

JANUARY 2023

# WRITING THE FUTURE

T W I S T  
BIOSCIENCE

CACGATACGATGATACGAGGATCGCATCGACTA

GCTACGACTAGATTATCTAGACGAGGATATCGA

AGCGGATGAGGGATTAGTAGCATCATAGATG

TACTATCAGCAGGAAACGGCGCAGACTATAG

ACGAATGCATCGGAGGTTAGCTAGGAC

TTACTACGATCGACTAGTATCG

TACTAGCATCGAAGAT



# Legal Disclaimers

This presentation contains forward-looking statements. All statements other than statements of historical facts contained herein are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including, but not limited to, financial guidance for fiscal 2023 and 2024 and the first quarter of fiscal 2023, statements regarding future growth, expansion, market share gains, plans to achieve adjusted EBITDA break-even for Twist's core business and biopharma and Twist Bioscience's other expectations regarding its future operations plans and financial performance, expected commencement of product shipment from the "Factory of the Future" in January 2023; timing of the early access launch of Twist Bioscience's first DNA data storage solution, introduction of new products, and newly announced partnerships. Forward-looking statements involve known and unknown risks, uncertainties, and other important factors that may cause Twist Bioscience's actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the risks and uncertainties relating to COVID-19; 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 that could make the products Twist Bioscience is developing obsolete or non-competitive; uncertainties of the retention of significant customers; the ability of Twist Bioscience to successfully integrate acquired companies, including Abveris, and to achieve expected benefits from acquisitions; 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 Bioscience's patents or proprietary rights; and the risk that Twist Bioscience's proprietary rights may be insufficient to protect its technologies. For a description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to Twist Bioscience's business in general, see Twist Bioscience's risk factors set forth in Twist Bioscience's Annual Report on Form 10-K filed with the SEC on November 28, 2022 and subsequent filings with the SEC. Any forward-looking statements contained in this presentation speak only as of the date hereof, and Twist Bioscience specifically disclaims any obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.



## WRITING THE FUTURE ONE DNA STRAND AT A TIME

Cell therapy      Data storage  
Enzyme engineering      Protein engineering  
Structural genomics      Minimal residual disease      Agrigenomics  
Genealogy      Liquid biopsy      Global food security      Carbon recycling  
Hereditary testing      Cancer testing      Gene therapy      Personalized medicine  
Population genetics      Forensics      Antibody therapeutics      Vaccine development  
Genetic screening      Rare disease testing      Nutrition      Animal health  
Global food security      Pathogen surveillance      Protein degradation  
Ancient DNA      Neuroscience      Target Discovery      Infectious disease      Microbiology  
Material science      Translational research      Industrial chemical ingredients

**DNA. RNA. PROTEINS.**

**Twist is:**

**INNOVATION**

**COMMERCIAL EXECUTION**

**PATH TO PROFITABILITY**



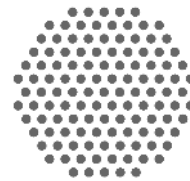
# Twist DNA Writing on Silicon Platform

## Everyone Else

1 oligo per well



**96 Well Plate**  
makes **1 gene**



1M oligos per chip



**State of the art  
commercial  
infrastructure**



Up to  
**10,000X**  
more scale  
& throughput

**Twist Silicon Platform**  
can make **9,600 genes**

Proprietary SW powering:

