Investor Update
Lonza’s Blueprint for the Future
15 October 2020
Introduction

Organizational Design

Our Divisions

• Capsules and Health Ingredients
• Small Molecules
• Biologics
• Cell & Gene Therapy, and Bioscience

External Reporting

Company Culture

Concluding Comments

Q&A
Organizational Design
The Case for Change

Decision to carve out LSI in 2019

Different dynamics between LSI and LPBN

Attractive growth opportunities across all LPBN modalities

Increased competition and complexity of Biopharma industry offering

Need to rethink the future set-up of Lonza

Decision to exit LSI via a sales process

Refocus the Lonza business around the LPBN portfolio
Design Principles
A clear focus on the market and customer

- **Cohesion**: A manageable matrix
- **Simplicity**: Standardized and efficient processes and structures
- **Global Perspective**: Selected functions and teams defining global frameworks and standards, and guiding innovation
- **Workforce Engagement**: Shared accountability and decision-making. An aligned organization
- **High-performing Organization**: Clear roles and responsibilities, supported by a balanced performance management system
Organizational Design

Business Divisions

Four Divisions, each with their own Business Units
Each holds responsibility for its own value chain and P&L

Global Functions

Five Functions supporting the Divisions and Business Units
Responsible for Group standards, policies, principles and governance
Divisions and Functions Overview

- **CEO**
- **Office of the CEO**
- **Corporate Functions**

**Divisions**
- Capsules and Health Ingredients
- Small Molecules
- Biologics
- Cell & Gene Therapy, and Bioscience

**Functions**
- Operations
- Quality
- Commercial / Marketing
- Finance
- Human Resources

**P&L accountability**
- End-to-end delivery to customers
- Business model to create competitive edge

**Global standards, processes and best practices**
- Functional strategies
- Partnership approach to divisional support

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1 Including: Legal, Communications, Investor Relations, EHS, M&A, Data Management / Digital
Divisions Overview
A market-led structure to meet evolving customer needs

Capsules and Health Ingredients
- Capsules
- Health Ingredients

Small Molecules
- Active Pharmaceutical Ingredients
- Drug Product Formulation

Biologics
- Mammalian
- Microbial
- Licensing
- Bioconjugates
- Drug Product Solutions
- m-RNA

Cell & Gene Therapy, and Bioscience
- Bioscience
- Cell and Gene Therapy
- Personalized Medicine
Functions Overview
Deep functional expertise across Business Functions

- Operations
  - Procurement
  - Manufacturing Standards
  - Supply Chain
  - Planning

- Quality
  - Compliance
  - Quality Control
  - Regulatory

- Commercial / Marketing
  - Customer and Market Intelligence
  - Digital Marketing
  - Branding and Advertising
  - Technical Documentation

- Finance
  - Tax
  - Treasury
  - Accounting
  - IT
  - Controlling

- Human Resources
  - Recruitment
  - Talent Management
  - Union Relations
  - Compensation and Benefits
Management Team
Lonza Group Leadership

Pierre-Alain Ruffieux  
Chief Executive Officer  
Commences 1 November 2020  
Tenure with Lonza  
PhD Biotechnology (EPFL Lausanne)  
Degree Chemical Engineering (EPFL Lausanne)  
Professional experience snapshot  
Education and qualification snapshot

Rodolfo Savitzky  
Chief Financial Officer  
6 years  
MBA (Chicago Booth)  
BSc Industrial and Systems Engineering (Tecnológico de Monterrey)  
Professional experience snapshot

Caroline Barth  
Chief Human Resources Officer  
6 months  
MBA (Open University)  
BA European Business (University of Sunderland)  
Professional experience snapshot

Stefan Stoffel  
Chief Operating Officer  
30 years  
Diploma in Mechanical Thermal process and Chemical Engineering (Lucern Engineering College)  
Professional experience snapshot
Lonza Group Leadership

Claude Dartiguelongue
Capsules and Health Ingredients
Tenure with Lonza: 9 months
Education and qualification snapshot:
- MSc Medical Management (ESCP Business School)
- MSc Biotechnology (University of Grenoble)

Gordon Bates
Small Molecules
Tenure with Lonza: 17 years
Education and qualification snapshot:
- MSc Engineering Business Management (University of Warwick)

Jean-Christophe Hyvert
Biologics / Cell & Gene Therapy, and Bioscience
Tenure with Lonza: 3 years
Education and qualification snapshot:
- MBA (Northwestern University)
- MSc Physics (INSA)
Our Divisions
2019 Sales Distribution – Divisions

- **Biologics**: 47%
- **Capsules and Health Ingredients**: 27%
- **Small Molecules**: 10%
- **Cell & Gene Therapy, and Bioscience**: 16%

*Sales figures, expressed in % are approximate and based on full-year 2019 results at actual exchange rate (AER). The split reflects the 3rd party net sales of the LPBN segment in 2019 and excludes any net sales presented under Corporate Divisions.*
Sales Distribution of Divisions and Business Units
Business Unit sales listed in descending order for each Division

**Capsules and Health Ingredients**
- Capsules: 27% of Group sales
- Health Ingredients: 16% of Group sales

**Small Molecules**
- Active Pharmaceutical Ingredients: 47% of Group sales
- Drug Product Formulation: 10% of Group sales

**Biologics**
- Mammalian: 27% of Group sales
- Microbial: 16% of Group sales
- Licensing: 47% of Group sales
- Bioconjugates: 10% of Group sales
- Drug Product Solutions: 27% of Group sales
- m-RNA: 10% of Group sales

**Cell & Gene Therapy, and Bioscience**
- Bioscience: 27% of Group sales
- Cell & Gene Therapy: 16% of Group sales
- Personalized Medicine: 47% of Group sales

*Sales figures, expressed in % are approximate and based on full-year 2019 results at actual exchange rate (AER). The split reflects the 3rd party net sales of the LPBN segment in 2019 and excludes any net sales presented under Corporate.

