Brighter ideas with aluminum

"Push for Pull"- Implementing TOC MTA solution in the Flat Rolled Products industry

Managing upstream of the supply chain

Presented by
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Director Supply Chain Europe

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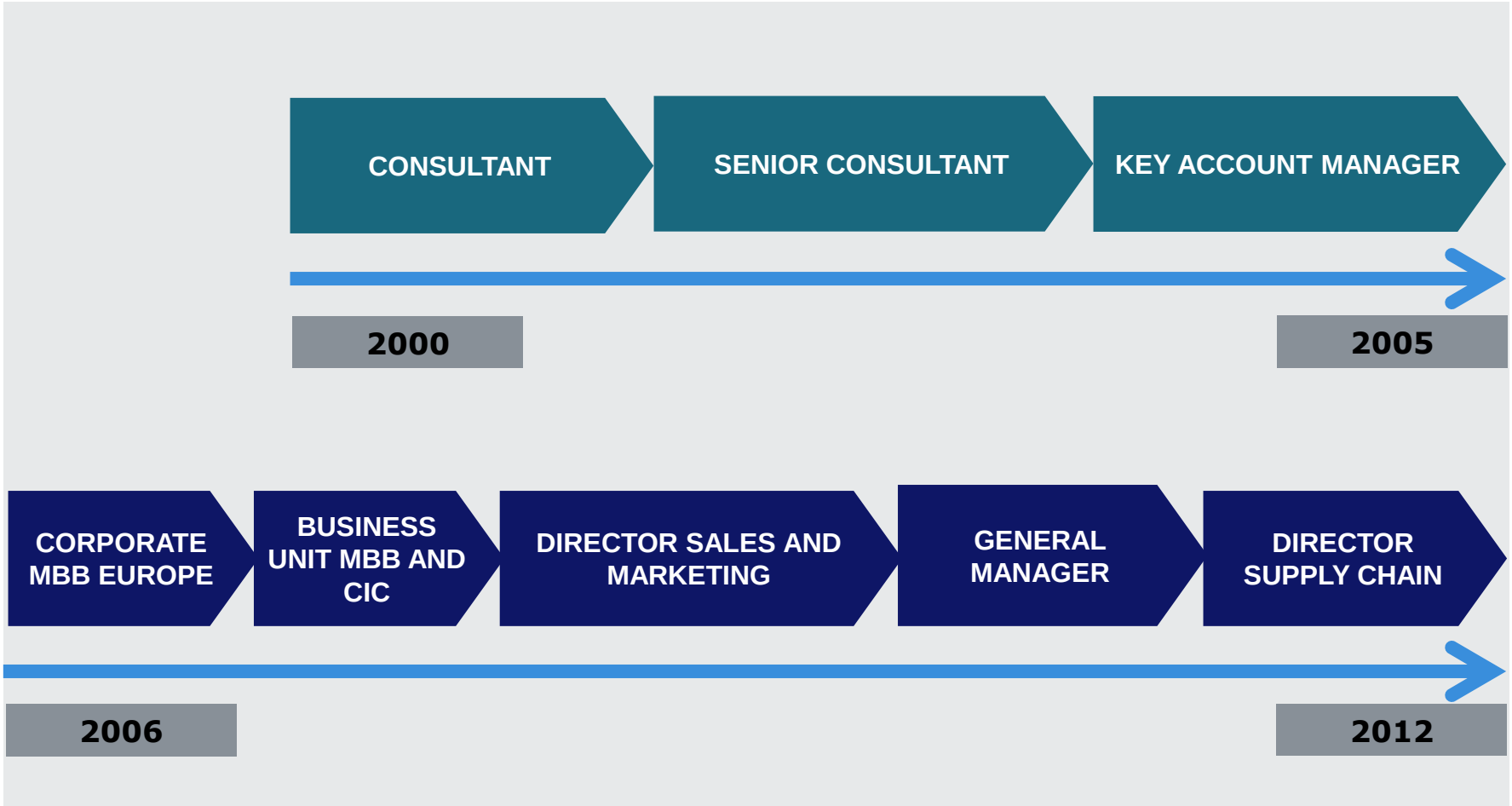
Frank Oliver Rill

Frank is working with Novelis Europe. In 2011 he was appointed as the Director for Supply Chain, Europe. He has been with Novelis since 2005 as served as the Master Black Belt and Continuous Improvement Champion, the Director for Sales & Marketing and there after the General Manager and Value Steam Leader for Global Litho and Foilstock. Between 2000-2005 Frank was s senior consultant and Master Black Belt with UMS Gmbh, Frankfurt, Germany.

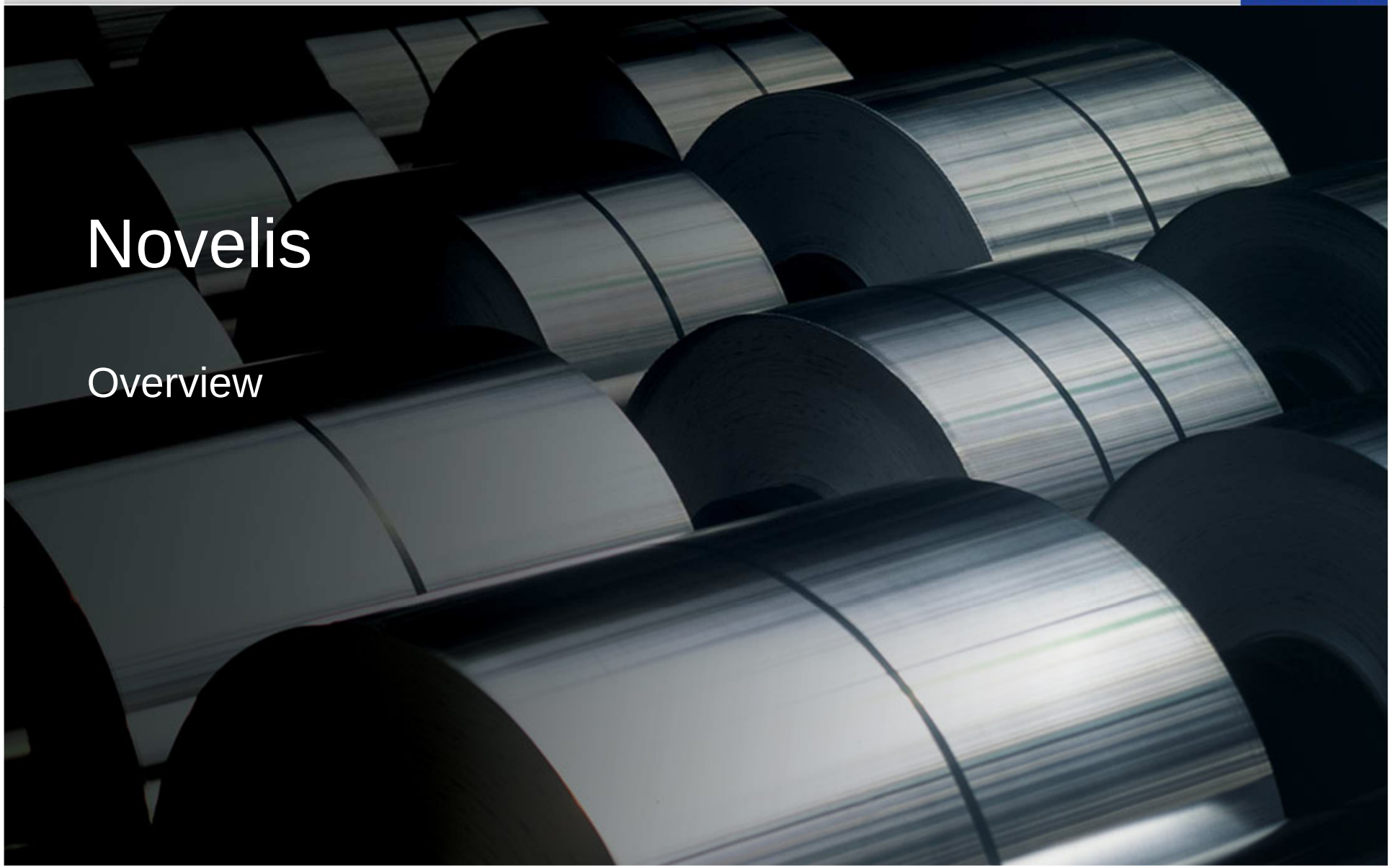
Frank has a Diplom Kaufmann in Business Administration from Johann Wolfgang Goethe Universität, Frankfurt Germany. He is a Qualified Bank Clerk (Bankkaufmann) from Frankfurter Volksbank eG, Frankfurt Germany

