

Digital Transformation in the Milling Industry

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Agenda

- 01 Introduction

- 02 Latest trends in digital technology

- 03 Milling Industry's Digital Journey

- 04 Key Challenges and Solutions

- 05 Conclusion



01

Introduction

About myself



POLYTECHNIQUE
MONTREAL



BOMBARDIER

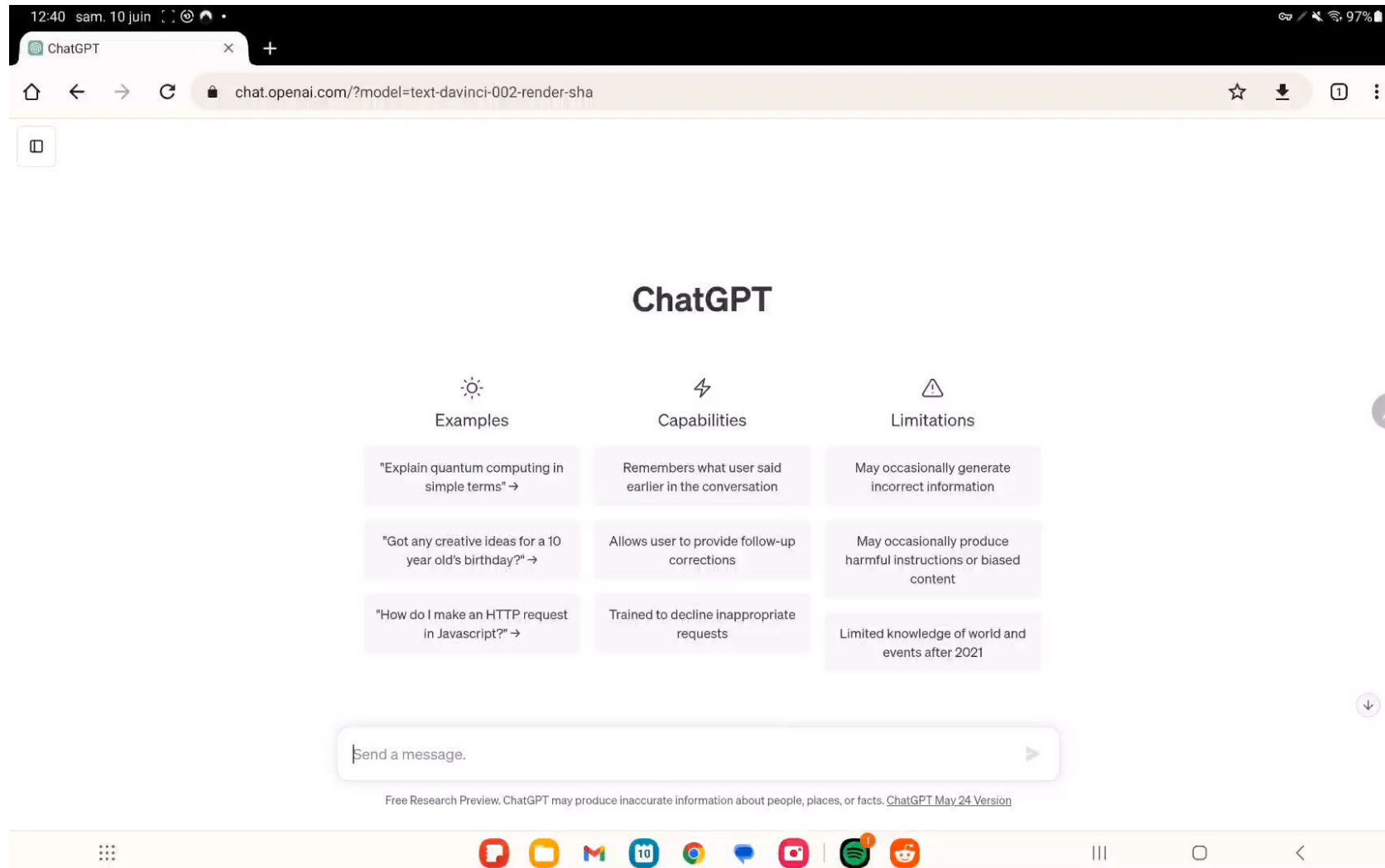


SmartMill

powered by  **Bühler Insights**



Importance of Automation and Digital in the milling industry



Importance of Automation and Digital in the milling industry

As a flour mill owner, how can I increase the profitability of my business?

What is the role of automation and digital technologies?

