



Collecting, handling and interpreting data: maximizing the benefits unlocked by data – bioMérieux's experience

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Temperature Controlled Logistics in Biopharmaceuticals
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PIONEERING DIAGNOSTICS

WHO I AM ?



Name → *Juan Guillermo ANGEL*

Current position → *Cold Chain Manager / bioMérieux*

Scope → *Cold Chain management of export shipments from FR & US.*

Professional background → *Over 20 years in Supply Chain activities within the Healthcare sector.*



BIOMÉRIEUX



BIOMÉRIEUX

IN

100
SECONDS



FOLLOWING PASTEUR'S FOOTSTEPS SINCE 1897



MARCEL MÉRIEUX
Student of Louis Pasteur
Founder of Institut Mérieux in 1897



CHARLES MÉRIEUX
Took up the reins
of Institut Mérieux in 1937



ALAIN MÉRIEUX
Founder of bioMérieux
in 1963



ALEXANDRE MÉRIEUX
Executive Chairman



FOUR GENERATIONS
of one family committed to global public health

KEY FACTS AND FIGURES

60+ YEARS
OF EXPERTISE IN *IN VITRO*
DIAGNOSTICS

30+ YEARS
OF EXPERTISE IN
INDUSTRIAL
MICROBIOLOGY CONTROL

€
€3.675
BILLION IN SALES
IN 2023



More than **90%**
INTERNATIONAL SALES
(outside of France)

