CODEX DNA

BUILDING BIOLOGY

Codex DNA presentation | February 2022

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This presentation includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties as well as our own estimates of potential market opportunities. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. We believe that these third-party sources and estimates are reliable, but have not independently verified them. Our estimates of the potential market opportunities for our products include several key assumptions based on our industry knowledge, industry publications, third-party research and other surveys, which may be based on a small sample size and may fail to accurately reflect market opportunities. While we believe that our internal assumptions are reasonable, no independent source has verified such assumptions. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of important factors that could cause results to differ materially from those expressed in the estimates made by third parties and by us.


At Codex DNA, our mission is to apply our breakthroughs in automation solutions for DNA, mRNA, and protein synthesis to enable customers to program and “write” synthetic biology that creates sustainable healthcare and technology solutions for some of humanity’s biggest challenges.

CODEX DNA AT A GLANCE

- End-to-end automation of synthetic biology powered by Gibson Assembly method
- Large IP portfolio of over 300 patents creates *picket fence* and first-mover advantage
- Opportunity to unlock large, multi-billion-dollar TAMs for mRNA therapeutics + vaccines, biologics, genome engineering, and digital DNA storage
- Strong commercial growth trajectory is anticipated for both commercialized products and products in development
- Rapid revenue growth results from strong demand, increased use and new products
- Potential for significant gross margin expansion
- Robust development pipeline creates potential for significant upside

CODEX DNA TEAM

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VP Global Sales

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Innovation

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VP Manufacturing & Quality

JUSTIN EMORY
VP Information Technology

Enablement

JENNIFER McNEALEY
Chief Financial Officer

ROB CUTLER
Chief Legal Officer

LAURA PUGA
VP People & Culture

THE GENOMIC REVOLUTION ENABLED DECREASING COSTS + INCREASING SCALE FOR SEQUENCING, OR READING DNA

THE NEXT REVLOUTION WILL BE DRIVEN BY SYNTHETIC BIOLOGY APPLICATIONS THAT WRITE OR RE-CODE DNA TO ADDRESS LARGE OPPORTUNITIES IN HEALTHCARE + TECH

2001
Sequencing of the human genome

Thousands and thousands of genomes sequenced for more than 3,500 species

CODEX DNA

BIOLOGICS

mRNA VACCINES + THERAPEUTICS*

GENOME ENGINEERING

DIGITAL DNA STORAGE*

*Future product offering

OUR PRODUCTS AND SERVICES ARE POSITIONED TO DISRUPT AN INDUSTRY AND DRIVE THE NEXT REVOLUTION

Codex DNA comprehensive synthetic biology solution

BioXp system

Push-button, walk-away, end-to-end automated synthetic biology workstation

BioXp portal

Online portal that offers an intuitive guided workflow + design tools for building new DNA + mRNA sequences

BioXp kits

All the necessary building blocks + reagents to allow BioXp systems to produce synthetic DNA + mRNA

Biofoundry services

Enabled with the BioXp system, our services are designed to tackle fast turn-around times and complex projects

Cloud-based scripts

Product-specific and pre-validated scripts that optimize + simplify the use of the BioXp kits on the BioXp system

Benchtop reagents

Gibson Assembly, Vmax cells, synthetic genomes

SYNTHETIC BIOLOGY DEFINED

The engineering of biological components such as genes, mRNA, proteins, viruses, and living cells starting from a digital DNA sequence, enabling the construction of those macromolecules and organisms with new and improved biological functions

APPLICATIONS

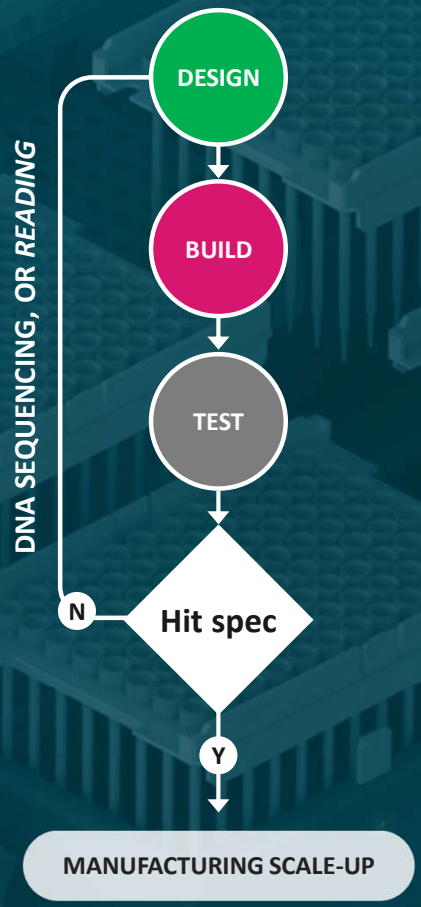
THERAPEUTICS
Solutions to design, build and test biologic constructs against drug targets

