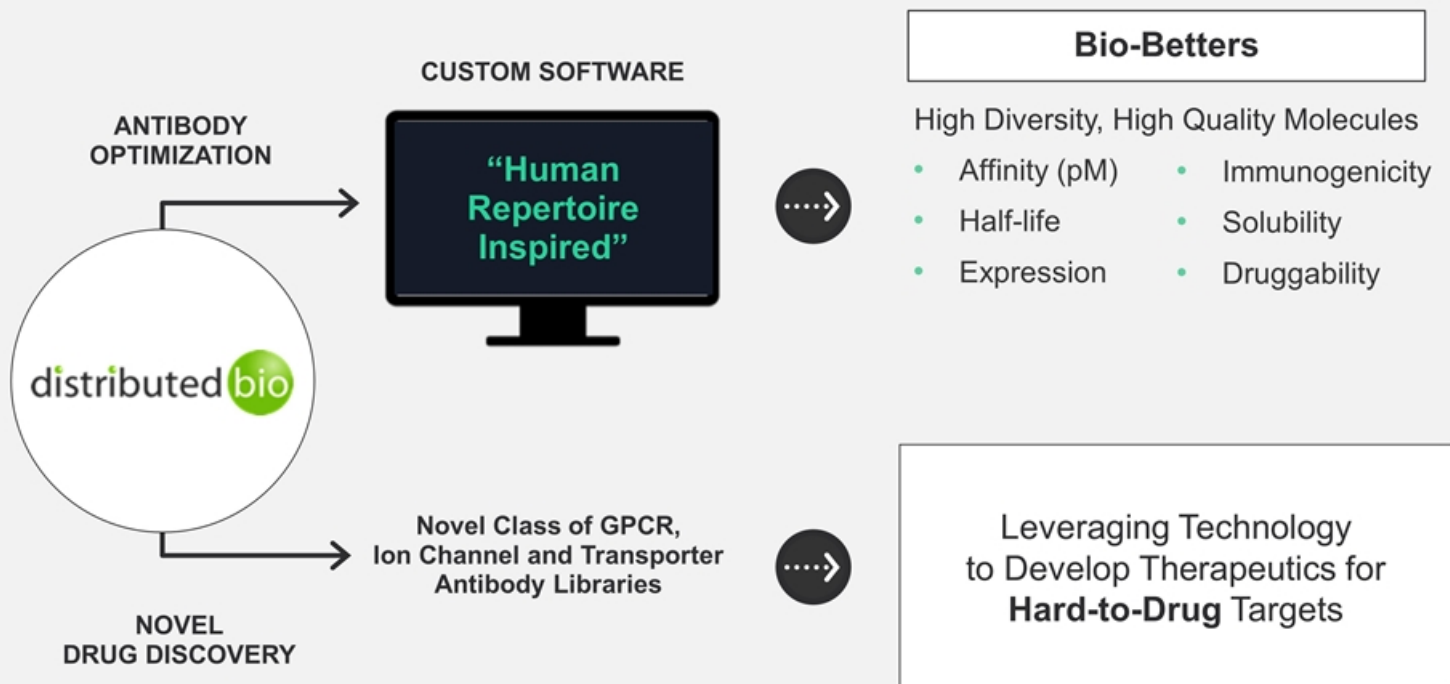


Multi-Domain



# Expanding Drug Discovery Capabilities

Enables Tackling Bio-Betters and Hard-to-Drug Targets



# Twist's Platform Extends to Other Growth Verticals



**\$1.3B**

**SYNTHETIC  
BIOLOGY**

- Competitive Turnaround Time
- Lower Cost
- High Throughput
- High Quality

**SHORT TERM GOAL**  
Grow Revenue

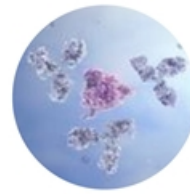
Source: BCC Report (2017), Markets and Markets (2014) DeciBio (2015)