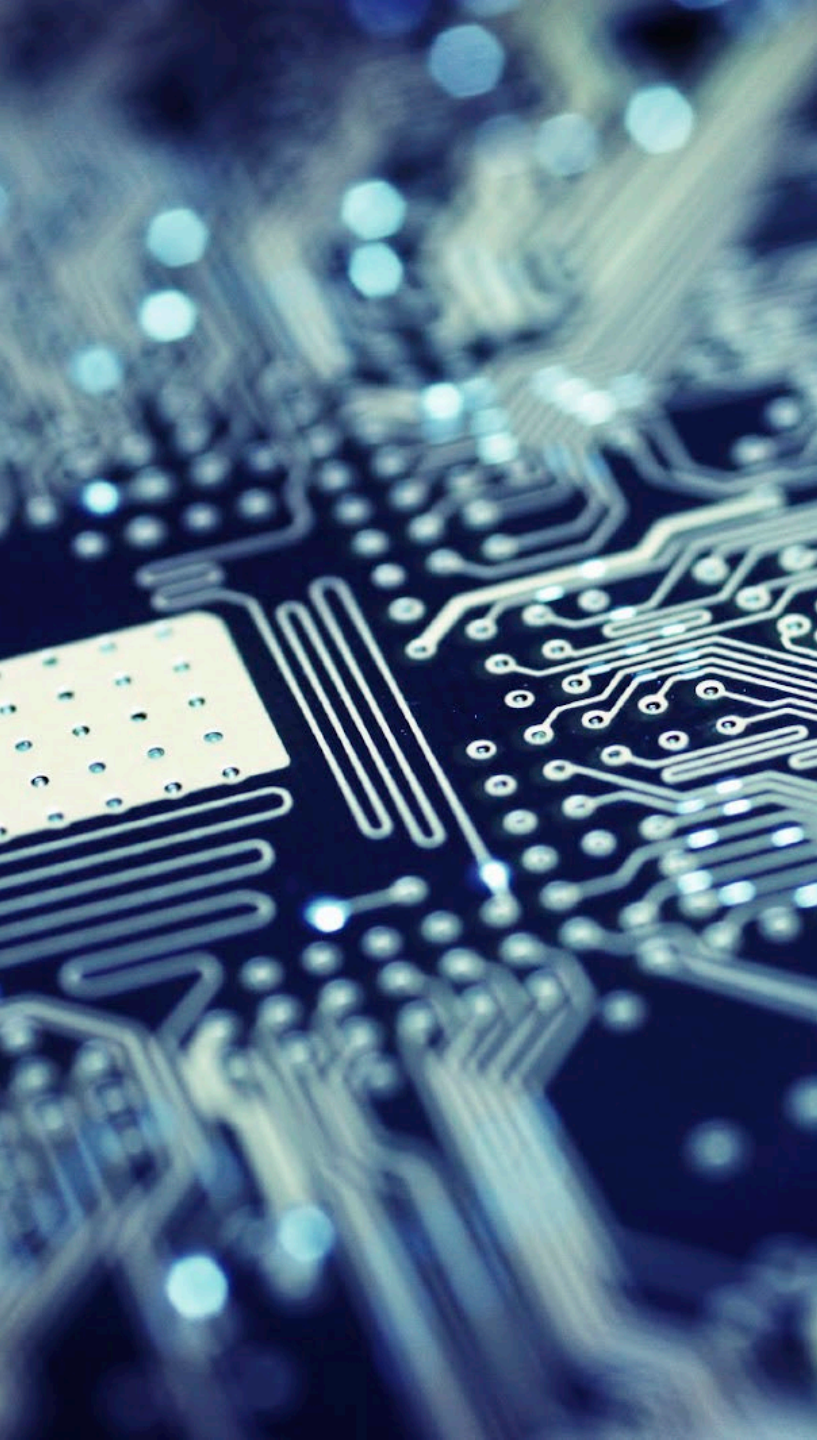
1. Improve operational efficiency
2. Streamline supply chain
3. Enhance product quality
4. Expand product offerings
5. Develop strong marketing and branding
6. Explore new markets
7. Optimize pricing strategies
8. Invest in technologies
9. Establish strong customer relationships
10. Seek cost-saving opportunities

- | | |
|------------------|-----------------|
| 1. Major driver | Bühler Priority |
| 2. Major driver | Bühler Priority |
| 3. Major driver | Bühler Priority |
| 4. Support | |
| 5. Support | |
| 6. Support | |
| 7. Major enabler | |
| 8. Major driver | Bühler Priority |
| 9. Support | Bühler Priority |
| 10. Support | Bühler Priority |



