



**Eelco Dijkstra**



**Laurent Foetisch**



Supply Chain Operations

...We do it for you...

OXFORD

AstraZeneca



sinov



药集团  
OPHARM



Vaccines are starting to  
move.....

Pfizer



UPS has delivered our first COVID-19 vaccines to destinations across the U.S. and Canada.  
— see more



More than 800,000 doses of COVID vaccine from Pfizer / Biontech are transported through the DHL Express Hub in Brussels to UK. The logistical effort is enormous: the vaccine has to be cooled to -70 degrees. A smooth process in transportation is crucial - DHL fully supports this. Connecting people, improving lives.  
#lifescience #dhl



Corona-Impfstoff: Flughafen Brüssel bereitet Lieferung nach Großbritannien vor - DER SPIEGEL







# Global Supply Chain Challenges |



**Nothing in recent times has been  
more disruptive than**

**COVID-19**



**When will the  
vaccines  
become  
available?**





December

January

February

March

April

May

June

??



Estimate: Millions of vaccine production per month coming on stream

Vaccines Pfizer, Sinopharm starting to move.  
Sinovac, Sputnik V closely behind  
Biggest challenge: production lag!



Production lag biggest  
challenge

**Are we ready to  
get vaccinated?**



# 45%

## Percentage of the population say NO

**Source:** Europhia Consulting global survey conducted in August 2020



# 68%

Percentage of the  
population say it  
depends...

**Source:** Europhia Consulting global survey conducted in August 2020



....on where the vaccine is  
coming from





A hand wearing a blue nitrile glove is holding a small, clear glass vial with a white label. The vial has a silver cap. The background is a soft, out-of-focus light blue and white.