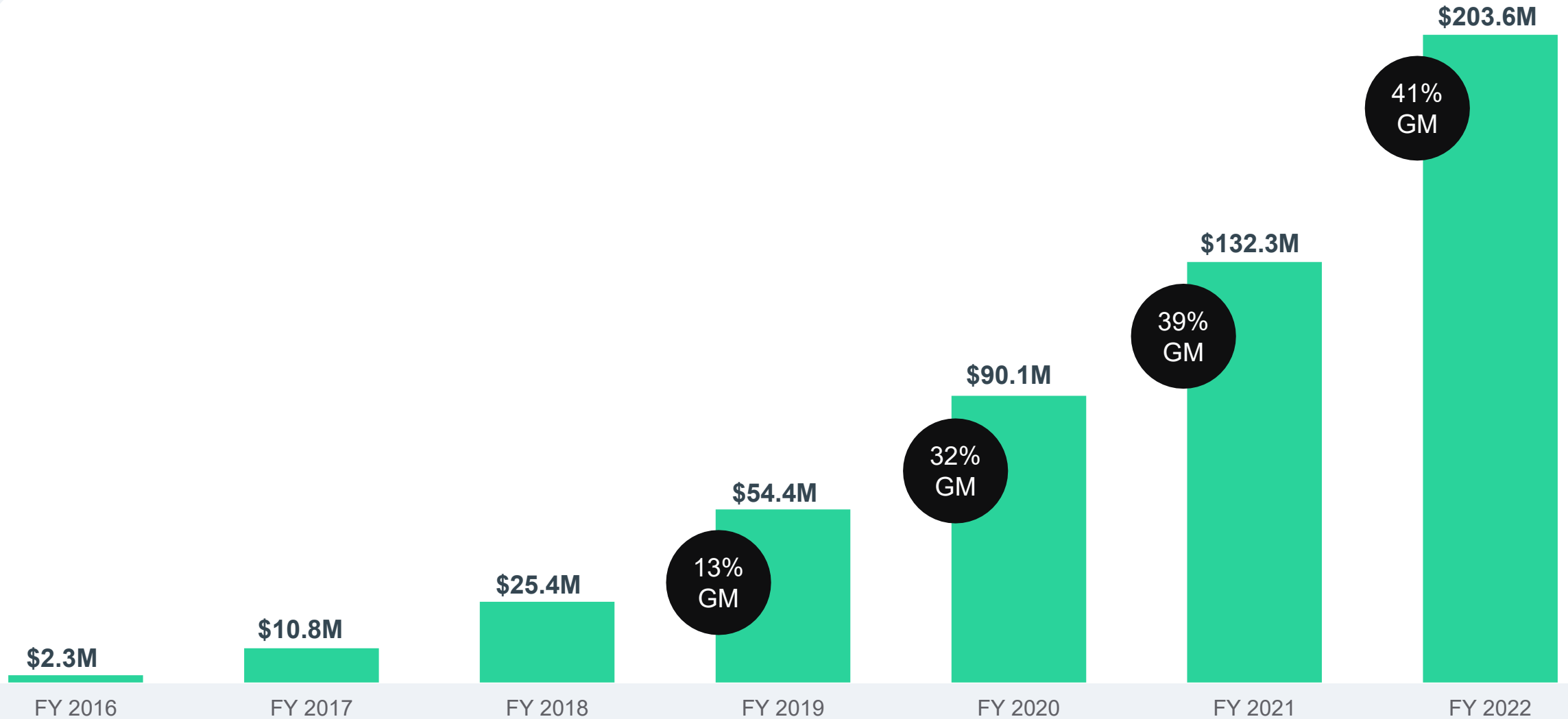
Integrated  
eCommerce platform

Custom instruments

Manufacturing execution  
system



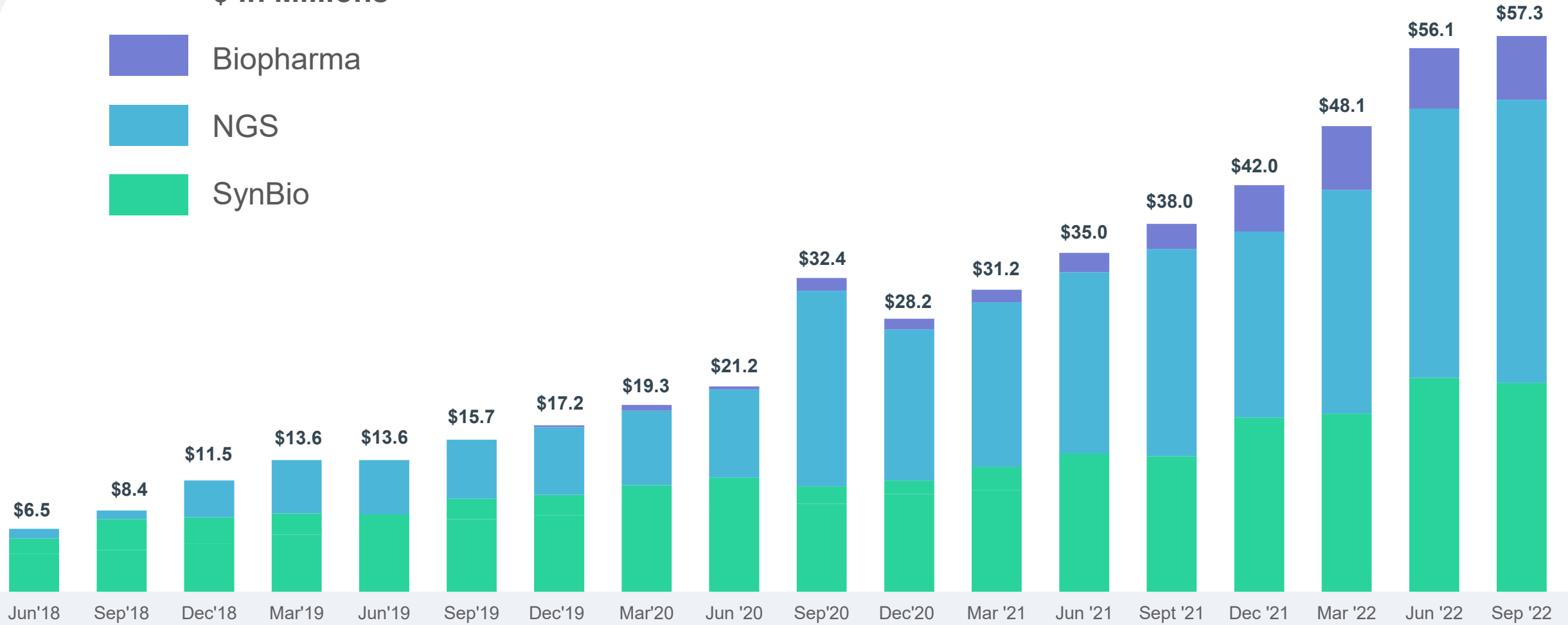
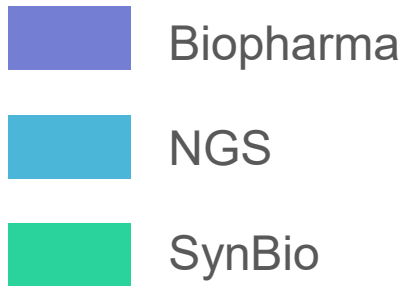
# Strong Annual Revenue Growth and Increasing Gross Margin





# Strong Revenue Growth

\$ in Millions





# Strong Execution Across Our 4 Key Businesses

LIFE SCIENCES TOOLS: CORE BUSINESS

PREMIUM SOLUTIONS

1

SYN BIO  
WRITE

2

NGS  
READ

3

BIO  
PHARMA  
SOLUTIONS

4

DNA DATA  
STORAGE

**Competing in markets with different market dynamics**  
**Reducing risk through diversified revenue and customer base**