**\$0.5B**

**GENOMICS:  
NGS ENRICHMENT**

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## LARGE MARKET OPPORTUNITIES



**LARGE MARKET**

**DRUG DISCOVERY/  
DEVELOPMENT**

- High Quality Diversity Hits / Leads
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**MID TERM GOAL**  
Develop novel therapeutics



**\$35B+**

**DATA STORAGE**

- Permanence
- Density
- Ease of Copying
- Universal Format

**LONG TERM GOAL**  
Enter technology market

Source: LDC Market Analysis, LTO Program Technology Provider Companies

## MAN-MADE, NOT PERMANENT



**20,000**  
Years ago

**40,000**  
Years ago

**560,000 - 780,000**  
Years ago

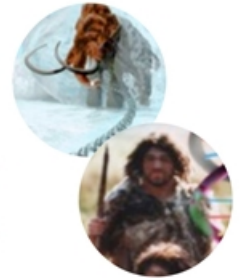
## STABLE FOR 1000s of YEARS

### Sequencing the nuclear genome of the extinct woolly mammoth

Webb Miller<sup>1</sup>, Daniela I. Drautz<sup>1</sup>, Aakrosh Ratan<sup>1</sup>, Barbara Pusey<sup>1</sup>, Ji Qi<sup>1</sup>, Arthur M. Lesk<sup>1</sup>, Lynn P. Tomsho<sup>1</sup>, Michael D. Packard<sup>1</sup>, Fangqing Zhao<sup>1</sup>, Andrei Sher<sup>2</sup>, Alexei Tikhonov<sup>2</sup>, Brian Raney<sup>3</sup>, Nick Patterson<sup>4</sup>, Kerstin Lindblad-Toh<sup>5</sup>, Eric S. Lander<sup>1</sup>, James R. Knight<sup>6</sup>, Gerard P. Izzyk<sup>6</sup>, Karin M. Fredrikson<sup>7</sup>, Timothy T. Harkins<sup>7</sup>, Sharon Sheridan<sup>8</sup>, Tom Pringle<sup>8</sup> & Stephan C. Schuster<sup>1</sup>

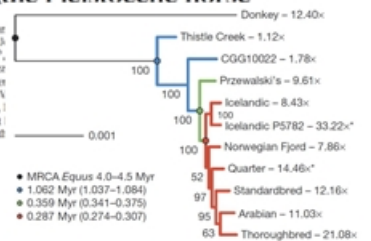
### A Draft Sequence of the Neandertal Genome

Richard E. Green<sup>1,†</sup>, Johannes Krause<sup>1,†</sup>, Adrian W. Briggs<sup>1,†</sup>, Tomislav Maricic<sup>1,†</sup>, Udo Stenzel<sup>1,†</sup>, Martin Kircher<sup>1,†</sup>, Nick Patterson<sup>2,†</sup>, Heng Li<sup>3</sup>, Weiwei Zhang<sup>4</sup>, Markus Hsi-Yang Fritz<sup>5</sup>, Nancy F. Hansen<sup>6</sup>, Eric Y. Durand<sup>7</sup>, Anna-Sapfo Malaspinas<sup>8</sup>, Jeffrey D. Jensen<sup>9</sup>, Tomas Marques-Bonet<sup>10,11</sup>, Can Alkan<sup>12</sup>, Kay Prüfer<sup>13</sup>, Matthias Meyer<sup>14</sup>, Hernán A. Burbano<sup>15</sup>, Jeffrey M. Good<sup>16,17</sup>, Rigo Schultz<sup>18</sup>, Aylmer Aulino-Pedr<sup>19</sup>, Anne Butthof<sup>20</sup>, Barbara Höber<sup>21</sup>, Barbara Hoffner<sup>22</sup>, Madlen Siegemund<sup>23</sup>, Antje Wehmann<sup>24</sup>, Chad Nusbaum<sup>25</sup>, Eric S. Lander<sup>26</sup>, Carsten Russ<sup>27</sup>, Nathaniel Novod<sup>28</sup>, Jason Affourtit<sup>29</sup>, Michael Egholm<sup>30</sup>, Christine Verna<sup>31</sup>, Pavao Rudan<sup>32</sup>, Dejana Brajkovic<sup>33</sup>, Zeljko Kucan<sup>34</sup>, Ivan Gušić<sup>35</sup>, Vladimir B. Doronichev<sup>36</sup>, Liubov V. Golovanova<sup>37</sup>, Carlos Lalueza-Fox<sup>38</sup>, Marco de la Rúa<sup>39</sup>, Javier Fortea<sup>40</sup>, Antonio Rosas<sup>41</sup>, Ralf W. Schmitz<sup>42,43</sup>, Philip L. F. Johnson<sup>44</sup>, Ewan E. Eichler<sup>45</sup>, Daniel Falush<sup>46</sup>, Ewan Birney<sup>47</sup>, James C. Mullikin<sup>48</sup>, Montgomery Slatkin<sup>49</sup>, Rasmus Nielsen<sup>50</sup>, Janet Kelso<sup>51</sup>, Michael Lachmann<sup>52</sup>, David Reich<sup>53,54</sup> & Svante Pääbo<sup>1,†</sup>



