



DETEN QUÍMICA S.A.

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- Deten Química S.A..
- The New Industrial Revolution



CEPSA & DETEN CORE VALUES



SAFETY

QUEREMOS UN 0

Para nosotros, el mejor resultado es **0**

Safety

CEPSA

LEADERSHIP



CONSTANT IMPROVEMENT



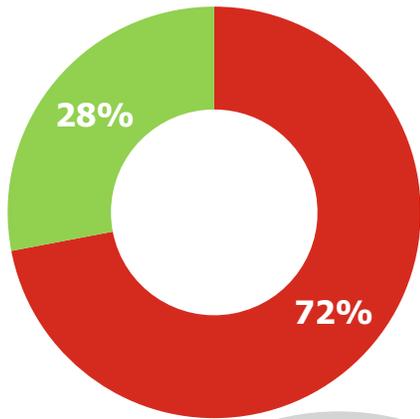
SUSTAINABILITY



SOLIDARITY

DETEN QUÍMICA S.A.

Shareholding Structure



CEPSA Química

100%



63%



37%



Established in 1978

Start up: 1982

Gross Oper. Revenue:
R\$ 1,5BI (2018)

EBITDA:
R\$ 136MM (2018)

Production Capacity:

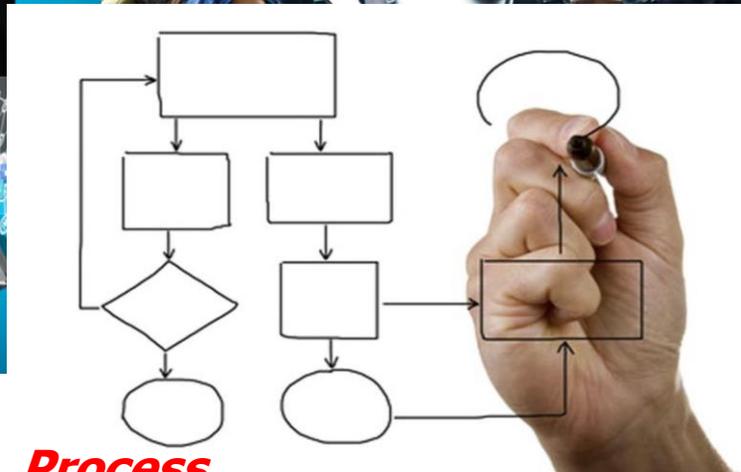
- LAB → 260 KTA(*)
- LAS → 120 KTA
- ALP → 11 KTA

A man wearing a VR headset is the central focus, looking forward. The background is a blurred city street at night, filled with colorful neon lights and bokeh effects. The text is overlaid on the image in a bold, italicized red font.

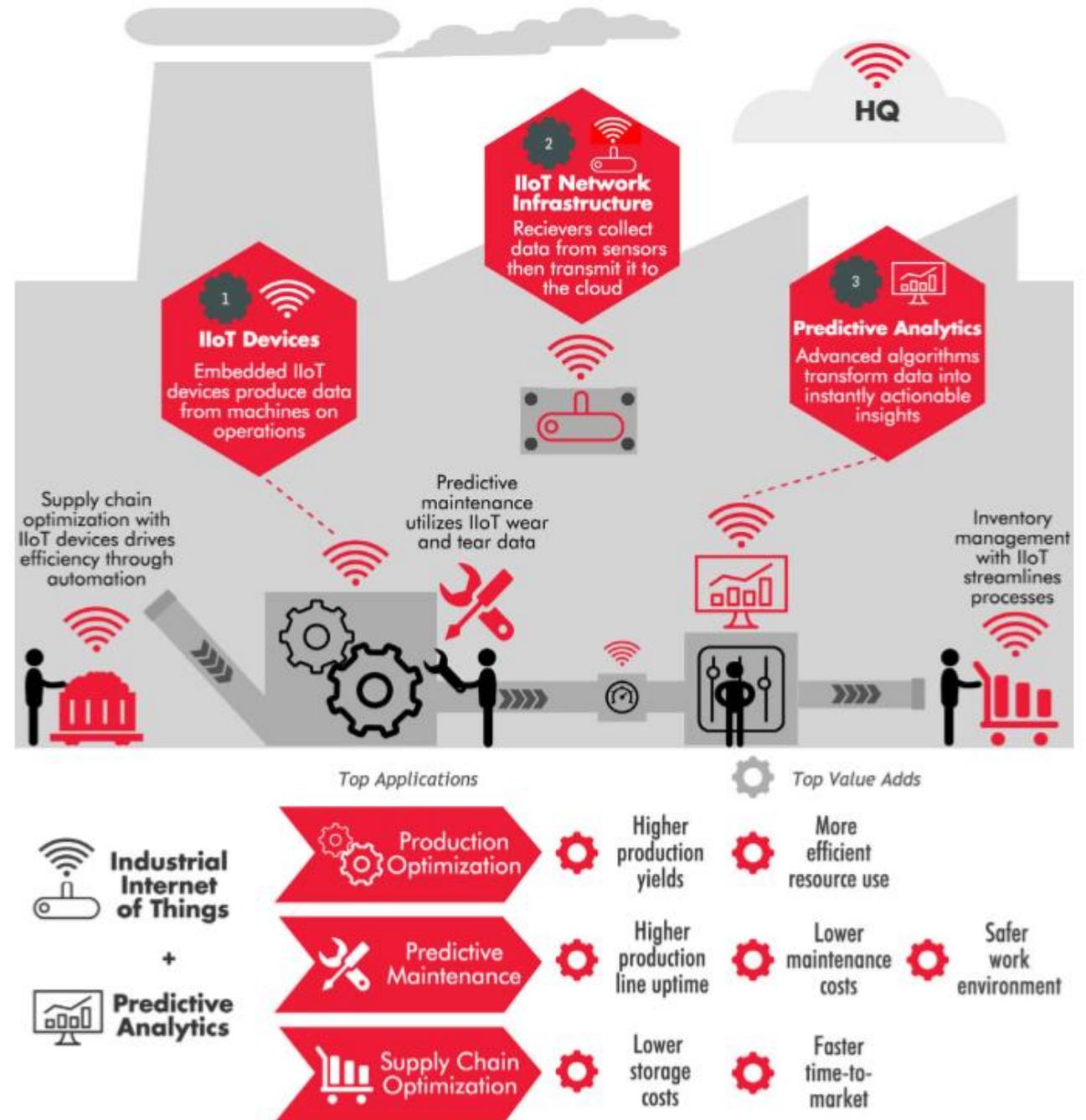
The New Industrial Revolution
Redefining not only companies, but everything

The New Industrial Revolution – a suggestion of what to do in order to transform Deten Business and boost profits

The Dimensions to work:



- **Technology** - Predictive analysis, intelligent factories (sensors, proprietary LTE net, APC, artificial intelligence, etc.), advanced materials, digital design, simulation and integration, high performance computing, advanced robotics, additive manufacturing (3D printing / scanning), open-source design / customer direct input, augmented and virtual reality.