Frank took extensive training in TOC, Risk management, negotiations, Sales & Marketing, Six Sigma, Lean, product development, presentation and facilitation. Frank has Green Belt, Black Belt and Master Black Belt qualifications.
Frank was born in 1969 in Frankfurt, Germany. He is currently located in Zurich, Switzerland. He is married, has one child and a second coming soon.

Profile Frank Oliver Rill



Brighter ideas with aluminum



Novelis

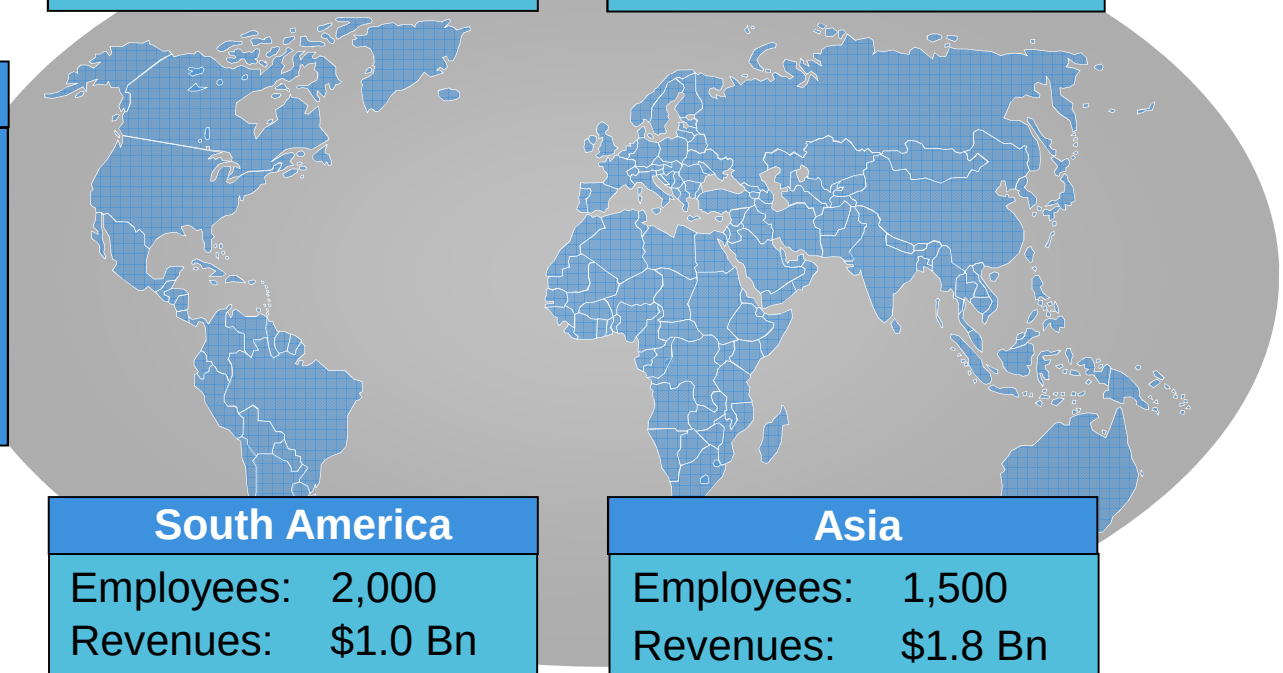
Overview

Novelis Worldwide Footprint

Novelis Total	
Employees	12,700
Revenues	$11.2 billion [1]
Shipments	3,150 kt [2]
Countries	11

North America	
Employees:	3,200
Revenues:	$4.1 Bn
Shipments:	1,166 kt

Europe	
Employees:	6,000
Revenues:	$4.3 Bn
Shipments:	1,106 kt



South America	
Employees:	2,000
Revenues:	$1.0 Bn
Shipments:	348 kt

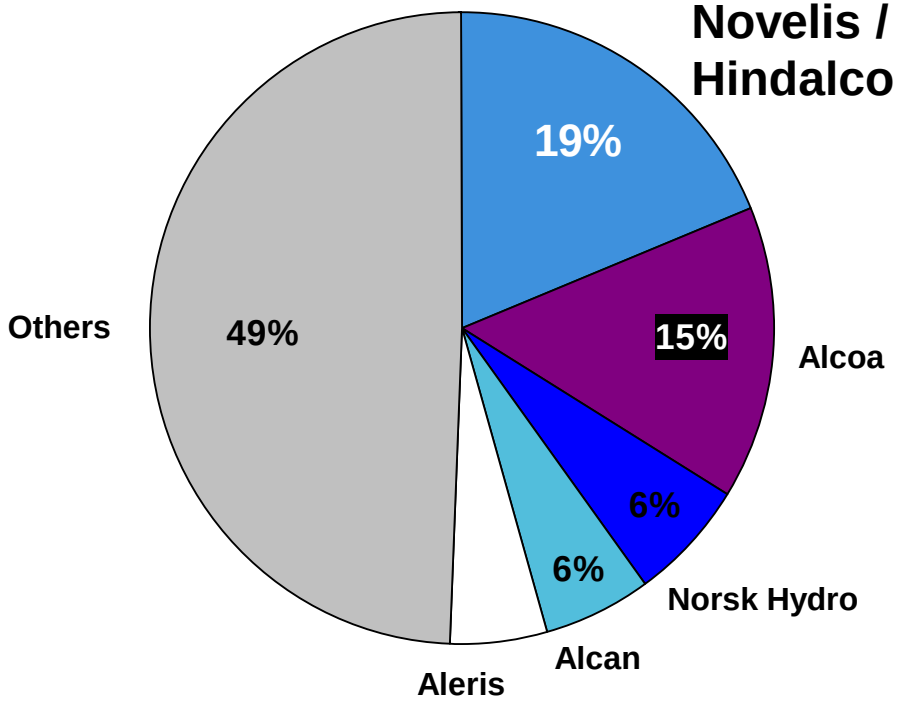
Asia	
Employees:	1,500
Revenues:	$1.8 Bn
Shipments:	530 kt