**The public is  
concerned about  
public safety aspects**

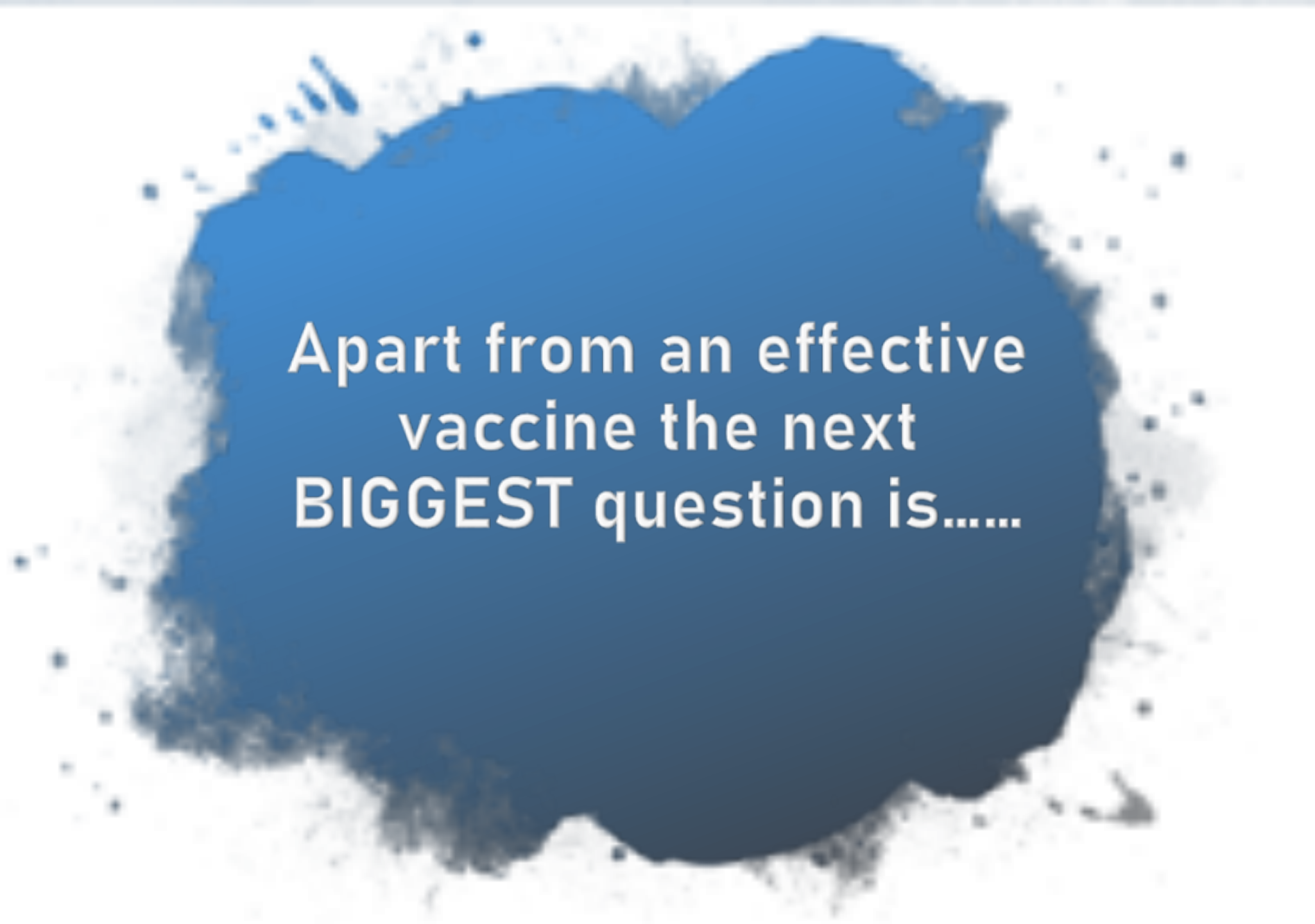
**will it work?**

**side effects?**

Governments play an important role in ensuring public confidence in immunisation programs



# Scientific data




Apart from an effective  
vaccine the next  
**BIGGEST** question is.....





whether the Supply Chain is ready to handle the biggest logistics challenge ever?



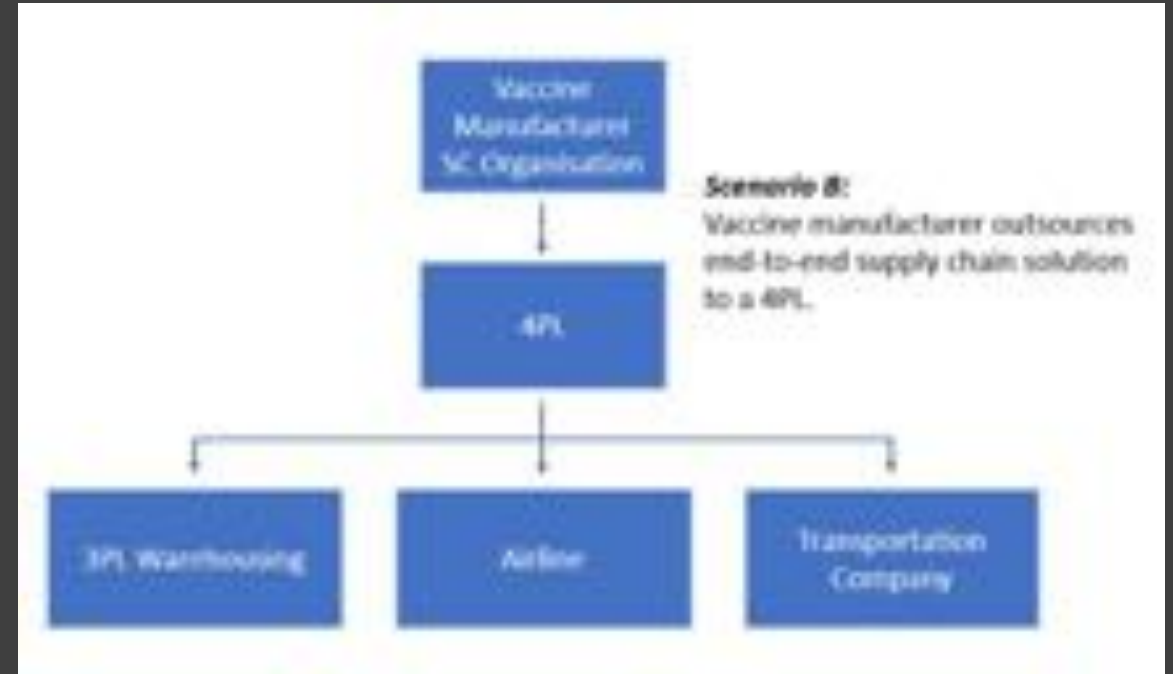
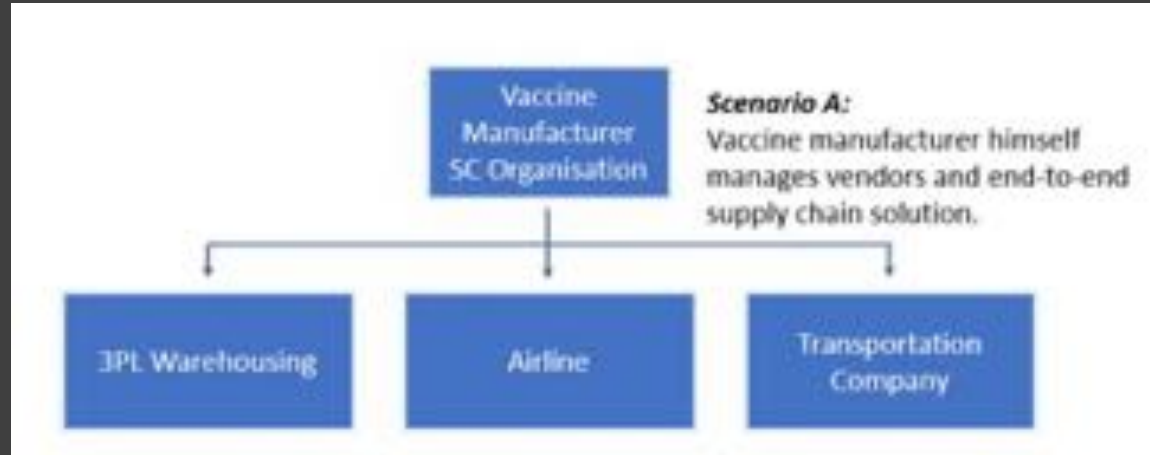
**Are we ready to  
handle a global  
demand of 7.8  
Billion  
vaccines?**