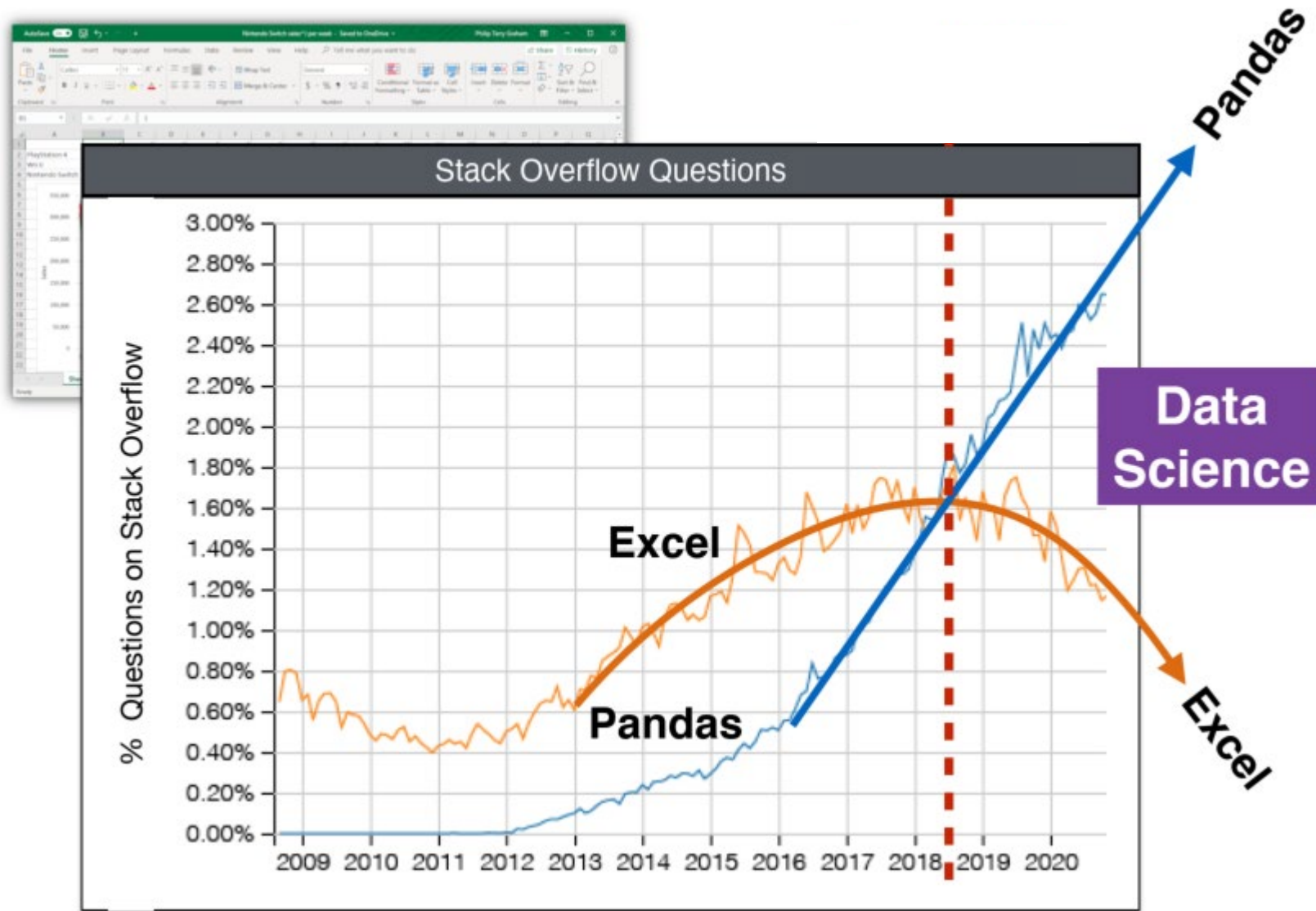
igital technology





What is happening in tech?

Tools are changing

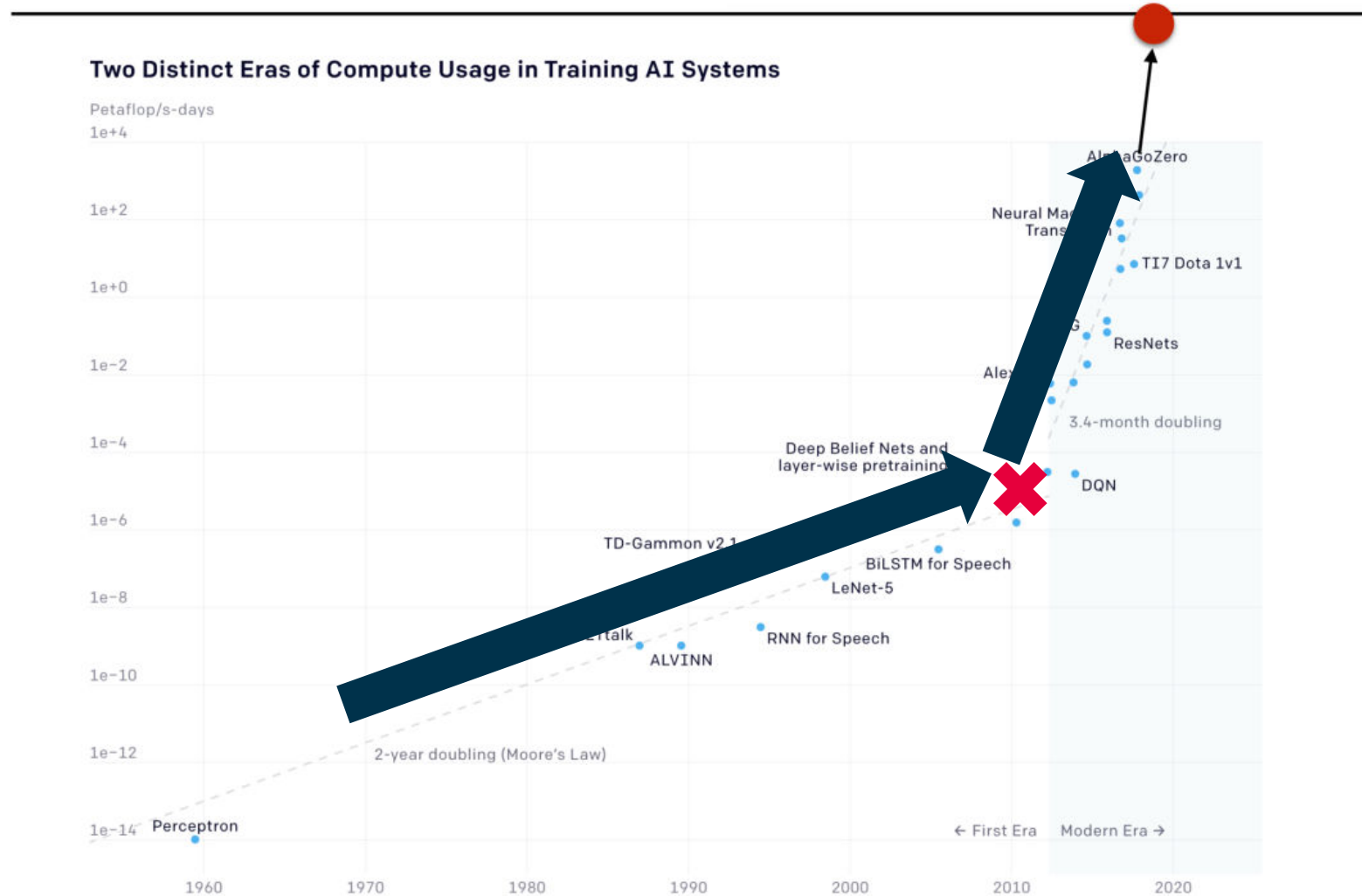


Language and skills too...