[1] Earnings based on FY 08 results; reported in US dollars
[2] Shipments include rolled products and ingots

Global Leader in Rolled Aluminum

Global Aluminum Rolled Products Production

100% = 17,200 kt
Top 5 = 51%



Source: CRU estimate – 2007 data (April 2008)

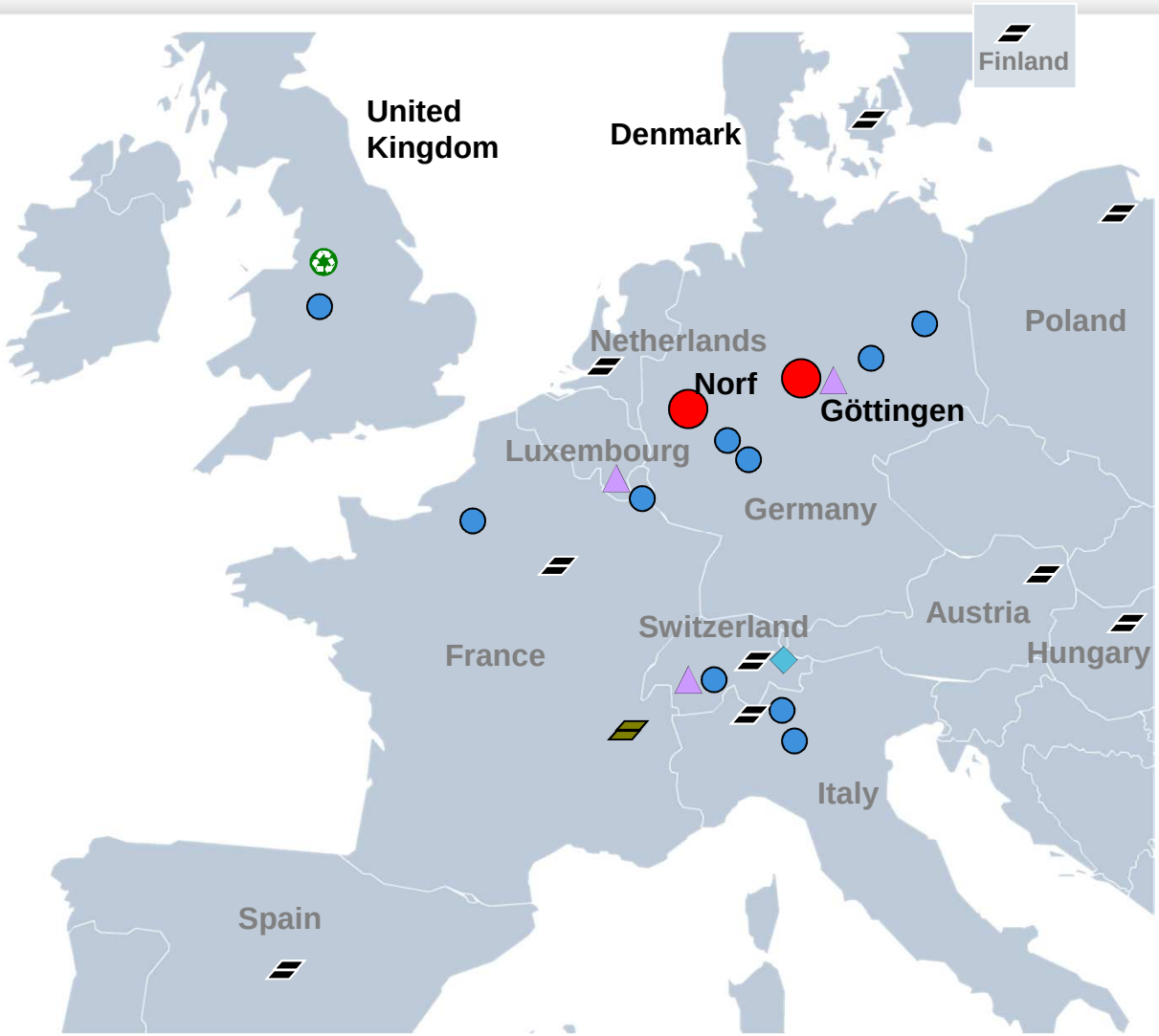
#1 rolled products supplier worldwide

Leader in:

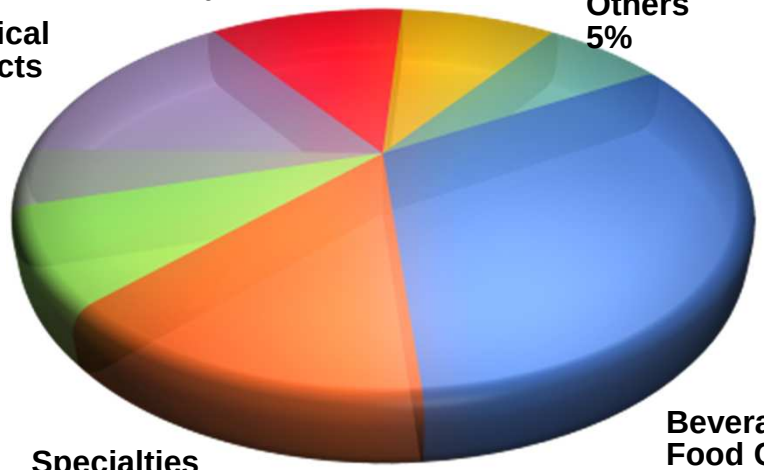
- Can, Auto, Foil
- Europe, Asia & S-A
- Rolling technology
- Continuous casting technology
- Recycling