# Collaboration

between manufacturers,  
government and logistics  
companies will be the best  
way to go. ■





Manufacturers need to involve more supply chain expertise into their distribution design

What are the biggest  
challenges?





# End-to-end temperature controlled supply chain

2-8° C

-20° C

up to -70° C



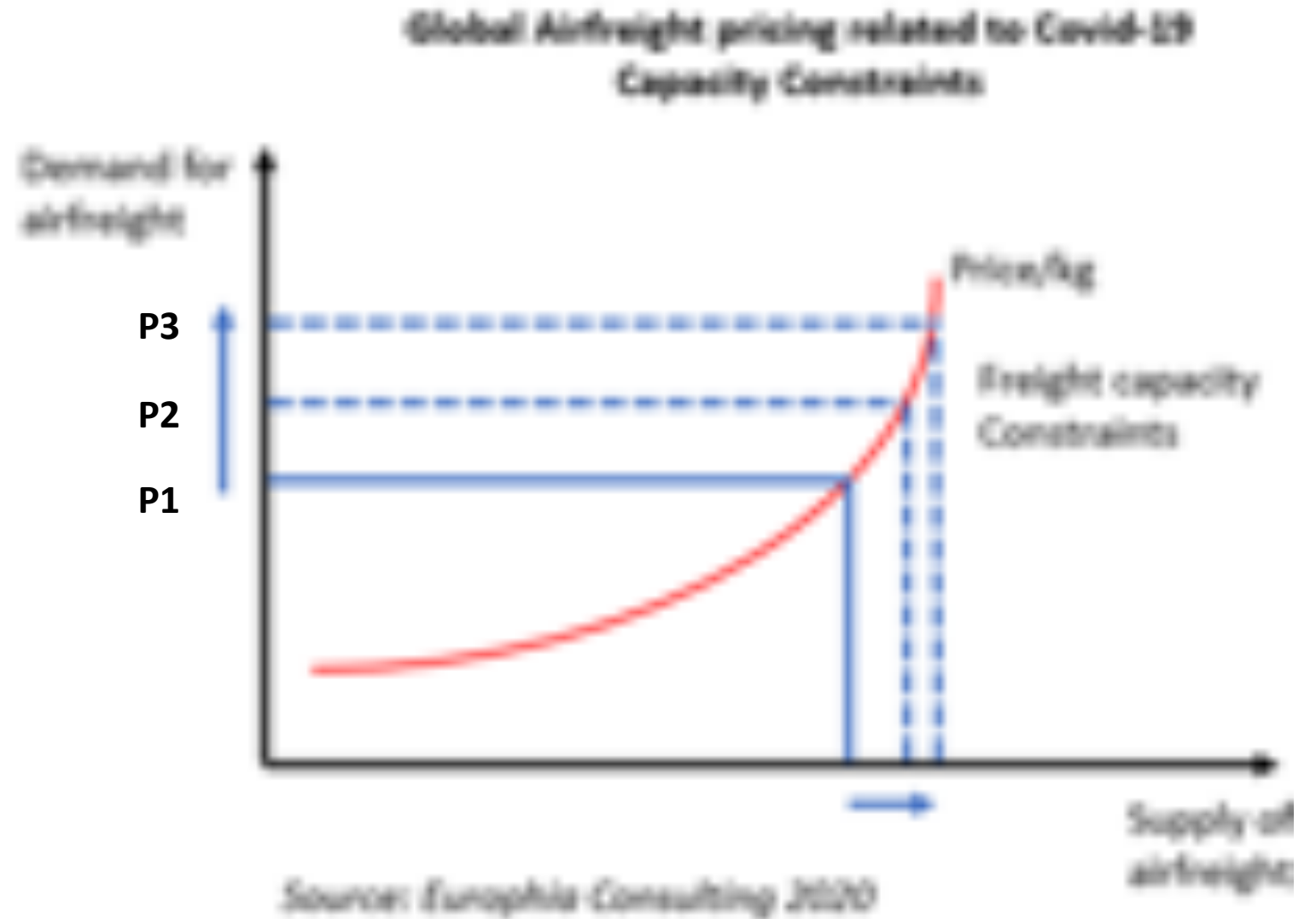
**Thousands of  
freighters required to  
meet global demand**