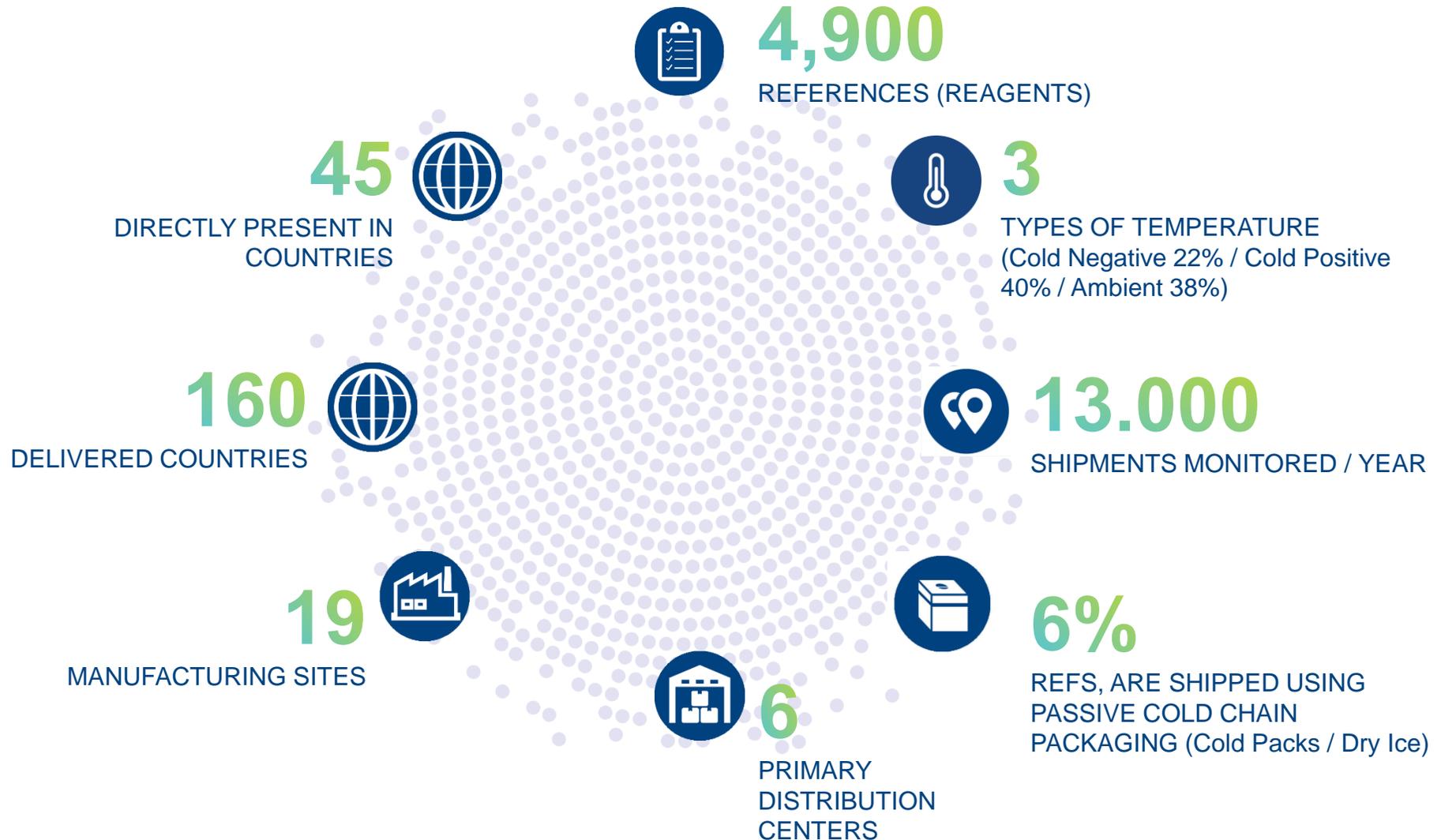


Marcy l'Etoile, FR

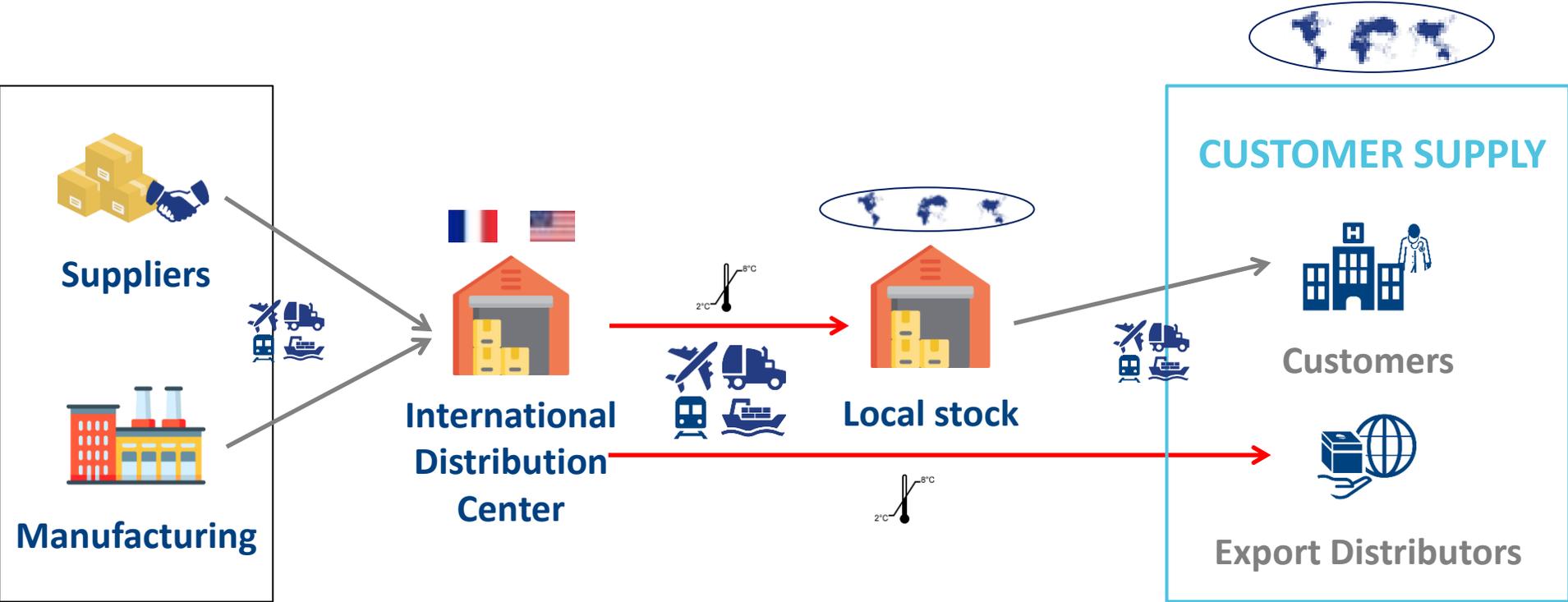


> 14,000
TEAM MEMBERS
WORLDWIDE

SUPPLY CHAIN / COLD CHAIN FIGURES



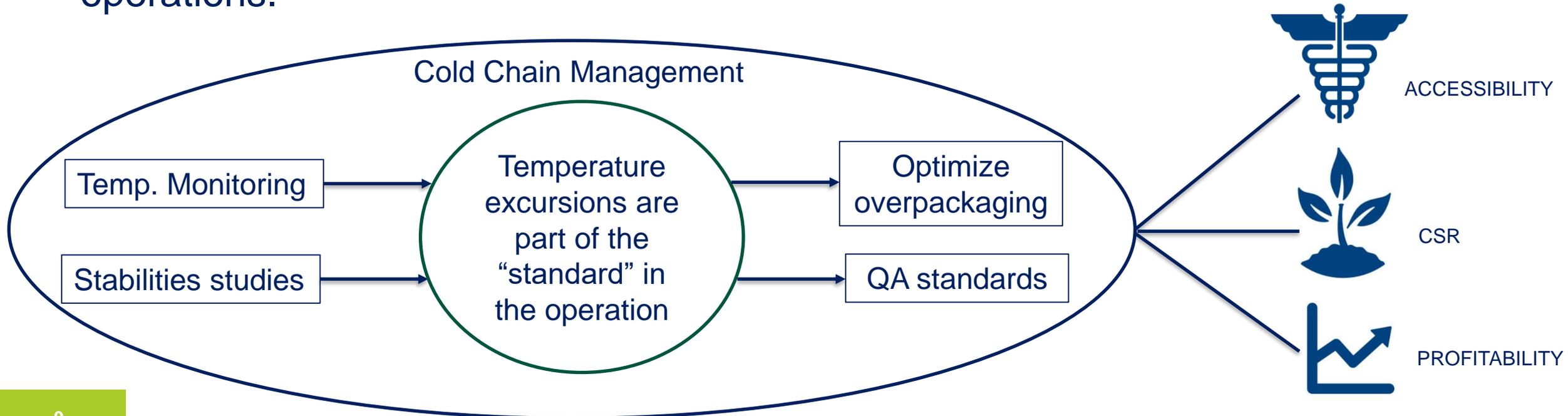
DOWNSTREAM SUPPLY CHAIN



WHY TEMPERATURE MONITORING IS ESSENCIAL FOR BIOMERIEUX?



Stability studies are essential to our cold chain management. By closely **monitoring shipment temperatures**, bMx ensures