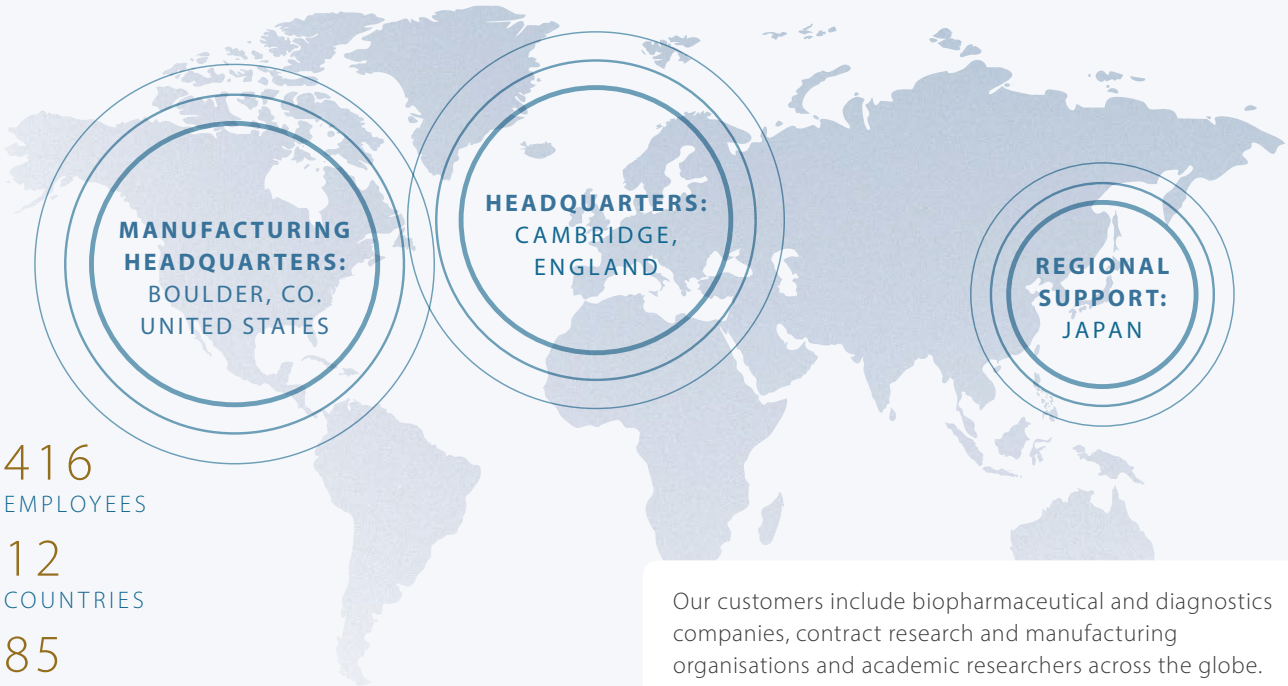
horizon™
INSPIRED CELL SOLUTIONS

HORIZON DISCOVERY PLC

The go-to provider of cell engineering solutions

We are a cell engineering company focused on commercialising the application of gene editing and gene modulation to accelerate scientific innovation and biopharmaceutical drug development.

Built upon decades of experience in the engineering of cell lines, we have created a unique and high value portfolio of tools and services, which enable almost any gene to be altered, or its function modulated, in human and other mammalian cell lines.