# 1 SYN BIO WRITE

## LARGE END MARKETS



Pharma



Biotech



Industrial chemicals



Agriculture



Academic labs

## DIVERSE APPLICATIONS

Target discovery  
and validation

Antigen production

Antibody discovery,  
production, and screening

Enzyme, protein, and  
cellular engineering

Protein expression

CRISPR applications

## INNOVATIVE PRODUCTS



Clonal genes  
Gene fragments



Oligo pools



Libraries  
IgG proteins

## WHY WE WIN

Cost

Scale

Quality

Customer experience

Innovative products and solutions

Frictionless ecommerce

## NEXT UP

Factory of the Future launch

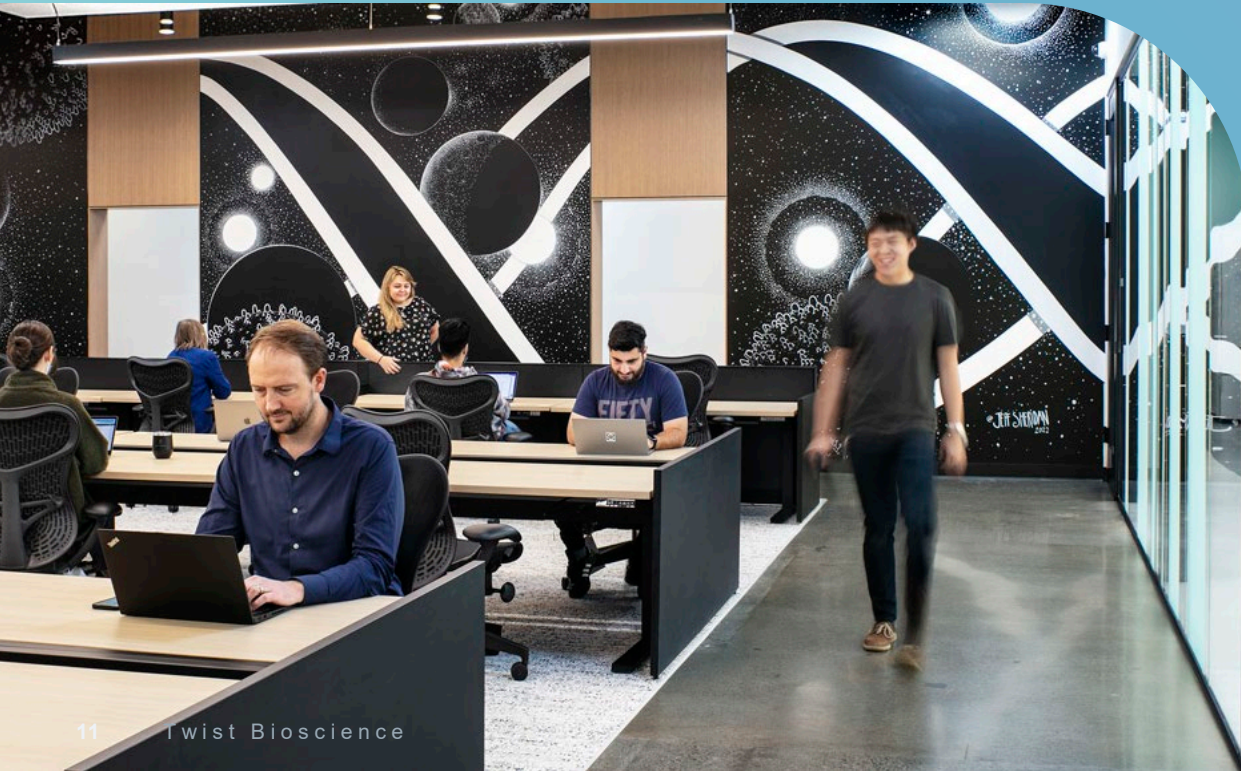
FoF-enabled new product introduction

Fast DNA

Long fragments

RNA

GMP



## Factory of the Future

*Shipping products January 2023*

Next evolution of platform

Expect doubling of **current capacity**

Additional differentiation, including  
**fast turnaround time**

## LARGE MARKETS



Diagnostics



Basic and translational research



AgBio

## DIVERSE APPLICATIONS

Liquid biopsy

Clinical, population, and cognitive genomics

Oncology research

Minimal residual disease

Rare disease

Variant detection

Biomarker identification

Trait selection

HTP single cell analysis

## INNOVATIVE PRODUCTS

Fixed panels

Custom panels

Alliance panels

Library prep kits

Reagents

Controls and standards





## WHY WE WIN

Quality

Uniformity

Lower sequencing cost

Rapid customization

Fast throughput

Sequencer agnostic

## NEXT UP

Liquid biopsy growth

MRD growth

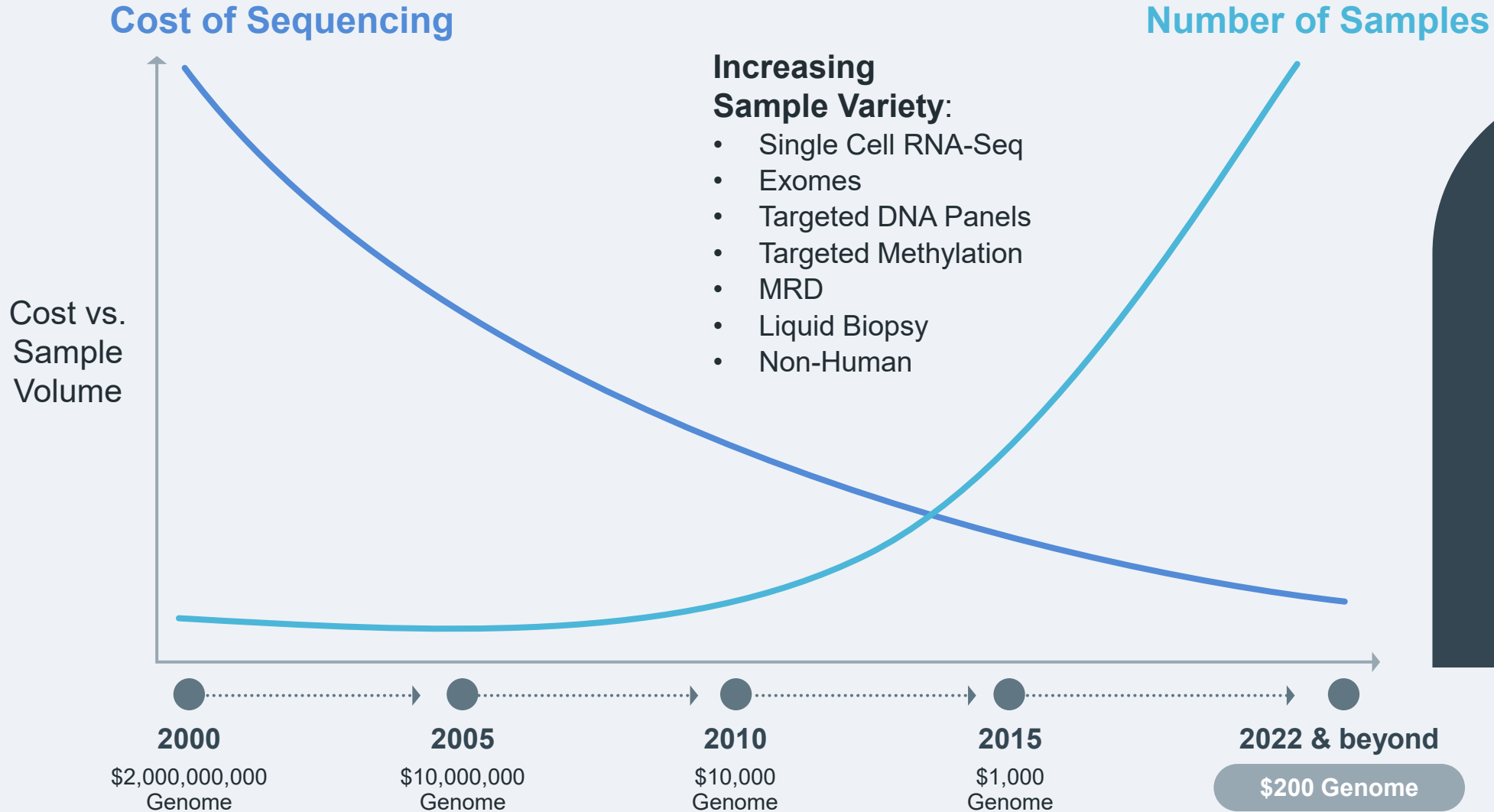
RNA sequencing workflow

SNP microarray conversion

Alliance content



# As Cost of Sequencing Decreases, Sample Variety/Volume Increase



Twist enables **ALL** sample types, multiple sequencers;

