



SOLVAY
PROGRESS BEYOND

Digital Transformation in Solvay: *how digital can support HSE*

7a Conferenza Nazionale sulla Chimica Sostenibile
Milan – 30/01/2020

Emilia Buffa

Solvay at a Glance



24 500

Employees



61

Countries



115

Industrial
Sites



21

Major
R&I Centers

**WE ARE
AN ADVANCED MATERIALS
AND SPECIALTY
CHEMICALS COMPANY**



€10.3bn
Net Sales



€2.2bn
EBITDA¹



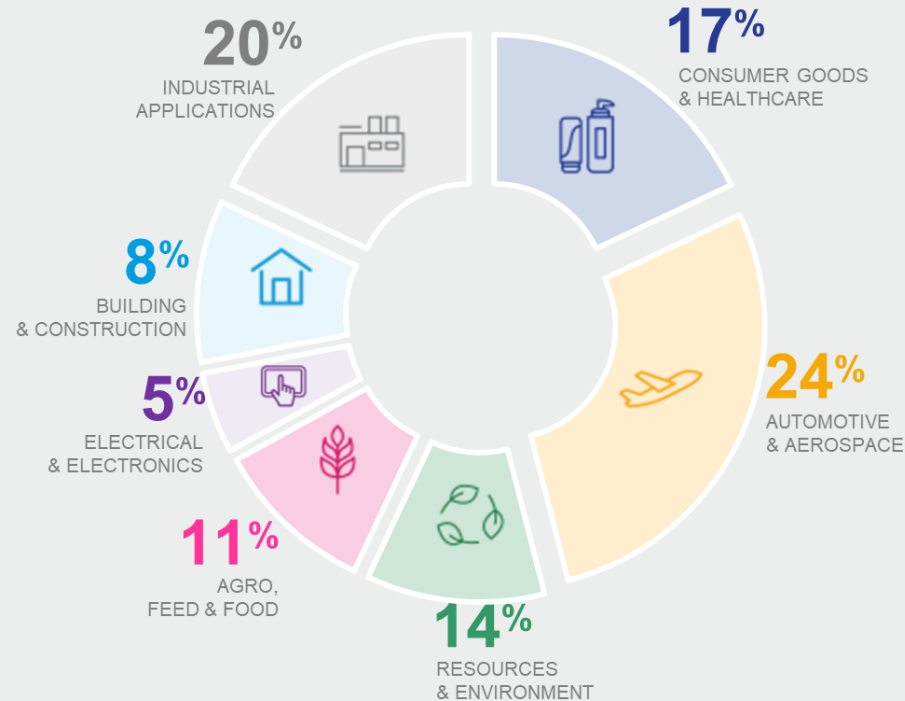
- 24 %

Over 3 years
Greenhouse gas
emission intensity



50%

Sustainable
Solutions
Group net sales

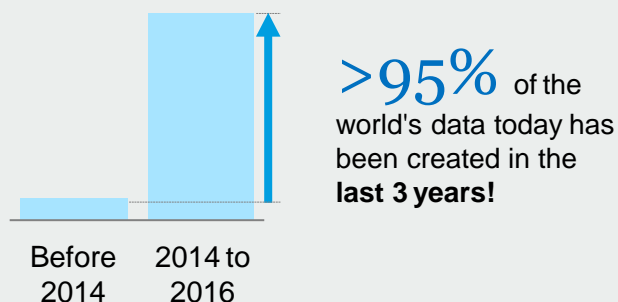


Why the chemical industry has to go for Digital?

