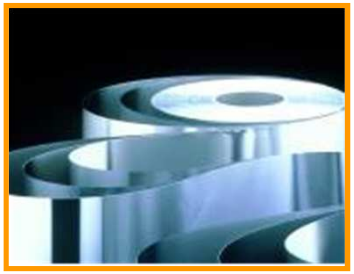
Brighter ideas with aluminum

MTA @ Novelis Italy

Sharing experience

Moscow 19-20 May, 2012



Emanuele Strada

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Emanuele Strada

Emanuele has a longstanding experience as an engineer and IT expert, with more than 20 years at a worldwide leader manufacturing company, involved in different areas and responsibilities, with strong focus on process re-engineering and problem solving. With proven experience in managing complex turn-around project at international level and Global Company award obtained for different projects.

Emanuele developed a special simulator to demonstrate the power of the solution in the reality of these plants that was used in order to communicate the solution and persuade management to adopt the solutions. Emanuele is known for his sharp thinking and the ability to challenge conventions and find solutions "outside the box", thanks to his unique mix of IT and processes know-how ensure effective and brilliant speaker in different manufacturing excellence workshops, including University and Business Process Management Courses.

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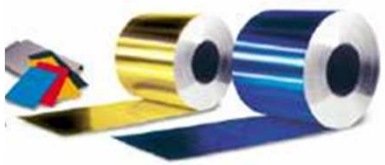
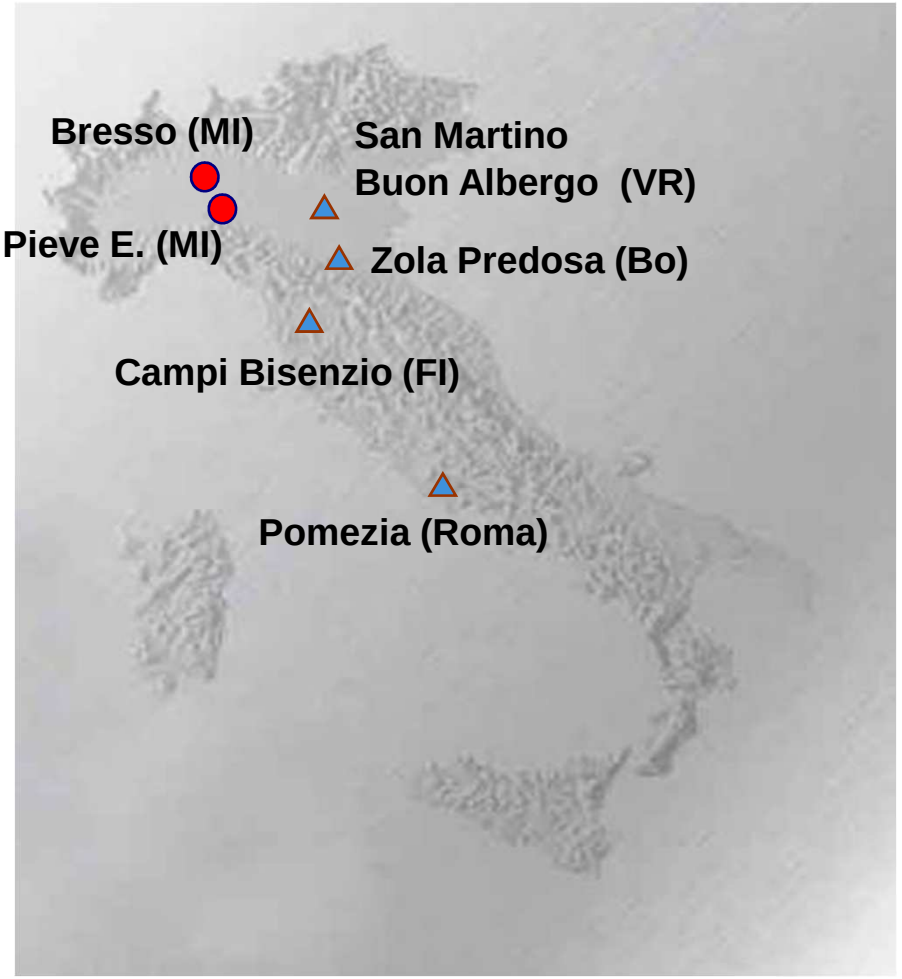
Novelis Italia S.p.A.