product quality and optimizes overpacking. This strategy helps to manage the cost to serve, reducing both the freight cost (less chargeable weight) and the environmental impact of our operations.



TEMPERATURE MONITORING – 2017: THE BEGINNING...



Once upon a time...8 years ago

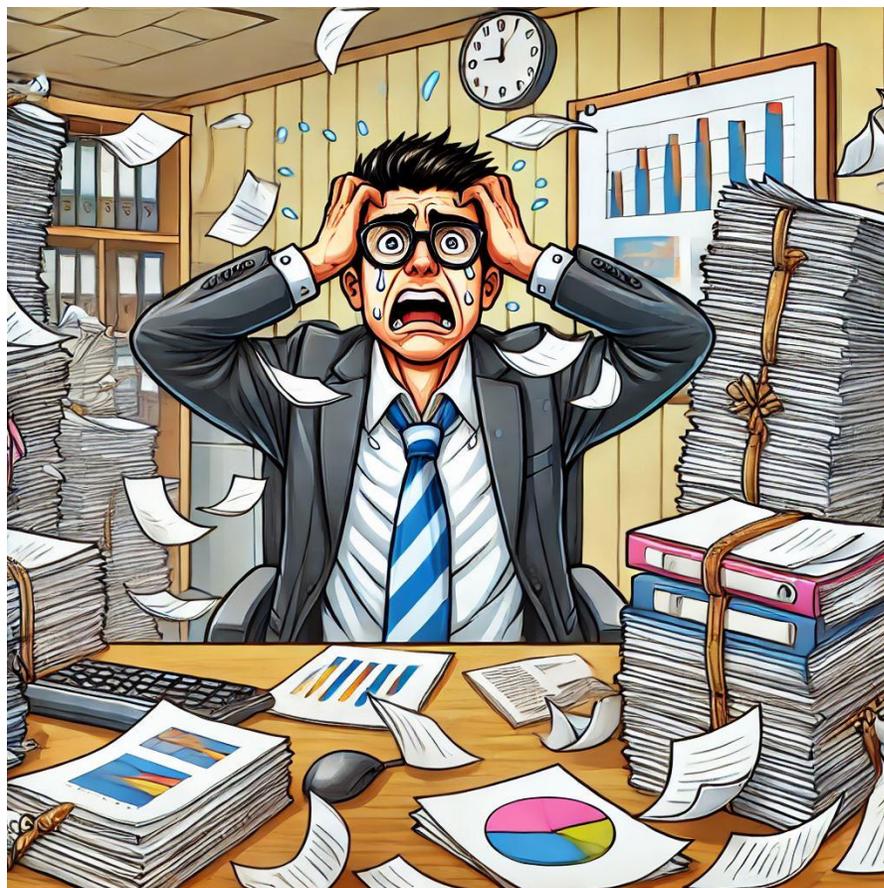


 During the period between **2017 and 2021**, we encountered several issues within the process 