### Recalibrating *Equus* evolution using the genome sequence of an early Middle Pleistocene horse

Ludovic Orlando<sup>1\*</sup>, Aurélien Ginolhac<sup>2\*</sup>, Guojie Zhang<sup>3\*</sup>, Dazhuan Enrici-Cappellini<sup>4</sup>, Bent Petersen<sup>5</sup>, Ida Moltke<sup>6</sup>, Philip L. F. Johnson<sup>7</sup>, Thorfinn Kornelissen<sup>8</sup>, Anna-Sapfo Malaspinas<sup>9</sup>, Josef Nigg<sup>10</sup>, Andrej Dolocan<sup>11</sup>, Jesper Stenderup<sup>12</sup>, Ambed M. V. Velazquez Grant<sup>13</sup>, Zuzana<sup>14</sup>, Andaline Seguin-Orlando<sup>15,16</sup>, Cecilie Møller Jacobo Weinstock<sup>17</sup>, Kristian Gregersen<sup>18</sup>, Knut H. Reed<sup>19</sup>, V. Douglas F. Antczak<sup>20</sup>, Mads F. Beresheim<sup>21</sup>, Soren Brunak<sup>22</sup>, John Mundy<sup>23</sup>, Anders King<sup>24</sup>, M. Thomas P. Gilbert<sup>25</sup>, Kurt Joppe V. Olsen<sup>26</sup>, Michael Hofreiter<sup>27</sup>, Rasmus Nielsen<sup>28</sup>, Bert