Machine Learning:

- **Natural language processing**
- **Autonomous vehicles**
- **Smart robotics**
- **Virtual agents**
- **Computer vision**

1. LTE Network and Push to Talk System (PTT)



4G private Cepsa network
The current way of doing push to talk becomes an Android app called LiTRA thanks to LTE Network



2. Mobile terminals and devices

Examination, device analysis and tests of concept
Employees will have the possibility to use mobile devices and tables in the field



3. IoT and Data Warehouses for Advanced Analytics 4) Mobile APPS

¿What is the Internet of Things?

- ✓ Digital interconnection between everyday objects through the network and the data capture for later analysis

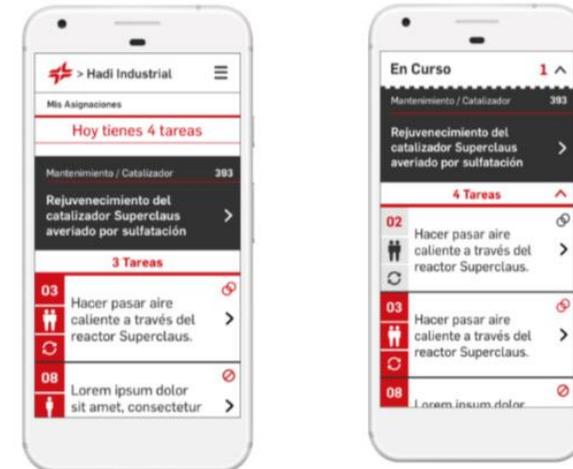
¿What is Cepsa searching with IoT?

- ✓ Improve people's **safety**
- ✓ Improve **operational processes**
- ✓ Improve **equipment maintenance**
- ✓ Develop the **means and infrastructures** for a massive deployment

¿How are we approaching it from Hadi Industrial?

- Sensors to **monitor** non-critical equipment
- Predictive analytics on critical **equipment and processes**
- Prospecting and testing of **field technology**
- Sensors to improve **plant safety**

We are developing different mobile apps to facilitate the accessibility, mobility and a more efficient work.





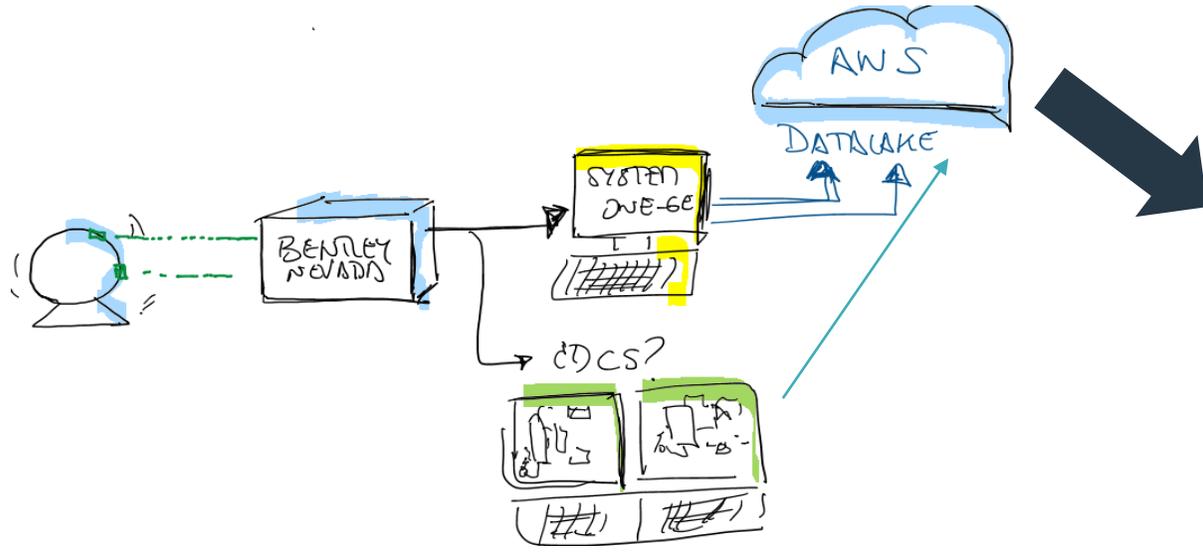
'La base': Line 3 field operators' place



Line 3 base



Dashboard Keeper



Two screenshots of the Dashboard Keeper interface. The top screenshot shows a list of alerts for various pumps (P01-P11) with a "TAG Alert" table. The bottom screenshot shows a detailed view for TAG: P01, including a "PUMPS DISTRIBUTION" table and a "Typical Single Stage Pump Curve" graph.

| TAG | Alert |
|-----|-------|
| P01 | Alert |
| P02 | Alert |
| P03 | Alert |
| P04 | Alert |
| P05 | Alert |
| P06 | Alert |
| P07 | Alert |
| P08 | OK |
| P09 | OK |
| P10 | OK |
| P11 | OK |

| P1 | P2 | P3 | P4 |
|-----|-----|-----|-----|
| P11 | P12 | P13 | P14 |
| P21 | P22 | P23 | P24 |
| P31 | P32 | P33 | P34 |
| P41 | P42 | P43 | P44 |
| P51 | P52 | P53 | P54 |
| P61 | P62 | P63 | P64 |

Handwritten notes on a whiteboard detailing equipment data, SAP metrics, and a process flow diagram.

DATOS DEL EQUIPO

- TAG ✓
- PID - Link ✓
- Curva fabricante ✓ - comparación?
- Curva real (MSH)
- Q mín. estable (hoja datos) ✓
- PRINCIPAL/RESERVA ✓
- Funciona en paralelo? ✓
- Q nominal (Hoja datos) ✓
- m3
- PAN API ✓
- Hoja datos (documentación) ✓
- T Coder