**The size of the boxes for each Business Unit are intended to provide an indicative (but non-specific) view of the size (by proportion of sales).**
Capsules and Health Ingredients (CHI)
**CHI Portfolio**

**Capsules***
- Empty Capsules
- Filled Capsules (Dosage Form Solutions)

**Health Ingredients**
- Distinctive offerings for consumer health
  - UCII® Healthy aging (joint health)
  - Carnipure® Sports nutrition
  - ResistAid™ Digestive and immune
  - Others

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* The size of the boxes for each Business Unit are intended to provide an indicative (but non-specific) view of the size (by proportion of sales)
CHI Offering & Capabilities

**Pharma Capsules**
- **Empty Capsules**
  - Innovation and quality leader
  - Strong support along regulatory pathway
  - Differentiated solutions
    - Immediate release
    - Modified release
    - Others

**Nutrition Capsules**
- **Empty Capsules**
  - Multipurpose and functional capsules
  - Broad product portfolio for the supplement market
  - Modified release and ingredient performance optimization

**Filled Capsules (Dosage Form Solutions)**
  - Unique technologies and capabilities for liquid filled hard capsules
  - Formulation services
  - Analytical and stability testing

**Health Ingredients**
- Addresses major consumer health concerns and needs
  - Sports nutrition
  - Joint health
  - Digestive and immune
- Highest safety and quality standards
- Regulatory support
Network and Assets

For 5,000 global customers

230 Billion capsules produced annually

- Cohasset, USA
- Greenwood, USA
- Benicia, USA*
- Fort Smith, USA*
- Puebla, Mexico
- Bornem / Komec Helsen, Belgium
- Colmar, France
- Sagamihara, Japan
- Suzhou, China
- Nansha, China
- Jakarta, Indonesia
- Delhi, India

* To be fully integrated to Greenwood, USA and decommissioned by end of the year

Capsules
Nutritional Ingredients
Capsules and Nutritional Ingredients
Market Overview

### Drivers for Demand in Pharma Capsules
- Overall growth in Pharmaceutical demand
- Many new molecules are heat sensitive, eliminating tableting as an option
- End-patient preference drives and defines the oral dosage market

### Capsules Selected Competitors
- ACG, India
- Qualicaps, USA (Owned by Mitsubishi)
- Suheung Capsules, South Korea
- CapsCanada, Canada

### Drivers for Food Supplements’ Demand
- Demographic Trends
  - Growth of older/ageing demographic groups
- Health condition
  - Joint health concerns account for ~70% of medical indications at 65+ years
- COVID-19
  - Significant increase in demand for health nutrition supplements
Key Priorities

Accelerate profitable growth

Drive differentiation with capsules
- Focus on innovative capsules
- Quality leadership
- Cutting edge capsule dosage forms and services

Increase capsules capacity

Focus on high-growth, high-margin Joint Health and Nutrition markets

Continuous implementation of operational efficiencies
CHI Growth Rates

**Market**

- **Capsules**
  - Estimated Growth: 2 – 3%
  - CAGR 2020 – 2023

- **Health Ingredients**
  - Estimated Growth: 5 – 6%
  - CAGR 2020 – 2023

**Lonza**

- **Capsules**
  - Estimated Growth: 3 – 4%
  - CAGR 2020 – 2023

- **Health Ingredients**
  - Estimated Growth: 6 – 8%
  - CAGR 2020 – 2023

1 Based on volume
2 Revenue growth
Our Contribution to the Value Chain

Pharma/Biotech Lifecycle

- Discovery
  - Basic Research
  - Drug Discovery
- Development
  - Pre-clinical Testing
  - Clinical Testing
- Manufacturing
- Commercial Production
- Commercial Sales

Clinical Development

Lonza

- Small Molecules
- Selected Modalities
  - Mammalian
  - Microbial
  - Bioconjugates
  - Drug Product Solutions
    - mRNA
- Cell & Gene Therapy
  - Bioscience
  - Personalized Medicine

Technical Development
Small Molecules
Small Molecules Offering

**Drug Substance**

- Full range of APIs
- Market leader on HPAPIs
- Increasing early phase development project acquisition

**Drug Product**

- Formulation:
  - Supply finished dosage form services to the pharma industry
  - Particle engineering: granulation, micronization, spray drying

- Oral Dosage Form:
  - Tablets
  - Encapsulation
  - Filled into sachets
End-to-End Services and Know-How

Drug Substance (DS)
- Early Phase
- Commercial DS
- Late Phase

Particle Engineering
- Formulation Development
- Enhanced Formulation
- Commercial DP

Drug Product (DP)
- Clinical Trial Development
- Packaging

Sales and Marketing

Lonza

Selected competitors
- ThermoFisher
- Catalent
- Cambrex
- Recipharm
- Siegfried
Industry Overview and Lonza Key Priorities

**Industry**

- Accounts for ~70% of global pharmaceutical sales
- 6,000 molecules in development
- Move towards more tailored and complex APIs
- Reshoring of the supply chain

**Lonza**

- Adapt business model for smaller companies to secure new early-phase clinical programmes
- Retain leadership position in particle engineering technology
- Balance of asset scales and location
- Continuing investment in Highly Potent API

- 270 commercial products in 2019
- 19 of top 20 Pharma Lonza customers
- 350 Pre-clinical and clinical molecules in 2019
The Rise of Highly Potent API Molecules

Growing demand for more complex and highly potent APIs (HPAPIs)

New way to use small molecules to deliver innovative patient therapies

Interest in HPAPI drugs is largely driven by oncology research

New medicines with lower dose requirements and fewer side effects

Particle engineering is particularly important

Need for well-trained workforce with strong commitment to a culture of safety
Small Molecules Growth Rates