## 1 Coding

00 → A  
01 → G  
10 → C  
11 → T

## 2 Synthesis



## 3 Storage



## 4 Retrieval



## 5 Sequencing



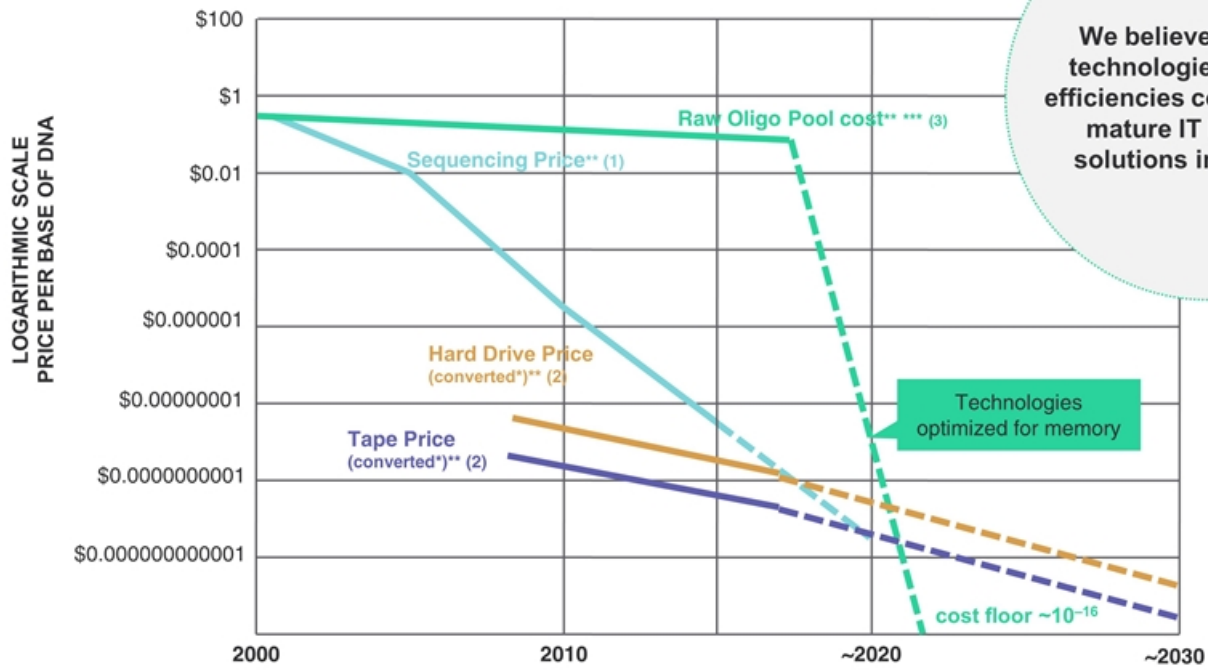
## 6 Decoding

A → 00  
G → 01  
C → 10  
T → 11

**Permanence • Density • Random Access • Universal format**



# DNA Data Storage Trends and Projections



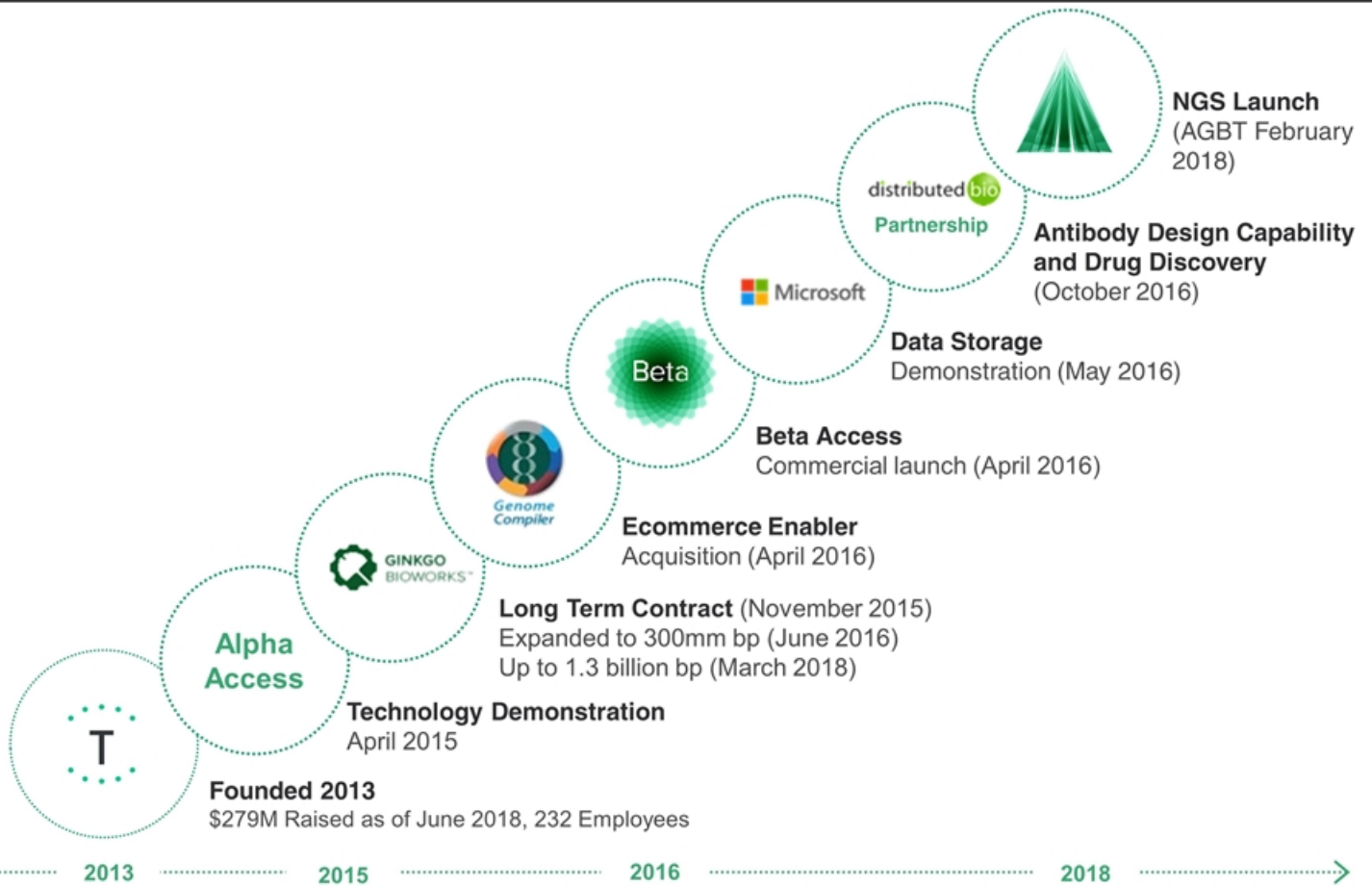
We believe new DNA technologies and cost efficiencies could surpass mature IT hardware solutions in 3–5 years

Technologies optimized for memory

cost floor  $\sim 10^{-16}$

\* DNA bases per byte for hard drive and tape shown at typical published encoding ranges from about 5:1 to 6.25:1  
 \*\* All dotted lines represent extrapolations and assumes continued trajectory of historical trends, and that there will be continued decrease in price as technology improves.  
 \*\*\* Raw oligo pool cost extrapolation based on DARPA and another anticipated government-sponsored grant project objectives, both at specified time points  
 (1) [www.genome.gov](http://www.genome.gov) (2) Bob Fontana, IBM Systems, Storage Media Overview, May 4, 2016 (3) Bioeconomy Capital, Rob Carlson, January 20, 2018, [www.synthesis.cc](http://www.synthesis.cc)