Novelis Europe

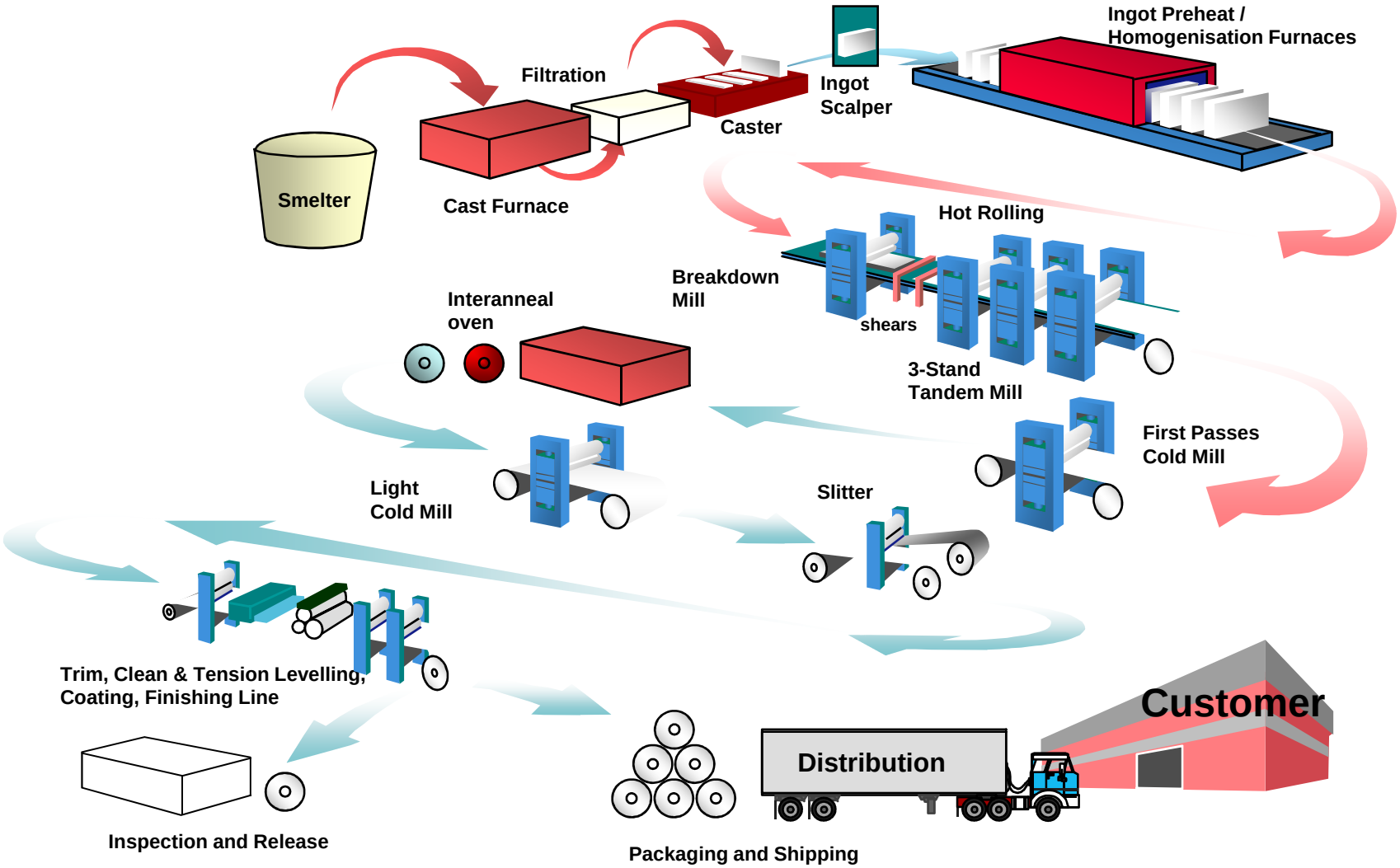
- Rolled Products
- Recycling
- Research & Development
- Regional Office
- Sales Center
- Technology Sales



European Product Portfolio and end users



A Standard Process Route



Starting Situation – What to Change?

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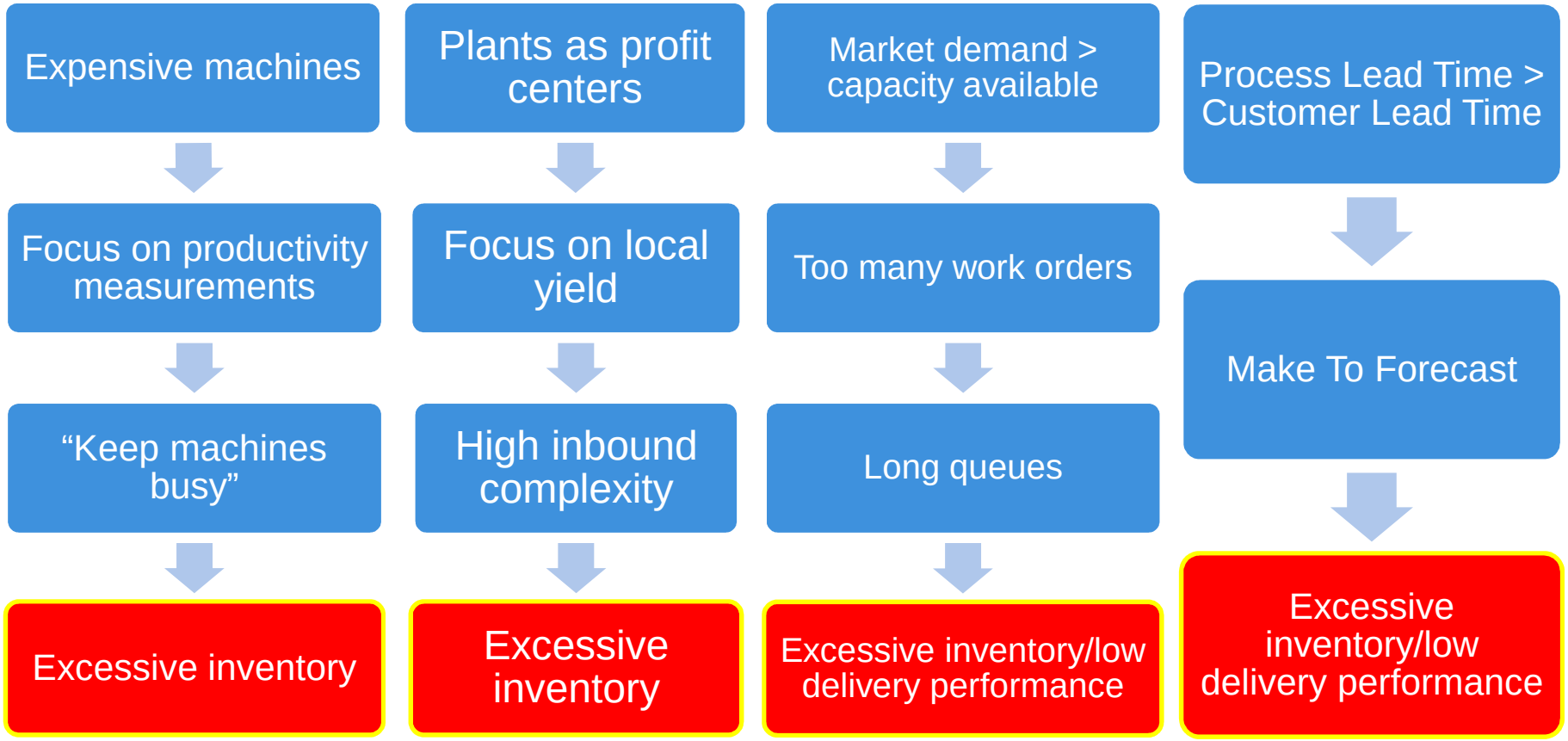
Traditionally low Inventory Turns!