- × Manual tasks for the teams engaged in the process (Operations and QA).
- × Limited operational flexibility. → The solution provided by a single FF, can't be replicated.
- × Complexity and time-consuming process to download the data → Delays in the QA release process for the products. → OTIF impact.
- × Fragmented data → Challenging to assess.

TEMPERATURE MONITORING - THE BEGINNING...

In summary...this was me, 4 years ago!



TEMP MONITORING – 2021: THE CHANGE...



By the end of **2021**, we made a **big change** in our process → A new type of temperature monitoring device utilizing a **cloud-based solution** was adopted.



Benefits achieved:



Save money



Expedite the overall process

- Reduce data download time.
- Expedite data analysis process.
- Expedite QA release process.



Accessibility



Reduce e-waste

- The option to reuse devices became available.

TEMP MONITORING – BENEFITS



Save money



Accessibility



Thanks to the possibility to **have access to the temperature data of all our shipments in the same place**, we achieved the following benefits:

- ✓ Our focus changed from reactive responses to **preventive actions**.

Examples:

- ✓ Identify deviations and recurring issues in the process.



TEMP MONITORING – BENEFITS



Save money



Accessibility



- ✓ By leveraging the cloud-based environment, we automated several manual tasks, thereby reducing the time required by the QA and operational teams involved in the process.



Before



After

TEMP MONITORING – BENEFITS



Save money

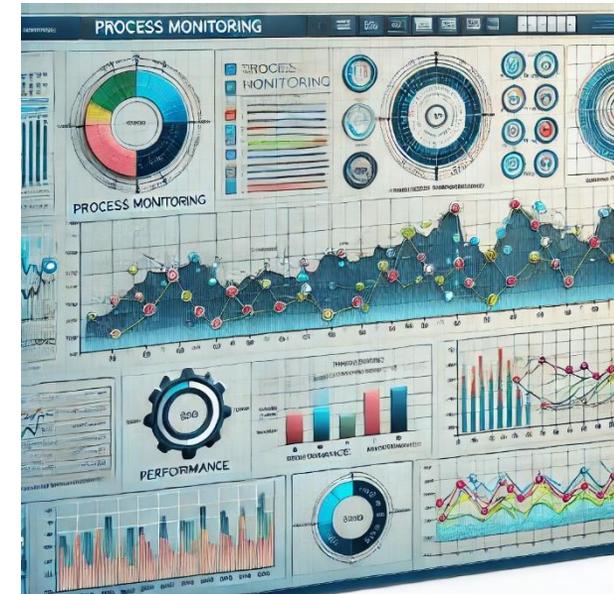


Accessibility



✓ Easy access to the information, enables us to generate various types of KPI's for process monitoring, such as:

- # of shipments with excursions.
- Total average transit time (door to door).
- Analysis of temperature excursions by:
 - Destination.
 - Origin.
 - Customer.
 - Temperature of the shipment.
 - FF used.
 - Transportation mode.