# Strong Momentum and Milestones Achieved

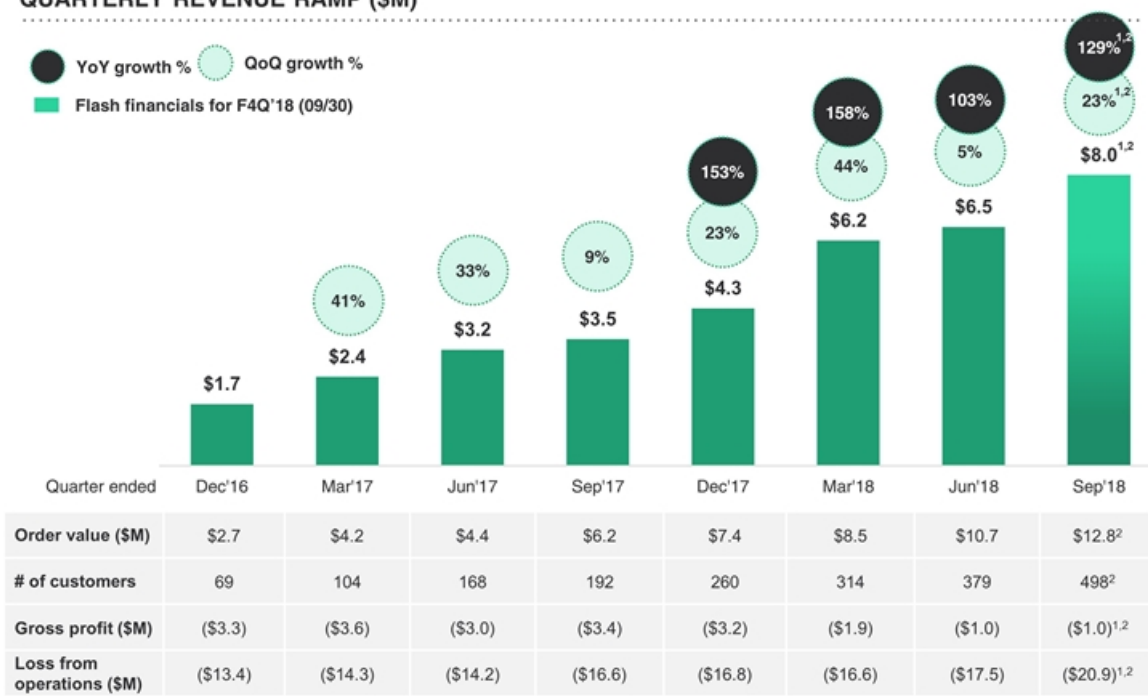


# Quarterly Revenue Ramp



## QUARTERLY REVENUE RAMP (\$M)

● YoY growth %
 ● QoQ growth %
   
■ Flash financials for F4Q'18 (09/30)



F4Q'18 Flash Financial Results <sup>2</sup>	
<b>Revenue</b>	\$8.0M - \$8.3M
<b>Orders</b>	\$12.8M
<b>Customers</b>	498 total customers
<b>Gross Profit</b>	(\$1.0M) – (\$0.9M)
<b>Loss from Operations</b>	(\$20.9M) – (\$19.5M)

**Cash, cash equivalents and short-term investments of \$80.8M as of September 30, 2018<sup>2</sup>**

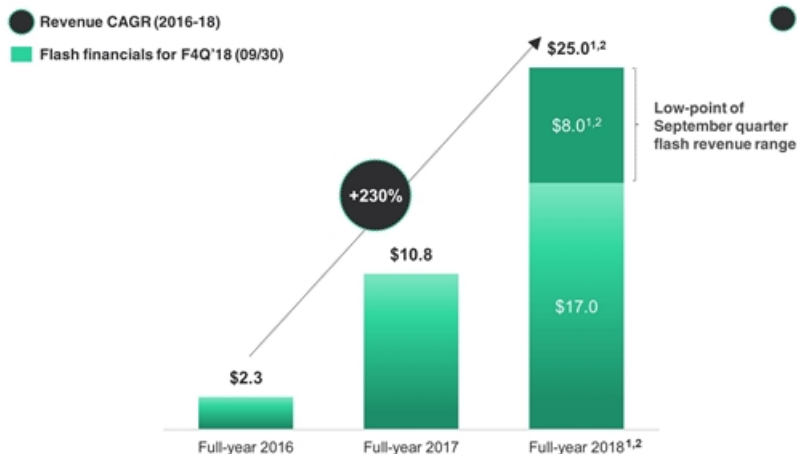
**Long-term debt of \$9.7M as of September 30, 2018<sup>2</sup>**

<sup>1</sup> Estimates based on the low-point of the estimated range based on preliminary estimated data for the three months ended September 30, 2018; <sup>2</sup> Our consolidated financial statements for the three months ended Sep 30, 2018 are not yet available. Accordingly, the information presented for this period reflects our preliminary estimates subject to the completion of our financial closing procedures and any adjustments that may result from the completion of the quarterly review of our consolidated financial statements. As a result, these preliminary estimates may differ from the actual results that will be reflected in our consolidated financial statements for the quarter when they are completed and publicly disclosed. These preliminary estimates may change and those changes may be material