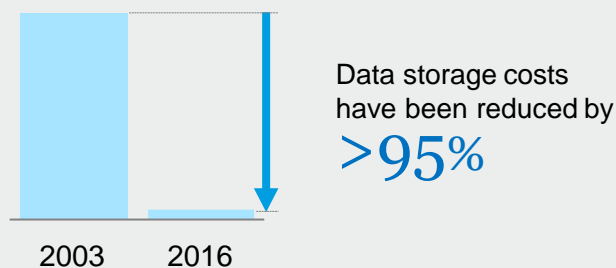
Data availability and cost +

Computing power +

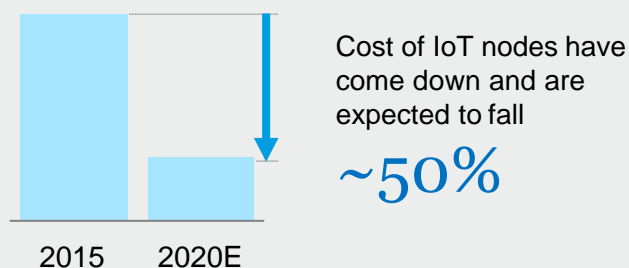
Readiness of society



>95% of the world's data today has been created in the **last 3 years!**

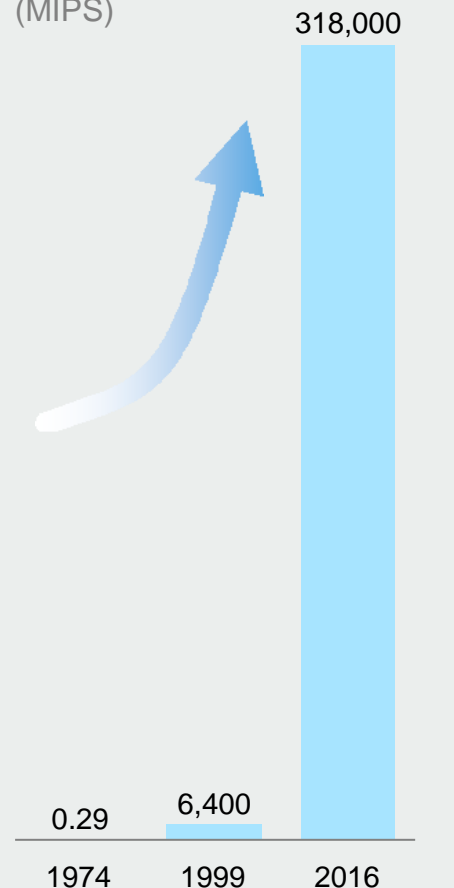


Data storage costs have been reduced by **>95%**

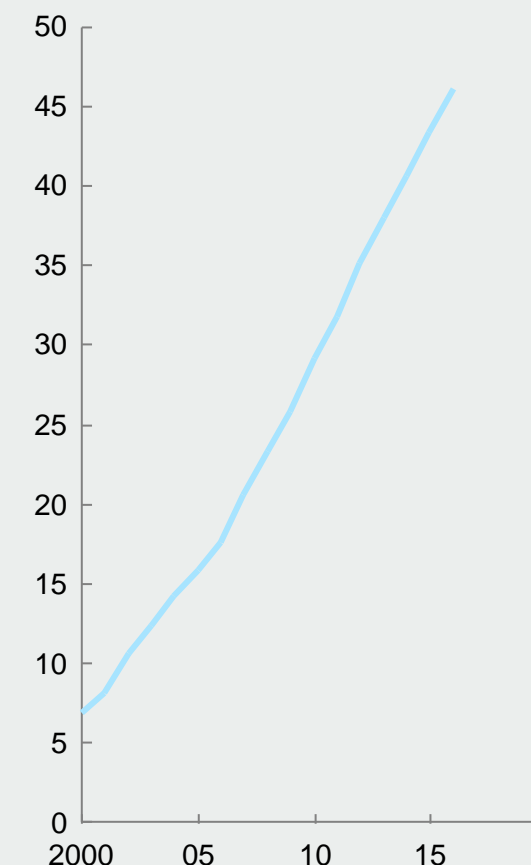


Cost of IoT nodes have come down and are expected to fall **~50%**

Processor speed
Millions instructions per second (MIPS)



Share of internet users
Percent



Why the chemical industry has to go for Digital?

Digital transformation is a must to cover the gap with our daily routine



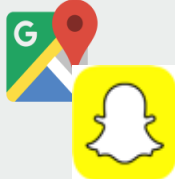
Piazza San
Pietro
Roma, ITALY

2005



2013

Between those two dates :



Our Mission: Lean leveraged by Digital Tools

ADVANCED ANALYTICS AND WAY OF WORKING: Two pillars of the digital transformation

ADVANCED ANALYTICS

Provide visual indications to the control room operator to improve plant performance by:

- ✓ Disrupt data Silos-management
- ✓ Perform powerful **explorative analysis** to identify the best set of process parameters.
- ✓ Boost process Model

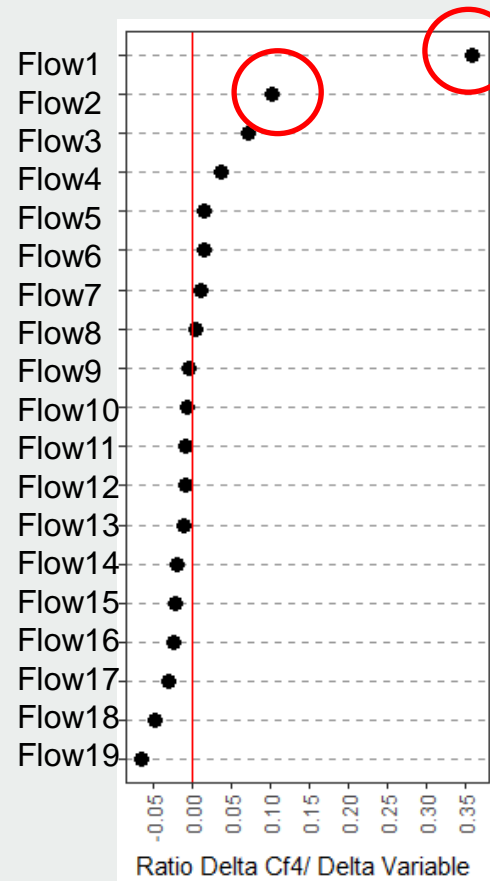
DATA SCIENTIST

WAY OF WORKING

Standardize the Site Way of Working by introducing a series of Apps that allow to:

