

# Innovation at Lonza

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# Lonza at a Glance

## Key Figures

**Lonza**

Pharma & Biotech

*"A trusted supplier to the pharmaceutical, biotech and specialty ingredients markets"*



Key figures include recently acquired Capsugel

# Lonza at a Glance

Delivering synergies and optimizing performance by connecting technology platforms and fields of expertise

**Lonza**

Pharma & Biotech

## Pharma & Biotech

### Patient Healthcare



- Clinical development and manufacturing
- Commercial manufacturing
- Consumables and research tools

## Specialty Ingredients

### Consumer Health

### Consumer Preventive Healthcare



- Consumer health and nutritional ingredients and delivery systems
- Hygiene and microbial-control solutions

### Consumer & Resources Protection

### Consumer's Healthy Environment



- Coatings and composites solutions
- Agricultural products and services including basic chemicals

**PRESCRIPTION**

**PREVENTION**

**PROTECTION**

**PRESERVATION**

**The healthcare continuum at Lonza spans all of its businesses**



# Lonza Pharma & Biotech: Offering Customers an Integrated Approach

**Lonza**

Pharma & Biotech

Customized API<sup>1</sup>

Delivery & Product Differentiation

Pharma &  
Biotech

Chemical  
Technologies

Biologics

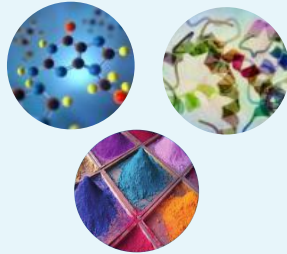
Drug Substance  
Development

Drug Substance  
Manufacturing

Drug Product  
Development

Drug Product  
Manufacturing

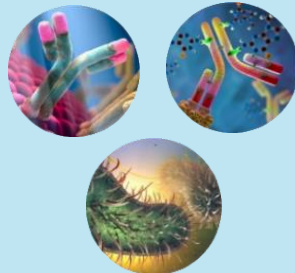
Patient  
Healthcare



Small molecules,  
HAPI, cytotoxics,  
intermediates



Oral dosage  
forms & delivery  
systems



Mammalian and  
microbial expression  
systems, cell and gene  
therapy



Parenteral drug  
product services

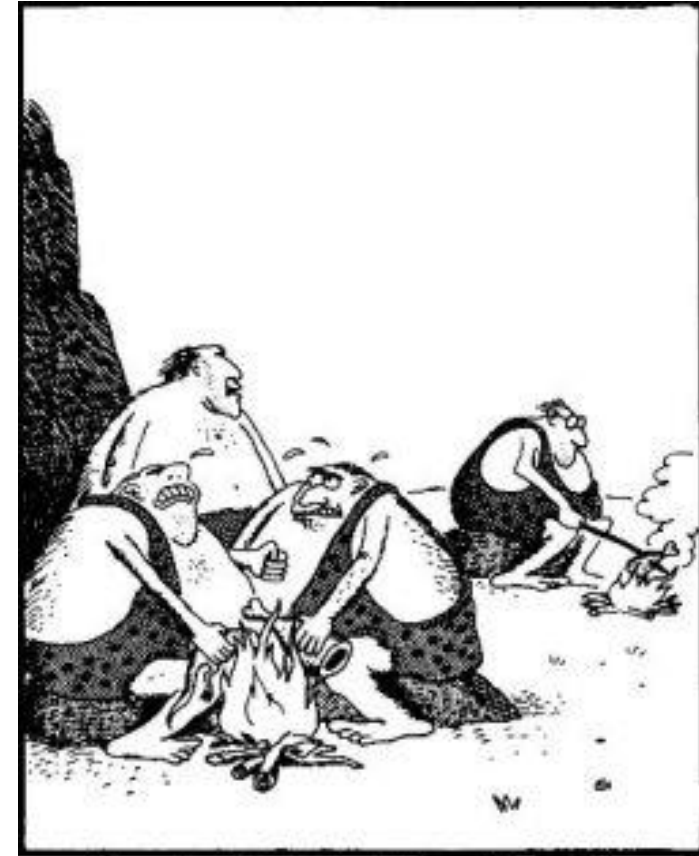


Technology Platforms Along Pre-Clinical to Commercial, Science & Regulatory Expertise

<sup>1</sup>API Active Pharmaceutical Ingredient

“**Forschung** ist die Umwandlung  
von Geld in Wissen,  
**Innovation** ist die Umwandlung  
von Wissen in Geld“

Dr. Alfred Oberholz (\*1952)



"Hevi Look what Zoa do!"