TEMP MONITORING – BENEFITS



Save money



Accessibility

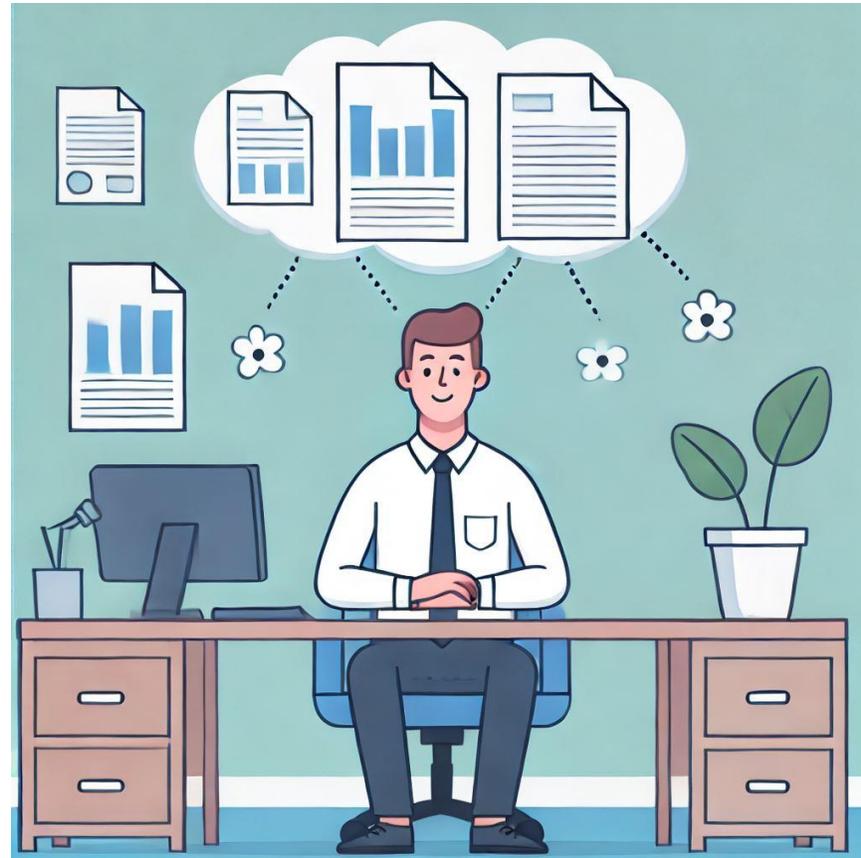


- ✓ The new process (software and hardware) has provided us with the flexibility to extend the use of our current solution to various stakeholders (bMx subsidiaries, export distributors & direct customers) in a short period of time.
- ✓ The collection and analysis of **historical data**, allow us to take calculated risks in managing the cold chain.

TEMP MONITORING – THE RESULT



This is me, today...

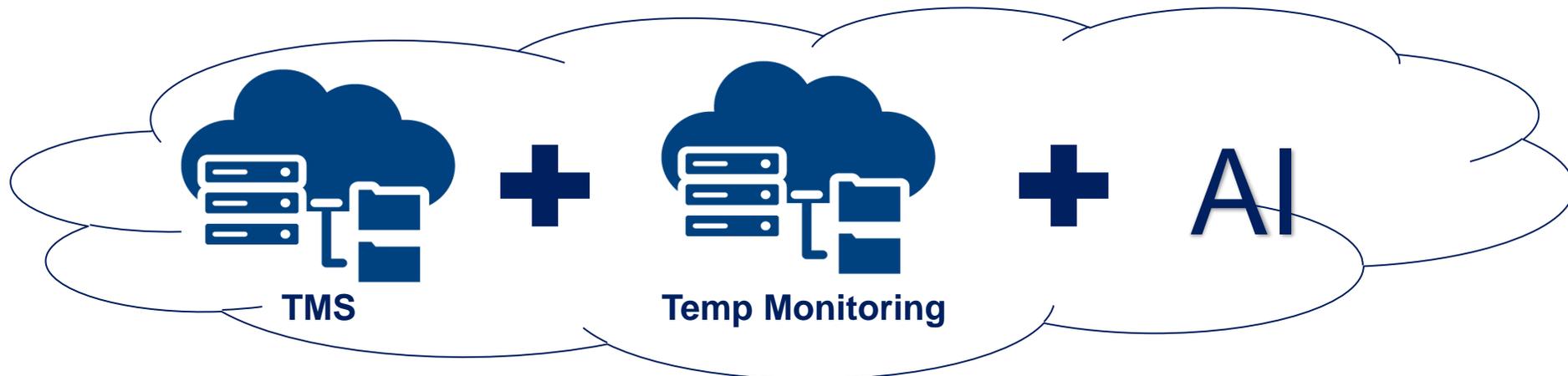


TEMP MONITORING – WHAT’S NEXT...



- ✓ **Real time monitoring** → It's complementary to our current monitoring process. It's used only in certain “high risk” SEA shipments and is not useful for our standard AIR shipments.
- ✓ **Consolidate different sources of information in one place.**
 - ✓ Example: Store the temperature information of the shipments in the cloud along with the shipment tracking/milestones + AI analysis.

Optimize the decision-making process





PIONEERING DIAGNOSTICS