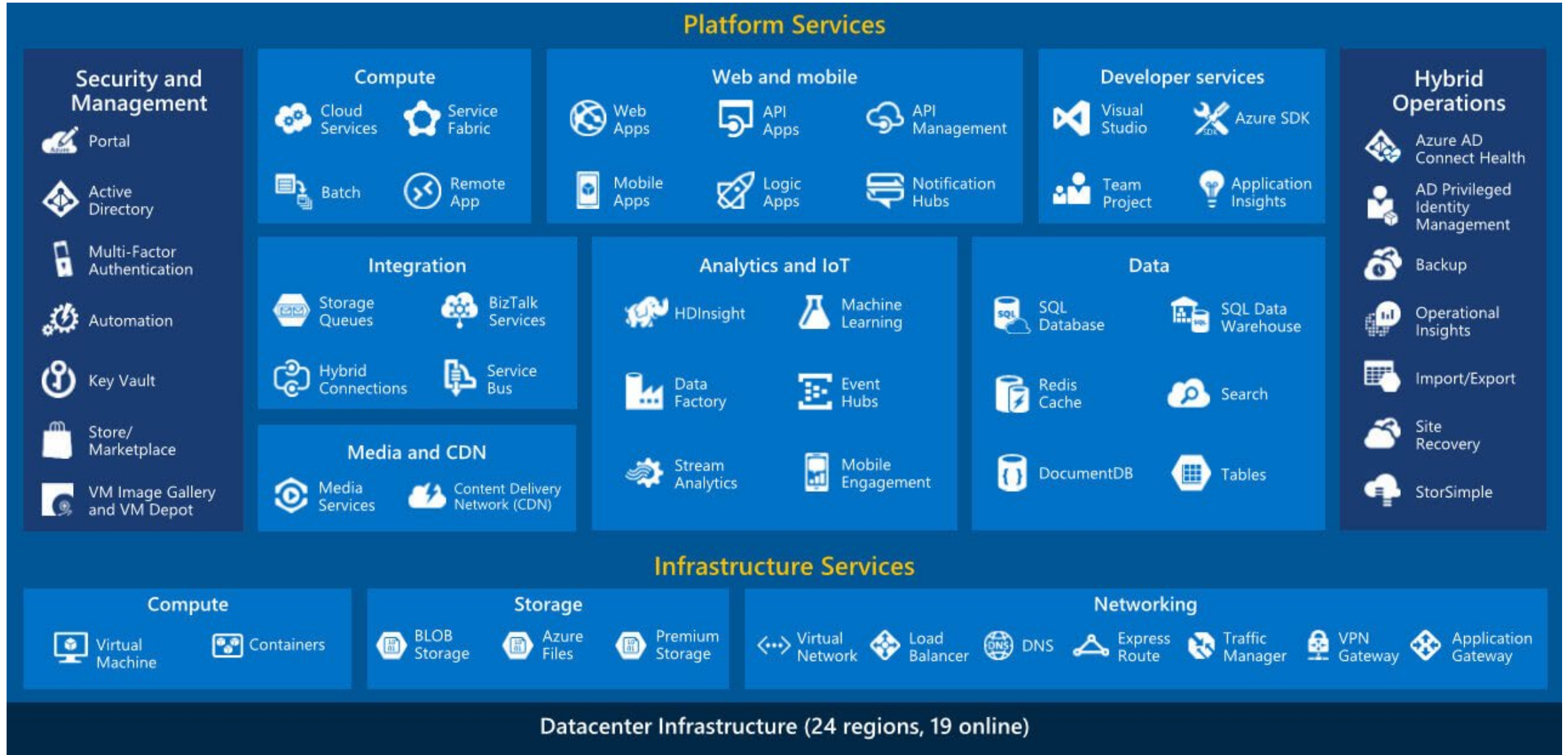


Algorithms are improving

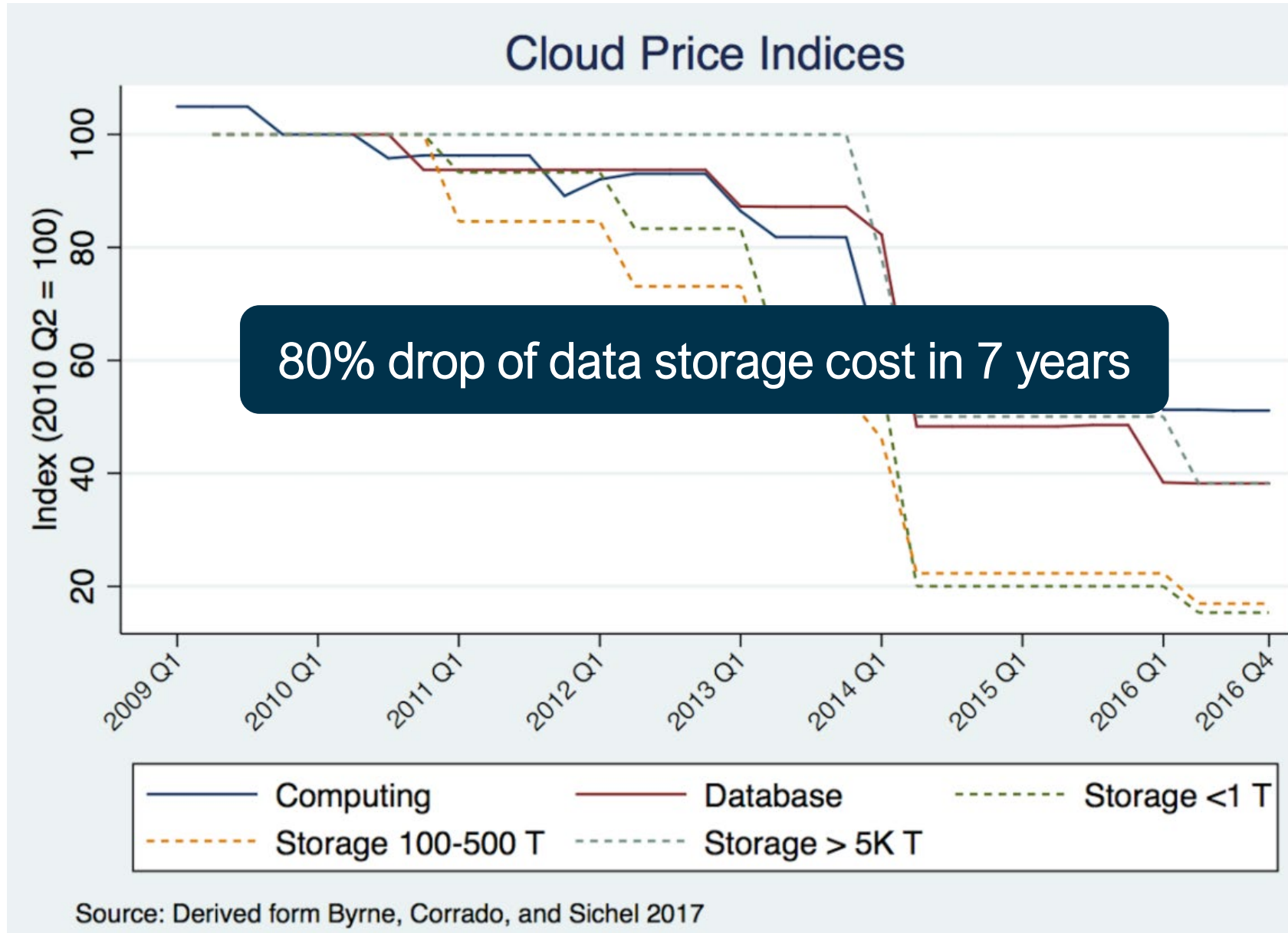
GPT-3 has 175 billion parameters;
GShard has 600 Billion Parameters