Estimated Growth
CAGR 2020 – 2023

Market\(^1\)
4 – 5%

Lonza\(^2\)
9 – 10%

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\(^1\) Based on volume
\(^2\) Revenue growth
Biologics: Mammalian
Mammalian Offering

Applied Protein Services
- Late stage discovery, early stage development
- Gene sequence analysis
- Vector development and manufacturing

Cell Line Development and Manufacturing
- Selection and manufacturing of host cells

Clinical Development and Manufacturing
- Full service drug substance and drug product development and manufacturing

Clinical Commercial Manufacturing
- Drug substance

Drug Product Solutions
- Parenteral drug product services

Commercial Manufacturing
- Drug product (small scale)
Network and Assets

Visp, Switzerland

Basel/Stein, Switzerland

Portsmouth, USA

Hayward, USA

Cambridge, UK

Slough, UK

Porriño, Spain

Tuas, Singapore

Guangzhou, China

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1 Ibex® Solution – under construction, operational Q1 2021
2 Drug Substance and Drug Product in Visp, Switzerland
3 New capabilities
4 Drug Substance
Mammalian Network Capacity – 330 Kiloliter (KL) by end of 2020

Portsmouth, USA
- 3 x 5 KL / 5 x 20 KL / 4 x 6 KL

Hayward, USA
- 2 x 1 KL / 1 x 2 KL

Slough, UK
- 6 x 1 KL

Visp, Switzerland
- 2 x 20 KL / 3 x 1KL / 3 x 2KL

Porriño, Spain
- 4 x 10 KL

Guangzhou, China¹
- 2 x 1 KL / 2 x 2 KL

Tuas, Singapore
- 2 x 2 KL / 4 x 20 KL

¹ Under construction, operational Q2/Q3 2021
Ibex® Complex in Visp, CH
Ibex proposal has been validated and wins significant new contracts

Ibex® Facility

Examples
Strong small-scale pipeline
Most capacity is contracted for the next two years

Ibex® Design & Develop

Examples
Large microbial contract
Moderna
Kodiak – Bioconjugation
Advanced negotiation for Bioconjugation with an Asian customer (identity undisclosed at this time)

Ibex® Dedicate

Sanofi JV Facility

Plant ramp-up expected from Q4 2020

Lonza’s reserved capacity is already contracted
Ibex® Complex in Visp, CH
Key Priorities

- Increase early phase sales, strengthen Applied Protein Services
- Increase end-to-end offering for small and large Pharma and Biotech
- Leverage Ibex\textsuperscript{®} Solutions
- Add incremental capacity
- Geographic expansion
- Asset-specific process improvements
- Build presence in commercial Fill & Finish
Lonza Mammalian Fermentation Capacity in Kiloliter (KL)

Additions by December 2020
- 4 x 6 KL in Portsmouth, USA
- 3 x 1 KL + 3 x 2 KL in Visp, CH
- 2 x 1 KL + 2 x 2KL in Guangzhou, CN
- 2 x 20 KL in Visp, Sanofi JV

Additions by 2023 – 2024
- Small and mid-size capacities
- Large-scale facility (ies)

1 Under construction, operational Q2/Q3 2021
Mammalian Growth Drivers and Estimated Production Capacity

**Growth Drivers**

- Solid base line demand in therapeutics
- Biosimilars – geographic adoption of new therapeutics
- Venture capital funding expected to continue
- Improvements to platform processes
- Increased speed of regulatory approvals
- COVID-19 has driven a higher level of demand than anticipated
- Future impact of Alzheimer’s therapeutics?

**Capacity Expansion in kiloliter (KL)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Capacity Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>N (\rightarrow) 5,800</td>
</tr>
<tr>
<td>2024</td>
<td>N (\rightarrow) 7,700(^1)</td>
</tr>
</tbody>
</table>

\(^1\)Based on announced capacity increases, without Lonza’s future expansion
## Market Overview

### Market

- More than 2/3 of the pipeline comes from small and mid-sized Biotechs
- Sustained need for large-scale manufacturing capacity
- Trend towards small-scale bioreactors combined with single-use technologies
- Increasing pipeline of new molecular formats and more complex molecules

### Selected Key Manufacturers

#### Pharma companies

- Roche
- J&J
- Novartis
- Boehringer Ingelheim
- Sanofi
- Amgen
- Biogen

#### CDMO companies

- Lonza
- Samsung Biologics
- Wuxi Biologics
- Boehringer Ingelheim
- Fujifilm
- Patheon
Mammalian Growth Rates

**Market**

Estimated Growth
CAGR 2020 – 2023

7 – 8%

**Lonza**

Estimated Growth
CAGR 2020 – 2023

10 – 14%

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1 Based on volume
2 Revenue growth
Biologics: Microbial
Offering

More than 30 years of experience

From clinical to commercial supply

Regulatory expertise to support IND and BLA

Proprietary XS Technologies® platform includes *Pichia pastoris*, *Escherichia coli* and *Bacillus* expression systems

Network and Assets

Clinical development and manufacturing

Commercial manufacturing

Ibex® Dedicate for tailored ownership and risk sharing models

Installed capacity: 1 x 70 L, 1 x 1 KL, 2 x 15 KL

New mid-scale manufacturing to be operational in 2022 (*Ibex® Solutions and multipurpose*)
Key Priorities

Leverage Lonza's proprietary expression systems

Expand development capacity to grow pre-clinical and early phase customers

Expand manufacturing capacity for full scope (small, mid and large scale)

Leverage Ibex® Dedicate

2019 sales distribution

- Pre-clinical and Phase 1: 10%
- Clinical – Phase 2 + 3: 25%
- Commercial: 65%
Industry Overview

Represents ~30% of total Biopharma

More than 2/3 of microbial derived biotherapeutics are from small/mid-sized Biotechs