# Strong Financial Profile



## FULL-YEAR REVENUE (\$M)



## 9-MONTHS REVENUE AS OF JUNE 30 (\$M)

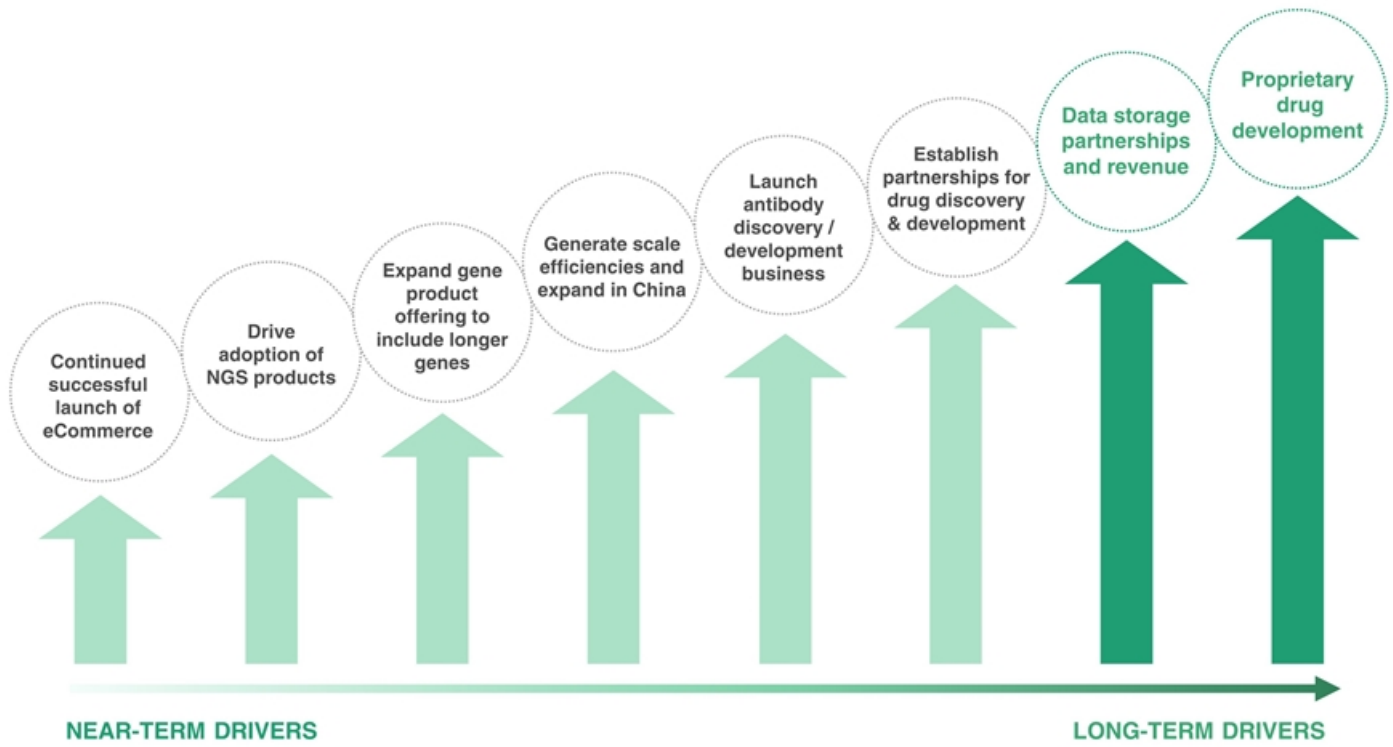


Order value (\$M)	\$1.2	\$17.6	\$39.4 <sup>1,2</sup>
% growth YoY	--	NM	124%
# of customers	97	286	717 <sup>2</sup>
Gross profit (\$M)	(\$7.2)	(\$13.3)	(\$7.0) <sup>1,2</sup>
Loss from operations (\$M)	(\$43.7)	(\$58.5)	(\$71.7) <sup>1,2</sup>
Net cash used in operating activities (\$M)	(\$38.6)	(\$51.3)	-- <sup>3</sup>