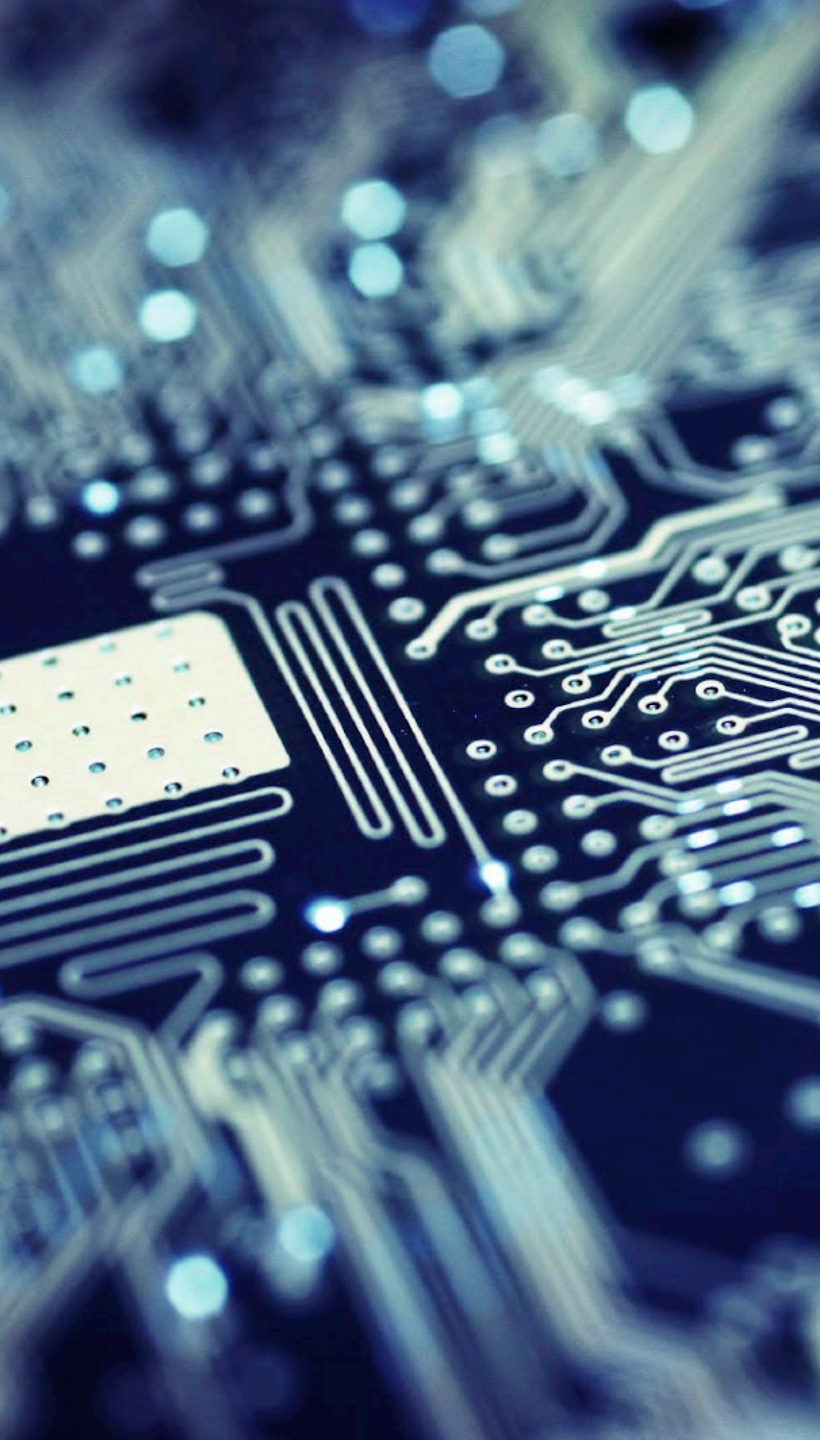


The cloud changed everything



Cloud cost are falling



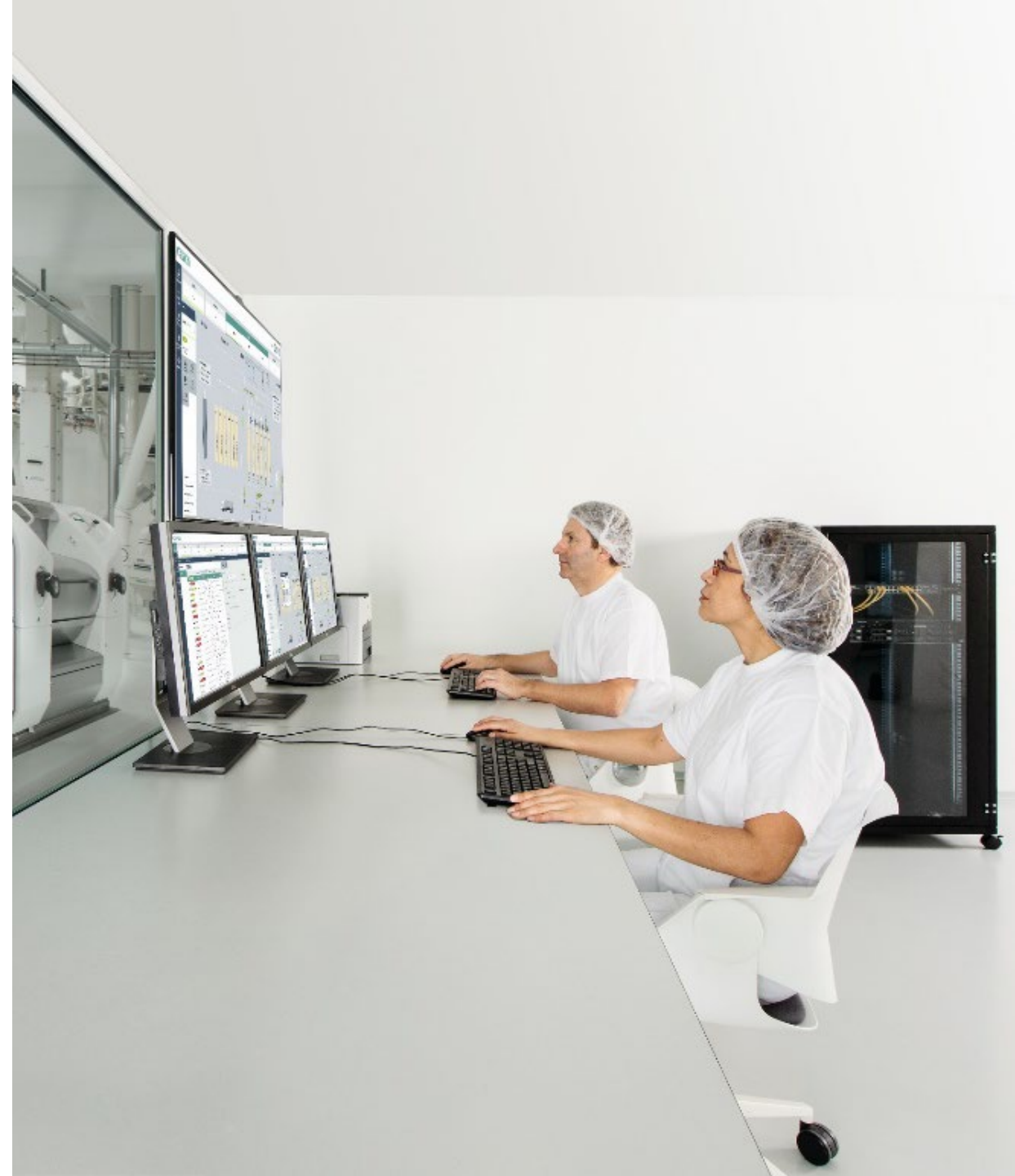


The transformation is
already underway.

Real-time analytics use cases

Manufacturing

- Operator real-time support
- Predictive maintenance
- Logistics optimization
- Quality deviation detection and correction



Cloud-computing use cases

- Combine data from external sources and optimize your operations: weather data, ERP data, etc.
- Multi-site data aggregation: instant view on production performance, broken down by production lines, recipes, season, etc. → No more Excel
- Highest security standard, fully managed, enable you to focus on your core business