SAP

- MTBF
- Costes
- Tiempo funcionando desde Uti

Procesos

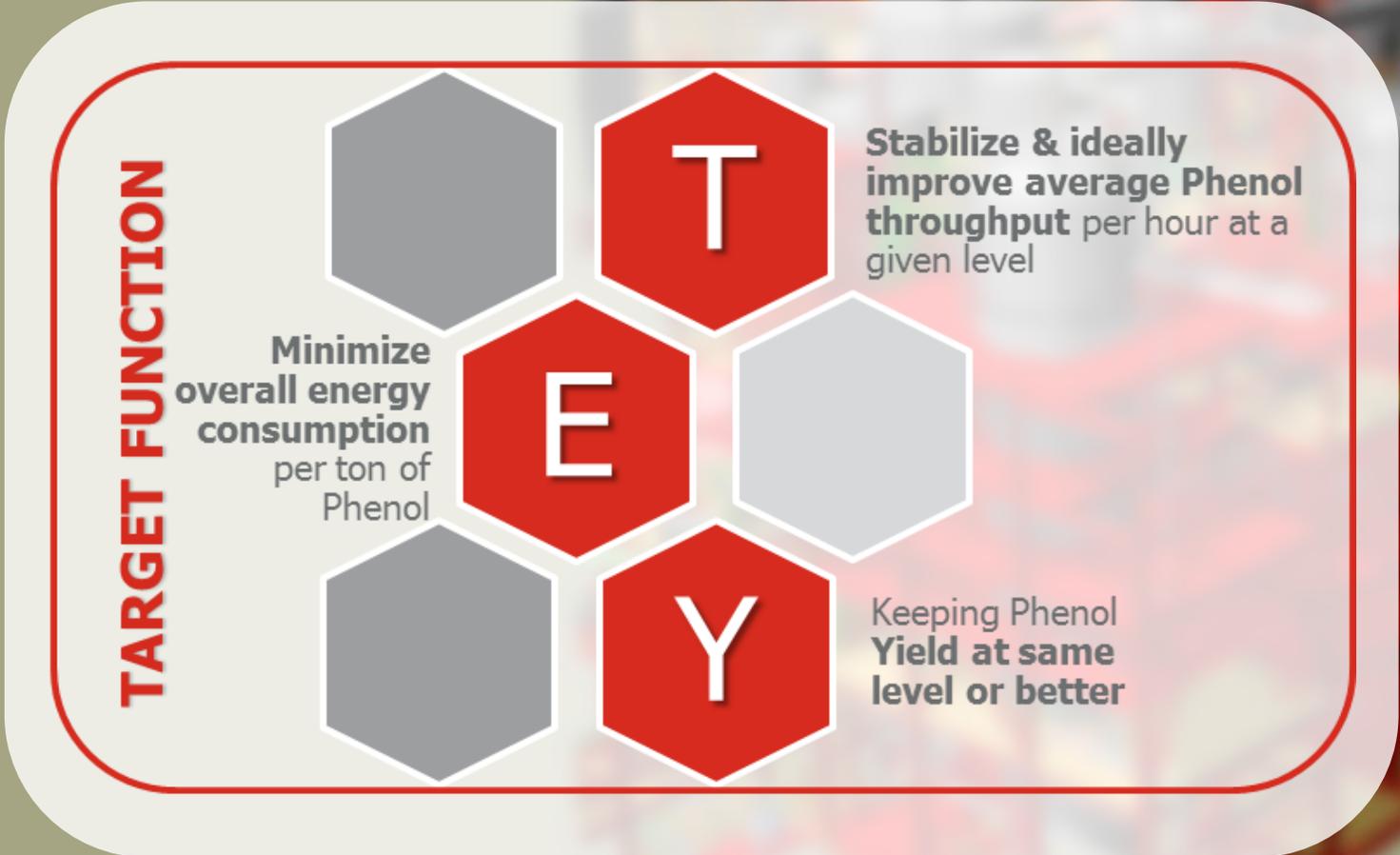
- ¿funcionamiento? (no usa)
- T ar (industria)
- Q seguimiento (Met map)
- Alarm
- Inte
- T de con AWS
- Con

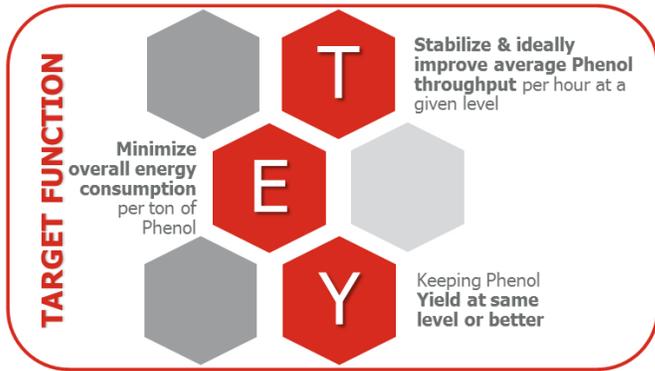
Diagram: A flow diagram showing a process flow with levels L1, L2, L3 and a COP (Coefficient of Performance) indicator. It also includes a note about "Alertas" (alarms) and "Temperatura redemiento".

Other notes: "CO2-DATOS BORSA", "Reserva de producción del oleo", "COBERTURA A SSIPI EXPERTOS", "DASHBOARD", "Fichero", "op".



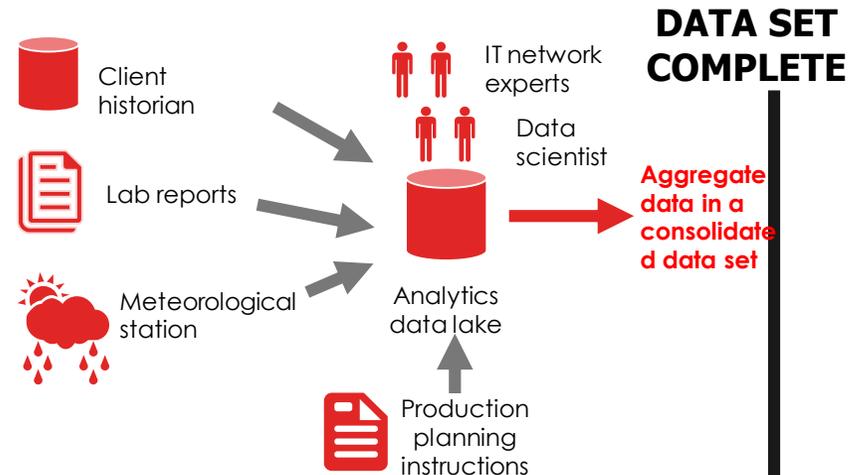
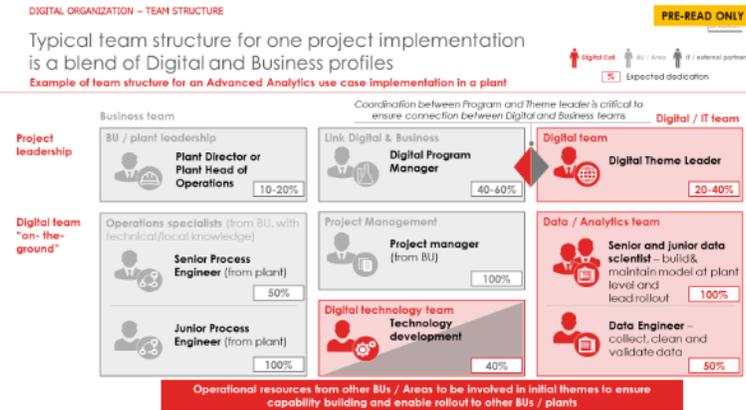
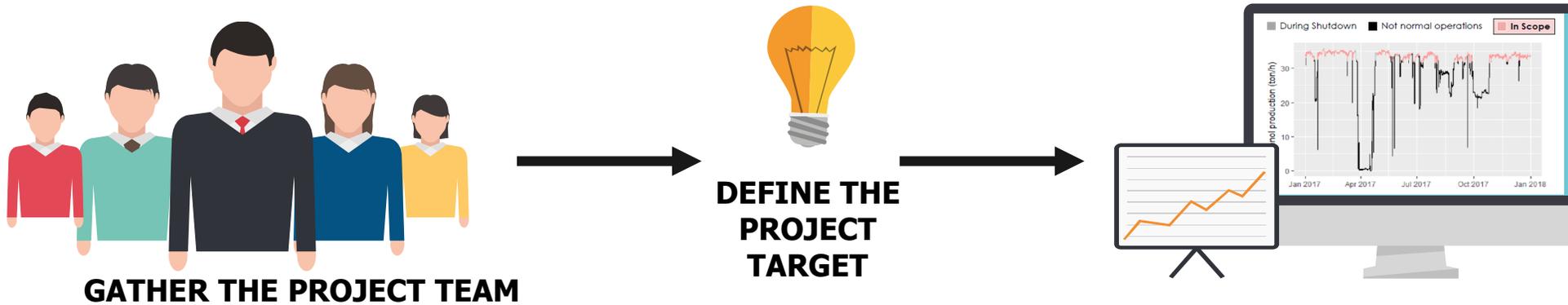
ADVANCED ANALYTICS CAN HELP US TO FIND THE BEST CONDITIONS FOR OUR PROCESSES EVERY MOMENT





