



MAY 18TH 2022

Delivering Covid Vaccine @ Lightspeed

Pfizer

Mieke De Winter & Stephen Privett – Pfizer Global Automation



Agenda

- Pfizer
- The Covid Vx Journey : Science will win
- Making Data Part of the Journey
- The future

2021 Pfizer : Breakthroughs that change patients lives



- 78,000 COLLEAGUES
- 39 MANUFACTURING SITES
- 300+ CMO
- 125 COUNTRIES



- 20 RISING STARS
- TREATMENTS FOR 27 CANCERS

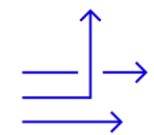


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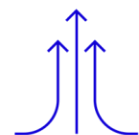
ESTIMATED **PATIENTS TREATED OR VACCINATED** BY A
PFIZER PRODUCT

424M

ESTIMATED **PATIENTS TREATED** EXCLUDING COVID-19
VACCINES OR TREATMENTS



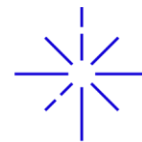
Courage



Excellence



Equity



Joy



**2022 PATIENTVIEW CORPORATE
REPUTATION OF PHARMA SURVEY!**

AVEVA

Pfizer has a rich vaccine history



Vaccines are one of the greatest public health advancements of all time. For more than **130 years**, Pfizer has played a pivotal role in helping to reduce the threat of deadly infectious diseases by developing and selling novel vaccines based on new delivery systems and technologies.

1906



The **diphtheria** antitoxin becomes the first FDA-licensed product manufactured at the Company's Pearl River, New York, facility¹

1948



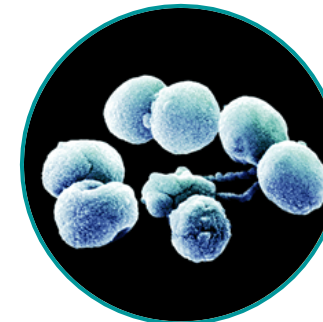
The Company introduces a combined vaccine for **preventing diphtheria, tetanus and pertussis** in young children¹

1968



First to develop bifurcated needle which subsequently revolutionizes **smallpox** delivery and leads to its worldwide eradication²

2000



First to license a 7-valent **pneumococcal** conjugate vaccine for infants and young children³

2010-2011



2010: First to license a 13-valent **pneumococcal conjugate vaccine (PCV13)** for infants and young children and in **2011** for adults 50 years and older⁴

¹ Lederle Laboratories; ² Wyeth; ³ Wyeth Lederle Vaccines and Pediatric ⁴ Pfizer

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The Covid Vx Journey : Science will win!



Partnering for success

The Biontech logo is displayed in a stylized, blocky font. The letters 'BIO' are green, 'NT' is yellow, and 'ECH' is green. The logo is positioned on the left side of the slide, below the title.