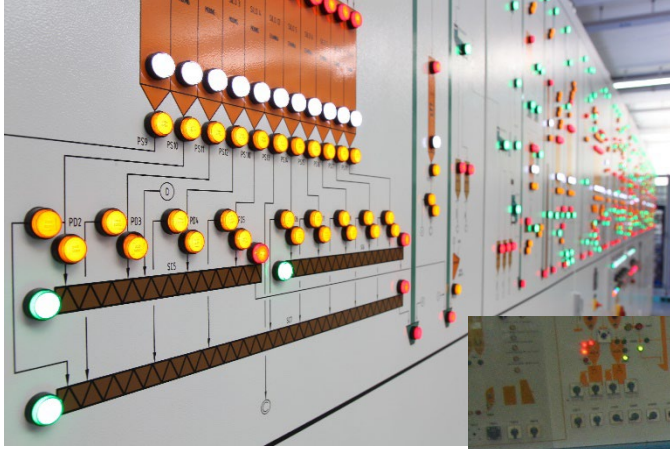




03

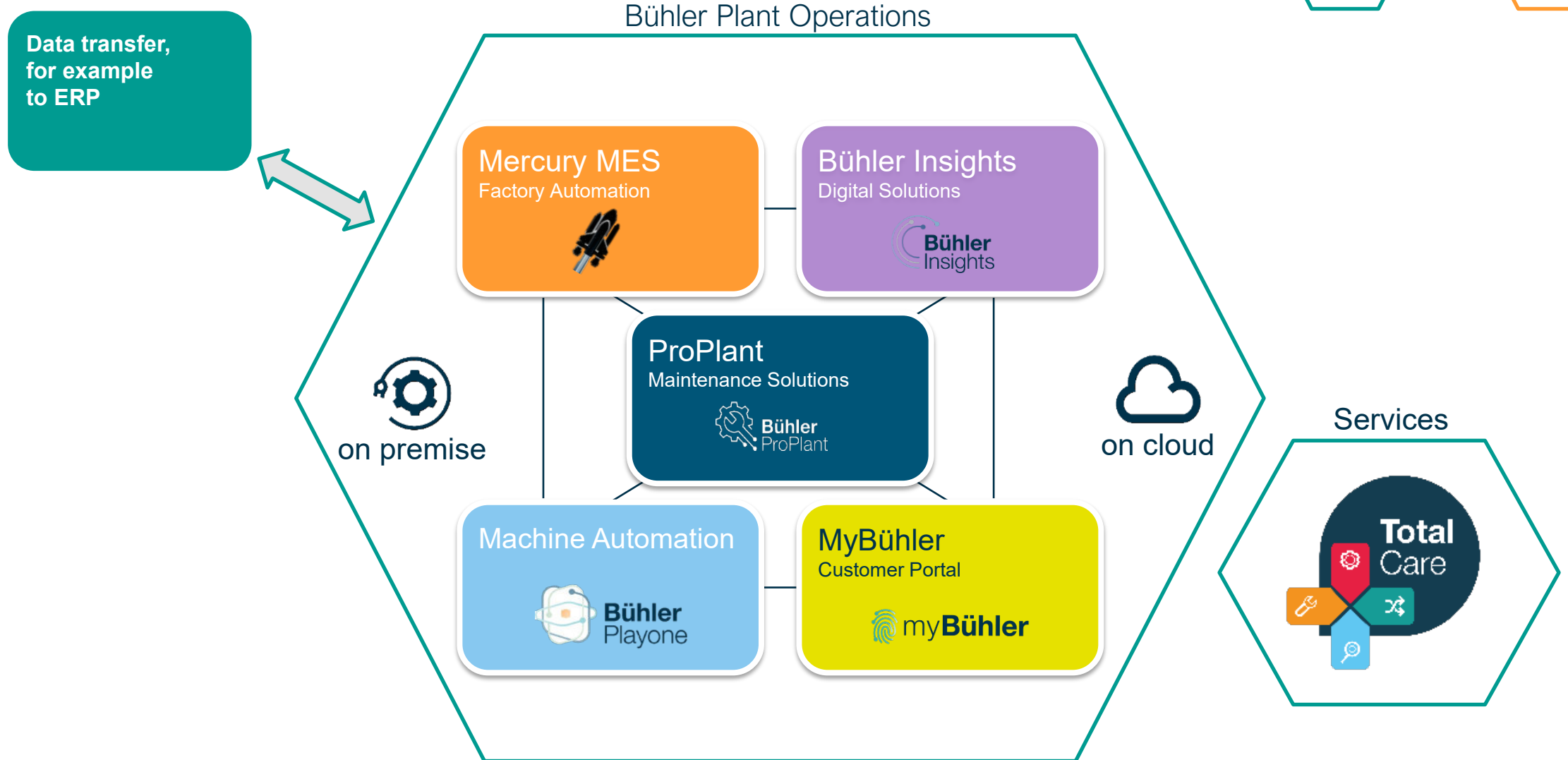
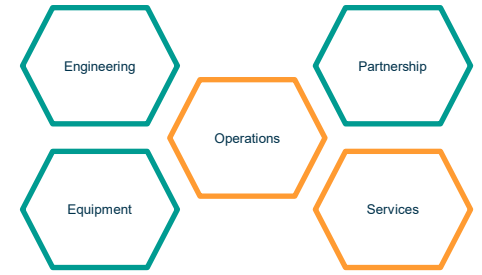
Milling Industry's Digital Journey

How is it impacting machine control, plant automation and business processes?



Automation and Digital Solutions

Today, the new symbiosis



Real Digital/Automation Implementation Examples

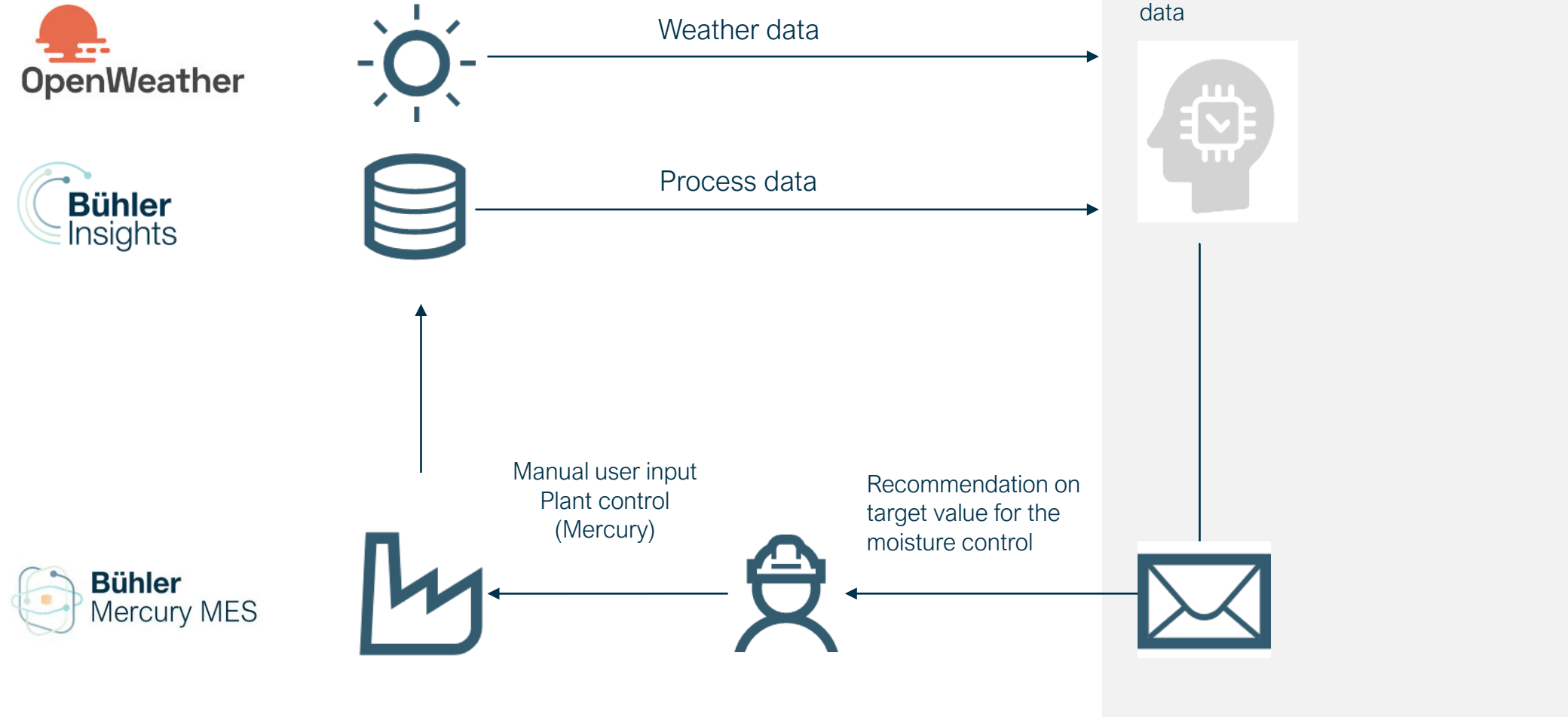
- Real-time operator support to adjust roller mills
- Daily recommendation on wheat moisture setting to maximize commercial yield
- Data-driven maintenance planning
- Real-time operator support to control quality parameters
- Quality assurance process automated to boost customer satisfaction
- Energy monitoring to predict maintenance
- Customized site performance monitoring
- Peak management to avoid electricity provider's penalties
- Root-cause analysis support
- Automatic recipe change with performance benchmarking
- ...