Operational Definition Inventory Turns: $\frac{\text{Avg. Shipments (M-2 to M-0)} \times 12}{\text{Month End } \textbf{Book Inventory}}$

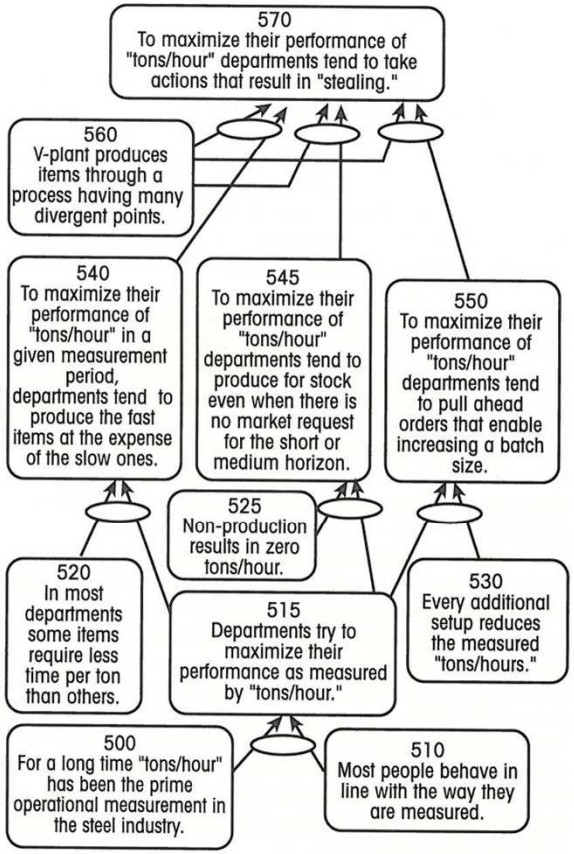
Starting Situation – What to change?



Starting Situation – Does this sound familiar?

At that stage, Johnny put up a transparency.

I know that it's difficult to read from the screen, so I'll read it, the same way that Don did.



Don started from the bottom. In the steel industry, each department is judged according to how many tons they process per hour; the measurement of tons-per-hour is the prime operational measurement, statement 500.

He then quoted the famous phrase, "Tell me how you measure me and I'll tell you how I'll behave." He didn't have any problem getting agreement that most people behave in accordance with the way they are measured, 510. Then he reached the conclusion that in the steel industry, we are bound to find that departments try to maximize their performance as measured by tons-per-hour, 515.

Without hesitation, they confirmed it.

What does this lead to? On its own, it might make sense, but not when combined with other facts that exist in the industry. Like the fact that in almost all departments some items require less time per ton than others, 520. For example, in the rolling department, you squeeze red-hot steel into plates to produce ten tons of two-inch thick plates, which takes much less time than to produce ten tons of one-half-inch thick plates. The result must be that in order to maximize their performance of tons-per-hour in a given measurement period, departments tend to produce the fast items at the expense of the slow ones, 540. You can imagine what this leads to. High inventory of the fast items, while missing orders on the slow items.

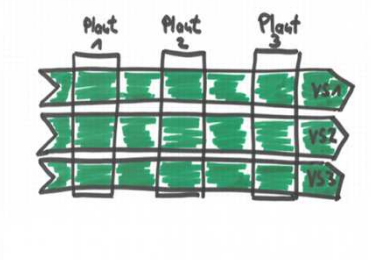
They discussed it at length, debating the magnitude of the resulting damage. Some tried to minimize its significance. Don didn't argue. He didn't have to. The other managers did it for him. They brought up hard numbers to prove it. The numbers weren't funny at all. Everything was in the many millions. Actually, the accompaning anecdotes were very funny, if you have a twisted sense of humor like I do.

When that was settled, Don moved on to highlight that in the steel industry, significant setup times exist in every department. Twenty years ago a setup of twenty-four hours was common. Today, due to new technology, most setups are more in the range of three to five hours. Still significant.

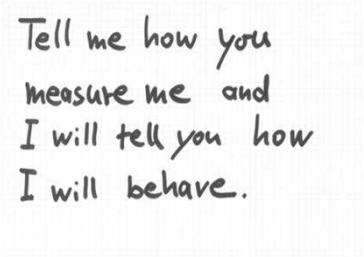
Solutions – What to Change to?