- 2 Plants:
  - Pieve: bare rolled products
  - Bresso: coil-coated rolled products

- 4 Distribution Centers:
  - Warehouses for finished products & service centers for cut-to length operations
    - bare rolled products
    - coil-coated rolled products





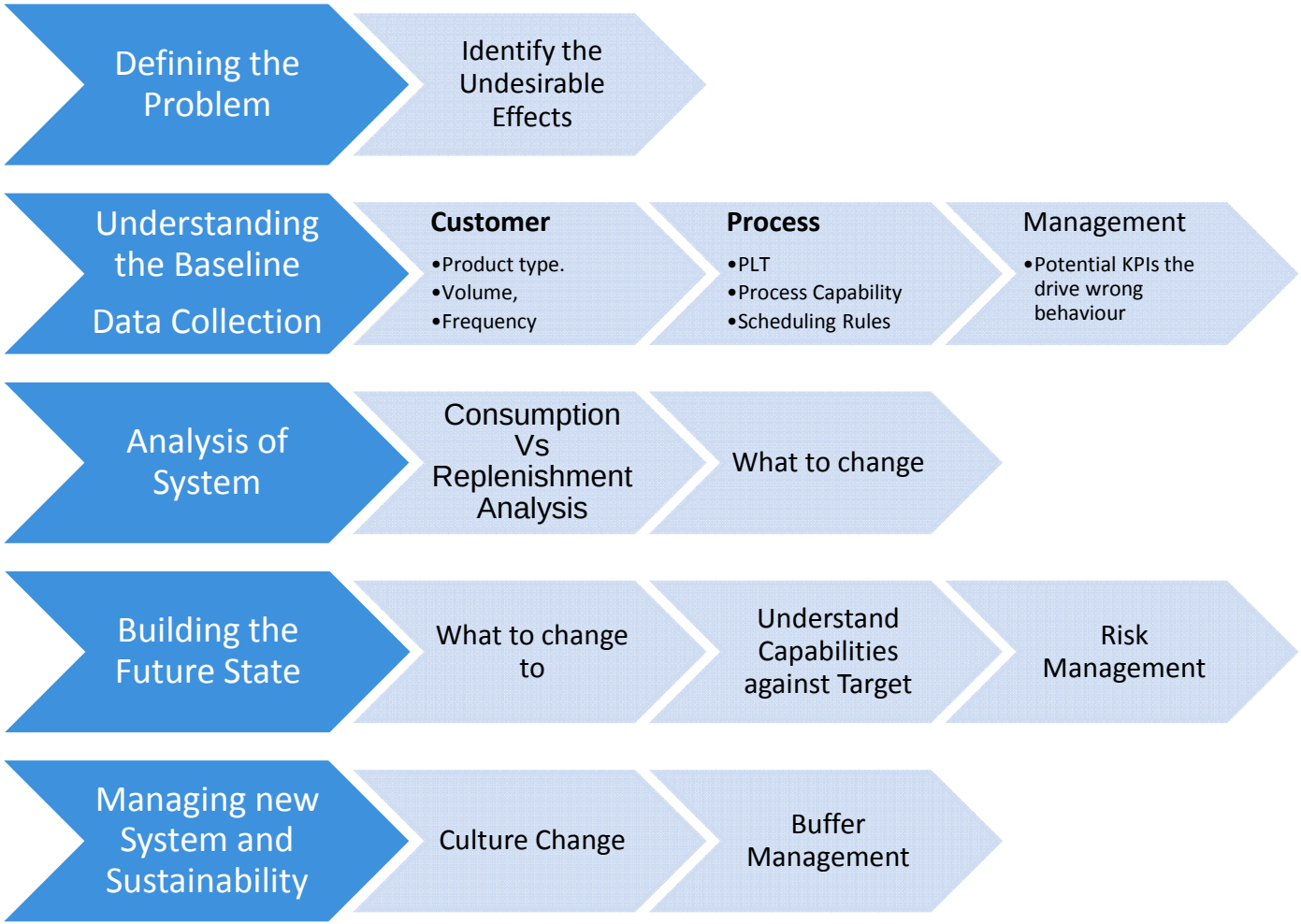
Plant products...