VACCINES
Solutions to develop vaccines for emerging viruses and pathogens

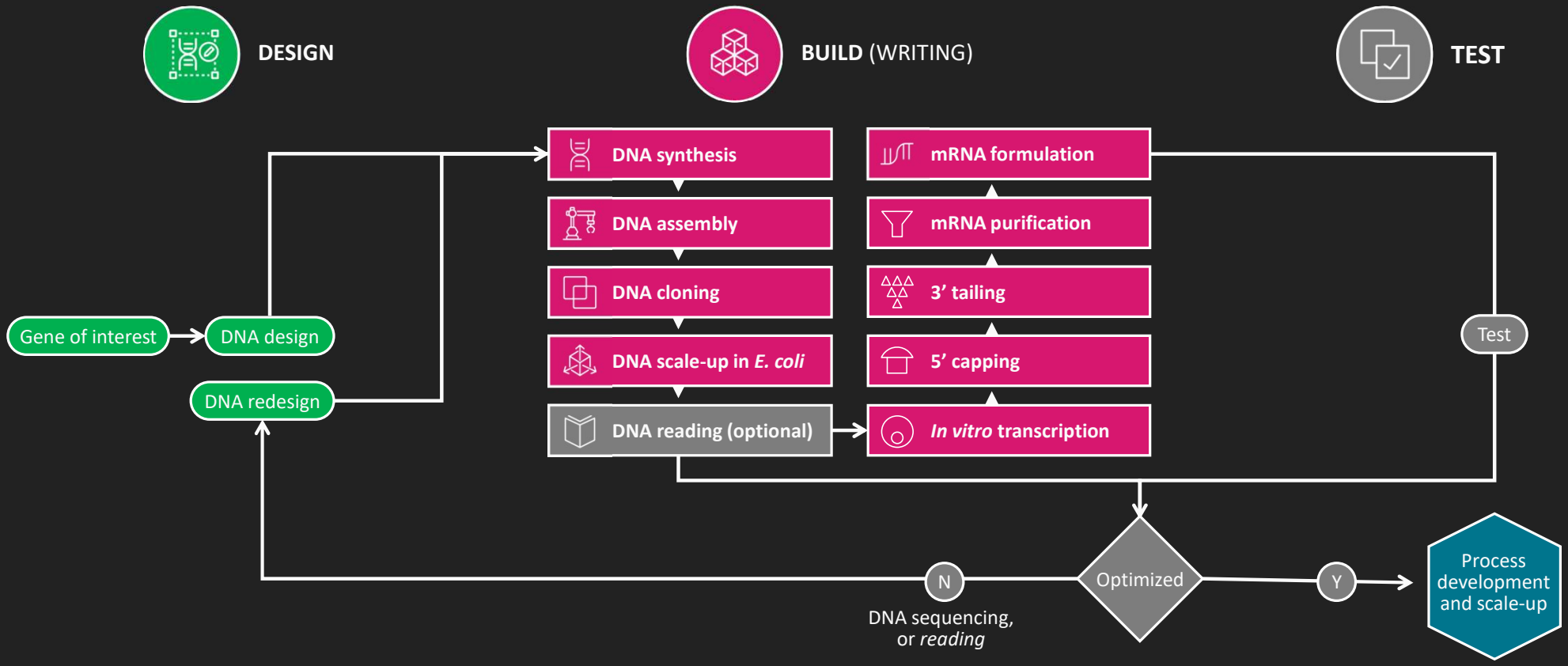
AGRICULTURE
Solutions to improve crop yield and create novel food sources

DATA STORAGE/CONSUMER MARKETS
Solutions to store digital files

PARADIGM



BUILDING DNA & mRNA IS A DIFFICULT MANUAL PROCESS ...



...AND THE INDUSTRY IS HIGHLY FRAGMENTED, WITH NO CLEAR PATH TO BEING ABLE TO RAPIDLY ITERATE CENTRAL DOGMA PRODUCT CYCLES

Problem with building DNA or mRNA: highly fragmented industry with multiple providers using different approaches

Days to weeks/months

Difficult to manage

Long lead times

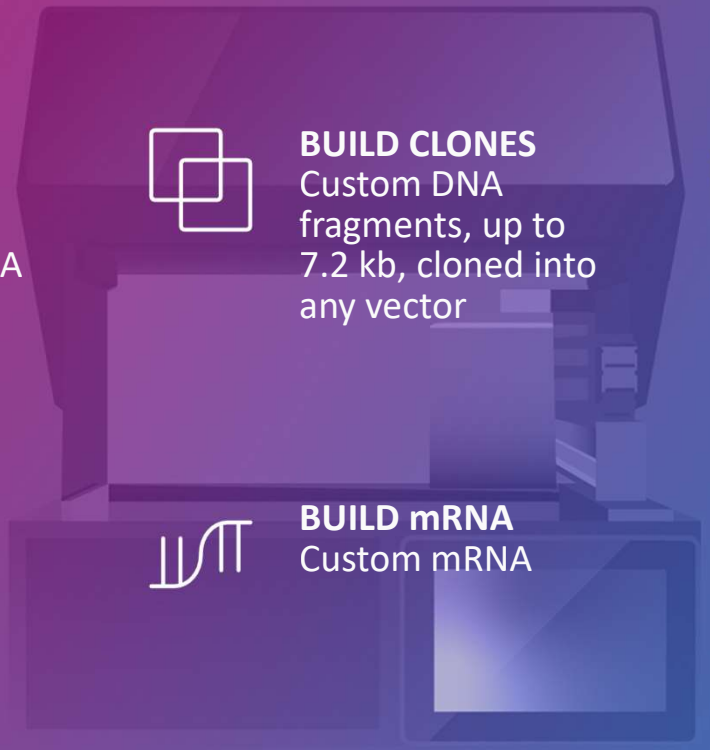
Inconsistent

Lack of control

Limited solutions

* Future product offering

TO ADDRESS THE NEED FOR RAPID ITERATION OF PRODUCT CYCLES, WE AUTOMATED THE ENTIRE BUILD CYCLE FOR SYNTHETIC BIOLOGY APPLICATIONS



BUILD GENES
Custom high-fidelity gene fragment + mRNA templates

BUILD CLONES
Custom DNA fragments, up to 7.2 kb, cloned into any vector

BUILD LIBRARIES
Custom variant DNA libraries

SCALE-UP
Cell-free DNA amplification

BUILD mRNA
Custom mRNA

BUILD PROTEIN*
Custom peptide + protein synthesis

* Future product offering

AND WE ARE DISRUPTING THE SYNTHETIC BIOLOGY INDUSTRY BY DECENTRALIZING APPLICATIONS WITH CUTTING-EDGE TECHNOLOGY AND PRODUCTS

We believe we are the first push-button system for on-demand printing of functional grade synthetic DNA, mRNA + protein*

Industry-leading quality and performance in speed, fidelity, complexity (AI), build-size + scale

Potential to enable global distributed manufacturing for mRNA therapeutics, vaccines + biologics

Accelerates processes from *days, weeks, or months* to *days or hours*

Productivity increase during *design* + *build* phases, resulting in accelerated product development cycles

Enables workflows for antibody + protein engineering, precision medicine, genome editing + engineering