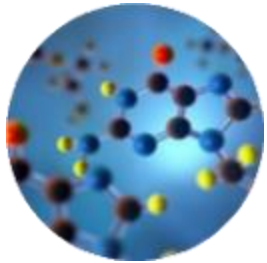
# Innovation is essential to prevent a “Sputnik Moment”

**Lonza**

Pharma & Biotech



# The Innovation Journey of LPB: Adaption to a changing Environment



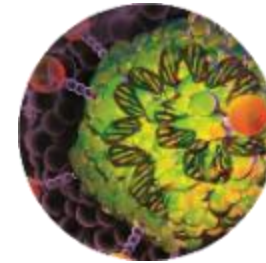
**1980s**

Small molecules



**2006**

Microbial



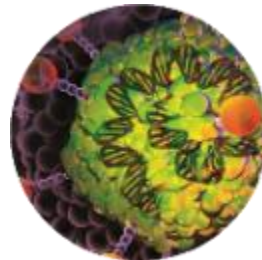
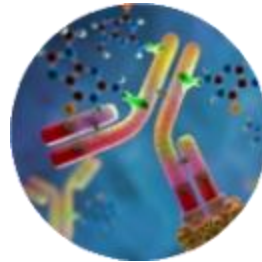
**2010**

Viral vector gene therapy



**1996**

Mammalian & monoclonal antibodies



**2007**

ADCs  
Cell therapy



**2017**

Capsugel

# Five Technologies That Will Disrupt Healthcare By 2020\*

- Artificial Intelligence: CAGR of 42% to reach \$6.6 billion in
- Immunotherapies: Checkpoint inhibitors growing at 139% CAGR
- Liquid Biopsy: Potential to monitor tumors non-invasively
- CRISPR/Cas9: Disrupting the way R&D is conducted and products are developed
- 3D Printing: Game changer for organ or tissue repair