416
EMPLOYEES

12
COUNTRIES

85
PHDS

>2,000
CUSTOMERS

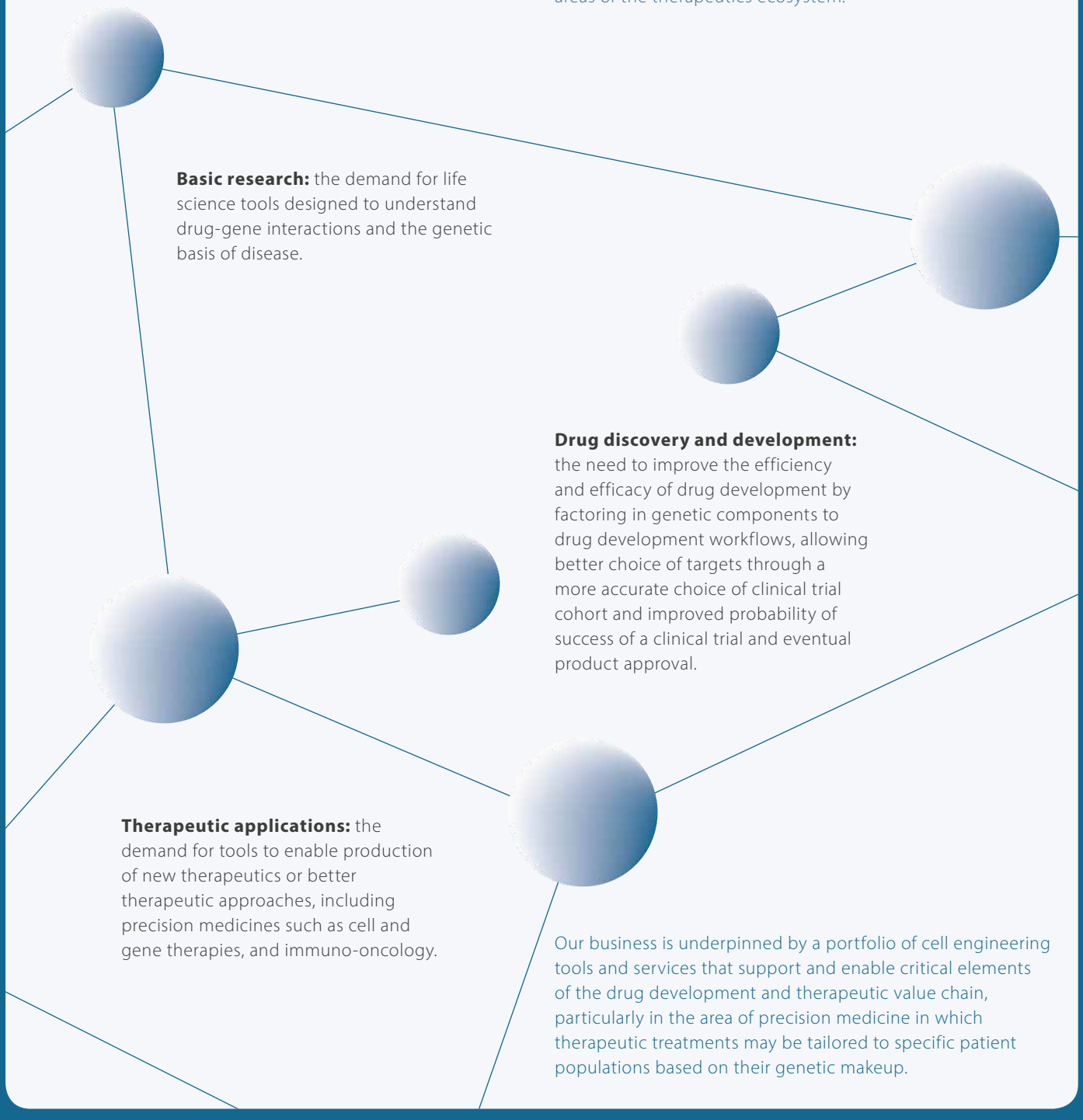
Our customers include biopharmaceutical and diagnostics companies, contract research and manufacturing organisations and academic researchers across the globe. In 2019, we sold our tools and services to more than 2,000 unique customers in over 60 countries, including 19 of the largest 20 biopharmaceutical companies by revenue.

Powering the therapeutic ecosystem

Horizon Discovery is a world-leader in the design, manufacture and application of gene editing and gene modulation tools, driving their use within the global life sciences market.

We achieve this by providing the key enabling technologies that allow researchers to effect a change in the protein synthesis pathway by either modulating (gene modulation) or permanently altering (gene editing) the function of any particular gene.