Increasing number of complex molecules produced in microbial systems

Industry growth driven by outsourcing

Moderate capacity expansion

A few companies dominate the commercial manufacturing space

Installed Capacities 2020 E

<table>
<thead>
<tr>
<th>Total</th>
<th>690,000 liters</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDMO</td>
<td>370,000 liters</td>
</tr>
<tr>
<td>Pharma</td>
<td>320,000 liters</td>
</tr>
</tbody>
</table>

Selected Players

- Lonza
- Fujifilm
- AGC Biologics
- Wacker

- Merck KGaA
- Roche
- Novartis
- UCB
- GSK
Microbial Growth Rates

Market\(^1\)
Estimated Growth
CAGR 2020 – 2023
7 – 8%

Lonza\(^2\)
Estimated Growth
CAGR 2020 – 2023
9 – 10%

\(^1\) Based on volume
\(^2\) Revenue growth
Biologics: Licensing
The Concept Starts with Lonza’s Expression System

Gene for a desired protein is combined with a DNA sequence
The recombinant DNA sequence is inserted into a host cell – cell bank
The host cell is grown in culture to reproduce the desired protein

Expression System: Vector + Host cell + Media + Know-how
The Licensing Business

More than 200 customers for around 600 molecules

80% of revenues from royalties with balance from annual fees, milestones and other payments

Sales and marketing focused on early stage innovators – first contact with Lonza

Our Mammalian Gene Expression Systems (GS) account for the majority of revenues

The Business Unit portfolio also includes microbial expression systems (XS) and viral vector technology (Lentiviruses and Adeno-Associated Viruses)

In 2019 we launched GS piggyBac™ to enhance production of complex proteins
Bioconjugates Overview

Biopharmaceuticals developed by attaching two molecules together, of which one is a biomolecule

Powerful anti-cancer therapeutics exploiting the high specificity of a monoclonal antibody (selection of the cell tumor) with enhanced tumor cell-killing capacity by attaching a highly cytotoxic agent

Main class of bioconjugates are the Antibody Drug Conjugates (ADCs)

Extensive manufacturing infrastructure required, alongside trained professionals
## Bioconjugates Offering

<table>
<thead>
<tr>
<th>Offering</th>
<th>Network and Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proven track record</td>
<td>Bioconjugation</td>
</tr>
<tr>
<td></td>
<td>• Clinical development and manufacturing</td>
</tr>
<tr>
<td></td>
<td>• Commercial manufacturing</td>
</tr>
<tr>
<td>Supports the majority of commercially approved ADCs</td>
<td>Highly Potent API</td>
</tr>
<tr>
<td></td>
<td>• API development and manufacturing</td>
</tr>
<tr>
<td>Competency around complex molecules</td>
<td>Mammalian and Microbial</td>
</tr>
<tr>
<td></td>
<td>• Clinical and commercial development</td>
</tr>
<tr>
<td></td>
<td>• Clinical and commercial manufacturing</td>
</tr>
<tr>
<td>Capacity expansion</td>
<td>Ibex® Dedicate</td>
</tr>
<tr>
<td></td>
<td>• Tailored ownership and risk sharing models</td>
</tr>
<tr>
<td>Most integrated “under one roof” supplier</td>
<td>Visp, Switzerland</td>
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<td></td>
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</tr>
</tbody>
</table>
Bioconjugates Growth Rates

Estimated Growth
CAGR 2020 – 2023

Market\(^1\)
6 – 8%

Lonza\(^2\)
10 – 12%

\(^1\) Based on volume
\(^2\) Revenue growth
Biologics: Drug Product Solutions (DPS)
DPS Offering

Drug Product Solutions (DPS)

Drug Product Services

- Expertise in formulation of API with excipients
- Analytical capabilities
- Stability and usability of final therapeutics

Fill & Finish

- Acquisition of Novartis Stein (CH) facility
- Drug product clinical fill & finish
- Vials (liquid), vials (lyo), prefilled syringes
- New capacity in Visp (CH) in 2021
Analytical Expertise Overview

Analytical methods for formulation development

Visible particles
Turbidity
UV
pH
Osmolality
Residual moisture
Methionine oxidation
Surfactant content
Injection force
Viscosity
Others

Particle characterization

Light obscuration
Flow imaging microscopy
Electrical zone sensing
Resonant mass measurement
Nano tracking analysis
Dynamic light scattering
Others
Industry Overview

Industry

Large and growing pipeline with all biologics being parenteral

New molecular formats require more specialized DP formulation know-how

Development of orphan drugs with narrower indications

Vials currently dominate; alternative delivery technologies are increasing

Competitive Landscape

Fragmented and disparate competitor community

Selected value chain competitors

- Wuxi
- Catalent
- Patheon

Selected specialized competitors

- Vetter
- KBI
- Corialis

Big pharma

- Internal know-how and assets
Built a leading offering over four years

Started in November 2016

Created leadership in science and regulatory know-how

Large number of customers are integrated with the Business Unit to provide end-to-end offering

November 2016

2020

>200 FTEs

>80 Customers

>100 Molecules
DPS Growth Rates

**Market**

*Estimated Growth*

- CAGR 2020 – 2023
  - 7%

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**Lonza**

*Estimated Growth*

- CAGR 2020 – 2023
  - 20%

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1 Based on volume
2 Revenue growth
Biologics:
mRNA
Strategic Collaboration with Moderna on mRNA platform

Ten year strategic collaboration agreement on mRNA and lipid nano-particles

Moderna is the leading developer of mRNA-based new therapeutics and vaccines

Lonza will gain access to all mRNA-based projects from Moderna's innovation pipeline

Current focus is the COVID–19 vaccine candidate mRNA 1273
COVID-19 Vaccine Candidate mRNA 1273 – Lonza’s Role