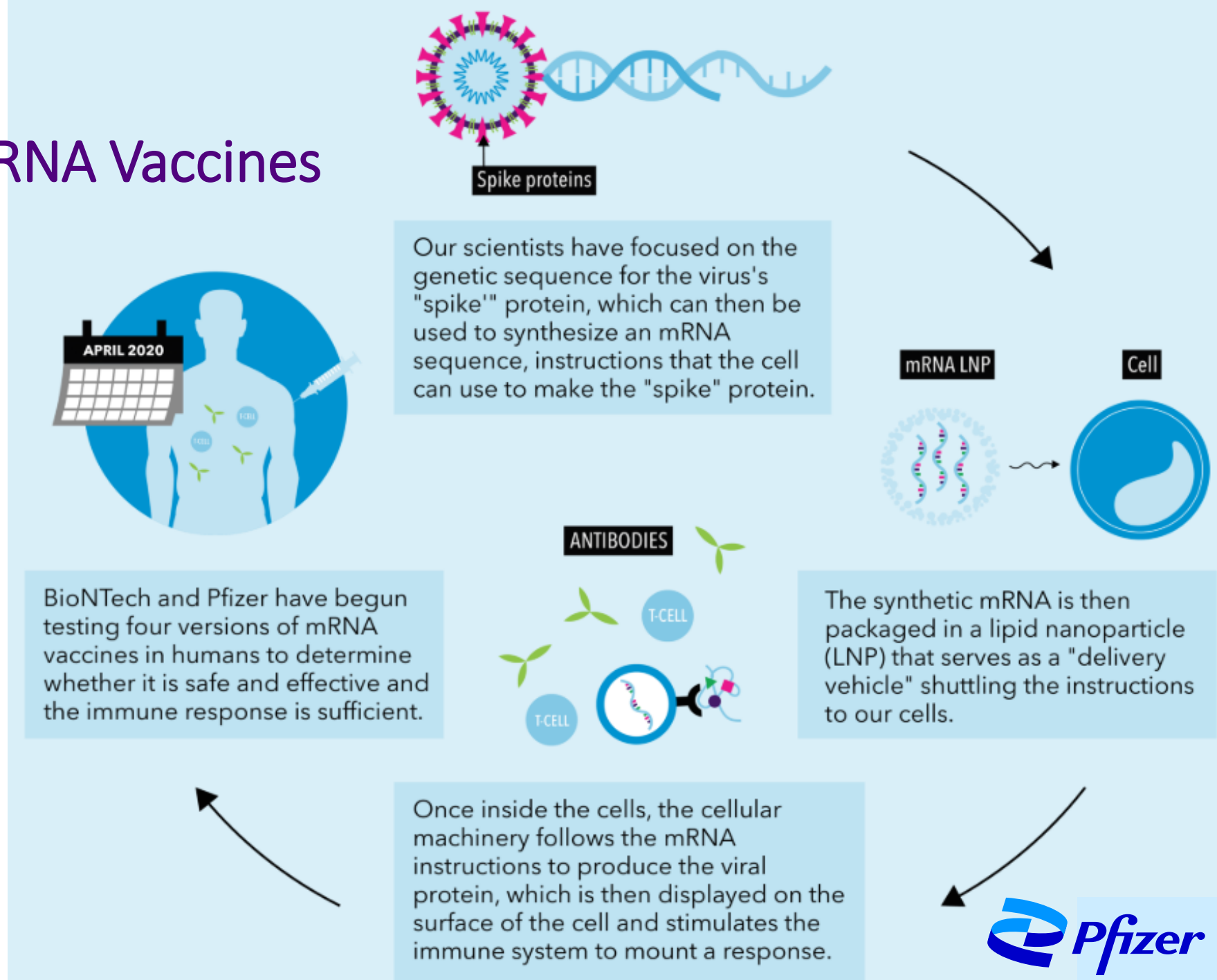
- A pioneer in the mRNA therapeutics* field
- Owns the most diversified mRNA technology portfolio in the industry.
- Highly potent Lipid-Nano-Particulate (LNP) mRNA vaccine platforms
- Operates GMP, certified manufacturing facilities in Germany including laboratory space.
- Leader in infectious disease vaccine research & development.
- One of the largest manufacturers of vaccines and therapeutics.
- Large pharmaceutical sciences development organization
- Extensive pilot scale capabilities

*More than 100 peer-reviewed publications including 5 mRNA publications in the Journals Nature and Science in the last 4 years

The AVEVA logo is located in the bottom right corner. It is written in a bold, purple, sans-serif font.

Understanding mRNA Vaccines

To build an mRNA vaccine, scientists only need access to the genetic sequence of SARS-CoV-2, and not the actual virus.