We are leveraging this technological expertise to provide cell engineering tools and services to our customers in three key areas of the therapeutics ecosystem:



Basic research: the demand for life science tools designed to understand drug-gene interactions and the genetic basis of disease.

Drug discovery and development: the need to improve the efficiency and efficacy of drug development by factoring in genetic components to drug development workflows, allowing better choice of targets through a more accurate choice of clinical trial cohort and improved probability of success of a clinical trial and eventual product approval.

Therapeutic applications: the demand for tools to enable production of new therapeutics or better therapeutic approaches, including precision medicines such as cell and gene therapies, and immuno-oncology.

Our business is underpinned by a portfolio of cell engineering tools and services that support and enable critical elements of the drug development and therapeutic value chain, particularly in the area of precision medicine in which therapeutic treatments may be tailored to specific patient populations based on their genetic makeup.

OUR PORTFOLIO

Today our portfolio includes tools and services for gene editing and modulation that help scientists to better understand disease mechanisms; reference standards derived from gene-edited cell lines that have been developed to mimic human diseases; screening technologies that that are designed to improve the outcome of drug discovery and development; and engineered Chinese Hamster Ovary (CHO) cell lines that have been designed specifically to enable the efficient manufacture of biologic drugs.

Tomorrow it will include next generation engineered CHO cell lines that have been optimised to solve current challenges in biologic drug development, and a novel base editing platform, which enables highly accurate gene editing and will be licensed to our customers for gene and cell therapeutic development.

	Current state	Horizon Discovery offering	Future state
Current state	Patient derived diseased cell lines with undefined genetics making the study of disease mechanisms complex	**DISCOVERY** GENE EDITING	Engineered disease cell line models with defined genetics making the study of disease mechanisms easier
Current state	Despite strong vetting for disease activity, only 10% of candidate new molecular entities in early stage clinical trials are eventually approved[1]	**DEVELOPMENT** CRISPR SCREENING	Pipeline drug targets with human genetic evidence of disease association are twice as likely to lead to approved drugs[2]
Current state	Single large-scale bioreactors producing large batches of "blockbuster" therapeutics	**MANUFACTURING** BIOPRODUCTION	Multiple small-scale bioreactors producing small batches of "personalized" therapeutics
Future ambition	Inefficient gene editing to introduce single base changes with off-target effects causing safety concerns	**CELL THERAPY** BASE EDITING	Precise chemical conversion of single bases in DNA with much reduced off-target effects and so the potential to advance genetic disease treatments

1 King at al., 2019, 2 Nelson et al. 2015

Horizon Discovery continuum

OUR BUSINESS UNITS

To meet the needs of our target market sectors, we are organised in business units.

RESEARCH REAGENTS

provides the tools and services that allow scientists to better understand disease mechanisms, and to identify the drivers behind a disease by inducing both permanent and transient changes in gene expression.

SCREENING

provides the tools and services that enable biopharmaceutical companies to understand disease pathways, find and validate novel drug targets, identify mechanisms of drug resistance or sensitivity, repurpose existing therapeutics for new indications and patient populations and stratify patients for clinical trials based on their genetic profile.

BIOPRODUCTION

business unit provides biotechnology, biopharmaceutical and contract manufacture organisations with a Chinese Hamster Ovary (CHO) cell line that has been modified by gene editing to enable efficient biologics manufacturing.

DIAGNOSTICS

business unit provides platform developers, biopharmaceutical companies and diagnostic laboratories with molecular reference standards derived from gene-edited cell lines that have been developed to mimic human genetic diseases, particularly in oncology.

BASE EDITING

In January 2020 we exercised our option with Rutgers, the State University of New Jersey, to exclusively license its novel base editing platform. We expect to refine this technology over the next 18 months ahead of full commercialisation. From the start of 2020 we have created a new dedicated business unit to provide the necessary focus on its development.