We grow as sample volume grows



## Rare and Inherited Diseases

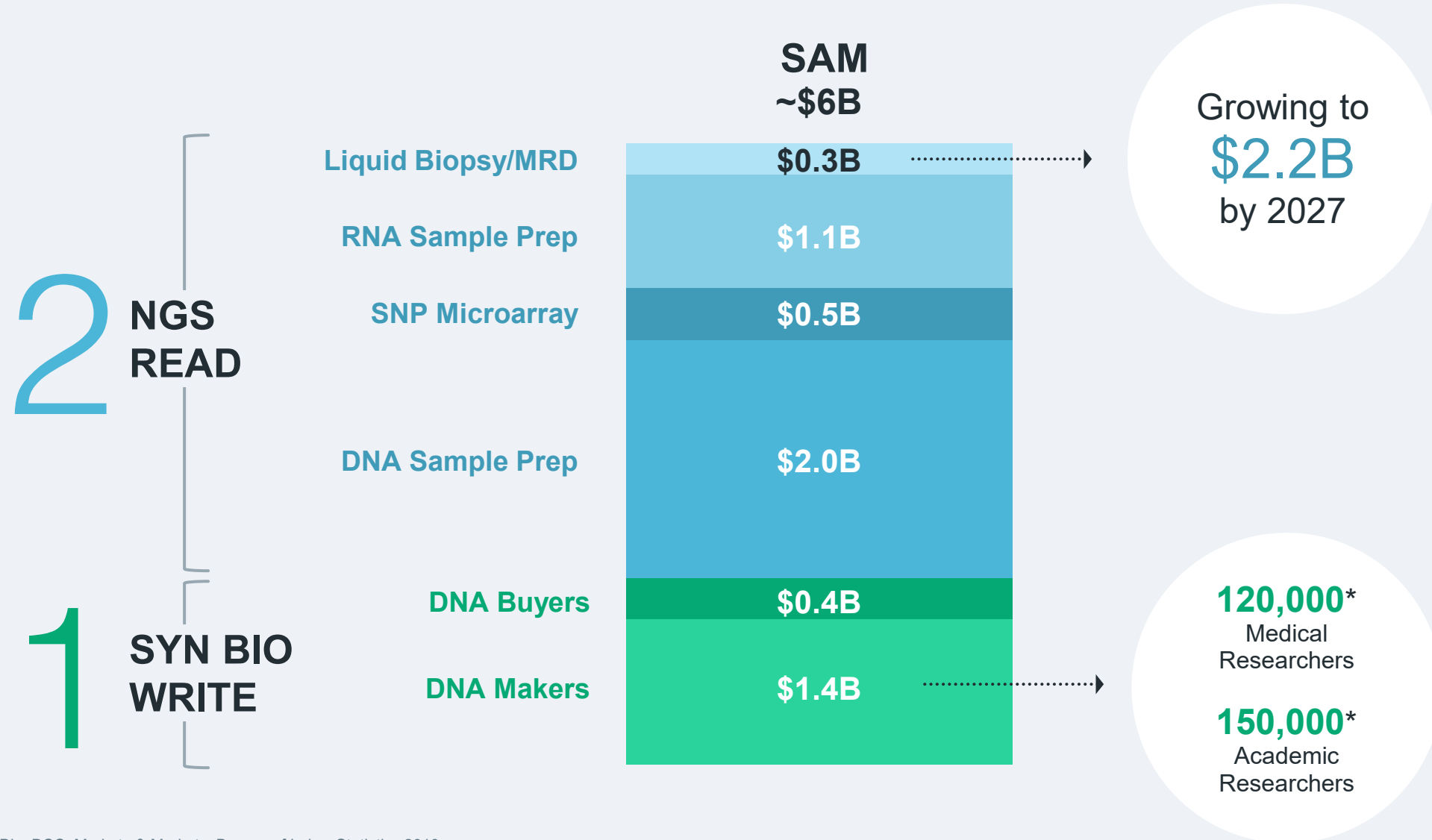
## Oncology Applications

	WGS 30X		WES 100X		WGS 50,000X		200kb Panel	
	Genome Nova	Exome Nova	Genome NovaX	Exome NovaX	Genome Nova	200Kb Nova	Genome NovaX	200Kb NovaX
Sequencer	\$ 600	\$ 51	\$ 200	\$ 17	\$ 1,000,000	\$ 33	\$ 333,333	\$ 11
Twist Library Prep and Enrichment	35	35+65	35	35+65	35	35+65	35	35+65
Analysis	65	25	65	25	4,333	8	4,333	7.5
Cloud Storage	50	4	50	4	33,333	3	33,333	2.8
<b>TOTAL</b>	<b>\$ 750</b>	<b>\$ 180</b>	<b>\$ 350</b>	<b>\$ 146</b>	<b>\$ 1,037,702</b>	<b>\$ 143</b>	<b>\$ 371,035</b>	<b>\$ 121</b>
<b>% savings for Exome</b>	<b>76%</b>		<b>58%</b>		<b>99.99%</b>		<b>99.97%</b>	

WGS remains too expensive for oncology applications  
 We play in the WGS space through our library prep offerings



# Large Growing Core Business Markets



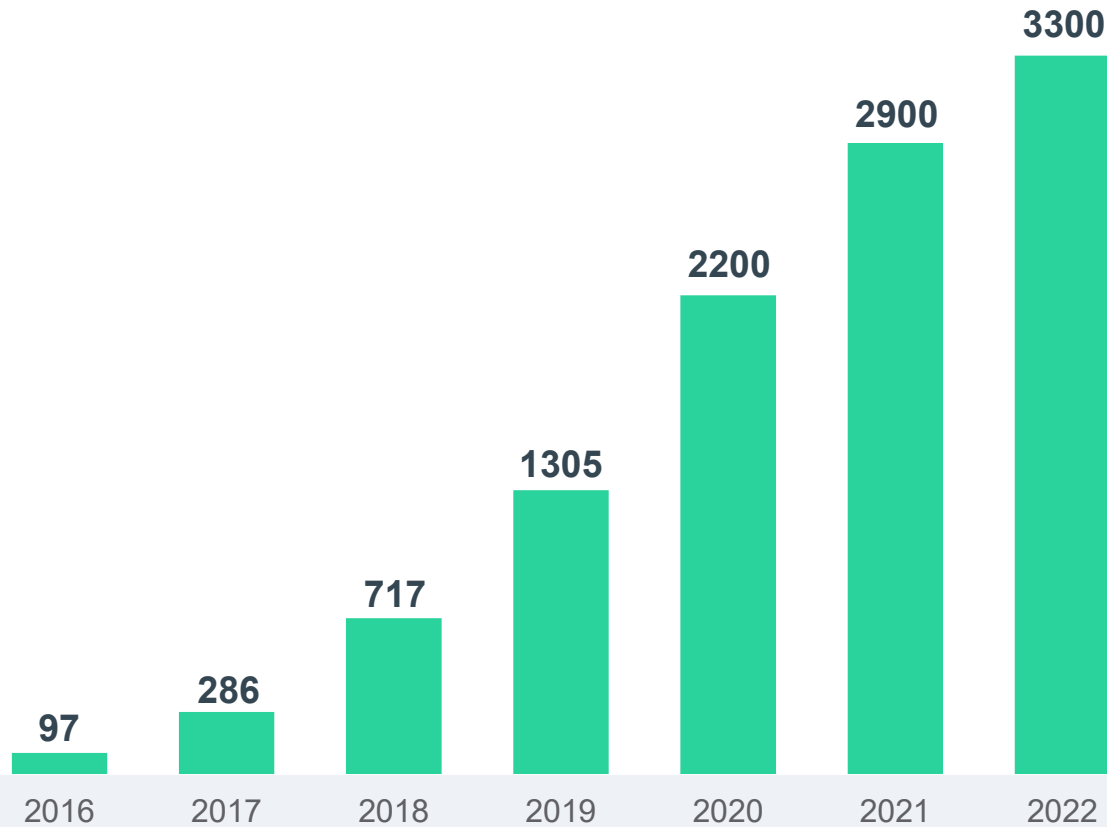
Sources: DeciBio, BCC, Markets & Markets, Bureau of Labor Statistics 2019