Simple, powerful platform for every lab

ERROR RATES
2.74x better

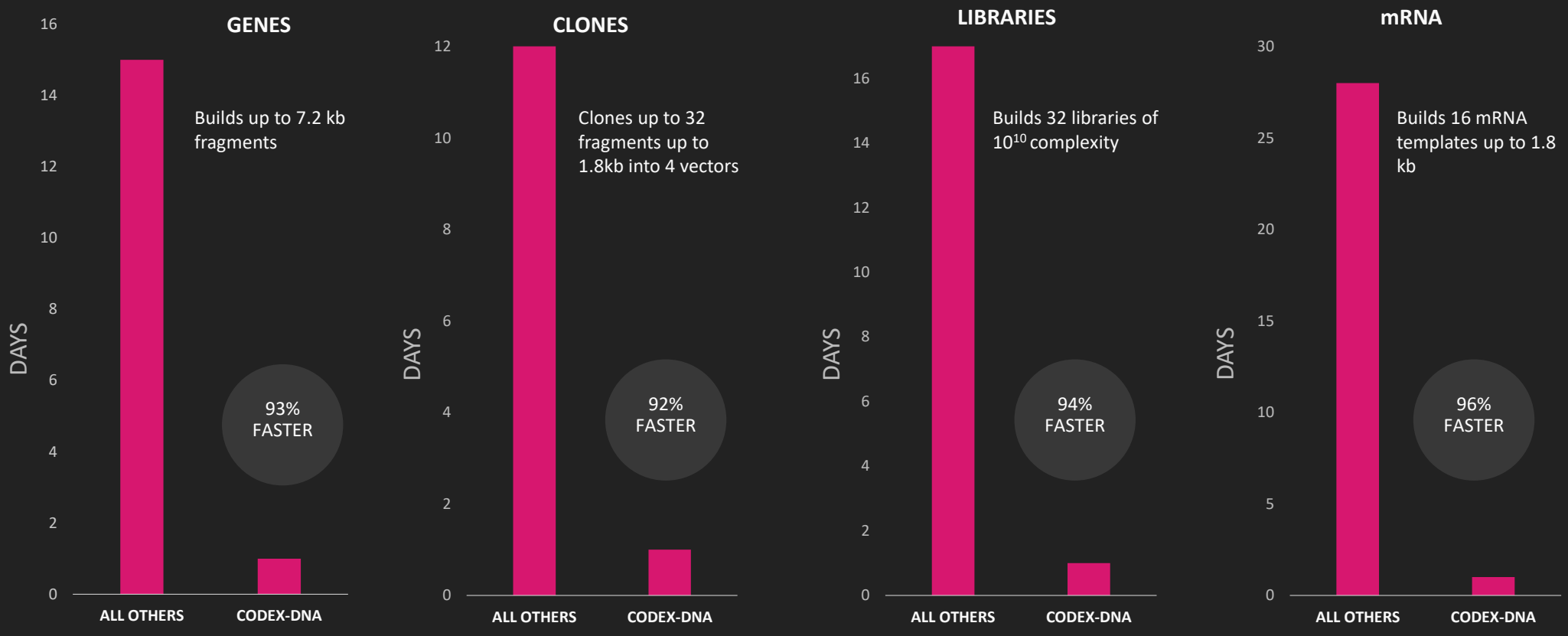
SPEED
12–17x better

SCALE
32 genes overnight

PRODUCTIVITY
20x+

The metrics shown above were calculated using averages derived from publicly available information and quotes received for comparable product offerings by some of our competitors, some of which included shipping times, and averages from the Company's workflows.
* Future product offering

SPEED MATTERS: THE INDUSTRY'S FASTEST BUILD TIMES FOR SYNTHETIC DNA AND mRNA



Note: The table only represents the average timeline from certain of the Company's competitors determined by management to offer the most comparable service. The table does not represent all products offered by the Company or its competitors.

RECENT BIOXP PLACEMENTS SHOW ADOPTION ACROSS MULTIPLE HIGH GROWTH WORKFLOWS

Recent BioXp system placements mix

BIOLOGICS

GENOME EDITING

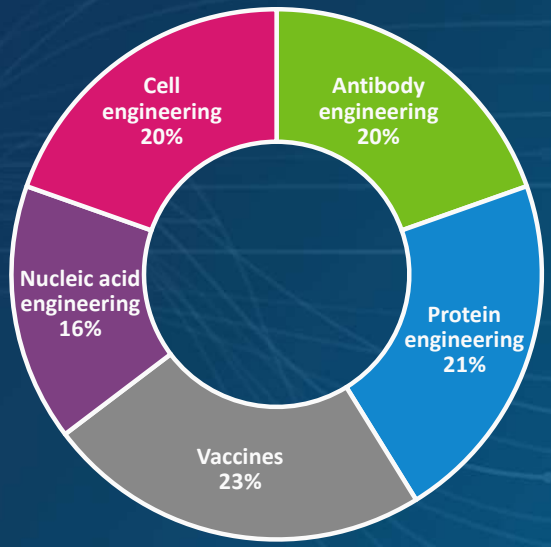
CELL & GENE THERAPY

VACCINE DEVELOPMENT

AGRICULTURE

SUSTAINABLE FOODS

WORKFLOWS

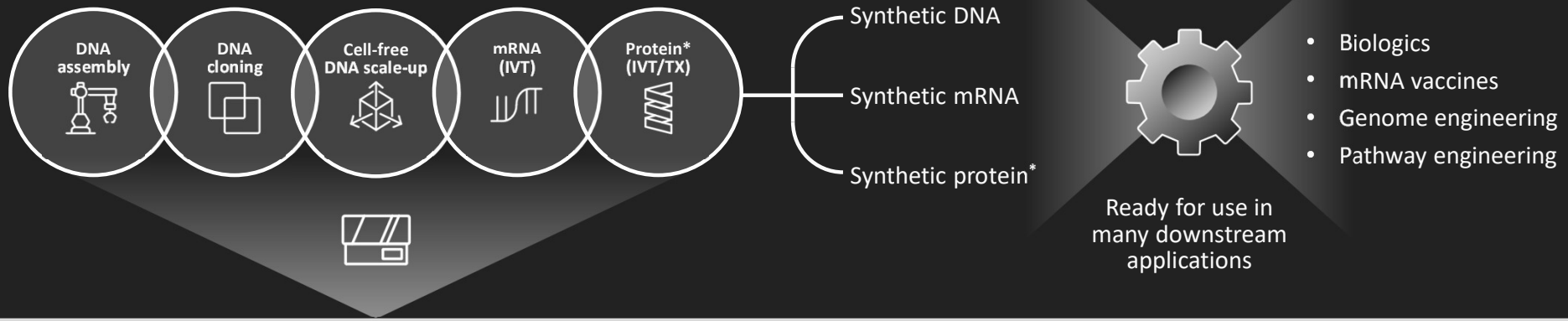


As of December 31, 2020

IT'S EASY TO USE: PUSH-BUTTON, FULLY- AUTOMATED, END-TO-END SOLUTION FOR ANY BIOLOGIST

Cloud-based scripts, along with BioXp kits, provide scalable, fast, robust results