Global Airfreight Capacity



# Impact on airfreight pricing





**Dry-ice  
restrictions on  
airfreight**

# Not enough Pharma Cold storage space





# Final Mile Distribution

Ground handling at airports  
Temporary cold-chain  
storage



# Product Safety and Integrity

## Serialization and barcoding



# Security and Counterfeiting

Crime and corruption


Illegal Trading of vaccines



First came news of a vaccine.  
Now come the scams.


By **Giulia Heyward** and **AJ Willingham**, CNN

Updated 3 hours ago Dec 16, 2020




**Never has the Supply  
chain been so relevant!**



The background features a dark teal gradient with a network of white lines connecting various circular icons. These icons include a gear, a location pin, a calendar, a factory, a truck, a warehouse, a building, and a cloud with an upward arrow. The text is centered within a semi-transparent white rectangular box.

**Never have secure and  
compliant supply chain  
solutions been more relevant**



The background features a dark teal gradient with several large, semi-transparent gears. Interspersed among the gears are various circular icons connected by thin white lines, representing a network or supply chain. The icons include a location pin, a factory, a truck, a warehouse, a calendar, a person, a gear, and a building.

**Never have the best supply  
chain professionals been so  
relevant**

The logistics industry is so much more than just the top 5 logistics companies

## Vaccine Distribution Solutions

Logistics companies such as DHL, UPS, Fedex, KN

Airports and Airlines specialised in pharma such as Emirates, KLM-France, Cargolux, Lufthansa