- ✓ Creation of a **historical database**
- ✓ Reduce case of misunderstanding
- ✓ Remove duplicated tasks, copy-paste and reduce paperwork
- ✓ Develop **real-time visual and efficient solutions**
- ✓ Create Engagement

Big Data Analysis to optimize the Thermal Oxidation unit and thus reduce the environmental footprint



Context

- A Thermal Oxidation Unit is used to treat plant off-gasses
- Emission of a Fluorochemical with a high GWP
- Scope: Reduction of Fluorochemical emission

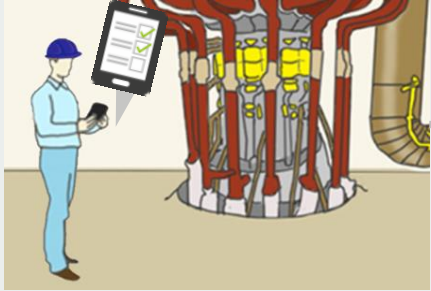
Methodology

- Process data collection
- Multivariate component analysis
- Problem solving on main findings

Results

- >50% reduction of Fluorochemical emissions
- Descriptive model to guide operators decision making
- 29M€ cost avoidance on dedicated Fluorochemical-treatment unit

Digital WoW to boost our performance ensuring Standardization and Sustainability



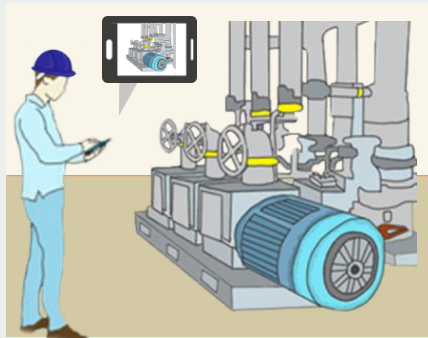
Routinary Safety Inspection

- Historical database of HSE field inspections
- Notification in case of deviation
- Final report automatically elaborated



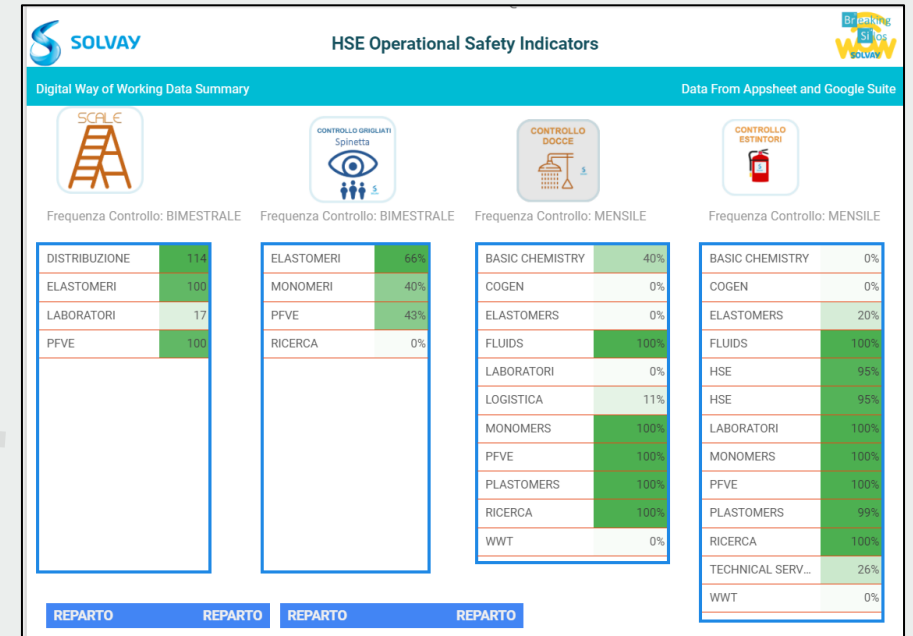
Daily Performance Dialogue

- HSE KPIs automatically displayed
- Key priorities discussed
- Corrective actions detected



HSE Periodic Control

- Digital periodic control on:
 - Showers
 - Metal grid
 - Fire extinguisher
- Safety Mask management portal
- Creation of historical database
- Notification to key people in case of deviation



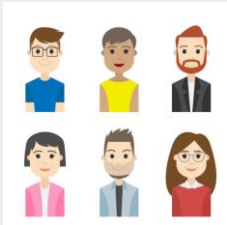
HSE Site Dashboard

- Summarize HSE Inspections results
- Visualize HSE Status per Prod. Area
- Immediately identify deviations

Where is Spinetta today in its Digital Journey

A journey started in 2017

PEOPLE INVOLVED



> 50

TRAINING MODULES



15

APP DEPLOYED



137

VOLUME INCREASE



> 10%



**Thank
You**