HANDS-FREE AUTOMATION

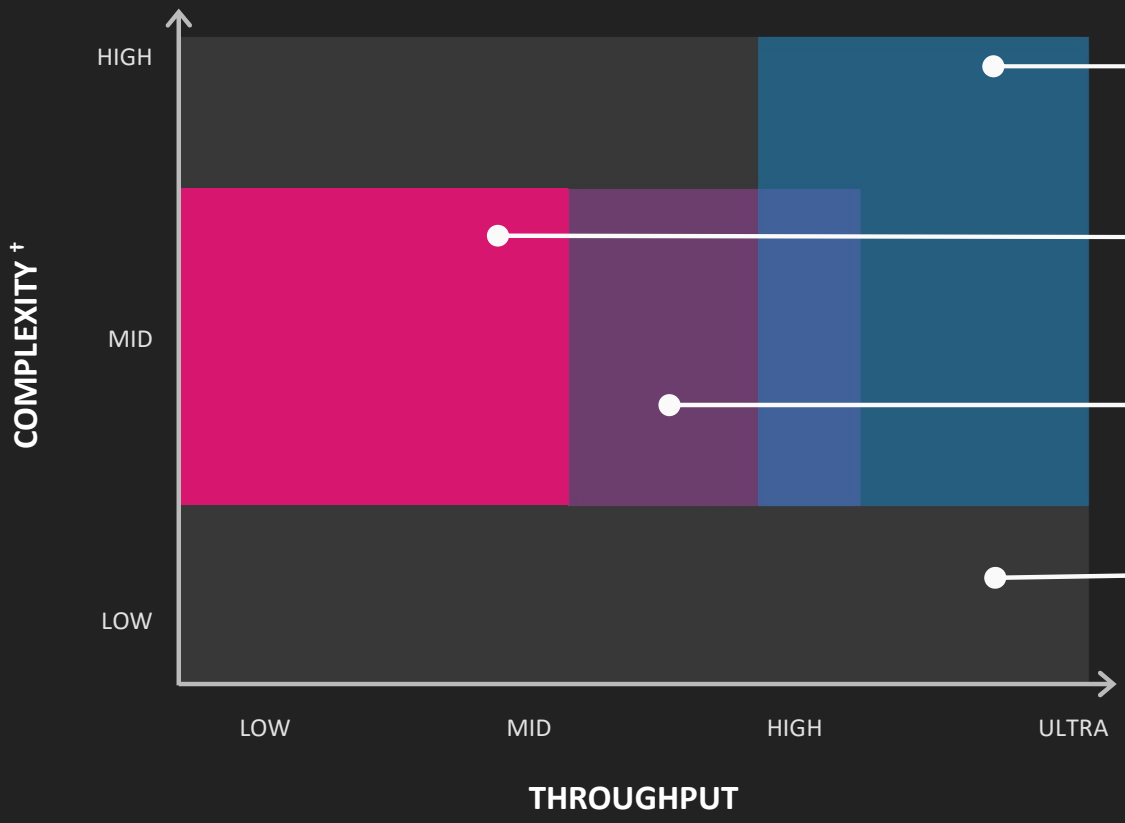


SIMPLE TO USE

1. Use BioXp portal to order BioXp 3250 kits
2. Load BioXp 3250 kits once received
3. Push button and walk away
Hands-free runtime: 8–24 hrs
Product ready for use

* Future product offering

COMPETITIVE LANDSCAPE: SECURING A PLACE IN AN UNDERSERVED MARKET*



BioXp BIOFOUNDRY SWEET SPOT
- Mid-to-high complexity
- Small-scale, high throughput

BioXp SWEET SPOT
- Mid-to-high complexity
- Small-scale, low-to-mid throughput

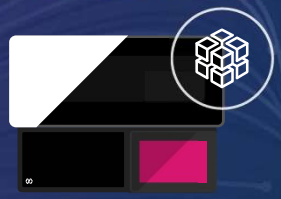
FUTURE BioXp 9600 SWEET SPOT
- Small-scale, high throughput

OPPORTUNISTIC ACROSS BioXp + BIOFOUNDRY
- Low complexity
- High-to-ultra-high throughput

* Builds that require 5 kb+ synthetic DNA or mRNA templates and all mRNA build.
† RUO applications requiring small-scale synthesis of synthetic DNA or mRNA.

USE CASE: NUMEROUS PHARMA / BIOTECHNOLOGY ACCOUNTS

For antibody- and protein-based drug candidates

CODEX DNA	COMPETITOR†
	
VARIANT LIBRARIES BioXp™ kits **Scanning | Combinatorial | Targeted**	**VARIANT LIBRARIES** **Various**
16 HOURS*	**AVERAGE OF 34 DAYS***
	

~**35**X FASTER ITERATION EQUATES TO A ~73% REDUCTION IN THE ANTIBODY, PROTEIN AND PATHWAY ENGINEERING WORKFLOWS

* Assumes antibody or protein engineering workflow requires the synthesis of two synthetic DNA libraries during screening.
† Based on average product delivery times, not including ship days for similar products from IDT, Twist Biosciences, Genewiz, GenScript, and Thermo Fisher Scientific.