The Foundation: 7 Guiding Principles

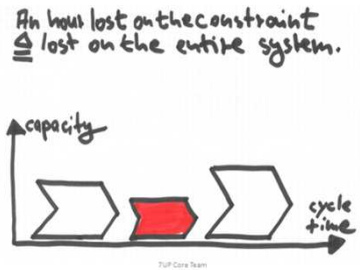
1 Manage Processes, not Functions



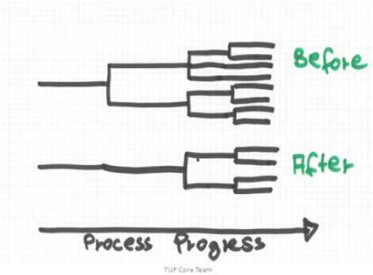
2 Use Appropriate Measurements



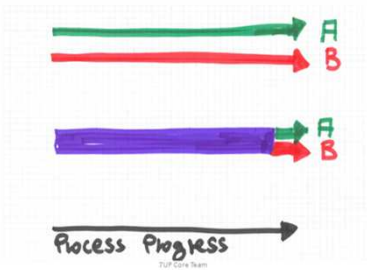
3 Identify and Manage the Constraint



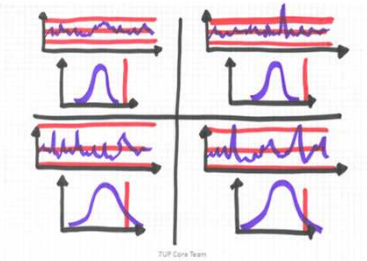
4 Reduce Complexity



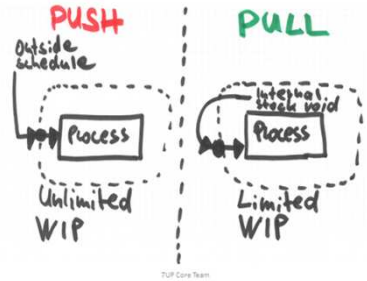
5 Postpone the Final Configuration



6 Understand and Reduce Variation



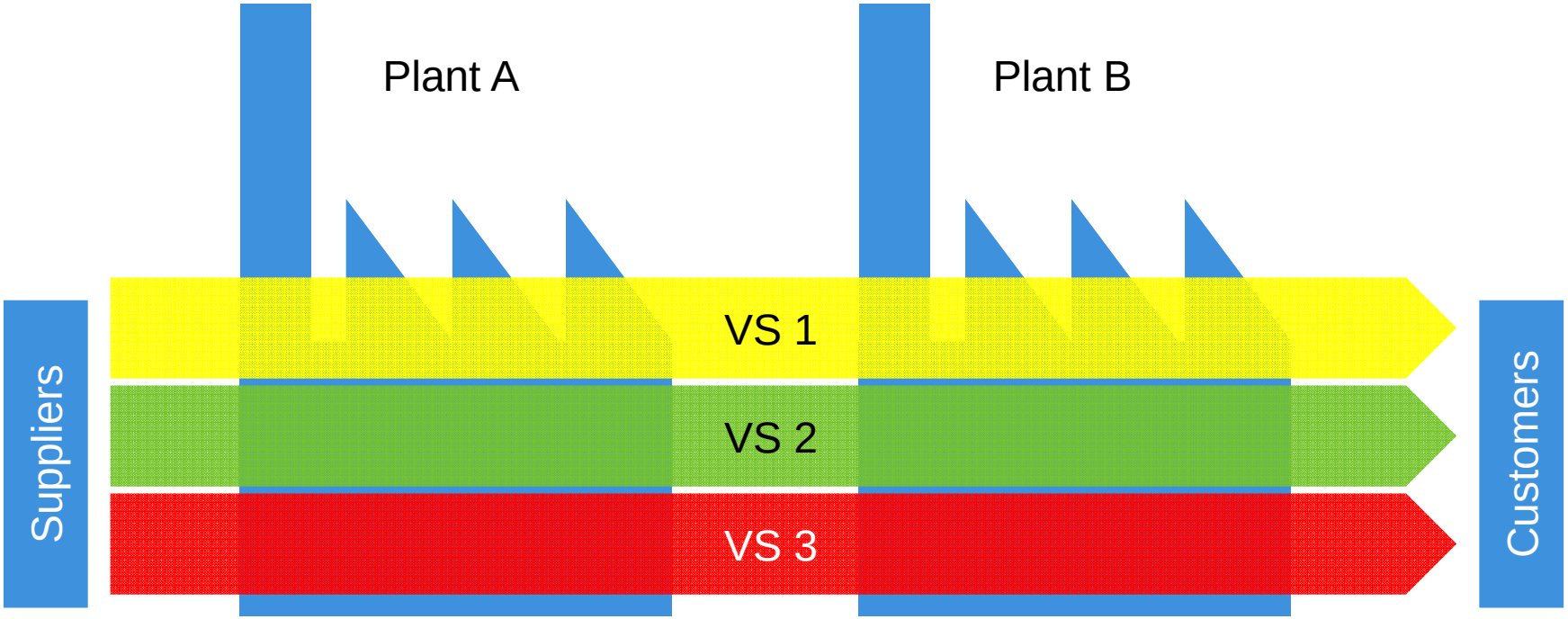
7 Pull



The Execution: 4 main areas of change

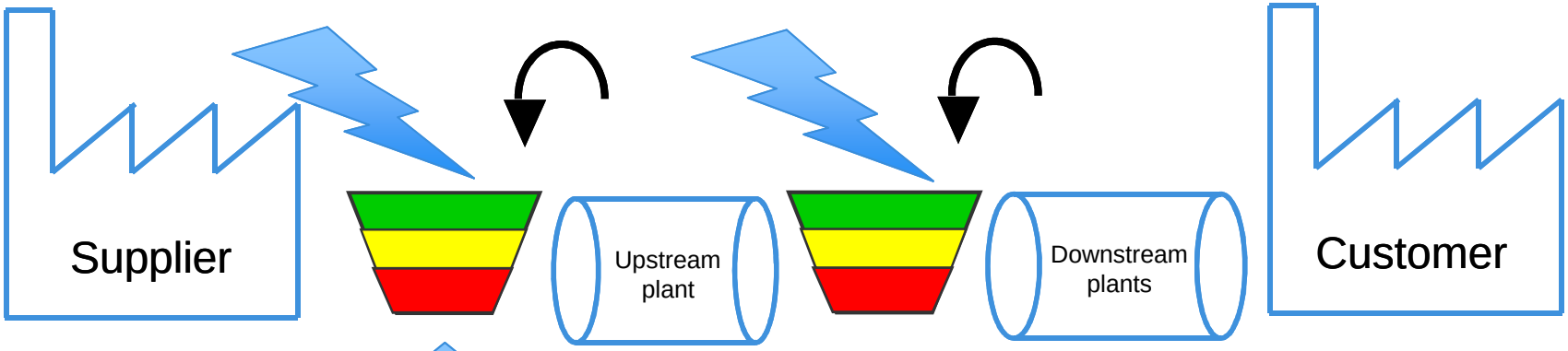
1. Change the organization from Business Unit to Value Stream entities
2. Protect the capacity constraint process steps by implementing a supermarket based on pull principles
3. Implement strategic decoupling points based on pull principles to meet desired customer lead times
4. Improve data quality of forecast accuracy and machine capacities based on statistical tools

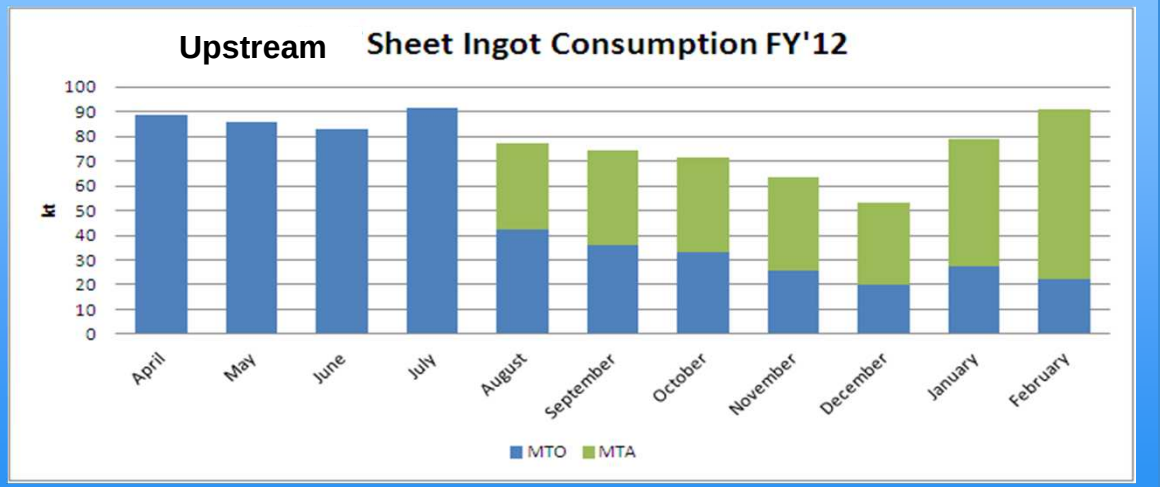
1. Changing Organization from BU´s to process focused Value Streams