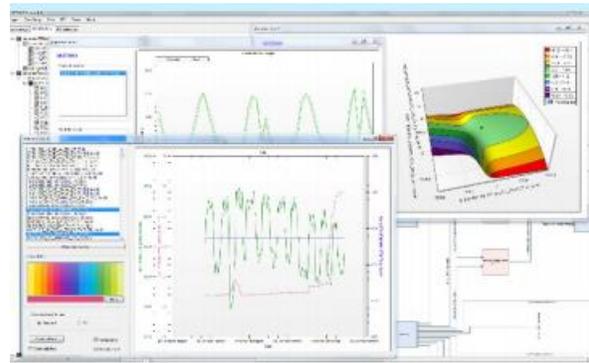
PROJECT PHASE #1

DATA ENGINEERING

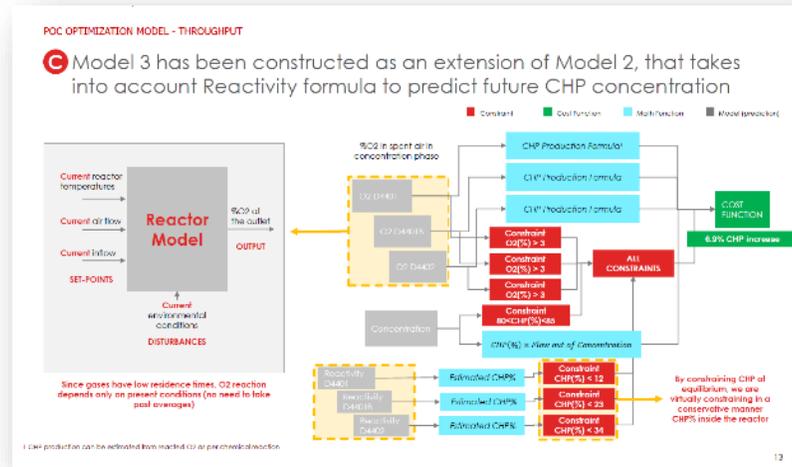


PROJECT PHASE #2

ANALYTICS & MODELLING



**BUILD
MODELS**



**DESIGN
MODEL CONCEPT**

**+ 2500 variables
1600 million data points**

**DATA CLEANING &
STRUCTURING**

PROJECT PHASE #3

OPTIMIZER IMPLEMENTATION



**BUILD
OPTIMIZER
STRATEGY**



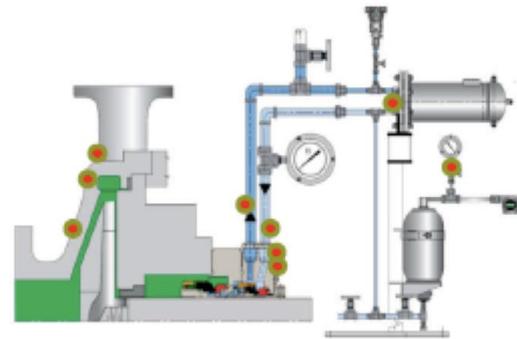
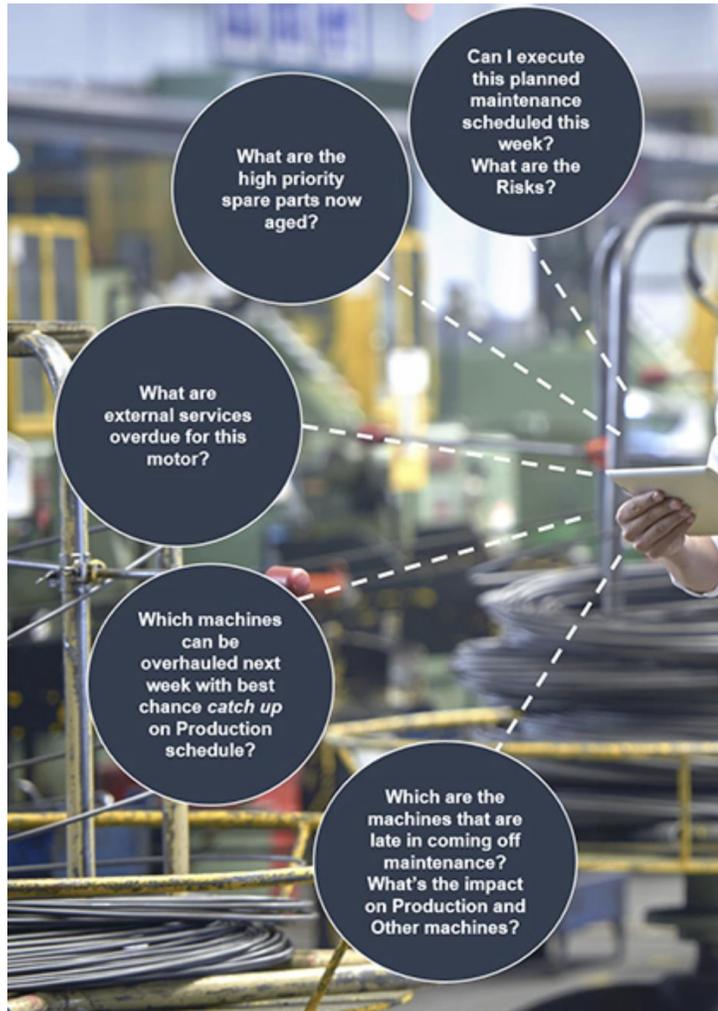
**CONFIGURE
OPTIMIZER WITH
ONLINE DATA**