Portsmouth
USA

One Drug Substance production line
Annual capacity 100 mio doses
CAPEX funded by Moderna: ~CHF 70 mio
First Drug Substance batch targeted for end October 2020

Visp
Switzerland

Three Drug Substance production lines
Annual capacity 300 mio doses
CAPEX
• Moderna: two lines; ~CHF 140 mio
• Lonza: one line; ~CHF 70 mio
First Drug Substance batch targeted for early November 2020
Production located in Ibex® Dedicate facility
Moderna with Most Advanced mRNA Platform
23 development candidates

- Moderna has the most advanced mRNA platform
- Moderna has one of the most advanced COVID-19 vaccine development programs
- Moderna is not only a COVID-19 vaccine company
- Moderna has 23 development candidates across a range of infectious diseases and therapeutic areas
Cell & Gene Therapy, and Bioscience Division
# Bioscience Offering

| Bioscience Discovery | Support customers in disease research, drug discovery and development, including cell and gene therapy  
| | Primary human cells and stem cells from various tissues  
| | Optimized cell culture media  
| | Nucleofector® transfection device |

| Bioscience Media | Cell Culture Media support the growth of plant/animal cells in vitro  
| | Used at various stages in the development and production for large molecule therapeutic, cell and gene therapy |

| Bioscience Testing | Automated and integrated solutions for Endotoxin Testing to ensure safety of injectable drugs |

| Bioscience Informatics | Integrated software platforms to streamline quality control processes for biologics and cell and gene therapies (MODA™) |
Network and Assets

- Rockland, USA
  - Electrophoresis

- Wayne, USA
  - MODA, Software

- Walkersville, USA
  - Cell Culture Media
  - Endotoxin Assays

- Durham, USA
  - Primary Cells – isolation of human and animal primary cells from tissue and blood

- Copenhagen, Denmark
  - Chromatography, Agarose

- Verviers, Belgium
  - Cell Culture Media

- Cologne, Germany
  - Transfection
Market Overview

Global addressable Research Products market estimated at around CHF 950 mio

- ~ CHF 300 mio in standard cell culture media for research use
- ~ CHF 300 mio in primary cells and cell specific media
- ~ CHF 150 mio in transfection
- ~ CHF 200 mio – others

Lonza serving academic, government institutions, biotech startups and large pharma
**Bioscience Growth Rates**

**Market\(^1\)**

**Estimated Growth**

CAGR 2020 – 2023

6 – 8%

**Lonza\(^2\)**

**Estimated Growth**

CAGR 2020 – 2023

10 – 12%

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\(^1\) Based on volume
\(^2\) Revenue growth
Cell & Gene Therapy (CGT)
CGT Overview and Lonza Participation

<table>
<thead>
<tr>
<th>Autologous Cell Therapy</th>
<th>Allogeneic Cell Therapy</th>
<th>Viral Vector Gene Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 batch = 1 patient</strong></td>
<td><strong>1 batch = multiple patients</strong></td>
<td>Viruses are used as “vehicles” to deliver genes into patients to restore functional cells</td>
</tr>
<tr>
<td>Product examples</td>
<td><strong>“Off-the-shelf” model (bulk)</strong></td>
<td>“Off-the-shelf” model</td>
</tr>
<tr>
<td>- Kymriah® (Novartis)</td>
<td>Centralized manufacturing</td>
<td>Different types of viruses are used: Adenovirus, Adeno Associated Virus (AAV) and Lentivirus</td>
</tr>
<tr>
<td>- Yescarta® (Gilead)</td>
<td>Currently no industrialized processes</td>
<td></td>
</tr>
<tr>
<td>- ZYNTEGLO™ (Bluebird Bio)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Tecartus™ (Gilead)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complexity and high costs of manufacturing / logistics</td>
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<td></td>
</tr>
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</table>
Unmatched CGT Experience

- **Experience**: 20+ years of GMP experience; acquisition of Cambrex in 2007
  - 2 commercial products

- **Process Development**: > 120 projects

- **Viral Vector Production**: 250 and 2,000 L suspension production

- **Market Access**: > 160 CGT customers globally
Network and Assets

- Portsmouth, USA
  - Cell therapy
- Houston, USA
  - Cell therapy
  - Viral vector
  - Process development
  - Largest dedicated cell & gene facility in the world
- Geleen/Maastricht, NL
  - Cell therapy
- Tokyo, Japan
  - Cell therapy
- Tuas, Singapore
  - Cell therapy

1 The facility is owned and operated by Nikon CeLL innovation Co. Ltd. under Nikon-Lonza Partnership
CGT is a laboratory-based science that is growing into an industry

Transformational efficacy of CGT is established

Accelerated approval pathways

Manufacturing is challenging: manual, unscaleable and slow processes

Selected competitors: Hitachi, ThermoFisher/Brammer, Oxford BioMedica, Wuxi, MilliporeSigma, Fujifilm, Catalent / MasterCell & Paragon

<table>
<thead>
<tr>
<th>Year</th>
<th>Products Approved</th>
<th>Active INDs on File</th>
<th>INDs/year to be Approved</th>
<th>Approvals 70-90</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>5</td>
<td>800</td>
<td>20+</td>
<td>-</td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
<td>200</td>
<td>-</td>
</tr>
<tr>
<td>2025</td>
<td></td>
<td></td>
<td></td>
<td>70 – 90</td>
</tr>
</tbody>
</table>
Key Priorities

Secure long-term sustainable growth

Align capacity expansion with growth ambition

Improve operational execution and reduce costs

Maintain technology leadership

Invest in top talents: identify, build and retain
CGT Growth Rates

Market\(^1\)

Estimated Growth

CAGR 2020 – 2023

>20%

Lonza\(^2\)