Pfizer Collaboration

Pfizer to Utilize SOLA to Accelerate R&D of New mRNA-based Vaccines and Biotherapies

Deal Overview:

- Early access collaboration with Pfizer around our novel SOLA enzymatic DNA synthesis technology
- Pfizer intends to leverage SOLA to accelerate development of new mRNA-based vaccines and biotherapies
- Pfizer is a market leader in mRNA vaccines - produced 3 billion vaccine doses in 2021 and expect to produce 4 billion doses in 2022

Deal Terms:

- Upfront and near-term potential milestones up to $18M
- Option for exclusivity in two therapeutic areas
- For exclusive applications development milestones up to $55M + commercial milestones up to $180M plus royalties each application
- With success in both exclusive applications total deal value of $500M+
- Non-exclusive applications also eligible for development milestones, commercial milestone and royalties

Deal is a validation of the impact of our cutting-edge SOLA enzymatic DNA synthesis technology

USE CASE: BIOFOUNDRY SERVICES

Codex DNA's solution applied to cellular agriculture

NEED
Rapid iteration using a highly targeted or enriched library — current outsourcing relationship takes too long and did not provide enriched library at desired specifications

SOLUTION
Codex DNA BioXp biofoundry services engaged to deliver a series of enriched libraries

RESULT
Customer developed entire workflow around Codex DNA enriched libraries — customer observed significant improvements in productivity

cellibre

DIFFERENTIATED BIOFOUNDRY SERVICES

USE CASE: POSITIVE PROOF OF CONCEPT RESULTS FOR PRECISION MEDICINE WORKFLOWS

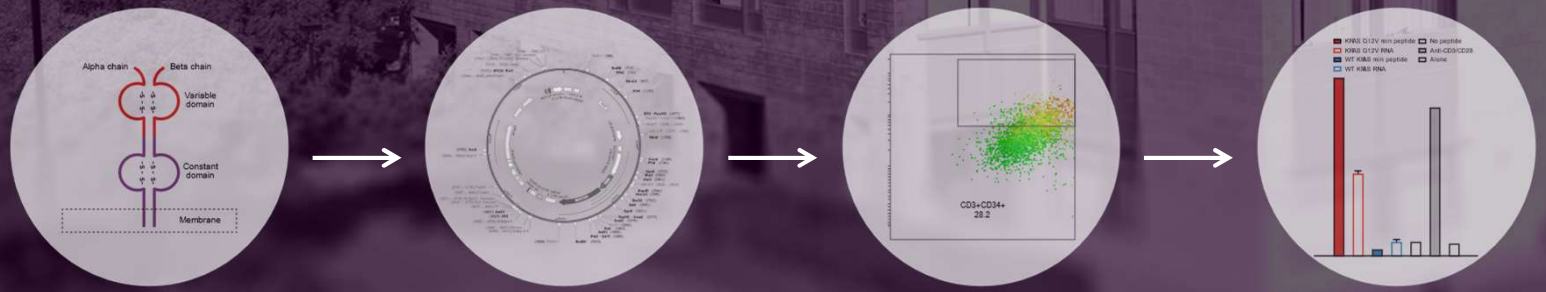
Codex DNA solution generates biologically active mRNA

NEED
Customer seeking rapid synthesis capabilities for KRAS G12V TCRs as a potential mRNA vaccine

SOLUTION
Used BioXp system to rapidly and accurately synthesize and clone TCRs for KRAS G12V and associated mRNA

RESULT
mRNA from synthetic TCRs elicited desired immune response

La Jolla Institute FOR IMMUNOLOGY

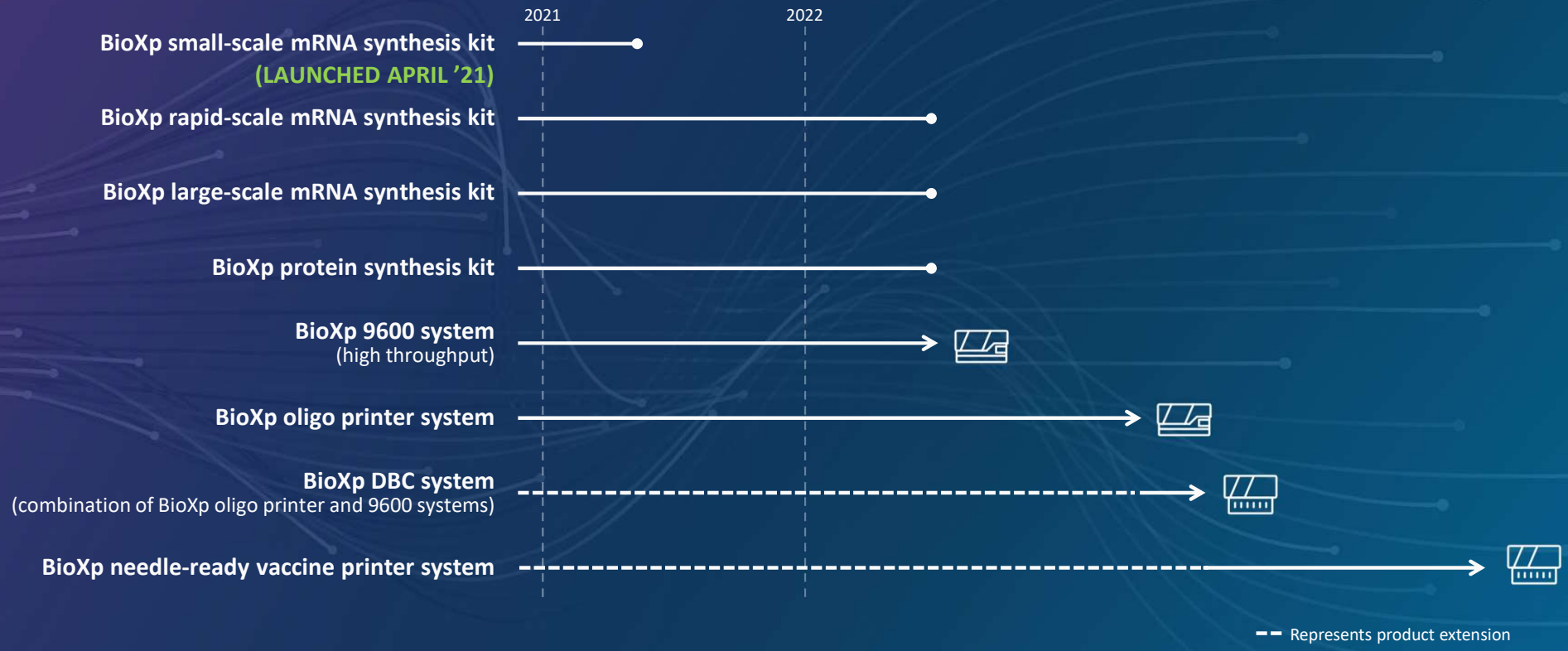


Graphics provided by Dr. Stephen Schoenberger of La Jolla Institute for Immunology

STRONG ADOPTION BY INDUSTRY LEADERS

ROBUST PIPELINE OF INNOVATIVE SYSTEMS AND KITS MAY UNLOCK ADDITIONAL OPPORTUNITIES

Provides strong foundation for future growth and lets customers scale with a single solution



Note: Timelines are presented for illustrative purposes only and are based on current management expectations; longer-term milestones are increasingly uncertain.