Consultant experts in supply chain and distribution

Packaging providers of passive and active cold chain boxes and containers

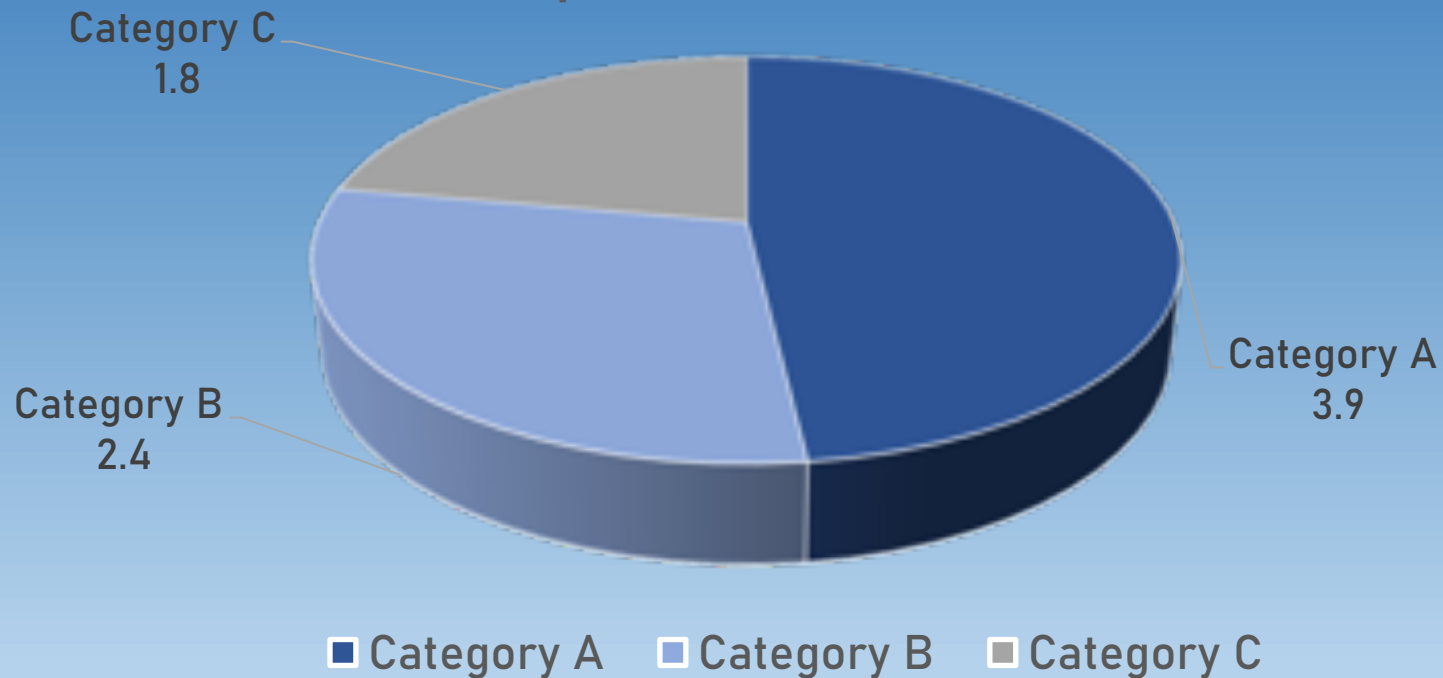
Local heroes with incredible storage and transportation assets

Validation, quality and system solutions

A world map is visible in the background, rendered in a light blue color against a dark blue background. The map shows the continents and oceans, with a focus on the Eastern Hemisphere where the largest populations are located.

The largest populations  
around the world are not in  
Europe or North America

## Categorization of Countries in terms of Population (in Billions)



Category	Countries
Category A	United States, China, India, Russia, Brazil, EU27
Category B	Mid-size countries such as Indonesia, Japan, LATAM ex Brazil, Nigeria, Saudi Arabia, Iran, Turkey, Egypt and others
Category C	Smaller countries with a pop up to 50 Million per country





Emerging markets have limited Pharma logistics capabilities





## Strategy:

- Ship direct into emerging markets
- Deploy replenishment models through Regional Distribution Hubs



An illustration on a teal background with white clouds. A hand in a dark suit sleeve holds a red and white striped life preserver. Below, a hand in a blue suit sleeve reaches up from a sea of white papers with green horizontal lines. The text "What are our Supply Chain recommendations?" is overlaid in the upper right.

**What are our Supply  
Chain  
recommendations?**



- 
- A person in a dark suit and tie is shown from the chest up, their hand reaching towards a glowing blue network diagram. The diagram consists of several circular nodes connected by lines, with a central node being particularly bright. The background is dark, and the overall lighting is blue, creating a high-tech, digital atmosphere.
1. Strategy first
  2. Design and test
  3. Execution

# 1. Strategy

Ensure you work with the  
best expertise and  
logistics service  
providers



## 2. Design and Test

Ensure end to end GDP compliant  
and temperature controlled  
solutions for storage and  
distribution

Smart  
Packaging  
solutions to  
protect  
vaccines which  
are also  
(cost)effective  
for transport








Keeping vaccines safe in  
the air and on the ground

The industry is in need of better, smarter and  
more cost effective actively cooled containers.



**Fast-track processing time  
through arrival airports and  
giving temporary air traffic  
rights**





# **Build Strong Supply Chain Teams**

**Logistics companies, airlines, governments and private consultants working together to bundle logistics expertise, management, contracts and compliance to regional and local regulations**

# 3. Implement

- GDP compliance throughout solution
- Quality Management Systems
- Trained staff