- Building Products

- Paint Stock
- Spacers stock
- Fin Stock
- Closures
- Plain

- Industrial Applications

Process to go from theory to Implementation



The Undesirable Effects:

The delivery performance of painted products at the Italian system are not matching the customers expectation

Why ?

Data are showing roughly the same patterns over the years

Pieve PLANT

Casters Dept.

Formazione Rotoli di Alluminio da rottame Al

Novelis suppliers

Inc. warehouse

Ricevimento materiale nei magazzini automatici

Mill Dept.

Sistema di laminazione (laminatoio, forni, slitters)

Shipment Dept.

Novelis Bresso plant

Yes

No

Pieve Castomers

BRESSO Plant

Warehouse

Ricevimento Materiale

Painting Dept.

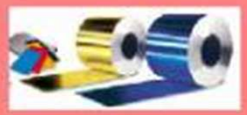
Verniciatura Liquida/Polveri del rotolo

Finishing Dept.

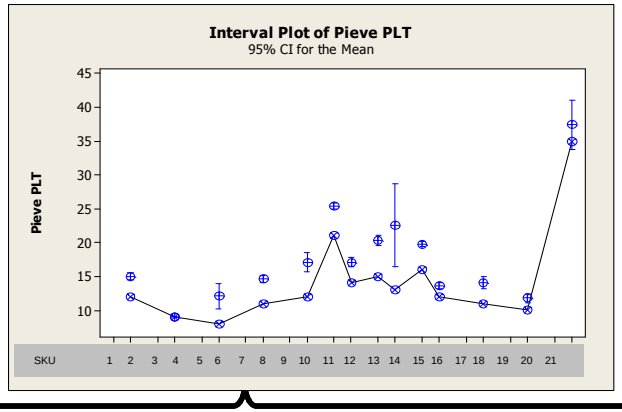
Taglio in sottoformati (lastre/nastri) e/o lavorazioni particolari (goffratura/lucido)

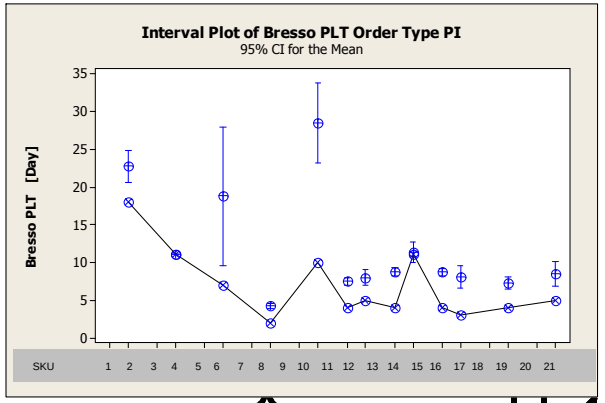
Shipment Dept.