- Value Stream Leaders as owners of the entire end-to-end process
- Value Stream Management from Supplier to final customer: Planning, Manufacturing, Sales, R&D
- Plant Managers are responsible for cost control, not P&L

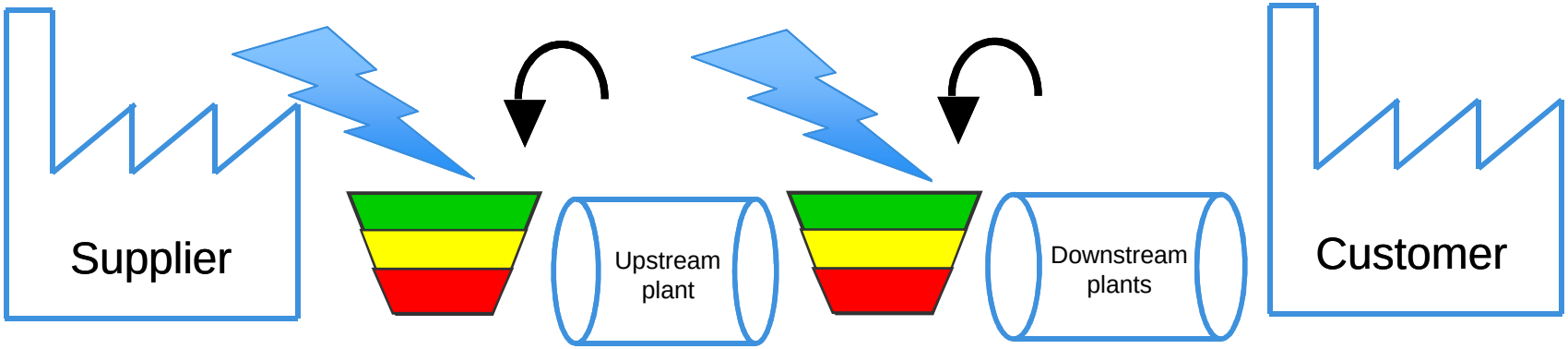
2. & 3. Implementing MTA replenishment where applicable