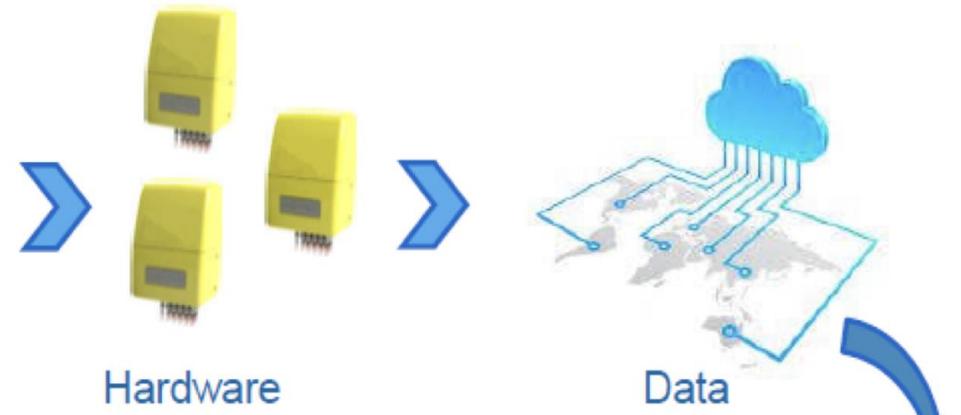
**IMPLEMENT
OPTIMIZER IN
CONTROL ROOM**



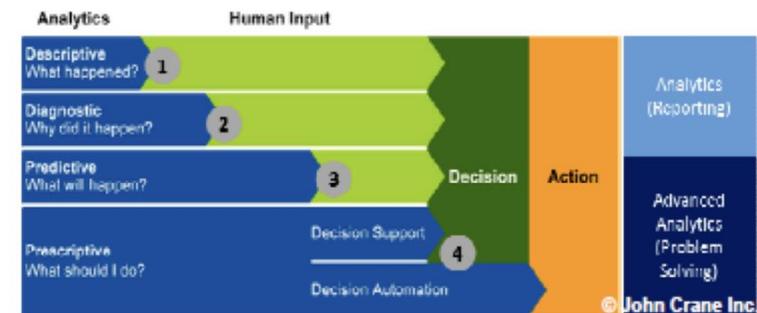
Prescriptive Maintenance



Sensors



User Interface



Analytics

Digital Transformation



ANALYTICAL

Water Analysis in HF

Conductivity



TOR



ARIN



ALP Quality

Refractive Optical Transducer

Infrared Transducer

LAB Quality by Absorbance

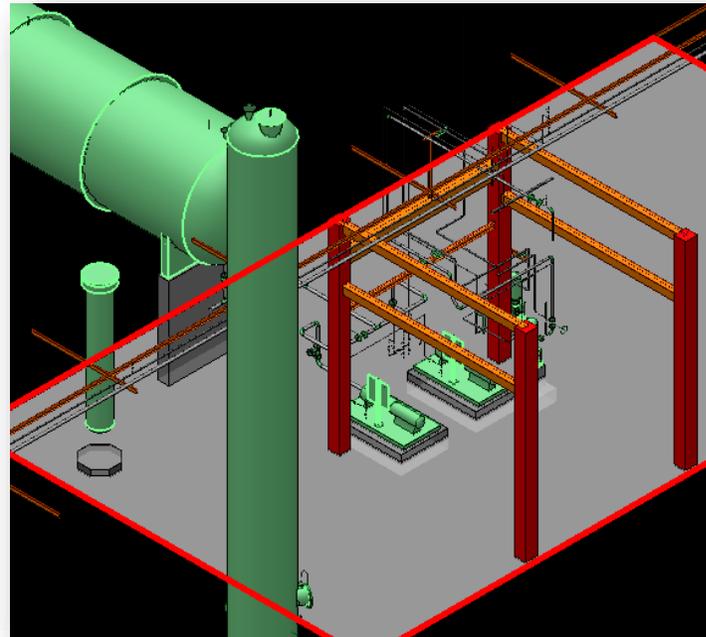
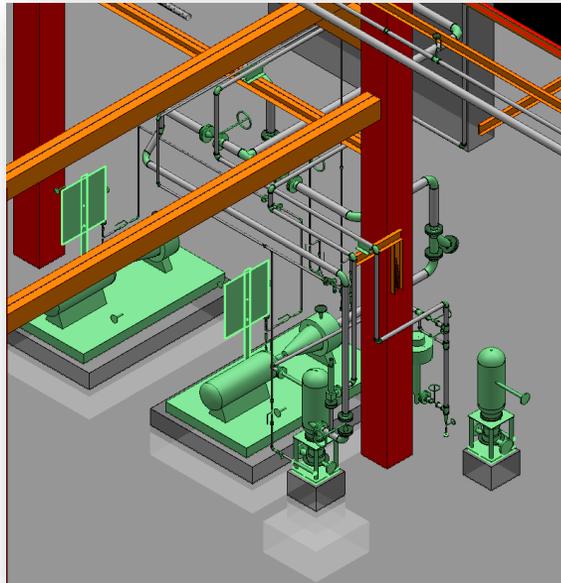
Ultraviolet transducer

LAS Quality by Infrared

Infrared Transducer

Engineering Information Management Solution

- ***Point Cloud (Scanner)***
- ***Electronic mockup (as built)***
- ***Specifications of the equipment and lines process data***
- ***Equipment and line data sheet***
- ***List of materials***
- ***SAP connection, maintenance systems, etc.***