OUR mRNA PRODUCTS ARE DESIGNED TO SERVE THE EMERGING MARKET FOR mRNA BASED VACCINES AND THERAPEUTICS

Strong emerging interest in RNA-based therapeutics

+

COVID-19 accelerated long-awaited therapeutic platform validation

+

Innovations have opened the RNA therapeutics and vaccines market

+

Potentially leading to large-scale platform conversions from protein to mRNA

WE BELIEVE WE ARE THE IDEAL DISCOVERY SOLUTION FOR mRNA AUTOMATION OF VACCINES AND THERAPEUTICS

EXAMPLE: OUR SOLUTION CAN DELIVER AN AVERAGE OF 10 µg PER WELL OF BIOLOGICALLY ACTIVE mRNA

In a single, automated run

CODEX DNA	COMPETITOR†
	
BIOXP SMALL SCALE mRNA KIT (BioXp™ kits)	N/A
20 HOURS 	MULTIPLE WEEKS 

* Optional runs of the BioXp™ system allow for pooling of up to 16 wells from a single kit each generating an average of 10 µg of mRNA per well.

† The turnaround time estimate for our competitors is based on the general turnaround time for Aldevron, LLC, Trilink Biotechnologies, Inc., Bio-Synthesis, Inc. and others who were selected by management because of their comparable product offerings.

ADVANCING OLIGO PRODUCTION WITH PROPRIETARY ENZYMATIC DNA SYNTHESIS TECHNOLOGIES

Improving our gross margins + empowering customers

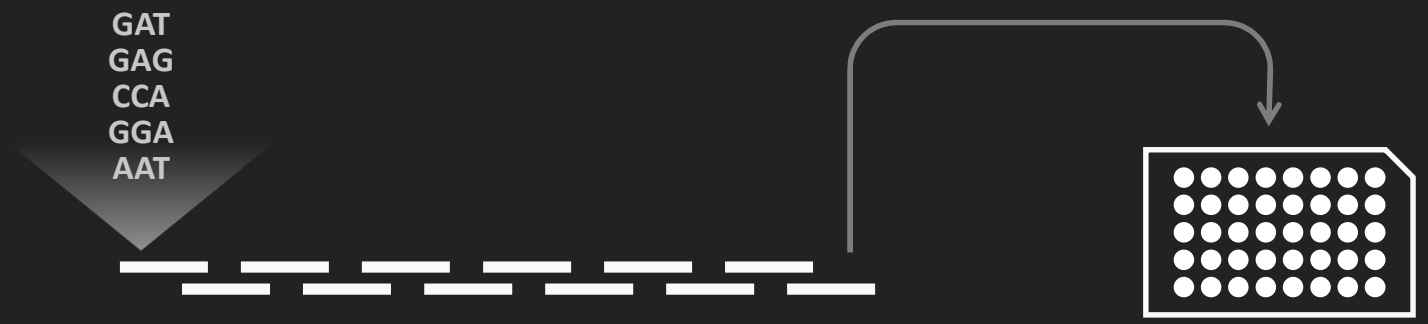
When integrated into our manufacturing process, it may significantly reduce our COGS

When launched on our BioXp systems, it may further entrench our products in large markets

DRAMATIC GROSS MARGIN IMPROVEMENT

ENABLE *ON-DEMAND* SYNTHESIS OF DNA, mRNA + PROTEIN

WHY OUR ENZYMATIC DNA SYNTHESIS PLATFORM MAY HAVE ADVANTAGES RELATIVE TO ALTERNATIVE APPROACHES



Our approach is designed to use a universal set of very small building blocks to build ***any*** DNA sequence

Customer orders our product as make-to-stock item

ADVANTAGES OVER ALTERNTIVE ENZYMATIC DNA SYNTHESIS CHEMISTRIES

FIDELITY | BUILDABILITY | COST | SPEED + THROUGHPUT | QUALITY

OUR ENZYMATIC DNA SYNTHESIS PRODUCTS MAY ENABLE GLOBAL DISTRIBUTED MANUFACTURING

Make biological samples anywhere, anytime, further accelerating time-to-result

CURRENT PARADIGM

1 → 2 → 3

Submit digital gene sequence information using our online ordering portal

We send reagent cartridges containing pieces of the desired genes to be built

Load the reagents, push *Start* button, and walk away

CUSTOM OLIGOS FOR EVERY ORDER

FUTURE PARADIGM

1 → 2

Customer orders our product as make-to-stock item
1–2x per year

Load the reagents, push *Start* button, and walk away

ALL REAGENTS ARE MADE-TO-STOCK

ADDITION OF *ENZYMATIC DNA SYNTHESIS* TO FUTURE BIOXP SYSTEMS MAY CREATE NEW, DISRUPTIVE SOLUTIONS FOR NEW MARKETS, INCLUDING CLINICAL APPLICATIONS

COMPETITION
(days to weeks)

CODEX DNA
(on-demand)

IDEAL SOLUTION

- ✓ mRNA therapeutics
- ✓ Personalized medicine
- ✓ Future pandemics

BioXp oligo printer system* **BioXp DBC system*** **BioXp needle-ready vaccine printer system***

* Launch anticipated after 2022

EXAMPLE: FUTURE PANDEMICS

Designed to synthesize and deliver vaccines globally

Send instructions over the internet to print a vaccine with the push of a button

Turn on 10,000+ printers at once

Deliver vaccines to emerging pandemic viruses in a matter of *days* instead of *months* —responding with unprecedented speed to new mutations

Potential to replace antiquated centralized manufacturing systems with modern distributed manufacturing technology

FINANCIALS

FINANCIAL STRATEGY HIGHLIGHTS

1 STEADY HISTORICAL GROWTH

- Growing installed base
- Launch of core portfolio products
- Early channel development

2 ACCELERATING FUTURE GROWTH

- Rapid adoption
- Recurring revenue
- Proven strategy
- Driven by channel + new products