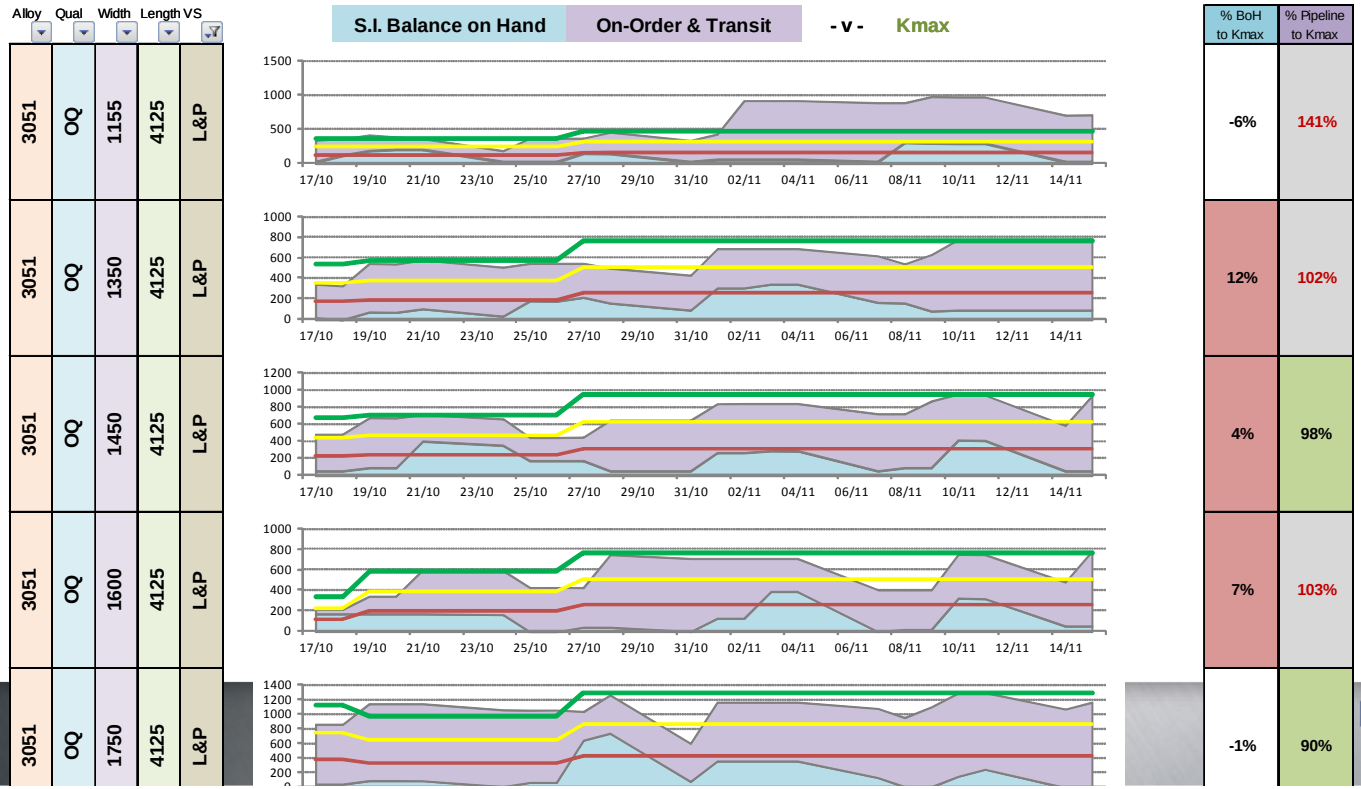




15% of Specifications cover 75% of Production Volume

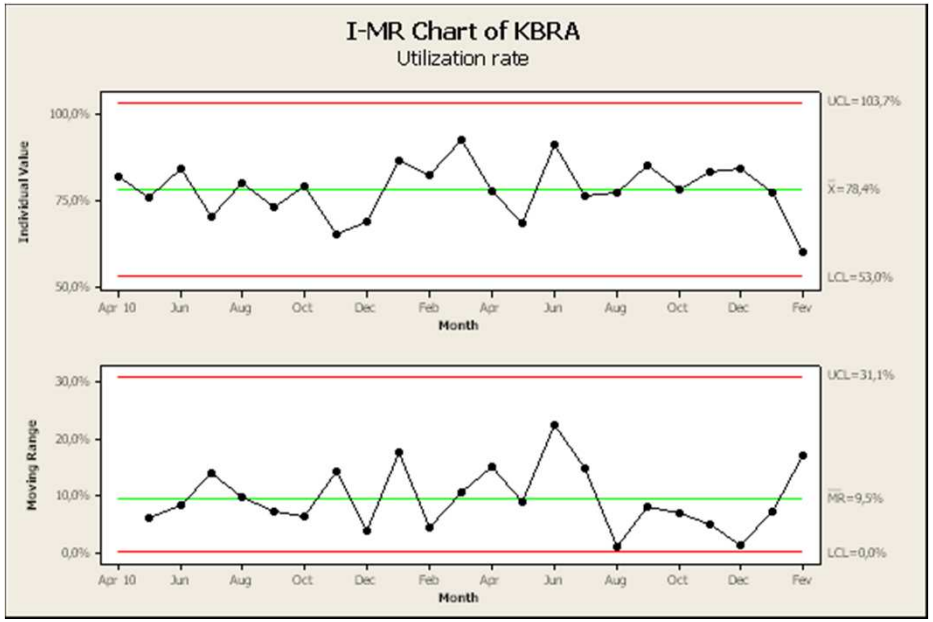
2. & 3. Implementing MTA replenishment where applicable



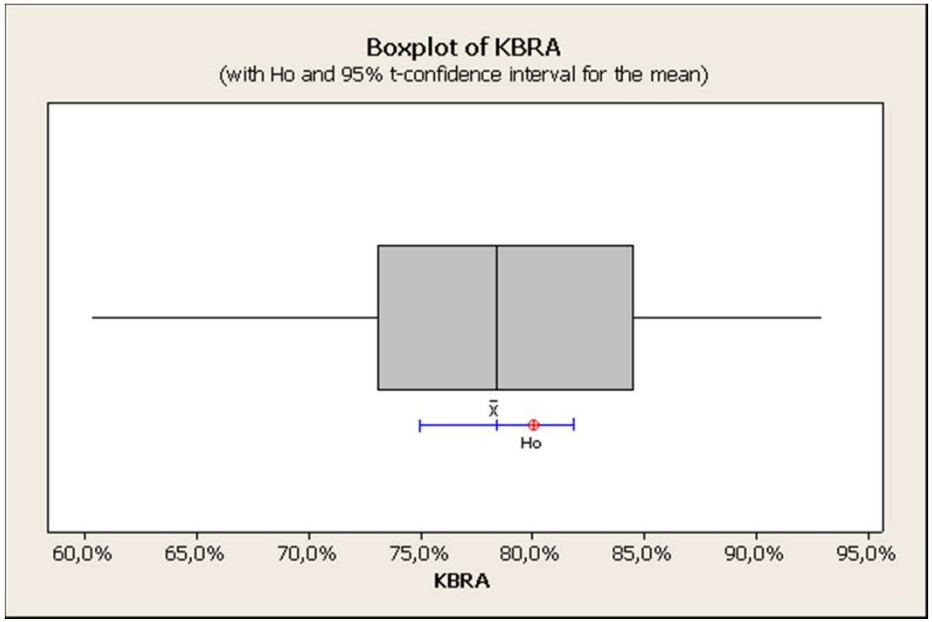


4. Improving data quality used in the planning process

Control Charts



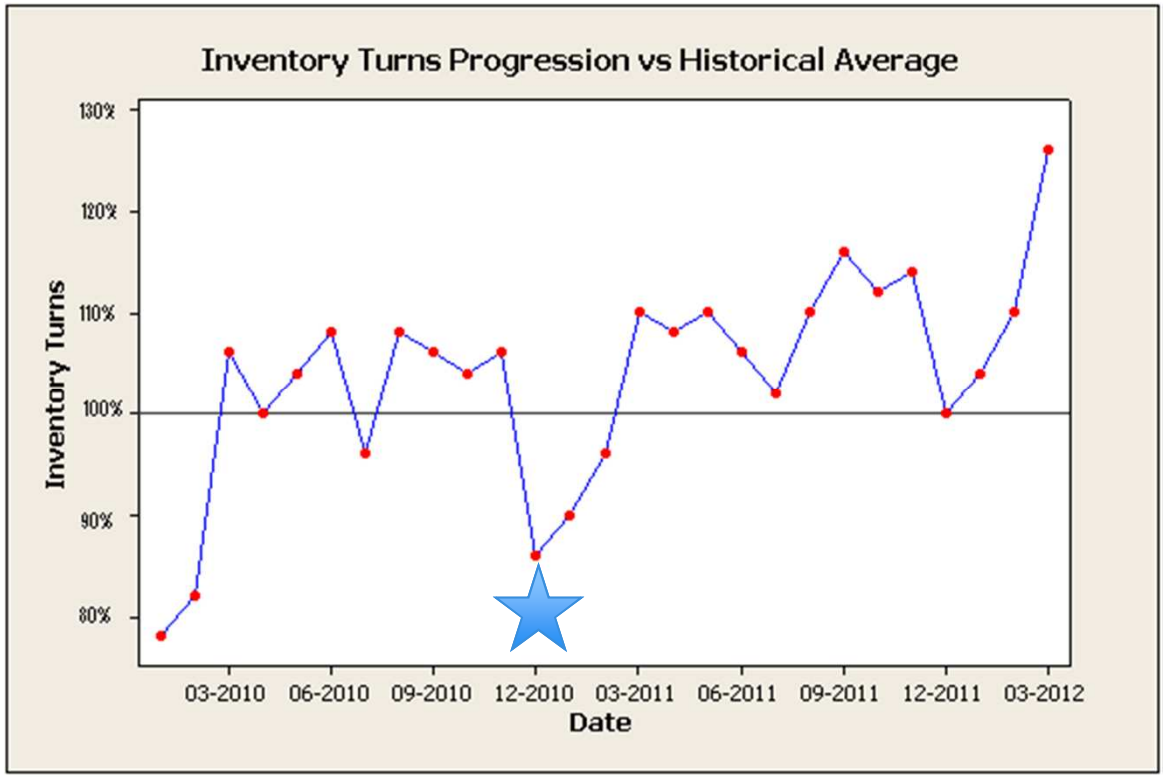
Hypothesis Tests



Are capacity assumptions still correct?
What is the magnitude of common cause variation?
Is the process in control?

Results and next Steps

Novelis Europe Inventory Turns Development



Historical Average

Since start of Supply Chain Excellence program January 2011 we have achieved promising results towards the desired turn level.

Lessons Learned: Do not forget the front end!

1. Understanding real supplier and customer needs
2. Manage processes, not functions
3. Use appropriate measurements
4. Identify and manage the constraint
5. Reduce complexity
6. Postpone the final configuration
7. Acknowledge, understand and reduce variation
8. Forecast is for planning, pull for execution

Thank you!