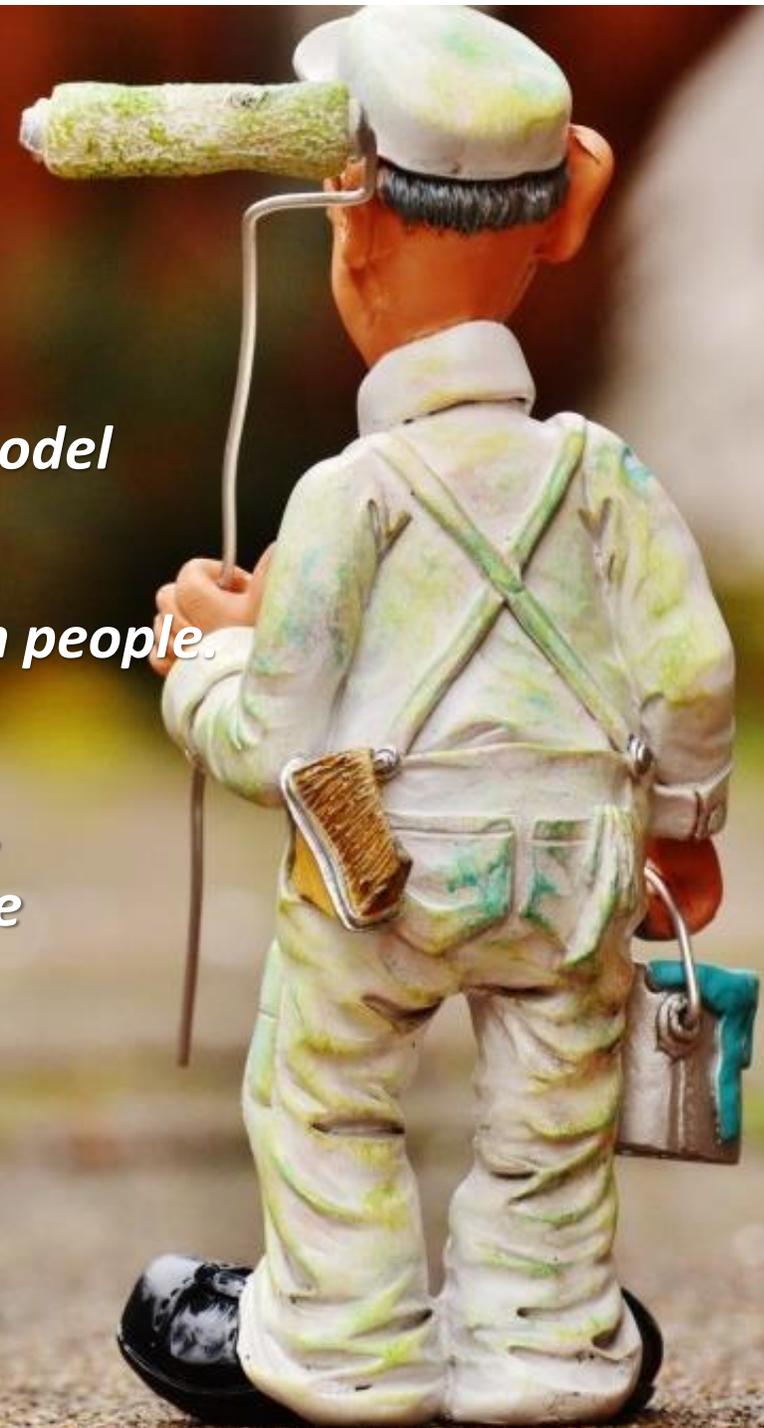
Focus on People

THIS IS NOT DIGITAL TRANSFORMATION...

Digital transformation = radical change of mental model

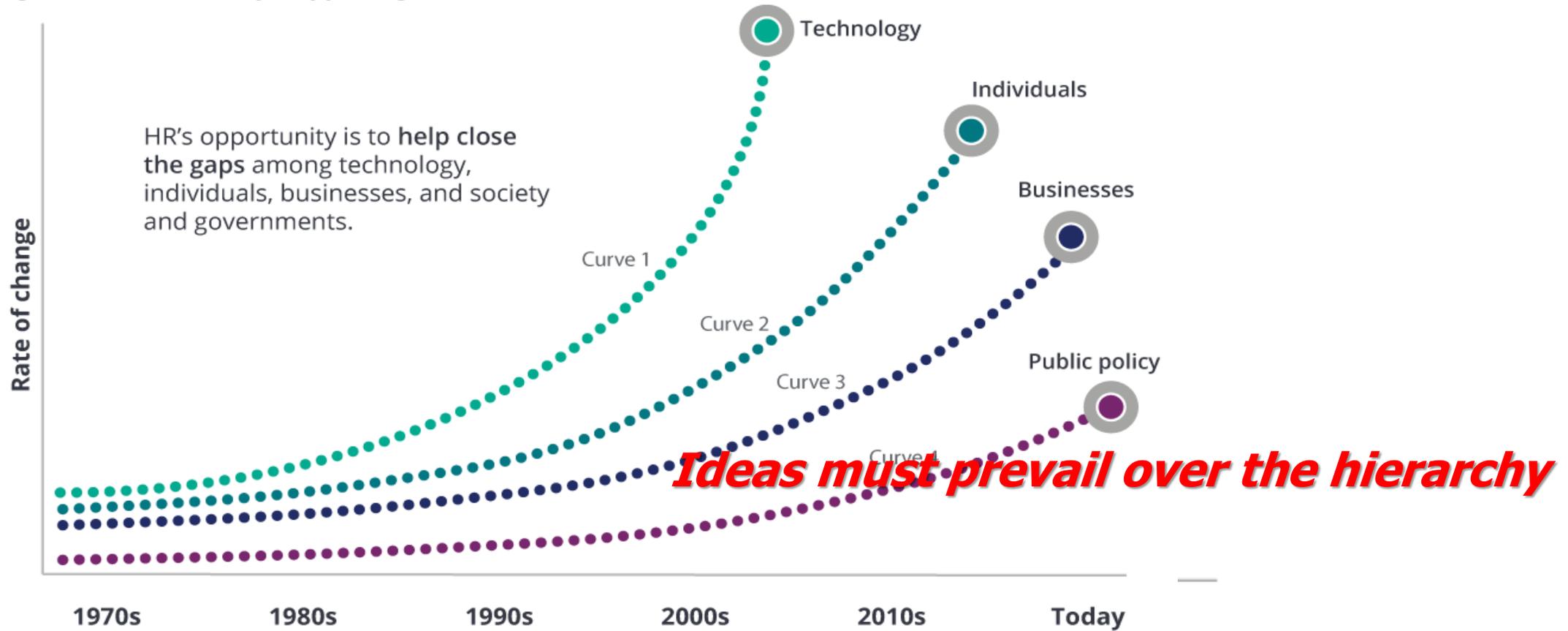
Technology is the medium, the revolution starts with people.

*Digital transformation is not about technology itself,
but about a new way to think (new mindset), to solve
problems and to connect with people.*



- **Culture, Behavior** – digital culture, flexible behavior to accept new ways of working and new work tools (flexible working hours, participative work, curiosity without limits, etc.). Create in the organization an exciting vision, and try that this organization makes a positive difference in the country.

Figure 2. What is *really* happening



CULTURE

A change in the **compromise model**
*Diversity in terms of **gender**, **experience** and **age** provides better results*