Estimated Growth

CAGR 2020 – 2023

20 – 25%

\(^1\) Based on volume

\(^2\) Revenue growth
Personalized Medicine
Challenges in Autologous Cell Therapy

- Manual and complex manufacturing process
- A challenge to scale the manufacturing process
- Variation in starting patient material
- Need to bring manufacturing closer to patient
- COGs and therapy costs are unsustainable
- Pricing: problem not solved
- The economics don’t work today

Lonza Cocoon® Solution

Develop a system to answer the needs for manufacturing automation, scale-up, process control and COGs
Meeting the Challenges in Autologous Cell Therapy

Cocoon® system answers the needs for manufacturing scale-out, costs, quality and process control

Costs
- Space efficiency
- Automation
- Ability to scale-out

Quality
- Process control and analytics
- Few manual steps

Opportunity
- Strong pipeline with over 500 products in development
- Robust pre-clinical pipeline

Quantity
- Ability to scale-out and create hubs
# Commercial Potential of Cocoon® Platform

<table>
<thead>
<tr>
<th>Model</th>
<th>Opportunity</th>
<th>Partners / Customers</th>
<th>Revenue Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocoon Sales</td>
<td>Cocoon and Cassette supply</td>
<td>Industry and academic clinical centers</td>
<td>Sales of Cocoons, Cassettes etc.</td>
</tr>
<tr>
<td>CDMO Services</td>
<td>CDMO services</td>
<td>Industry customers</td>
<td>Payment for CDMO services</td>
</tr>
<tr>
<td>Development / Manufacturing Partnerships</td>
<td>Jointly accelerating therapy path to clinical trials and commercialization</td>
<td>Biopharma companies</td>
<td>Product royalties</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Milestones</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Therapy product manufacturing in Cocoon (CDMO)</td>
</tr>
</tbody>
</table>
Sheba Medical Center Treats First Patient with CAR-T Cell Immunotherapy Manufactured Using the Lonza Cocoon® Platform

- First cancer patient dosed at Sheba Medical Center, Israel with autologous CAR-T therapy manufactured using Lonza's Cocoon® Platform
- Israeli Ministry of Health (MOH) approved use of the Cocoon Platform to manufacture a CD19 CAR-T cell immunotherapy for an ongoing Phase II clinical trial for B-cell malignancies
- MOH approval follows an extensive study that showed comparability of the therapy whether manufactured using the manual, open process or the automated, functionally closed Cocoon Platform

Basel, Switzerland and Tel Aviv, Israel, 8 September 2020 – Lonza and Sheba Medical Center announced the first patient has been treated at Sheba Medical Center with a CD19 CAR-T cell immunotherapy manufactured using Lonza's Cocoon® Platform. The Cocoon Platform is an automated and functionally closed system for patient-scale cell therapy manufacturing, designed to overcome some of the manufacturing challenges of manually producing personalized medicines, including autologous CAR-T cell therapies.

With the goal of increasing access to innovative cell therapies, Sheba Medical Center and Lonza have collaborated to translate Sheba’s open, manual manufacturing process into the Cocoon Platform since mid-2019. In less than a year, teams from Lonza Personalized Medicine and Collaborative Innovation Center (CIC) in Haifa, IL worked closely with Sheba Medical Center to complete process development, tech transfer, training and a full clinical comparability study requiring regulatory approval before the first patient could be treated. The successful approval of the Cocoon Platform clinical comparability study illustrates the platform's flexibility and ability to manufacture a final cell immunotherapy which is comparable to the original manual process while meeting the extensive patient safety criteria.

The current Phase II clinical trial at Sheba has successfully dosed over 100 patients over the last two years with positive clinical results. Sheba and Lonza plan to treat additional patients under the same CD19 CAR-T cell immunotherapy protocol using the Cocoon Platform. The Cocoon Platform will enable Sheba to reduce immunotherapy manufacturing costs by lowering manpower, time, and space requirements. It is hoped that this will ultimately allow Sheba to deliver potentially curative cellular immunotherapies to more patients.
End-to-End Offerings
End-to-End Offerings

- Discovery
  - Licensing
  - Bioscience: Media
  - Bioscience: Cells
- Pre-clinical
  - Biologics
- Clinical Supply
  - Small Molecules
  - Cell & Gene Therapy
- Commercial

Lonza clinical development and commercial solutions
From Gene to IND to Drug Substance and Drug Product

Example integration of Cambridge, Slough and Basel / Stein

**Cambridge UK**
- Site receives genes from customers
- Genes are analyzed
- Recommendations are made from *in silico* and *in vitro* analysis, which predicts the behavior of the genes. This ensures that the best genes are selected
- The empty vector(s) are developed

**Slough UK**
- The host cell is selected and produced
- The host cell is opened and the vector with the gene is introduced
- The host cell is grown
- A cell line is selected for the manufacture of the Drug Substance

**Basel / Stein Switzerland**
- Drug Product Services
- Formulation and analytics for developing the Drug Product
- Involved from the outset with Slough site
Drug Product Development
Example integration of Cambridge, Slough and Basel / Stein
Strong Pipeline Building
Strong Pipeline Building

Contracted business in Biologics and Small Molecules is up high double-digit versus 2019, driven by new assets coming on line and strong market demand.

New customer acquisition across Biologics, Small Molecules and Cell & Gene Therapy continues with >30% increase over 2019.

New projects in Biologics and Small Molecules up >30% versus 2019.