Formazione pallets e spedizione al cliente



Before MTA: 4 weeks to the market *"try & hope service"*





PLT= 3 weeks

PLT= 1 week

Pieve
Cont.Casting
department

Pieve
rolling
department

Bresso
(finishing plant)

Customer

Scrap & prime

Coils

Thick Coils

Thin Coils

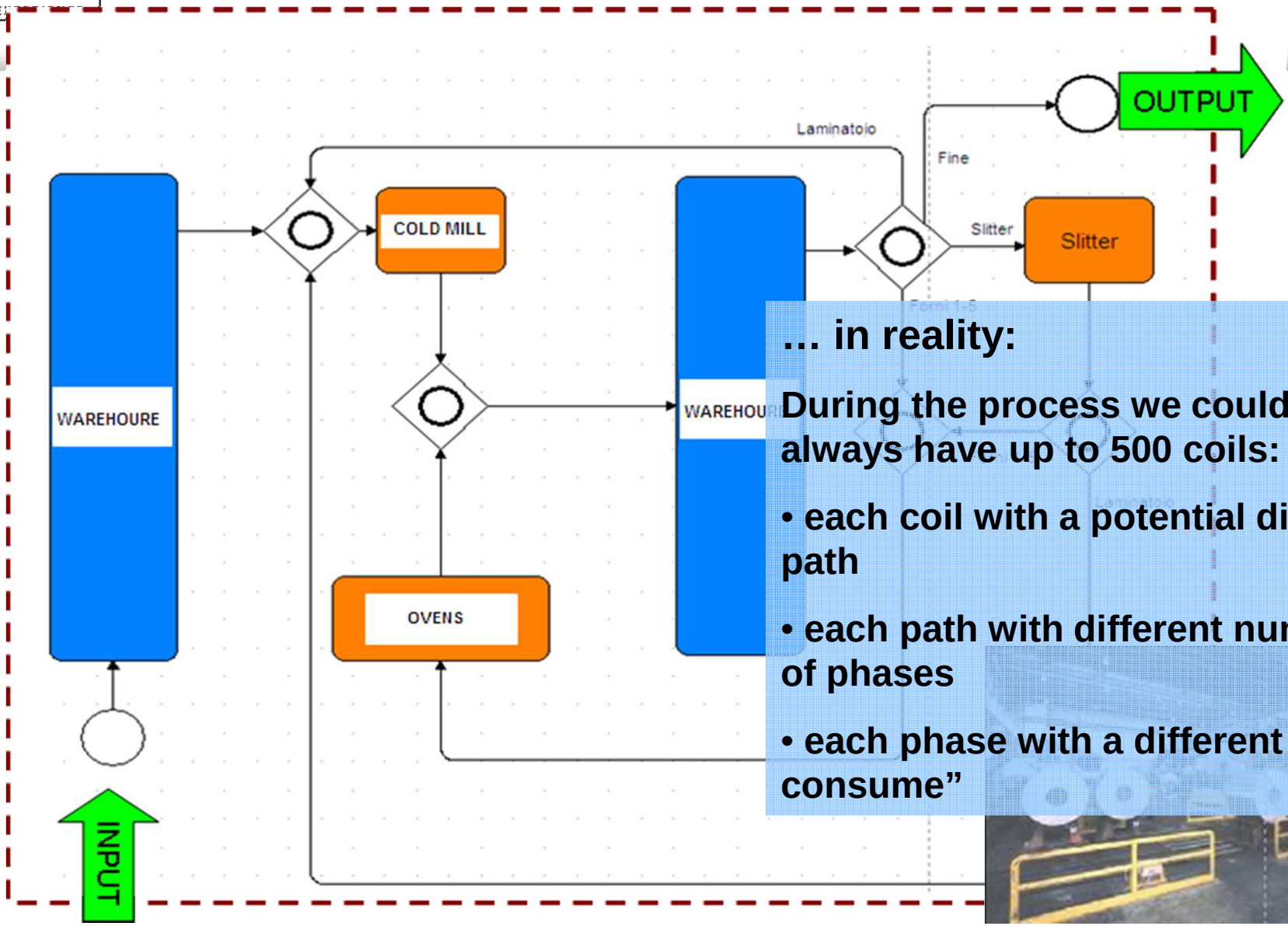
Thin Coils

Colored
sheets / strips

Why 3 + 1 weeks ARE NOT 4 Weeks ?