Evolution for less physical presence



External mobility pilot



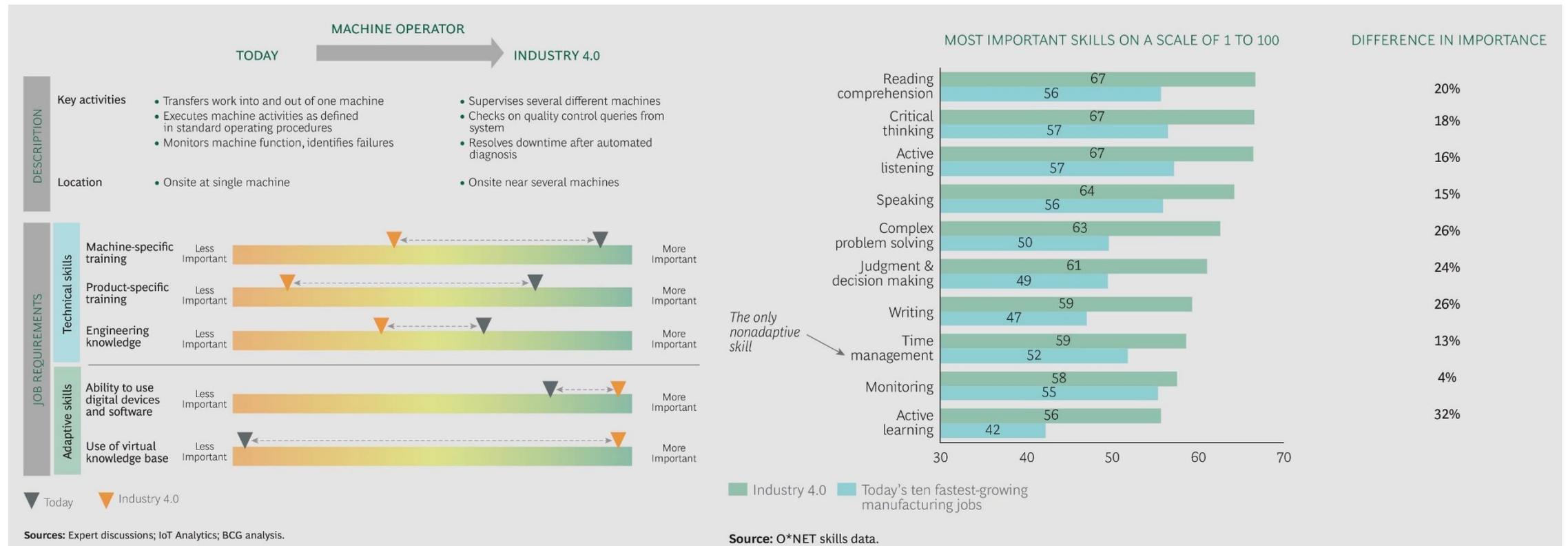
Better knowledge of the organization



Teamwork and collaboration



- Professional Qualifications** – definition of competencies or professional profile, attract, retain and qualify digital skills (lifelong learning in data analyst, laboratory, engineering, maintenance, operation, accounting, financial, human resources, etc.), having the opportunity for personal development and to earn professional qualifications. **Note: Traditional technical skills is less important, while adaptive skills – such as the use of online repositories of technical information as virtual knowledge bases – is absolutely essential.**



Traditional manufacturing jobs is requiring new adaptive skills

9 of the 10 most important skills in this new kind of industries is adaptive skills

Human factor key issue on success of these initiatives!

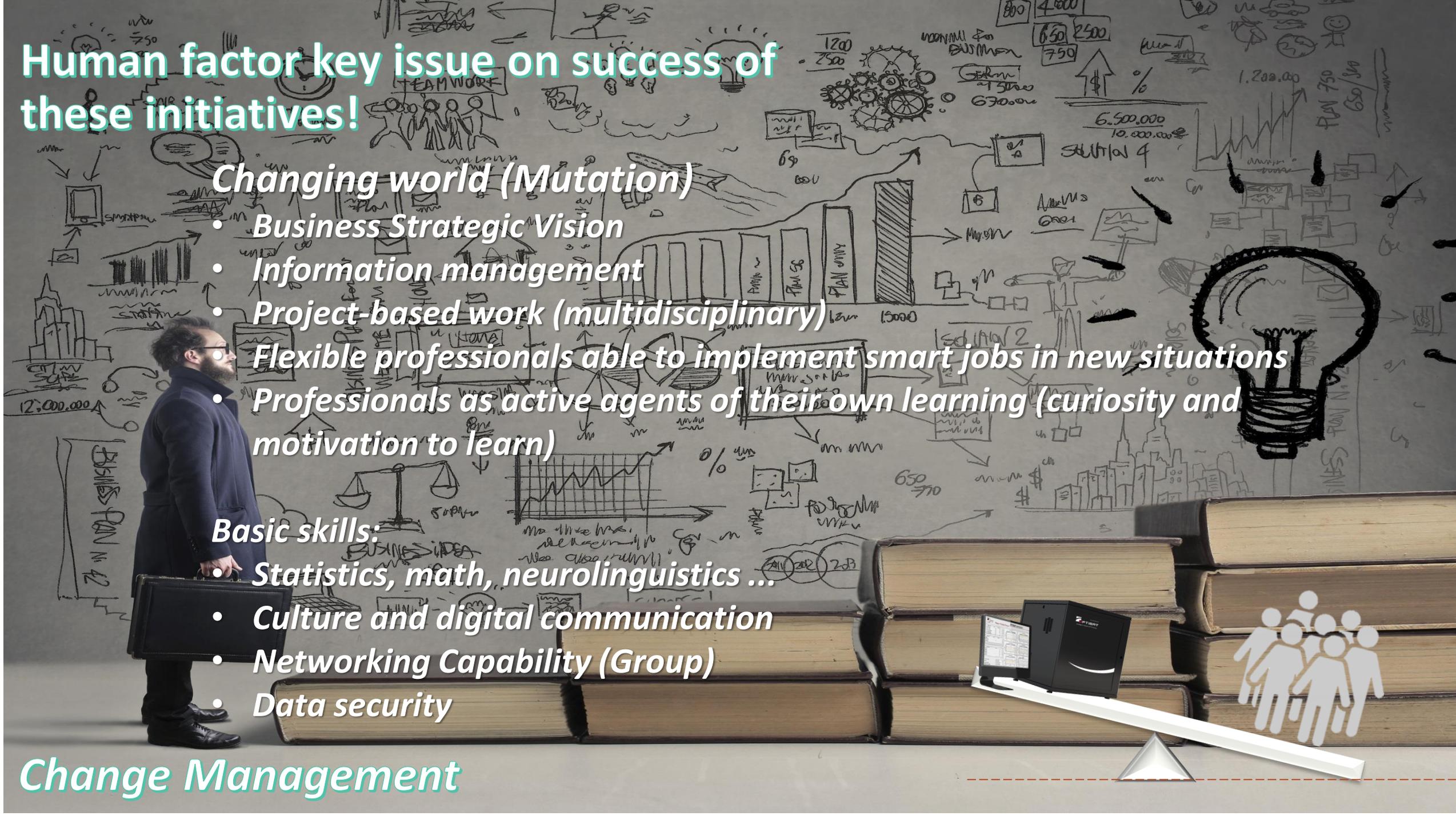
Changing world (Mutation)

- Business Strategic Vision
- Information management
- Project-based work (multidisciplinary)
- Flexible professionals able to implement smart jobs in new situations
- Professionals as active agents of their own learning (curiosity and motivation to learn)

Basic skills:

- Statistics, math, neurolinguistics ...
- Culture and digital communication
- Networking Capability (Group)
- Data security

Change Management



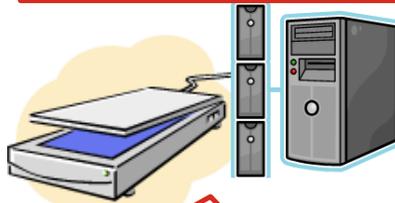
- **Process** - change in the way of performing work and activities with the *redesign of physical places to improve work forms, with mobility solutions.*

Three options: destroy, scan or guard

It is necessary that you remove from your work area everything that is available in other media or it is obsolete, and must be destroyed.



To help resolve any queries that may arise, you will be accompanied, throughout the process, by digital office staff and custody company.

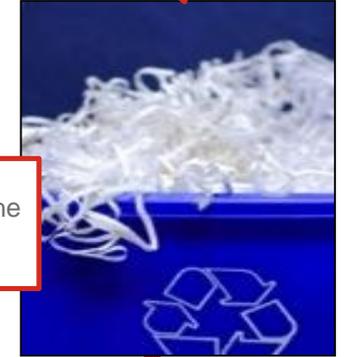


Recurring documents can be scanned into the systems.