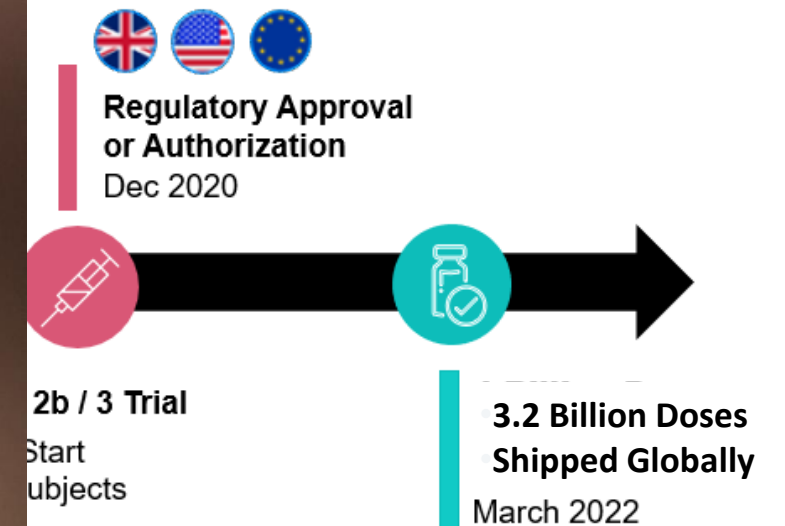
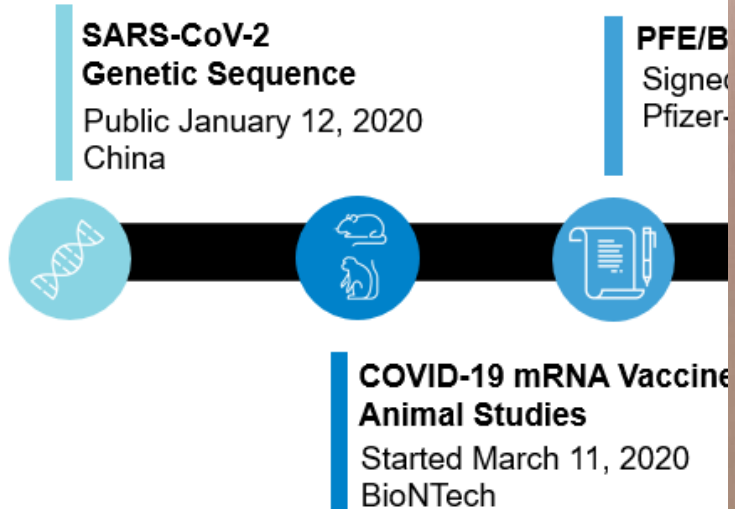


PROCESSED

Pfizer-BioN

ED

n Overview



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Comirnaty in Figures



Pfizer Sites

7

Colleagues Involved

? 15000+

Key Partners

many

Countries

179

Doses

3.2 Billion

Patients

±1B

Kalamazoo (US) & Puurs (BE): the places to be!