New projects in Cell & Gene Therapy up >20% versus 2019.
Investment Projects
2020 – 2023
## Selected CAPEX Projects 2020 – 2023 (1/2)

<table>
<thead>
<tr>
<th>Site</th>
<th>Project / Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visp, Switzerland</td>
<td>Ibex® Design – pre-clinical to clinical Phase 1&lt;br&gt;Ibex® Develop – clinical phase 2 to commercial&lt;br&gt;Ibex® Dedicate – fully customizable, 50:50 JV Sanofi-Lonza for large-scale biologics commercial manufacturing&lt;br&gt;Capacity expansion of Small Molecules&lt;br&gt;Capacity expansion of bioconjugation&lt;br&gt;Capacity expansion of Microbial development and manufacturing&lt;br&gt;Manufacturing of mRNA for COVID-19 vaccine</td>
</tr>
<tr>
<td>Basel / Stein, Switzerland</td>
<td>Expansion of parenteral drug product development services&lt;br&gt;Expansion of facility for drug product manufacturing</td>
</tr>
<tr>
<td>Geleen, Netherlands</td>
<td>Expansion of Cell &amp; Gene Therapy manufacturing</td>
</tr>
<tr>
<td>Portsmouth, USA</td>
<td>Mid-scale (6K) for commercial monoclonal antibodies manufacturing&lt;br&gt;Manufacturing of mRNA for COVID-19 vaccine</td>
</tr>
<tr>
<td>Tuas, Singapore</td>
<td>Expansion of development services for mAb</td>
</tr>
</tbody>
</table>
## Selected CAPEX Projects 2020 – 2023 (2/2)

<table>
<thead>
<tr>
<th>Site</th>
<th>Project / Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houston, USA</td>
<td>Capacity expansion of Cell Therapy manufacturing</td>
</tr>
<tr>
<td>Hayward, USA</td>
<td>Single-use technologies for clinical and commercial manufacturing of mAb</td>
</tr>
<tr>
<td>Guangzhou, China</td>
<td>Small-scale clinical and early commercial Mammalian offerings</td>
</tr>
<tr>
<td>Nansha, China</td>
<td>Increase capacity for Small Molecules</td>
</tr>
<tr>
<td>Bend, USA</td>
<td>Increase capacity in spray drying for Small Molecules</td>
</tr>
<tr>
<td>Many sites in focus</td>
<td>Increase capacity for empty capsules</td>
</tr>
<tr>
<td></td>
<td>Increase capacity for dosage form solutions</td>
</tr>
</tbody>
</table>
External Reporting
Increased Reporting Granularity
Principles for external reporting

Increase granularity by modality for investors

Ensure external reporting fully reflects new divisional structure from 1 January 2021

Focus on key financial metrics by reducing number of Alternative Performance Metrics (APMs)

Tighten CORE definition to only exclude material one-time effects

Increase qualitative disclosures to facilitate accurate interpretation of financial performance
Performance by modality group for Sales, CORE EBITDA margin and Capex

Key focus on growth, profitability, liquidity and capital return at Group level

Elimination of CORE EBIT and CORE RONOA APMs to align reporting to the steering model

<table>
<thead>
<tr>
<th></th>
<th>Division</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales AER / CER</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>CORE EBITDA/margin</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Capex</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Cash flow</td>
<td>–</td>
<td>✔️</td>
</tr>
<tr>
<td>ROIC</td>
<td>–</td>
<td>✔️</td>
</tr>
<tr>
<td>CORE EPS</td>
<td>–</td>
<td>✔️</td>
</tr>
<tr>
<td>Net Debt/CORE EBITDA</td>
<td>–</td>
<td>✔️</td>
</tr>
</tbody>
</table>
Convergence of CORE and Reported Financials
Impact of CORE adjustments on EBITDA

<table>
<thead>
<tr>
<th>Impact of CORE EBITDA adjustments on Lonza profitability(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018(^2)</td>
</tr>
<tr>
<td><strong>New CORE Definition</strong></td>
</tr>
<tr>
<td>EBITDA margin</td>
</tr>
<tr>
<td>CORE EBITDA margin</td>
</tr>
<tr>
<td><strong>Old CORE Definition</strong></td>
</tr>
<tr>
<td>CORE EBITDA margin</td>
</tr>
<tr>
<td>Delta ppts</td>
</tr>
</tbody>
</table>

\(^1\) Based on Lonza Continuing operations excl. Water Care
\(^2\) 2018 financials not restated for the impact of IFRS16

Moderate impact of CORE adjustments on financial results in the past – to be further reduced under new CORE policy

CORE adjustment threshold increased to only exclude significant one-off events
Different Financial Profile for Lonza after Divestment of LSI
Bridge to new reporting structure

### FY 2019 financial performance overview (Indicative figures)

<table>
<thead>
<tr>
<th>CHF mio</th>
<th>Lonza¹</th>
<th>LSI Discontinued Operations²</th>
<th>Future Lonza</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>5,920</td>
<td>1,693 (2.5)</td>
<td>4,227</td>
</tr>
<tr>
<td>% CER growth vs. PY</td>
<td>7.3</td>
<td></td>
<td>11.7</td>
</tr>
<tr>
<td>CORE EBITDA</td>
<td>1,620</td>
<td>302</td>
<td>1,318</td>
</tr>
<tr>
<td>% margin</td>
<td>27.4</td>
<td>17.8</td>
<td>31.2</td>
</tr>
<tr>
<td>Capex</td>
<td>786</td>
<td>91</td>
<td>695</td>
</tr>
<tr>
<td>% Sales</td>
<td>13.3</td>
<td>5.4</td>
<td>16.4</td>
</tr>
<tr>
<td>Operational Free Cash Flow</td>
<td>495</td>
<td>136</td>
<td>359</td>
</tr>
<tr>
<td>ROIC</td>
<td>9.1%</td>
<td>9.7%</td>
<td>8.9%</td>
</tr>
</tbody>
</table>

¹ Based on Lonza Continuing operations excl. Water Care
² LSI 2019 segment financials as proxy for LSI Discontinued Operations

**Future Lonza vs. current Lonza Group**

- Sales growth and margin accretive
- Higher Capex driven by growth project investments
- Maintained strong operational free cash flow
- Future Lonza ROIC more rapidly increasing behind growth projects
Behind a Strong Balance Sheet
Cash generation and capital allocation priorities