If it is necessary, within one day, they will make safe way, everything that is available to you the physical or Scanned documents.

For this you have at your disposal containers to deposit, useful.

After scanning, these documents will be destroyed.



Other documents that are subject to sporadic consultation will be delivered in an external file.



Digital Office
How we are going to do



Collaboration



Coordination



Execution



Concentration



Meeting



Confort



TECHNOLOGY

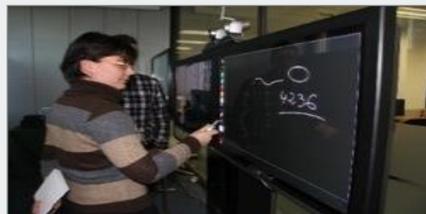
We are equipped with tools that allow us to work differently



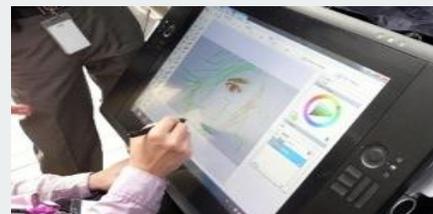
Mobility and flexibility



Collaboration and teamwork



Homogeneous tools



Access and knowledge management



Display information



• **Business Environment** - Review of the business models in front of the implantation of the new technologies, fomenting the entrepreneurship. Businesses are moving beyond traditional industry silos and coalescing into richly networked ecosystems, creating new opportunities for innovation alongside new challenges for many incumbent enterprises. Supply Chain

We are in the midst of a revolution

Digital Disrupters! What will **Artificial Intelligence** bring?

"Uber, the world's largest taxi company, owns no vehicles. Facebook, the world's most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. Airbnb, the world's largest accommodation provider, owns no real estate. Something interesting is happening. Tom Goodwin in TechCrunch

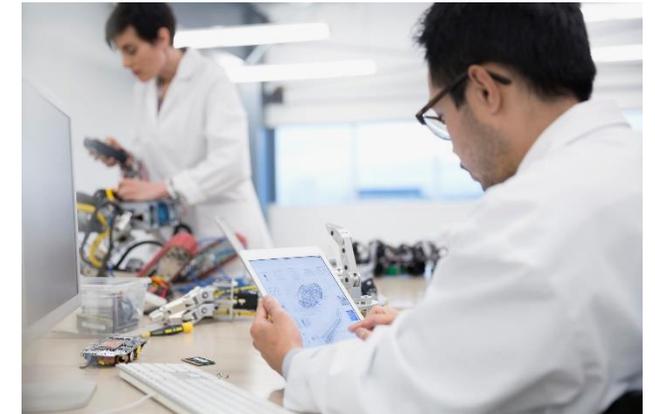
Develop a digital strategy roadmap is a priority for senior executives



New Trends

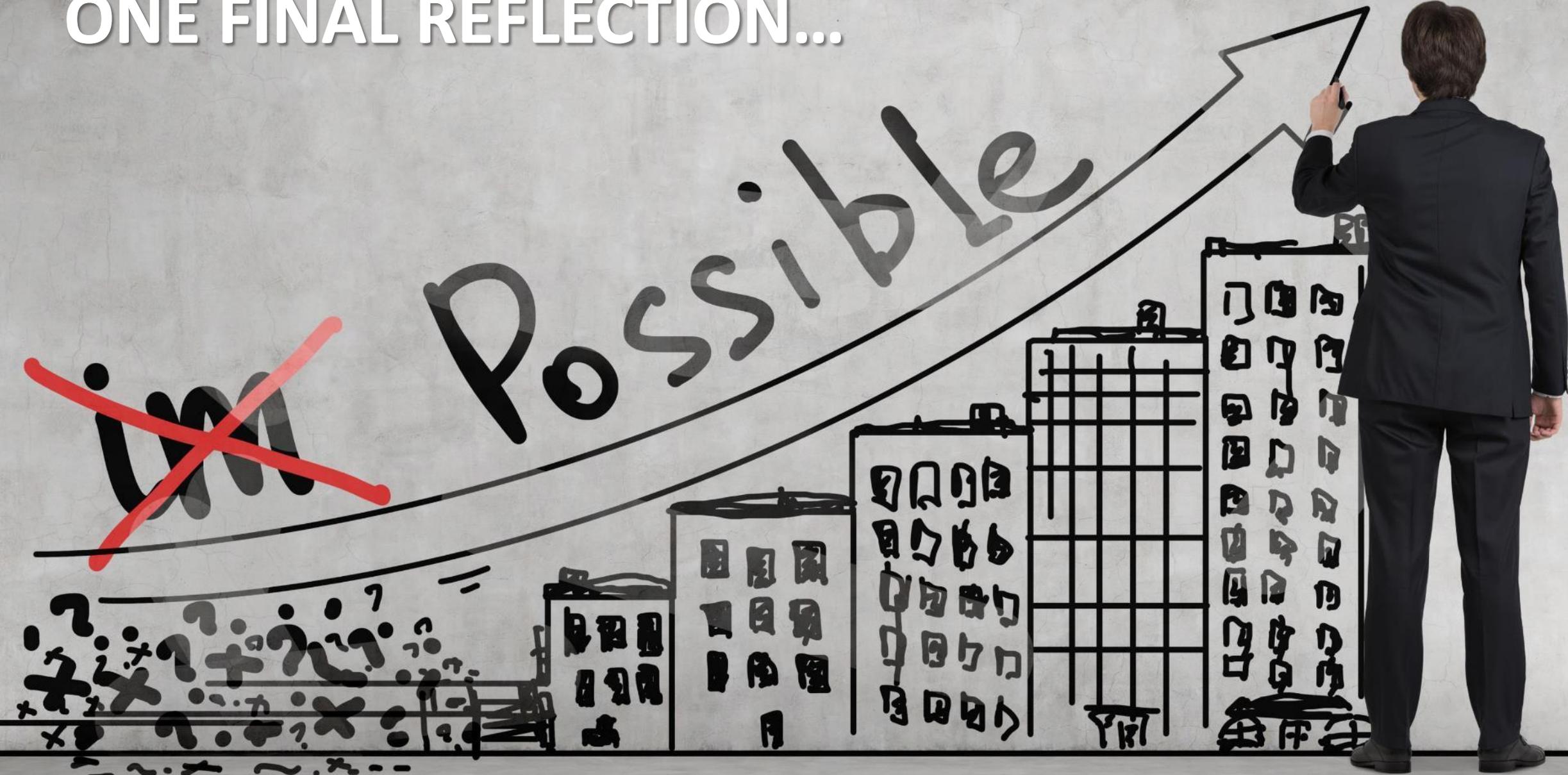
Employment X New Industrial Revolution

- ***Increasing production automation***
- ***Affect professional qualifications and employment relationships***
- ***Jobs & tasks are being redesigned to use more essential human skills, and are augmented by technology.***
- ***Probability of increasing inequality between social classes***
- ***Increasing the migration of workers***
- ***Creates new markets and business models***
- ***Change significantly the dynamics of the modern world***



ONE FINAL REFLECTION...

~~im~~ Possible





Thank you