# Core Business Growth

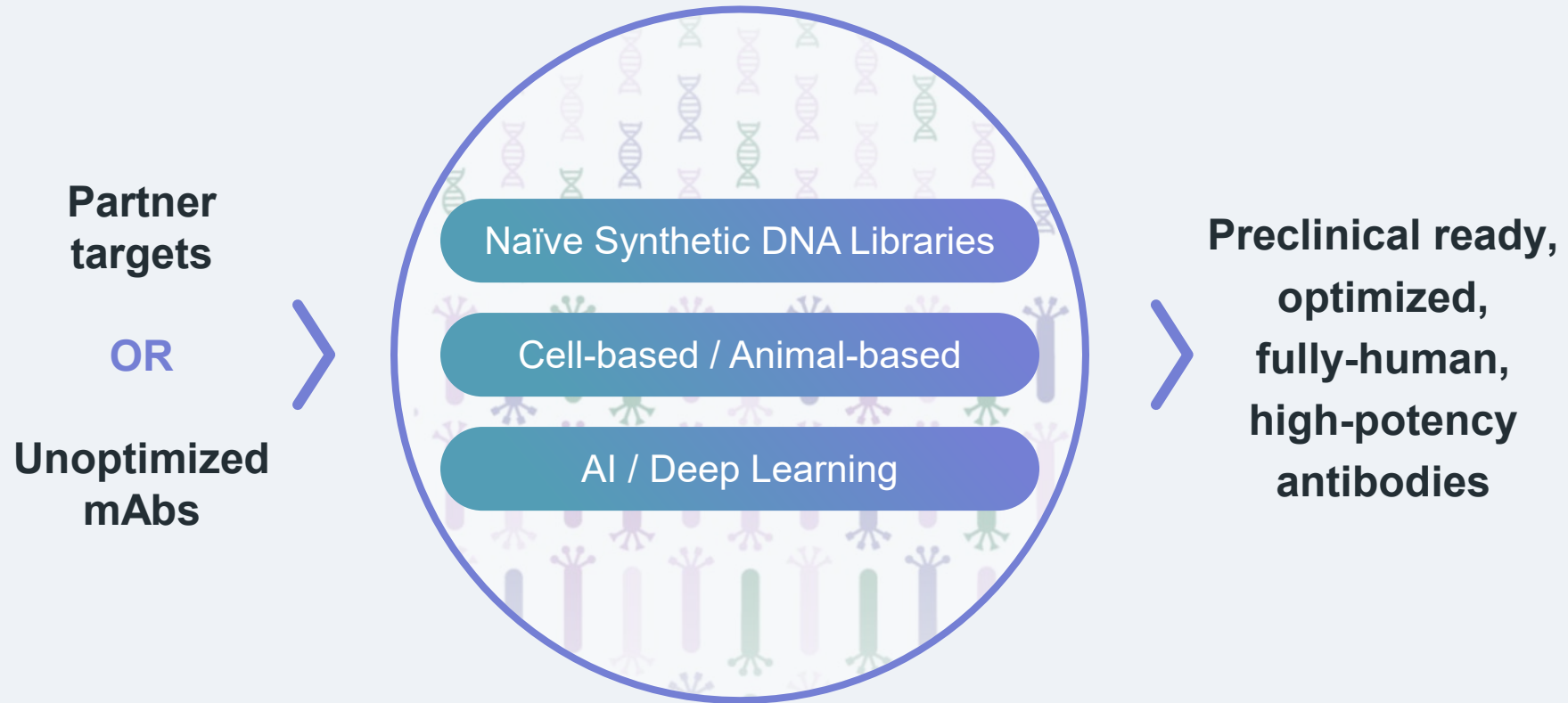
## Customers



## Core Business (SynBio and NGS) Path to Profitability

Line of sight to  
adjusted EBITDA  
breakeven at  
\$300M revenue

# Disruptive Discovery and Optimization Engine



**One stop shop with three discovery platforms**

# End-to-End Antibody Discovery Services



Therapeutic Discovery and Screening



Lead Optimization



Candidate Selection  
& Advancement

## WHY WE WIN

Comprehensive approach with in vitro, in vivo, and AI / ML

Fast workflow with highest natural diversity

Success with hardest biological targets