DC's

Mill system material Flow: Reality



… in reality:

During the process we could always have up to 500 coils:

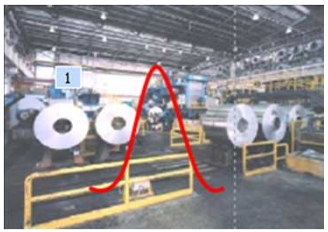
- **each coil with a potential different path**
- **each path with different number of phases**
- **each phase with a different "time consume"**

…the Key Question: If we want Improve our process performance…

How to **MEASURE** the process

…in order to be able to **ANALYZE**

…and then **IMPROVE** using potential solutions ?



Target State: What to change ? ..What to change to ? ...How to cause the change ?

~~Min Batch Size~~

~~Ordef Frequency~~

~~Supplier WOs Priority = "ASAP"~~

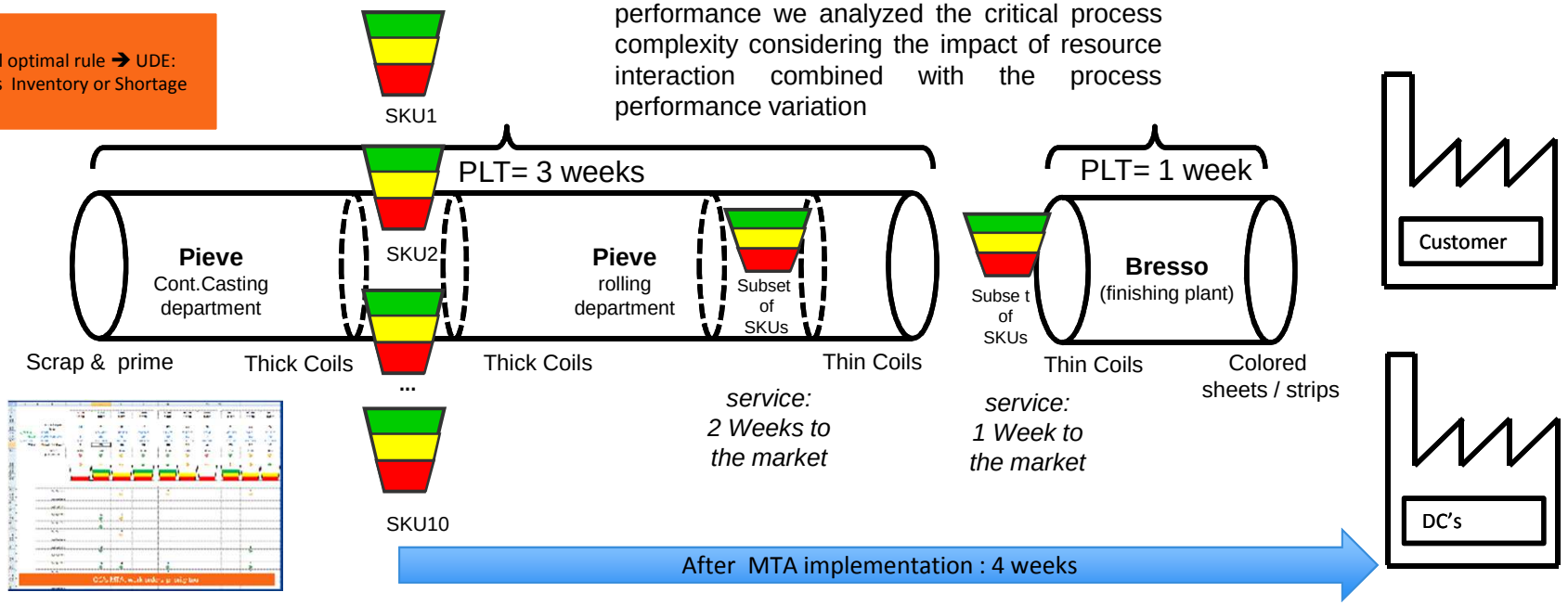
Min Batch Size = -50%

Order Frequency = x 2

Supplier WOs Priority = MTA Buffer Penetration

Local optimal rule ➔ UDE:
Excess Inventory or Shortage

➢PROCESS MODEL: in order to improve the performance we analyzed the critical process complexity considering the impact of resource interaction combined with the process performance variation