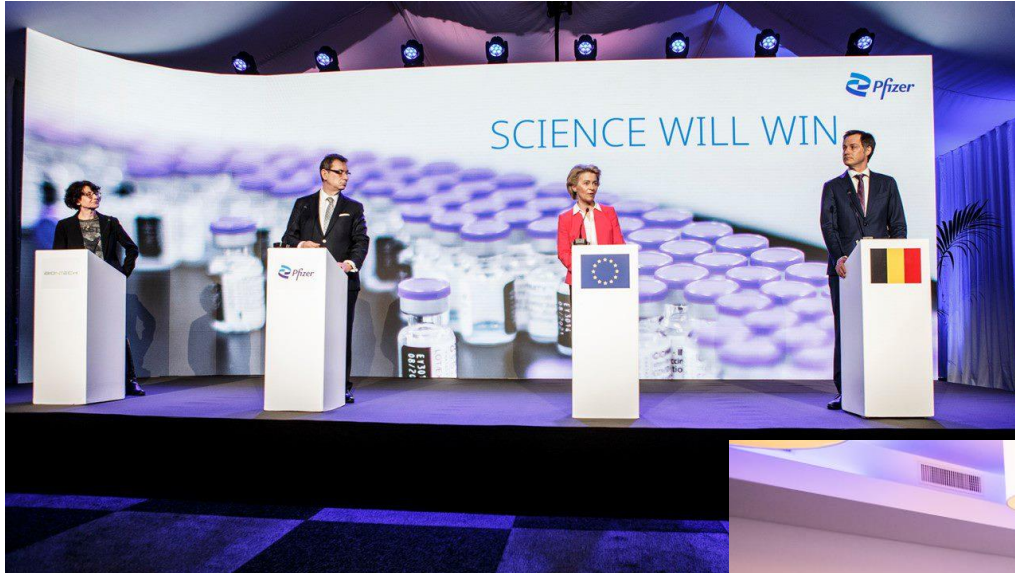


Image tweeted by @POTUS

and learned the process behind creating one of the two vaccines



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What was *Mandatory* for Success...



The whole is more than the sum of its parts



Making Data Part of the journey



Data Availability



Challenge

Full process oversight for all sites working on Comirnaty, in a time when traveling was not an option.

Solution

Global Historian implementation

Benefits

We'll come to that...



PI Journey

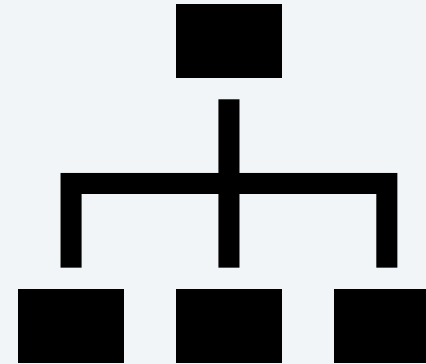
Structured Data Available Globally

Global Historian Program

Expand Site Footprints

Enterprise Agreement

Individual Site
Historians



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COVID Vx Data Strategy

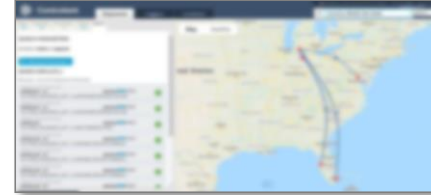
Delivering value across 7 key goals...

- 1 Supply Chain Acceleration
- 2 Optimize distribution
- 3 Cold Chain integrity
- 4 Increase visibility
- 5 Maximize throughput & reduce prod. cycle time
- 6 Reduce Release Cycle Time
- 7 Enhance Quality Adherence

...for breakthroughs that change patients' lives...