Track record of candidates in clinical trials



# Combined Biopharma Business Including Historical Abveris

## Broad

### Disease Indications

Cancer, Neurology, Immuno-oncology,  
Infectious Disease, Canine / Feline, Other

## Varied

### Modalities

mAbs, Bispecific Antibodies, VHH, ADC,  
Protein Engineering, More

# 278

## Partners

# 112

## Active Programs

# 464

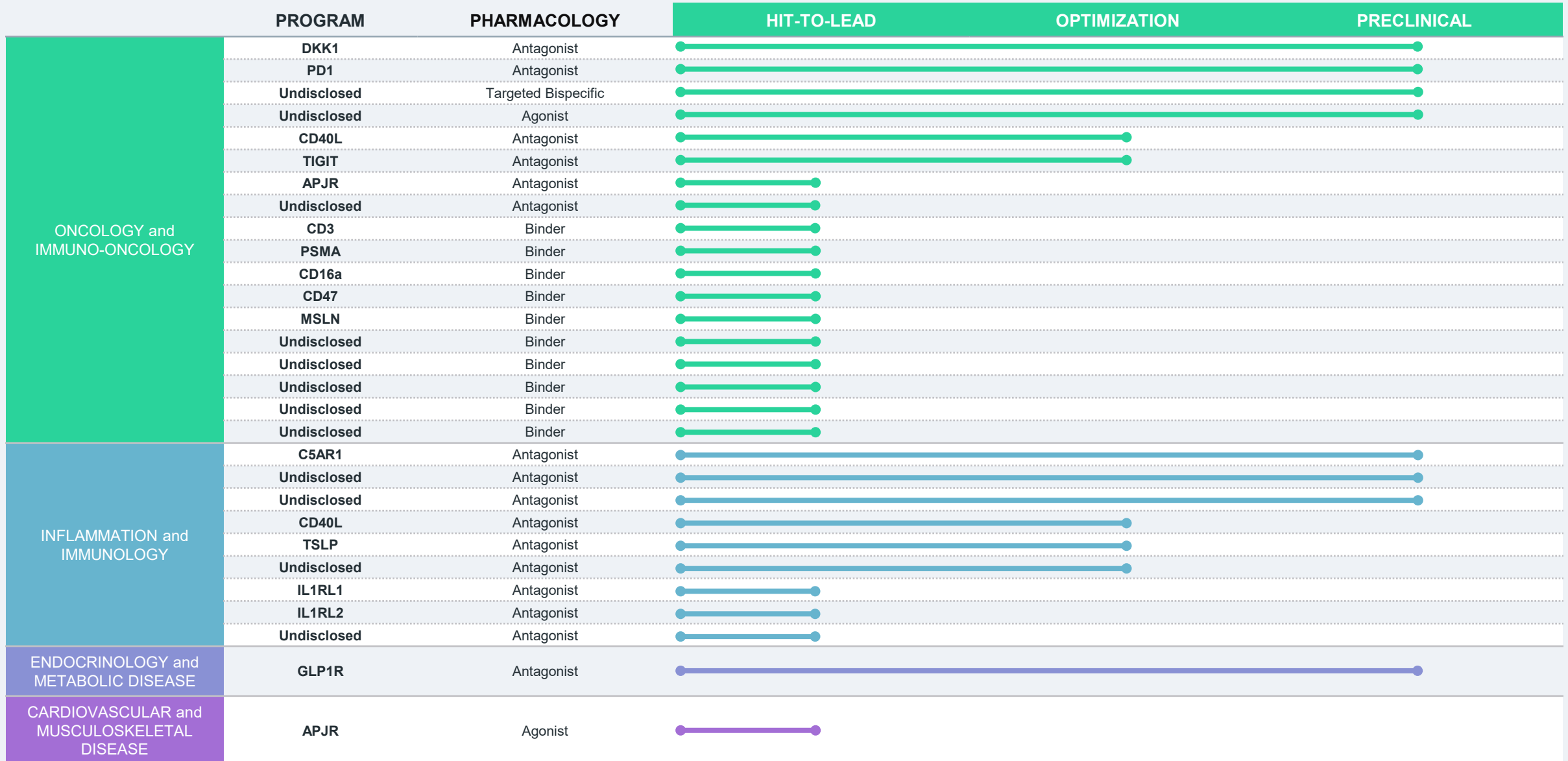
## Completed Programs

# 59

## Milestones/ Royalties



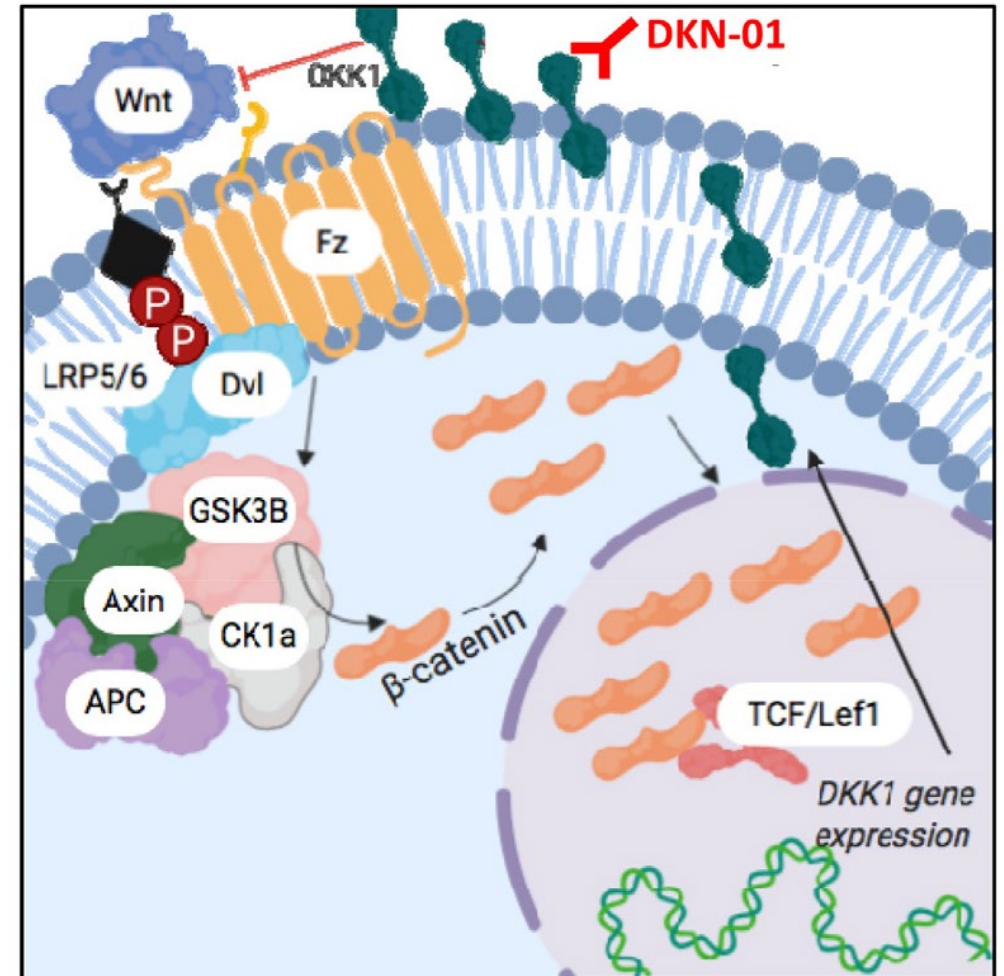
# Outlicensing Pipeline of Fully Validated and Functional Targets