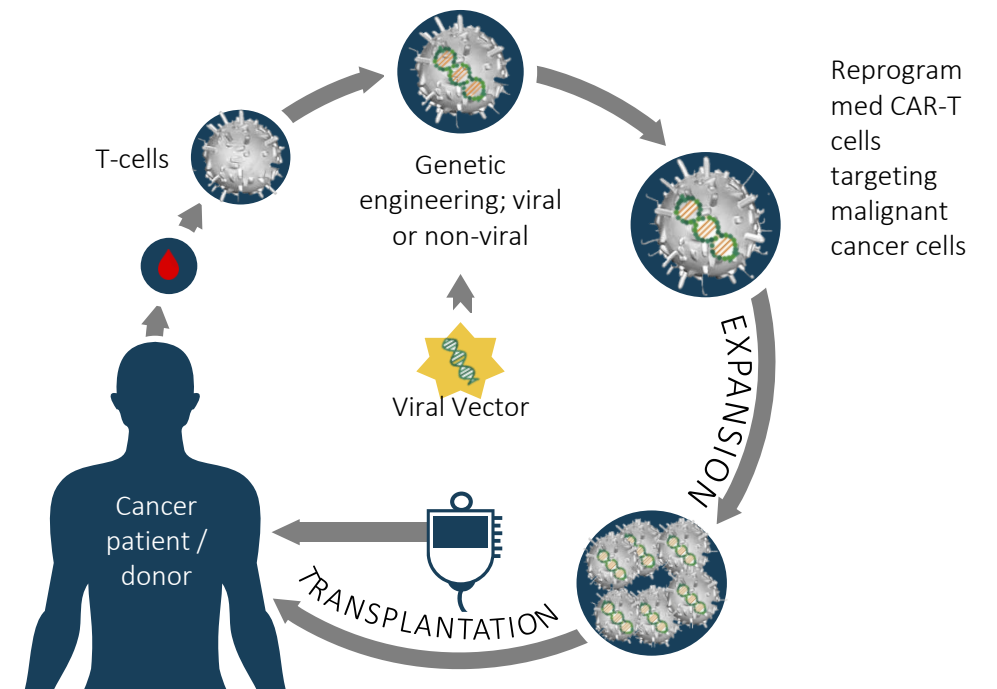
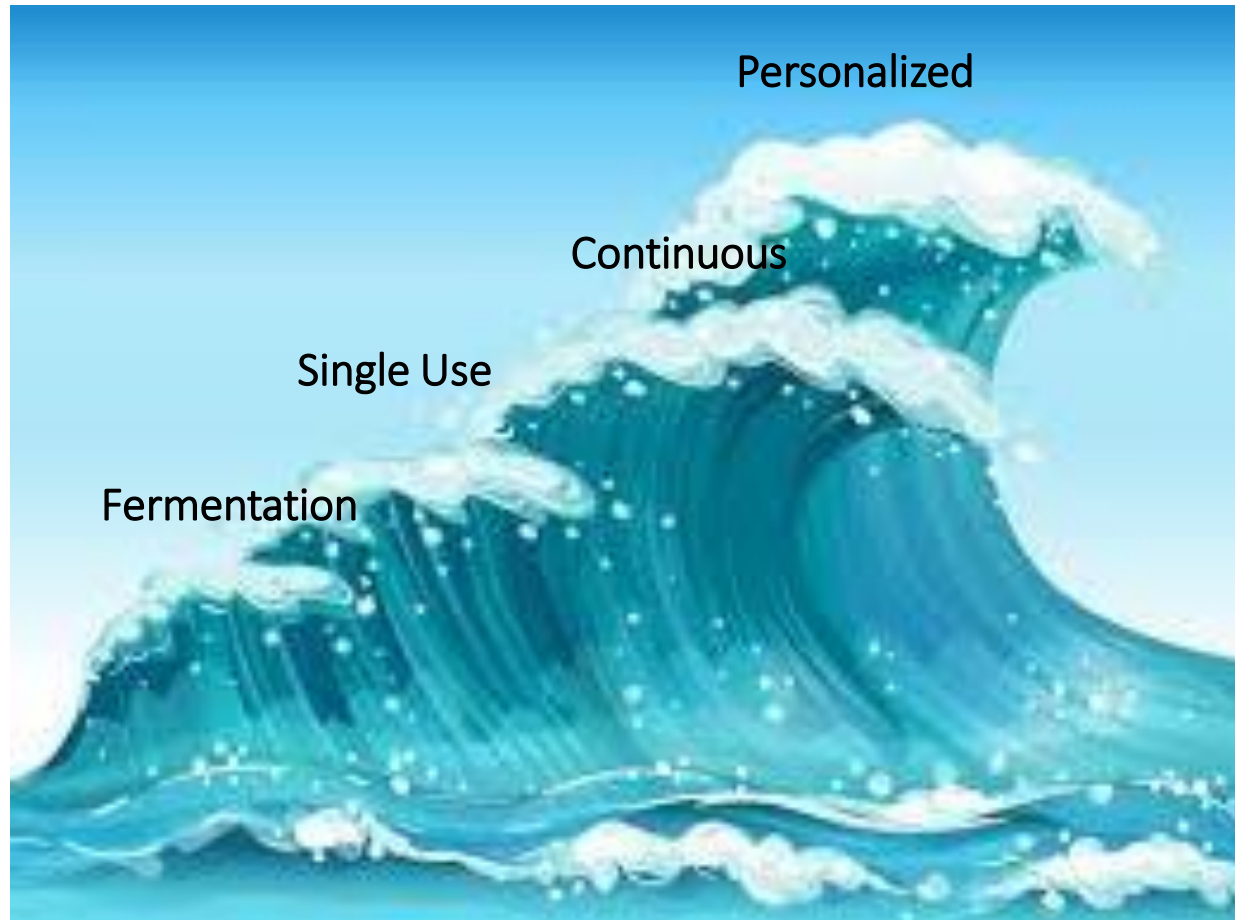
[\\*http://www.forbes.com/sites/reenitadas/2016/03/30/top-5-technologies-disrupting-healthcare-by-2020/#32b7aca36252](http://www.forbes.com/sites/reenitadas/2016/03/30/top-5-technologies-disrupting-healthcare-by-2020/#32b7aca36252)