3 EXPANDING MARGINS

- Increasing ASP
- Favorable mix

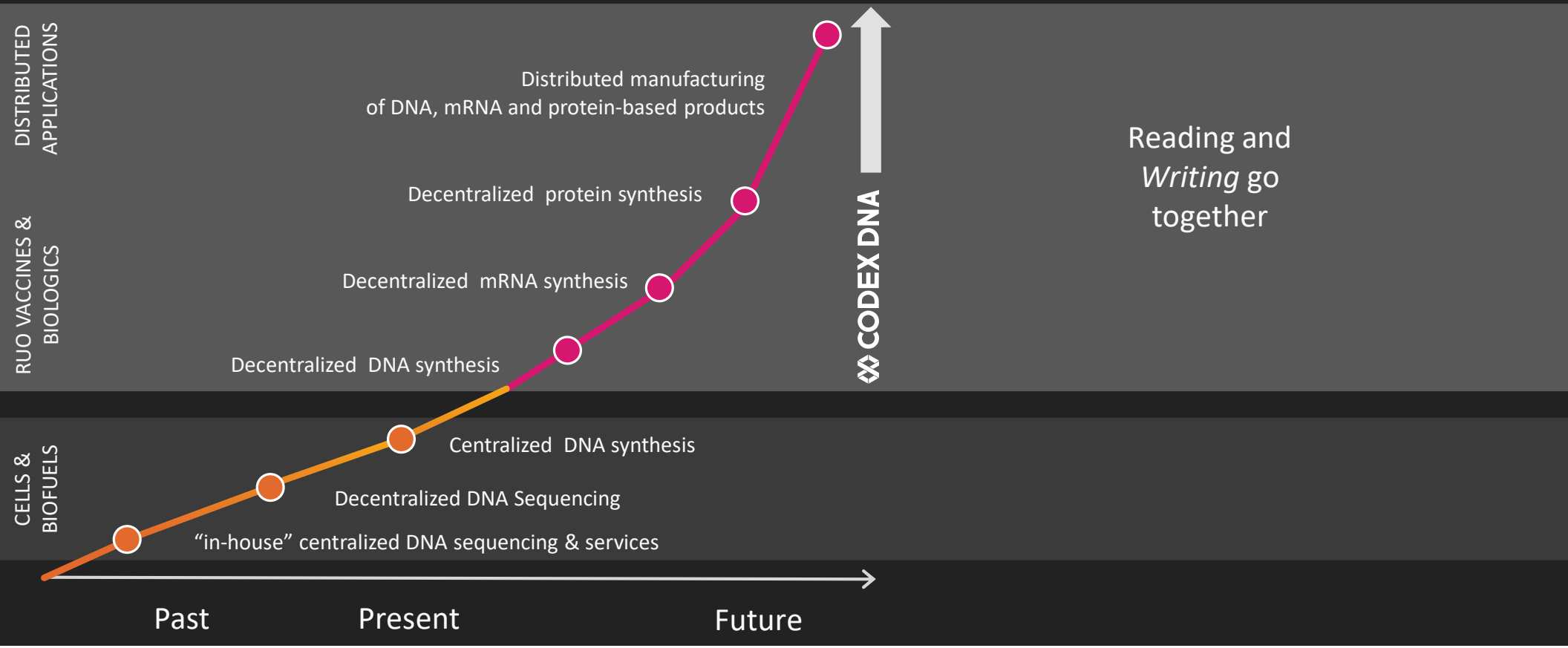
4 NEAR-TERM PROFITABILITY

- Operating leverage strategy to profitability in 2024

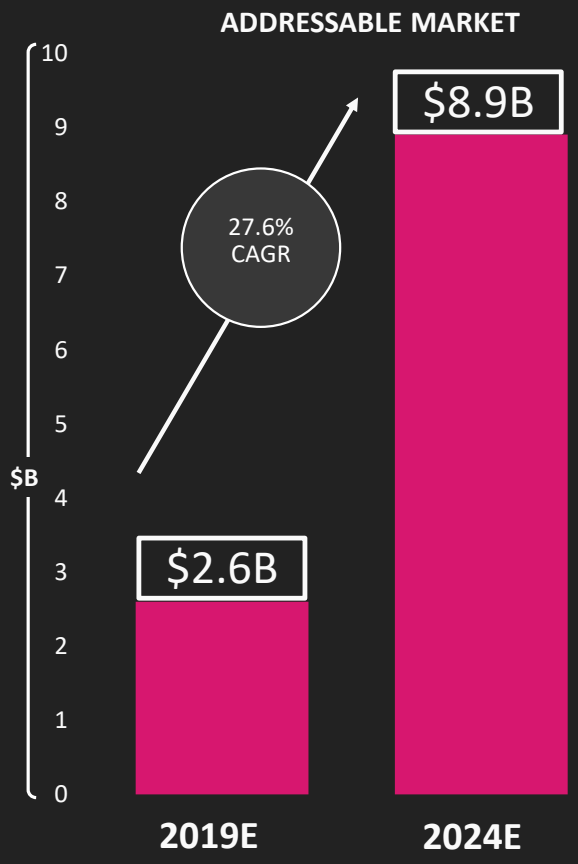
DIVERSIFIED REVENUE STREAM OF BIOXP SYSTEMS, BIOXP KITS, BENCHTOP REAGENTS, BIOFOUNDRY SERVICES, ROYALTIES + COLLABORATIONS

OUR GTM STRATEGY FOLLOWS A SOUND LOGIC OF FOCUSING ON SERVING LARGE TAMS IN NEED OF AUTOMATION

Synthetic biology "writers" or "printers" are the 2nd half of the equation *reading + writing*