Order value (\$M)	\$11.4	\$26.6
% growth YoY	--	134%
# of customers	208	539
Gross profit (\$M)	(\$9.9)	(\$6.1)
Loss from operations (\$M)	(\$41.9)	(\$50.9)
Net cash used in operating activities (\$M)	(\$39.8)	(\$49.5)

Note: all values over 200% denoted as NM; <sup>1</sup>Estimates based on the low-point of the flash range; <sup>2</sup>Our consolidated financial statements for the three months ended Sep 30, 2018 are not yet available. Accordingly, the information presented for this period reflects our preliminary estimates subject to the completion of our financial closing procedures and any adjustments that may result from the completion of the quarterly review of our consolidated financial statements. As a result, these preliminary estimates may differ from the actual results that will be reflected in our consolidated financial statements for the quarter when they are completed and publicly disclosed. These preliminary estimates may change and those changes may be material; <sup>3</sup>Not provided as financial statements for the period are not yet available

# Significant opportunities to drive further growth



# Why Twist?



## Breakthrough Technology

1<sup>st</sup> DNA Writing on Silicon Platform

## Broad Application

Multiple Product Categories and End Markets

## High Revenue Growth

2016-2017 revenue growth of 375%

## Large Growing Markets

Synthesis DNA, NGS TE, Drug Discovery and Data Storage

## Unique Platform & Value Proposition

Focus on Speed, Affordability, and High Quality

## Attractive Dynamics

No FDA Approvals or Reimbursements

## Experienced Team

with Strong Backing



- Completed initial public offering in October 2018
- Strong insider support as well as participation from new leading institutional life science investors
- Analyst research coverage: J.P. Morgan (Tycho Peterson), Cowen (Doug Schenkel), Catherine Schulte (Baird)

## Consolidated statements of operations and comprehensive loss (\$000s)

	Fiscal year ended		Nine months ended	
	30-Sep-16	30-Sep-17	30-Jun-17	30-Jun-18
<b>Revenues:</b>				
Synthetic genes	\$1,087	\$8,122	\$5,379	\$11,903
Oligo pools	\$862	\$2,056	\$1,512	\$2,146
DNA libraries	\$320	\$517	\$410	\$1,208
NGS tools	—	\$72	—	\$1,763
<b>Total revenues</b>	<b>\$2,269</b>	<b>\$10,767</b>	<b>\$7,301</b>	<b>\$17,020</b>
<b>Operating expenses:</b>				
Cost of revenues	\$9,421	\$24,020	\$17,191	\$23,096
Research and development	\$18,230	\$19,169	\$14,318	\$14,282
Selling, general and administrative	\$18,274	\$26,060	\$17,651	\$30,497
<b>Total operating expenses</b>	<b>\$45,925</b>	<b>\$69,249</b>	<b>\$49,160</b>	<b>\$67,875</b>
Loss from operations	(\$43,656)	(\$58,482)	(\$41,859)	(\$50,855)
Total interest income and expenses	(\$505)	(\$493)	(\$432)	(\$337)
Other income (expense)	\$73	(\$55)	\$151	(\$76)
<b>Loss before income taxes</b>	<b>(\$44,088)</b>	<b>(\$59,030)</b>	<b>(\$42,140)</b>	<b>(\$51,268)</b>
Provision for income taxes	—	(\$280)	(\$161)	(\$166)
<b>Net loss</b>	<b>(\$44,088)</b>	<b>(\$59,310)</b>	<b>(\$42,301)</b>	<b>(\$51,434)</b>