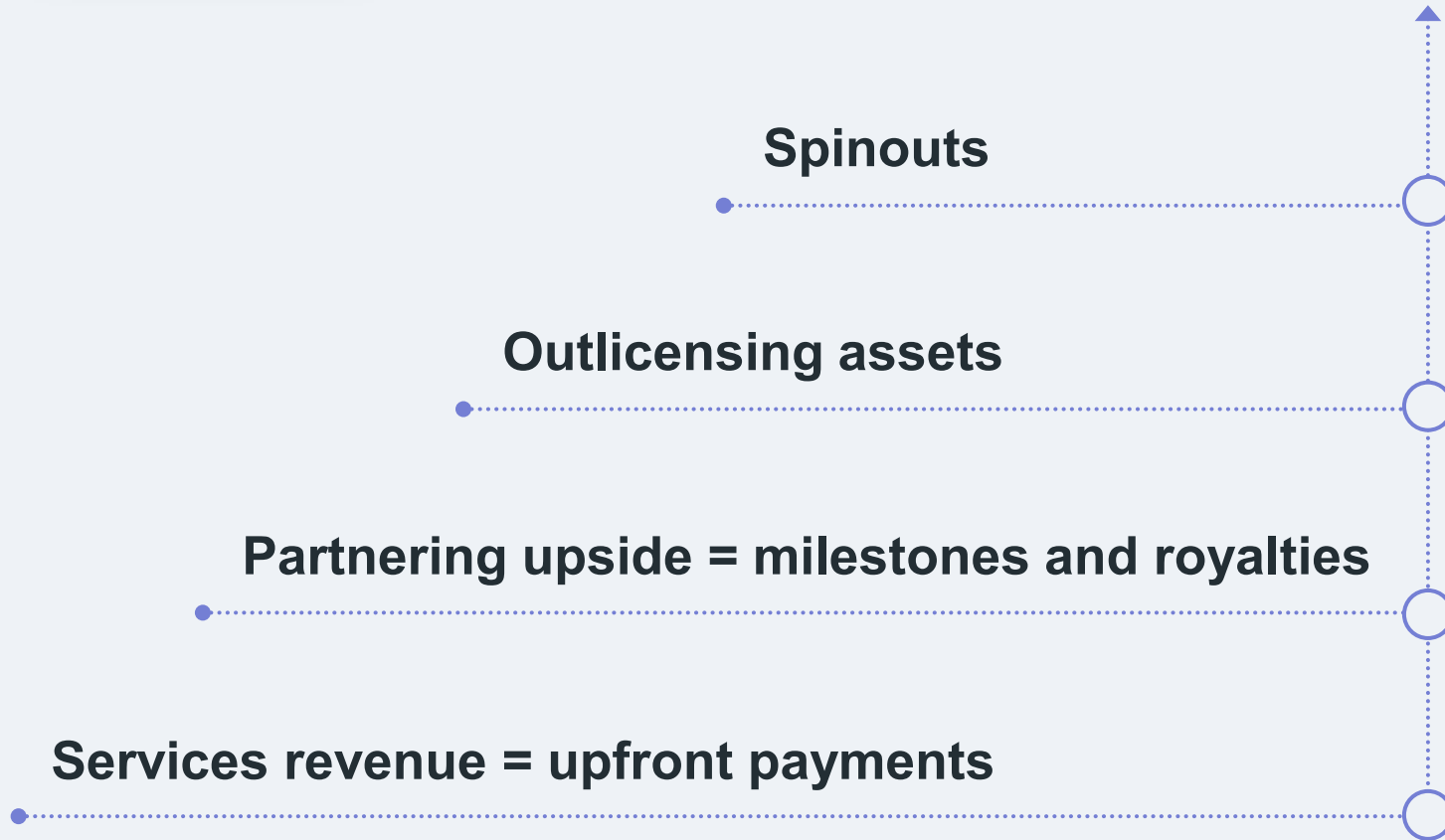


# Twist DKK1 Antibody Program: Modulator of Wnt Pathways

- DKK1 is tumorigenic in multiple cancer types, immunosuppressive (via MDSCs and NK cells)
- DKK1 inhibits Wnt from binding to LRP5/6
- Anti-DKK1 mAb activates immune response in preclinical models, binding and removing DKK1 from tumor microenvironment
- Dosing frequency / limited efficacy with DKN-01
  - Tolerated in combination with chemotherapy but PK and biomarker data indicate potential anti-angiogenic and immunomodulatory activity, need for increased dose and intensity
- Twist-developed antagonist to DKK1 targeting improved potency, dosing over DKN-01



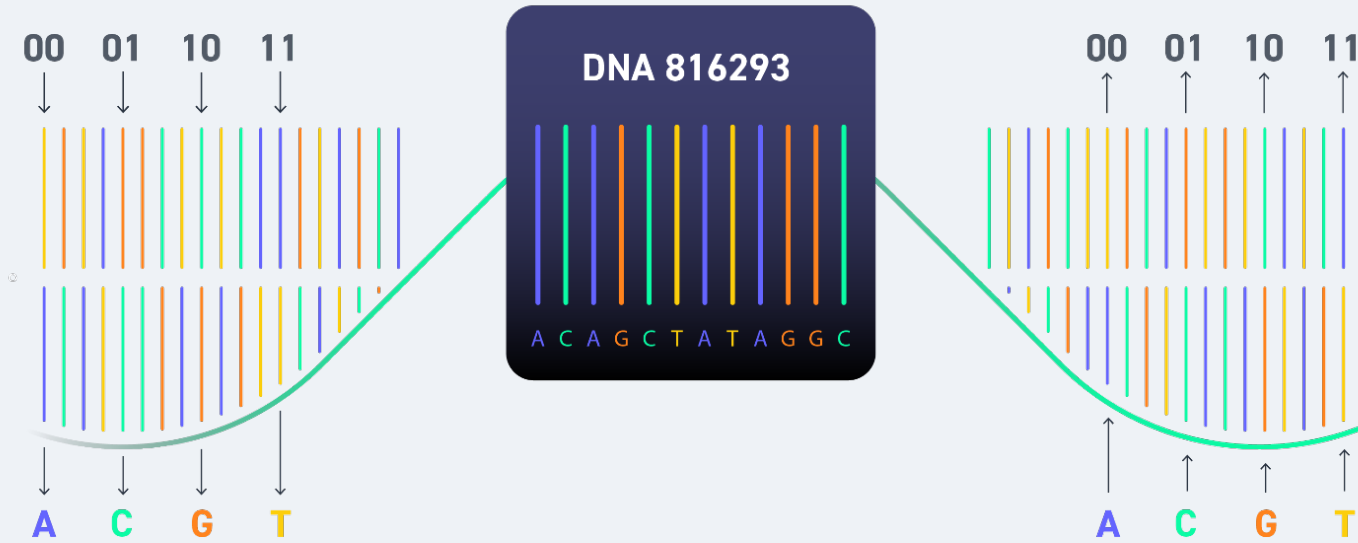
# Growth Platform



## Biopharma Path to Profitability

Line of sight to  
adjusted EBITDA  
breakeven at  
\$80M revenue

# Reinventing Archive Storage



## DNA Data Storage

delivers a unique value proposition, initially addressing deep archive to enterprise archive use cases and ultimately “Computational Cold Storage”

**Density:** Solutions scaling from Data Lakes to *Data Oceans*

**Longevity:** Enabling *century* and *millennium* scale archive storage

**Immutability:** Stable format – *storage medium is pool of DNA molecules* – always able to read DNA

**Sustainability:** Lowest *carbon footprint* amongst all storage media

**Store & Compute:** Biotechnology tools enabling computing on ‘Cold Storage’

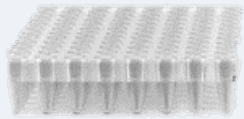


# Synthesis Scaling Innovation Roadmap

We're moving from writing DNA at megabyte to *gigabyte* to terabyte level

More than 8 orders of magnitude of scaling!