FINANCIAL HIGHLIGHTS

GROUP FINANCIAL HIGHLIGHTS

£58.3M
Revenues[1] from Continuing Operations of £58.3m (FY 2018: £54.1m) growth of 7.8% (£56.7 on a constant currency basis2 4.8% YoY increase)

70.0%
Gross Margin from Continuing Operations 70.0% (FY 2018: 69.7%)

£3.9M
Adjusted EBITDA[3] from Continuing Operations of £3.9m (FY 2018: £2.1m)

£18.8M
Cash position at 31 December 2019 of £18.8m (FY 2018: £26.7m)

£(11.5)M
Loss on continuing operations before tax of £11.5m (FY 2018: £6.6m loss)

BUSINESS UNIT PERFORMANCE[4]

Research Reagents: Revenues of £33.5m, growth of 8.4% (FY 2018: £30.9m) or growth of 5.2% on a constant currency basis

BioProduction: Revenues of £8.6m, down 1.1% (FY 2018: £8.7m) or a decline of 3.7% on a constant currency basis

Screening: Revenues of £11.4m, growth of 28.1% (FY 2018: £8.9m) or growth of 24.7% on a constant currency basis

Diagnostics: Revenues of £4.8m, down 14.3% (FY 2018: £5.6m) or a decline of 17.0% on a constant currency basis

OPERATIONAL HIGHLIGHTS

Disposal of In Vivo business unit completed in December 2019

Strategic collaboration with Mammoth Biosciences signed in December 2019

Post period end, in January 2020, the Group exercised an option to exclusively license base editing technology from Rutgers, The State University of New Jersey (U.S.), for use in all therapeutic applications

In April 2020 the Group successfully placed 6,764,365 shares at a price of 102 pence per share raising gross proceeds of £6.9m

1 During the 2019 financial year the In Vivo business unit contributed revenues of £4.6 million. The In Vivo business unit is reported as discontinued operations in the FY2019 and FY2018 results.

2 We calculate revenue on a constant currency basis by translating any current year revenues generated in foreign currencies into British Pounds, our reporting currency, using the average foreign currency exchange rate from the prior period.

3 We define this as loss for the year from continuing operations before taxation, finance costs, investment income, amortisation and depreciation and items which are non-recurring and do not form part of our underlying year to year expense base. Adjusted EBITDA incorporates a positive £2.5m impact of IFRS 16 which was adopted on 1 January 2019. A reconciliation of our loss for the period from continuing operations to adjusted EBITDA is presented in the Financial Review section.

4 New market aligned business unit structure introduced in January 2019. Prior year equivalents provided for comparison.

KEY STRENGTHS

We believe our future growth will be driven by the following competitive strengths:

1. **Broad portfolio and deep expertise in cell engineering.**
We believe we are a leader in leveraging technologies in gene editing and gene modulation with a proven ability to develop and commercialise them in our markets. We have access to a variety of cell engineering technologies, which allows us to take a technologyagnostic approach to delivering customer solutions.

2. **High growth business comprising a mix of well-established and potentially disruptive business units.**
Our business is underpinned by our long standing, high growth Research Reagents business which generates over 50% of our revenues from approximately 2,000 customers world-wide.
In addition, we are investing in three innovative, non-mutually dependent businesses that we expect will have attractive growth profiles: Screening, BioProduction and Base Editing. All of our business units leverage our core competence in cell engineering.

3. **Attractive, large and high growth addressable end markets.**
Our portfolio of gene editing and gene modulation tools and services support and enable critical elements of the therapeutic ecosystem, from basic research through to drug discovery and development and therapeutic applications.

4. **Unique market insights derived from longstanding customer relationships.**
We have established deep customer relationships with leading academic institutes and biopharmaceutical and diagnostics companies globally. The insights we gain from these customer relationships inform our product development and ensure that our tools and services are aligned to customers' needs.

5. **Established commercial team with global reach led by an experienced management team.**
We have an experienced senior management team whose members have a proven track record of growing successful global life science tools and services businesses and experience in industrialising, scaling and commercialising biological tools and services. We believe our 50-person sales organisation, comprising key account partners, territory sales and field application specialists, provides us with global reach, and is a key differentiator.