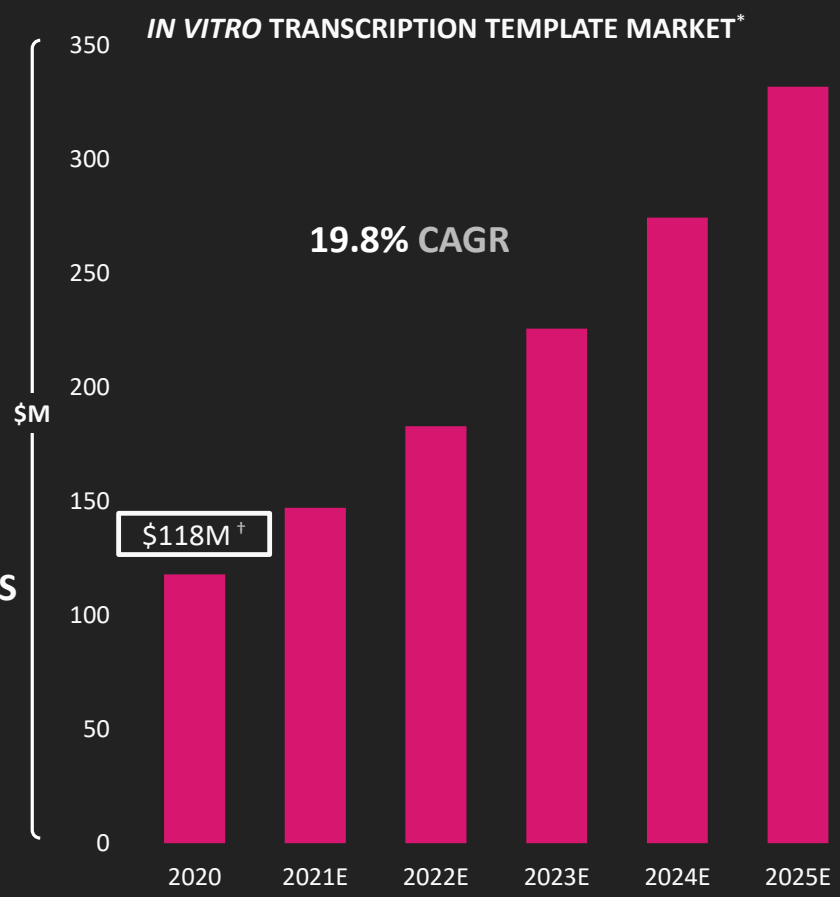


STRATEGY TO CAPTURE LARGE MARKET POTENTIAL



CONVERT *IN-HOUSE* TO BIOXP PLATFORM
SPEED, QUALITY, SCALE, CONTROL, EASE OF USE

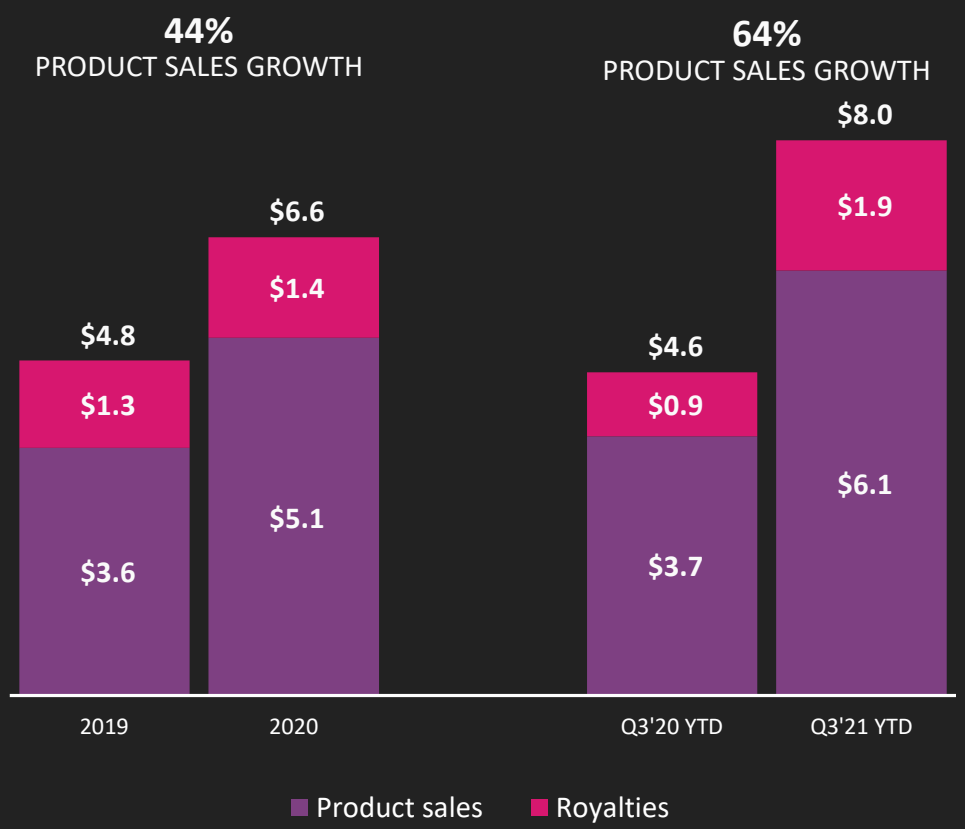
CONVERT *OUTSOURCED* TO BIOFOUNDRY SERVICES
SPEED + QUALITY



Source: *Synthetic Biology, Global Markets, BCC Research*, January 2020.
* *In vitro* transcription is the process by which mRNA is produced.
† 2020 market size according to in vitro transcription template market 2017–2031, *Transparency Market Research, Inc.*

SIGNIFICANT REVENUE GROWTH

TOTAL REVENUE ($ MILLIONS)



KEY DRIVERS OF FUTURE GROWTH

MARKET TAILWINDS

- ✓ Continued market and application growth

CHANNEL EXPANSION

- ✓ Direct revenue channels
- ✓ Channel partners for outside US

DISRUPTIVE PRODUCT LAUNCHES DRIVE UTILIZATION

BIOXP KITS

- BioXp small-scale mRNA synthesis kit
- BioXp rapid-scale mRNA synthesis kit 1H2022E
- BioXp large-scale mRNA synthesis kit 1H2022E
- BioXp protein synthesis kit 1H2022E

BIOXP SYSTEMS

- BioXp 9600 system Q3 2022E
- BioXp oligo printer system (after 2022)
- BioXp DBC system (after 2022)
- BioXp needle-ready vaccine printer system (after 2022)

SUMMARY INVESTMENT HIGHLIGHTS

- End-to-end automation system for synthetic biology
- Opportunity to unlock large, multi-billion-dollar TAMs
- Large IP portfolio
- Robust development pipeline
- Strong commercial growth trajectory
- Rapid revenue growth
- Potential for significant gross margin expansion
- *Writing* next to *reading*

CODEX DNA

END

THANK YOU