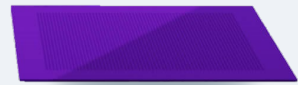
Before Twist



Chip Scaling: **100 Oligos**

DNA Pool Scaling:

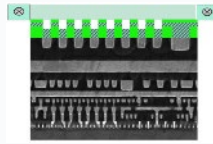
2016



**1M Oligos**

MB Scale

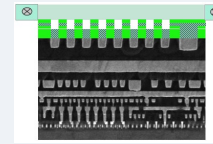
POC Chip



**256M Oligos**

GB Scale

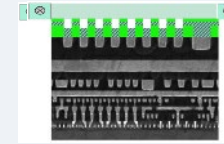
Alpha Chip



**3B Oligos**

TB Scale

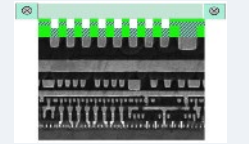
Beta Chip



**10B Oligos**

Lower cost

Enterprise Chip



**50B Oligos**

Lowest cost

Single chip size supports all generations

# Advancing Commercial Solution: Century Archive

- Expected early access product offering late calendar 2023
- Pilot production of POC chip
- Pilot production of *DNA data storage writer* supporting scalable chip format
- Partner with early adopters to set stage for commercial success
- New tier of storage



## TARGET EARLY ACCESS CUSTOMERS



Media/Entertainment



Big Science/Healthcare



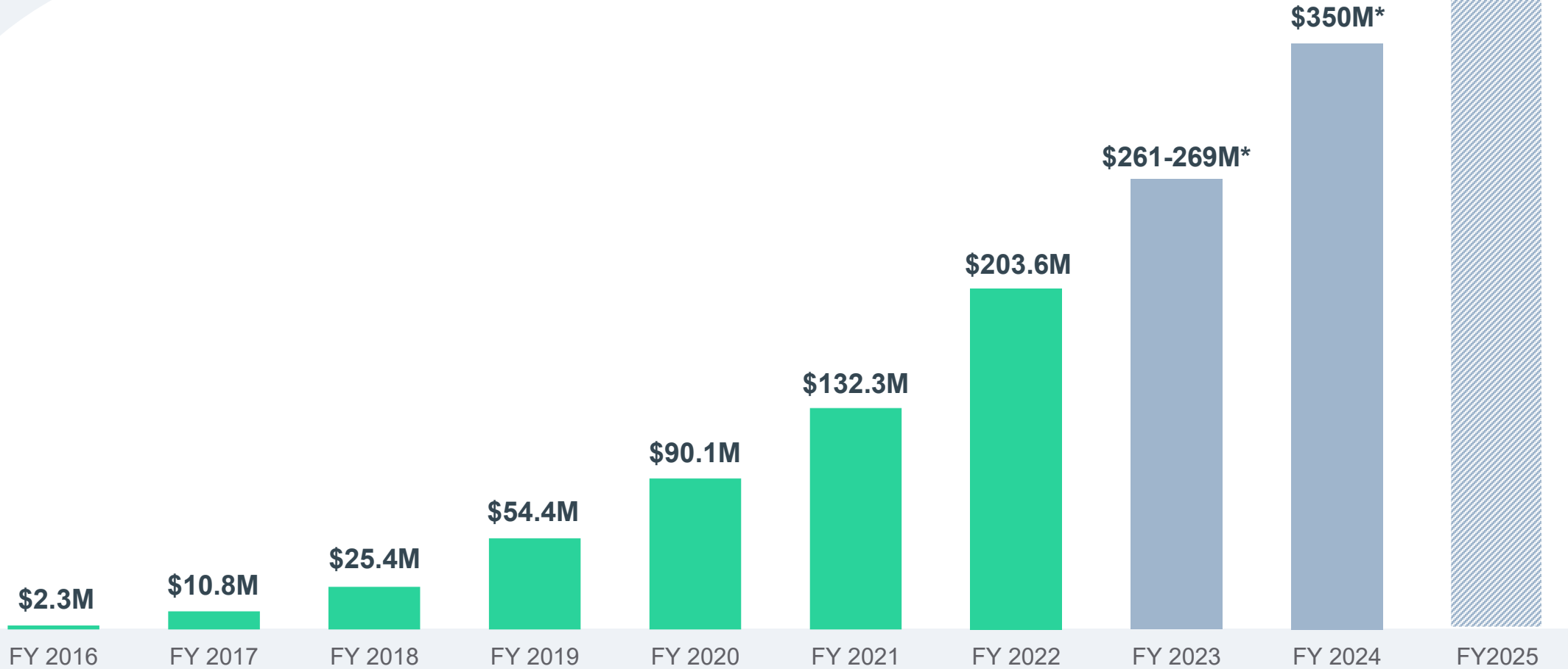
Preservationists (Cultural heritage)



Government



# Growing Revenue Stream



\* Guidance provided November 18, 2022



# Path to Profitability

## FY2023 Guidance\*

## FY2024 Guidance\*

\$261-269M

Revenue

\$350M

~39-40%

GM

~49%

\$365M

OpEx

\$386M

\$260M  
Stock-based Comp: \$83M  
Dep & Amor: \$26M  
Data Storage OpEx: \$46M

Net Loss

\$215M  
Stock-based Comp: \$90M  
Dep & Amor: \$35M  
Data Storage OpEx: \$57M

\$50M

CapEx

\$40M

\$300M

YE Cash Balance

\$170M

\* Guidance provided November 18, 2022



# ESG: Sustainability and Diversity Are In Our DNA

## Production

Our environmentally friendly production reduces

**99.8%**

Impact of oligo synthesis

### Miniaturization

enables more sustainable impact for our customers' products and research

## People & Culture

**63%**

Employees of color

**42%**

Women in executive leadership positions  
(39% of total workforce)

**82%**

Employees say Twist is great place to work  
(vs. 59% U.S. average)







**Innovative platform** for DNA on silicon

**Large, growing** markets

**Differentiated** products

**Scaling growth** across four businesses

**Sustainable** for our products and customers

**Validated** business models

**Continued high** revenue growth

**Path to profitability** with strong track record

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TACTAGCATCGAAGGAT