Real-time operator support to adjust roller mills

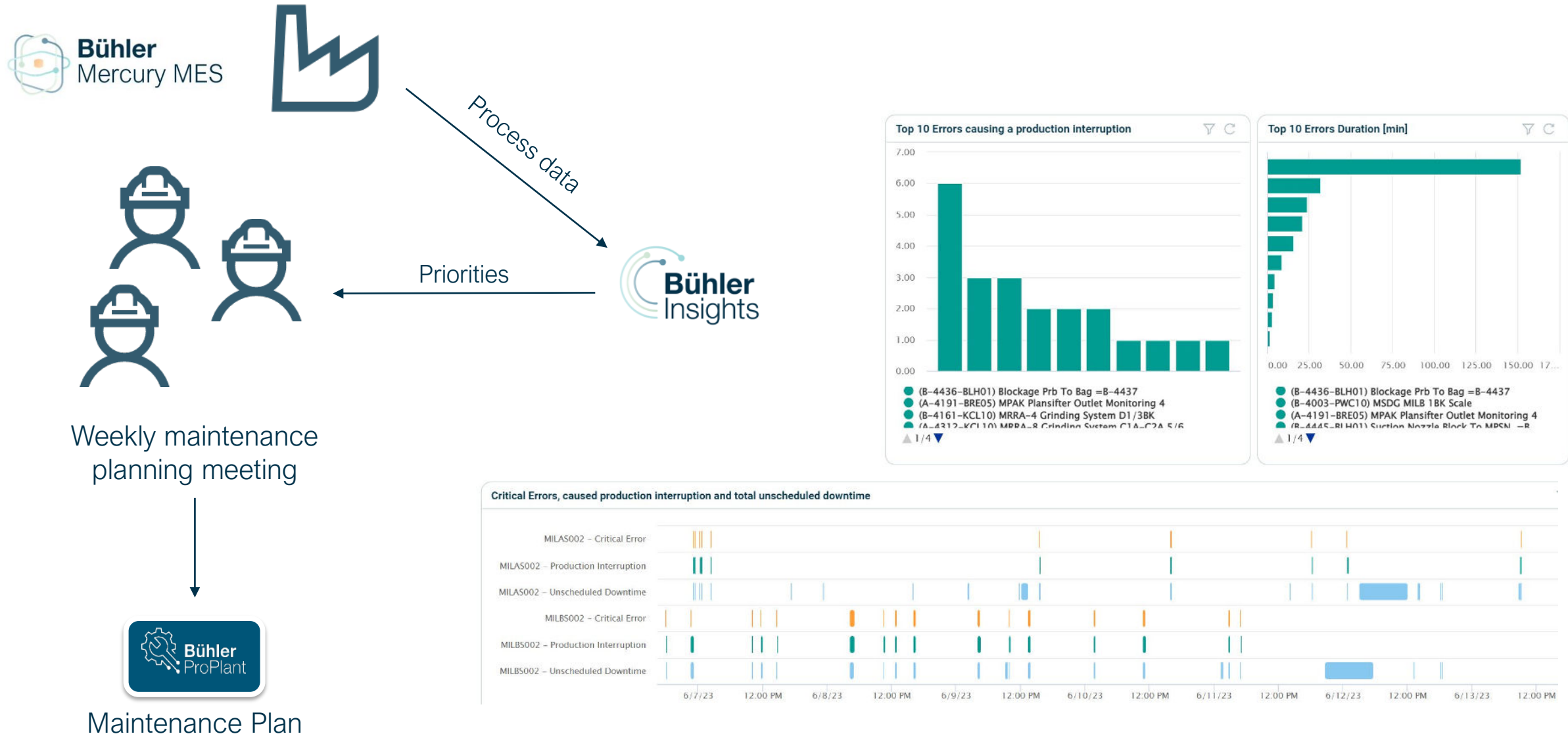
Milling Passage C7



Daily recommendation on wheat moisture



Data-driven maintenance planning





04

Key Challenges and Solutions

Key Challenges and Solutions

Challenges

- Return on investment uncertainties
 - Buying \neq Implementing
 - Volatile environment
 - Absorption capacity / User Adoption

Solutions

- Start
- Matching organization
- Required people and culture

Most important: Focus



Key Challenges and Solutions

Challenges

- User adoption challenge
 - Lack of skills
 - Misaligned priorities
 - Fear of being replaced

Solutions

- Involve the teams
- Communicate
- Train and re-skill



Key Challenges and Solutions

Challenges

- Integration in existing mills
 - Plant automation compatibility
 - Legacy software interfaces
 - Machine and process readiness
 - Amount of downtime during automation upgrade

Solutions

- Define a digital transformation strategy
- Technical debt, upgrade vs buy new
- Look at vendor's strategy



Key Challenges and Solutions

Challenges

- Data security
 - Data leaving the premises
 - Group policies

Solutions

- Use the cloud for your data
 - Safe
 - Flexible
 - Scalable
- Plant operations on-premise
- API Connection for what you need





05

Conclusion

Conclusion

1. Automation and digital are at the core of your company's operations: production, maintenance, logistics, customer satisfaction.
2. It's not one against the other, both need to work hand in hand to be successful.
3. Although easier to implement in modern installations, there is a wealth of opportunities for existing plants.

We want to make you successful!



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