# Innovation Waves in Biomanufacturing

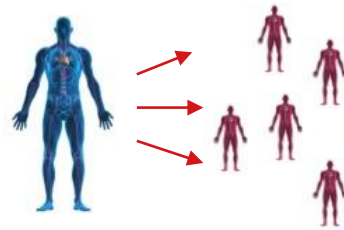
**Lonza**

Pharma & Biotech



# Allogeneic vs Patient-Scale Manufacturing

Allogeneic model



Patient-scale model



- **Scaled Up and Centralized**



- **Integrated and contained**
- **Automated and controlled**
- **Single Use**



- **Scaled out and Decentralized**

# Innovation Is Central Cultural Element to Lonza

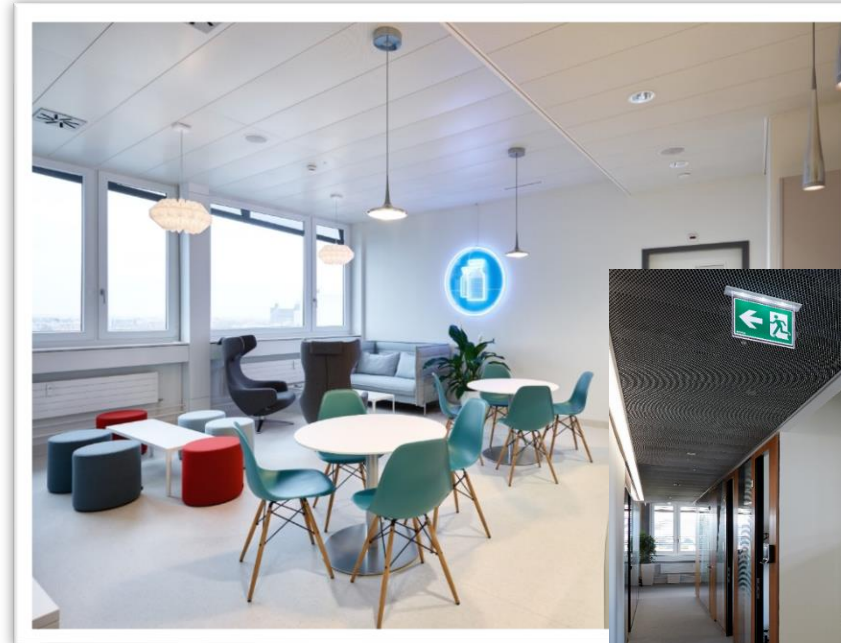




# Show case Innovation Culture at Lonza, Basel

## Drug Product Services

- Built a first operative Lonza site in Basel
- Focus “Gene to Vial” services for Customers and their Patients
- Most modern Infrastructure & Appearance
- Entrepreneurial setup
- Talent pool, ability to attract talents globally
- Diversity of gender, background, training and education, nationality (23 nationalities), and perspective
- Basel infrastructure – providing a fantastic Framework at be able to attract talents globally