➢PROCESS MODEL: in order to manage the risk in the dynamic environment using "What if…" scenarios and to prove the robustness of the new process

Considerations before starting - Key Learnings

- The complexity reduction review could help you the increase the probability to have the right material at the right time, then manage better the inventory and increase the speed of the flow

- Before improve the process performance, we should reduce the variation. The Data Gathering & Data Analysys will help you to identify the critical factors that could affect the overall performance

- In order to minimize the inventory level, we should increase as much as possible the supplier performance, Order Frequency and the minimum batch size review could be considered

People Behaviours – Key Learnings

- Changing the Local mindset is key, failure to do so could endanger not only the MTA implementation but also the entire flow
- Due to traditional cost account, not always the number of shifts are synchronized with the flow needs
- When the delivery performance are not very good, the normal sales behavior could be increase FGs or lie on the real customer due date

Identifying problem and Data Collection - Key Learnings

- Very often the Voice of Customer are not always very clear, then the challenge is to align the process capability with the market opportunity

- Collect the Voice of Process will help us to define if the process is in control, then if it is predictable

Design Considerations - Key Learnings

- The monitoring tool of the buffer penetration can be developed with a normal “office program” and will help you to set the right priority even in the scenario where the supplier “must” work by batch

- MTA can be used as a strategic de-coupling point in order to ensure the availability of the material and then increase the customer delivery performance

- The location (where implement the MTA within the supply chain) can be cosidered a tactic for you market strategy

Modelling Analysis and Risk Management - Summary

The Process Modeling is an essential tool:

- **In the Measure and Analyse phases**
  - Process Management helps us to understand the Complexity of the current process and ANALYZE the process to identify what needs to be changed.
- **Once the Future State Process has been determined**
  - The Process Modeling was used to identify the performance of the new system to determine whether it delivers the desired target state
  - Also essential before implementation Process modeling was used to MANAGE THE RISK in the dynamic environment using “What if…” scenarios to prove the robustness of the new process, thus providing confidence to management the that the new system will perform to the required level

Sustainability - Control Phase

- **Select the project team carefully making sure it consist of**
  - 'Technical' People: those needed to ensure the quality of the final system is robust
  - 'Cultural' people : those who key role is to own and run the new process
- **Taking care of the planning people, as their new role will involve less short term management of system to more medium/long term management of customer demand**
- **Implementing a Risk Management plan is essential**
- **The monitoring tool of the buffer penetration can be developed with a normal "office program" and will help you to set the right priority even in the scenario where the supplier "must" work by batch**

Summary – We have talked about

- Plants, Processes and Products
- Turning the Theory to Real Life
  - Roadmap to Implementation
  - Defining the Problem (UDE)
  - Use of Modelling in
    - Understanding the Baseline
    - Analysis of system
    - Understanding the Capabilities and Risk Management of the Future State
  - Sustainability
- Key Learnings

Reflection... A question?

Why did the Stoneage end ?

It ended not because they ran out of stones

.....but because a better way of working was found

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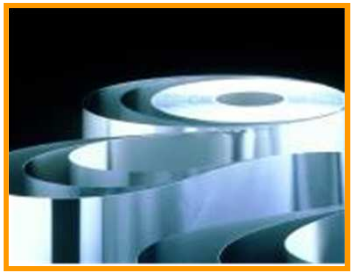

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Thanks