...while innovating with new game changing solutions

GPS Temperature Tracking



Freezer Farm Dashboard



Executive Visibility Dashboards



Automated BOH protocol



Operator Guided Experience



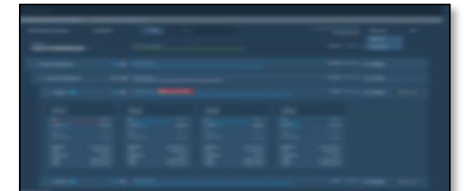
Virtual Twin



IIOT/WorkCenter Perf Mgmt



Time In/Out Refrig

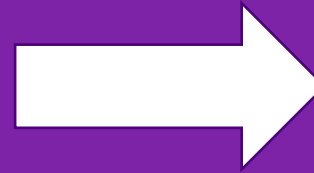


Global Historian Program

COVID Focus



18 Sites Engaged



4 Sites Focused

50+ AF Templates under development



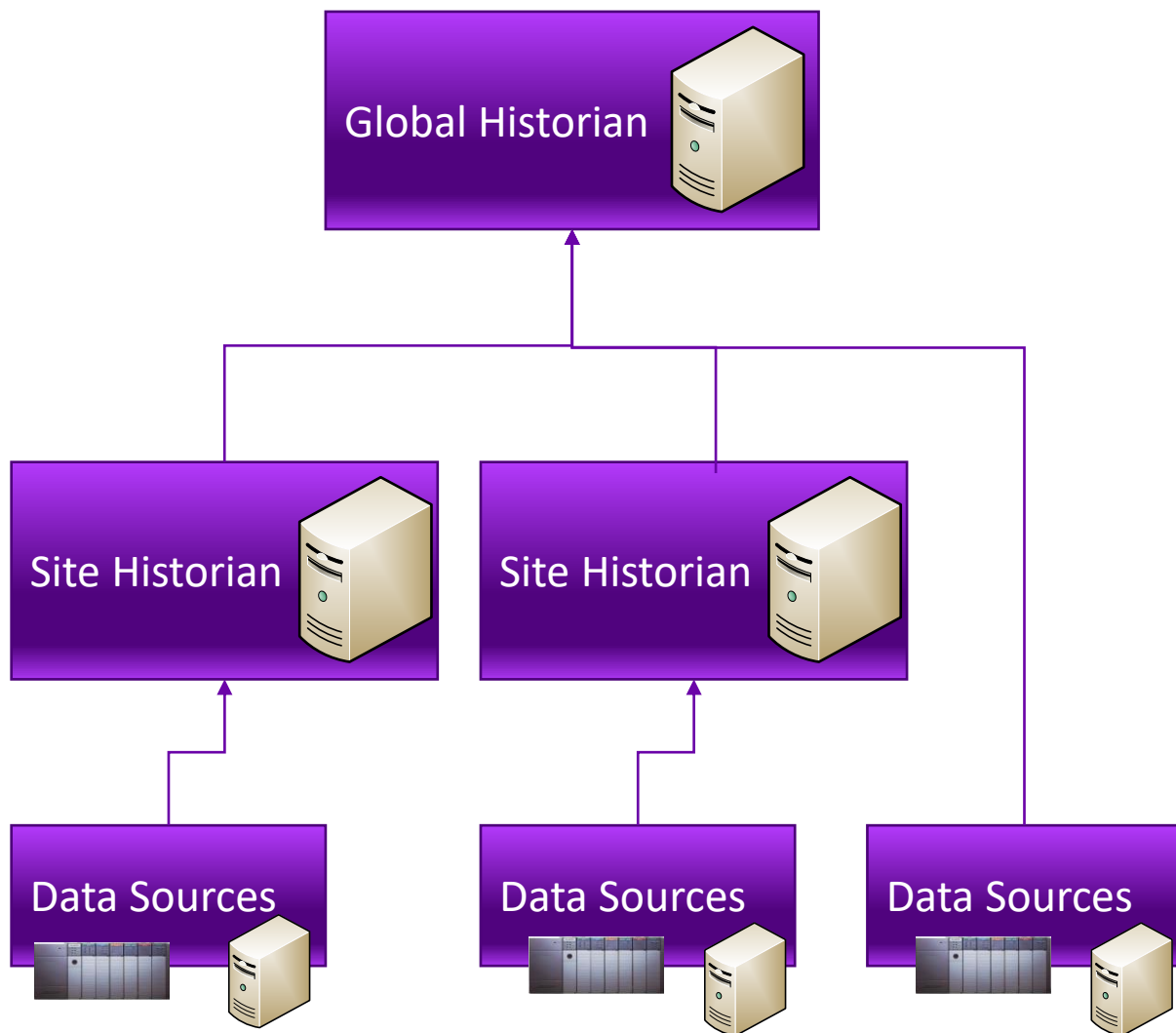
4 Key COVID Unit Class AF Templates

6 Key Event Frame Templates



6 Key Event Frame Templates





Local Connectivity

Global Consolidation

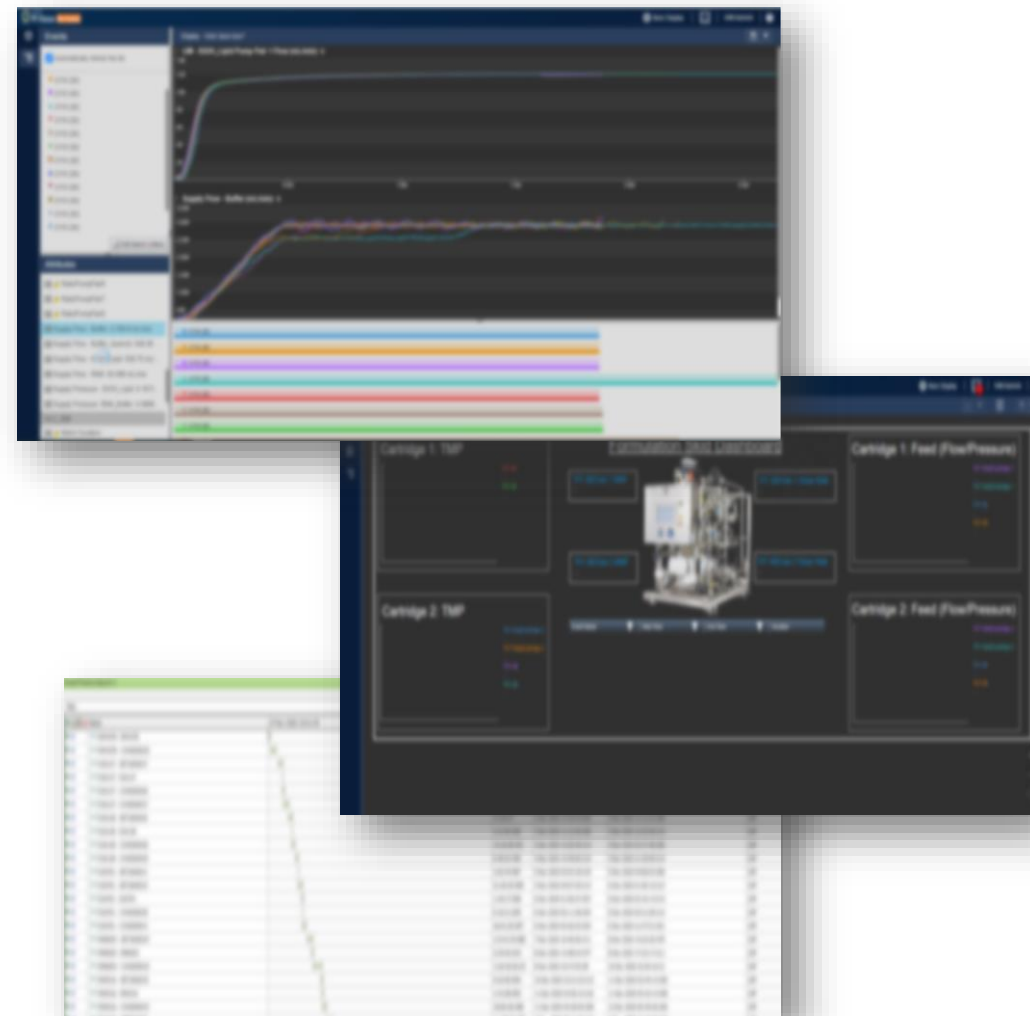
Global AF/EFs

Global Availability and Analytics

How Users are interacting with the data



- ***“Democratization of data”***
- *PI Vision Ad Hoc and Custom displays*
- *PI Vision Batch to Batch Overlays*
- *Tibco, Spotfire, ThingWorx, BioG*



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Big Wins



- Real Time process SMEs reviewing batches – Identified and optimising the processes faster.
- SMEs Data mining independently, identifying yield and reliability improvements.
- Worldwide colleagues from different backgrounds looking at the same data in the same format – allowing for wider collaboration between sites to maximize platforms



The future

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Moonshot

Inside Pfizer's Nine-Month
Race to Make the
Impossible
Possible



DR. ALBERT BOURLA

Chairman and CEO, Pfizer

Nurture the future of technology and AI
‘What if data and digital tools could reinvent prevention, patient empowerment and the pace of both R&D and manufacturing?’

*Chapter 12 : A Pro patient, pro innovation agenda
(Five-point plan - #3 Nurture the future of technology and AI)*



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