**Cash Generation**

- Accelerated CORE EBITDA increase behind strong sales growth and high operating leverage
- Capex investments required to support long-term growth leveling over time

**Capital Allocation**

- Organic growth projects
- Selected acquisitions
- Dividends

**Commitment to Strong Investment Grade Rating**
New Reporting Structure to be Reflected in H1 2021 Financial Results

New reporting structure timeline

**FY 2020 results reported in current organizational structure, LSI as discontinued operations**

Update of FY 2020 and H1 2020 Sales, CORE EBITDA, EBITDA and Capex figures in new organizational structure in May / June 2021

H1 2021 results to be reported in new organizational structure (with restated H1 2020 financials)
## Complementary Financial Models by Business

### Divisional financial models

<table>
<thead>
<tr>
<th></th>
<th>CDMO Commercial</th>
<th>CDMO Clinical</th>
<th>Product Business</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue profile</strong></td>
<td>Long-term contracts (5-10y in Biologics, 5-7y in SM)</td>
<td>&lt;2y</td>
<td>~1y</td>
</tr>
<tr>
<td><strong>Main revenue recognition consideration</strong></td>
<td>Batch release</td>
<td>Rendering of services/batch release</td>
<td>Shipment</td>
</tr>
<tr>
<td><strong>Operating leverage</strong></td>
<td>⬤⬤⬤</td>
<td>⬤⬤⬤⬤</td>
<td>⬤⬤⬤⬤</td>
</tr>
<tr>
<td><strong>Growth project impact (Opex)</strong></td>
<td>⬤⬤⬤</td>
<td>⬤⬤⬤</td>
<td>⬤⬤⬤</td>
</tr>
<tr>
<td><strong>Capital intensity</strong></td>
<td>⬤⬤⬤</td>
<td>⬤⬤⬤</td>
<td>⬤⬤⬤</td>
</tr>
<tr>
<td><strong>Quarterly results variability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Other specific revenue recognition criteria may apply
<table>
<thead>
<tr>
<th>Sales Split H1 2020²</th>
<th>Capsules &amp; Health Ingredients</th>
<th>~25%</th>
<th>Small Molecules</th>
<th>~15%</th>
<th>Biologics¹</th>
<th>~45%</th>
<th>Cell &amp; Gene, and Bioscience</th>
<th>~10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. CORE EBITDA H1 2020</td>
<td></td>
<td>~35%</td>
<td></td>
<td>~25%</td>
<td>~35%</td>
<td></td>
<td>Break-even</td>
<td></td>
</tr>
</tbody>
</table>

¹ Excluding Licensing
² Licensing attributable to ~5% of total sales
### Attractive Financial Trajectory for all Divisions

**3-year projections**

<table>
<thead>
<tr>
<th>Capsules &amp; Health Ingredients</th>
<th>Small Molecules</th>
<th>Biologics(^1)</th>
<th>Cell &amp; Gene, and Bioscience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales CAGR 2020 - 2023 (CER)</strong></td>
<td>Low-to-mid single-digit</td>
<td>High-single-digit to Low-double-digit</td>
<td>Low double-digit</td>
</tr>
<tr>
<td><strong>CORE EBITDA margin 2023 trajectory ambition</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Excluding Licensing
2023 Financial Guidance

Balance short term margin vs. long-term growth

Double-digit sales growth driven by Biologics, Small Molecules and Cell & Gene Therapy businesses

Improved CORE EBITDA margin despite investments in growth projects

Capex to remain at 2019 level in 2021 and 2022 as investment cycle continues

Double-digit ROIC driven by growth and margin expansion

Double-digit Sales Growth

~ 33% – 35% CORE EBITDA Margin

Double-digit ROIC
Company Culture
The Company Spirit

A CORE set of shared values, beliefs, habits and behaviors

A force field to unite and galvanize the whole employee community

Must be earned and built

A touchpoint to guide the behavior and mindset of individual employees

What Culture Means at Lonza
### The Values that Define our Culture

| Collaboration       | Collaborative based on mutual trust  
|                     | Collective contribution to the whole |
| Accountability      | A focus on performance and results  
|                     | Highly aligned, committed and accountable teams and individuals |
| Focus               | Pragmatic, motivated and conscientious  
|                     | Market and customer-centric business  
|                     | Attentive to developing our best talent |
| Integrity           | High standards of integrity and probity  
|                     | Constructive attitude |
| Openness            | Non-hierarchical management style  
|                     | Encouraging different views and open communication |
Building our Culture through Leadership Behaviors

Champion company values

Calm, resilient and consensual approach

Predictable, but responsive to change

Encourage and embrace new ideas and perspectives

Encourage creative and constructive dissidence

Grounded and down-to-earth

Nurture, develop and grow future talent
Conclusion
# Our Business Today

## Resilience

- Robust pipeline across our modalities

- Large Pharma is increasingly less likely to invest in production facilities

- Small Biotech companies rely on manufacturing partners to deliver path to commercialization

## Growth

- All Divisions show attractive growth levels

- Contribution to the value chain – following the molecule from late stage discovery to final drug product

- High entry barriers arising from reputation, quality, reliability, complexity and high initial investment costs
The Lonza Business Blueprint
A fully aligned structure and culture

Structure

- Full divisional P&A accountability
- Functional collaboration to create one Lonza business
- End-to-end customer delivery
- Global standards processes and best practices
- Enhanced and harmonized financial reporting process

Culture

- Accountability
- Collaboration
- Customer focus
- Integrity
- Openness
Immediate Priorities

- Dedicated focus on transformation and delivery
- Smooth and seamless leadership transition
- Single industry focus and single business identity
People crowd motion through the pedestrian crosswalk