# Innovation Show Case Drug Product Services - Basel Site



Modern Lab space & state of the art capabilities



# Innovation Show Case Drug Product Services - Basel Site



Start Up character & Interactivity

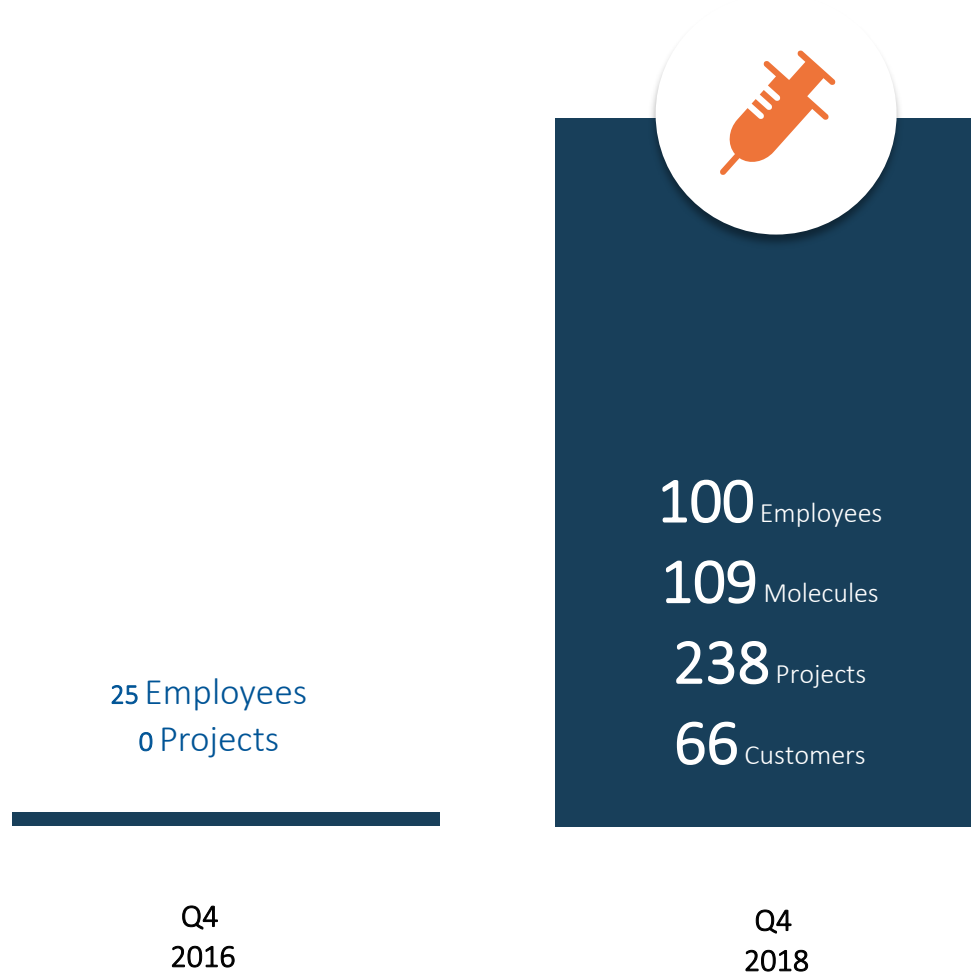
# Drug Product Services Basel - Delivering for Customers

**Lonza**

Pharma & Biotech

## Extending parenteral services for biologics further differentiates Lonza from competition

Lonza Parenteral Drug Product Services –  
A successful, organic build



- **Science-driven:** Technical capabilities, regulatory and industrial expertise; R&D activities and academic collaborations
- **Proprietary technologies** available to address most critical drug topics, e.g. particulates, surfactants, extractables, container and device testing
- **Customer & patient centric:** Formulation and choice of device based on patient safety and usability, differentiate customers from competition
- **Solutions provider:** Customers outsource complex projects to Lonza; we anticipate issues and develop custom solutions
- **Reduced complexity, increased speed to market**

<G:\Pharma and Biotech\internal\Drug Product Services\MarCom\07 Movies\We are DPS.mp4>

# Lab Tour – Safety!

- No food or drinks
- Wear safety goggles and labcoats
- Use handrails
- Stay with your guide and group
- Don't touch anything
- No pictures



# the next solution...

We'll find it together.