

The Borealis Way

Krems

4.5.2009

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Agenda

- Borealis –Who we are
- The Borealis Way –What it is
- Innovation Assistant Training –Personal impressions

Borealis at a glance

- **Leading provider of innovative, value creating plastics solutions**
- **More than 40 years of experience**
- **Unique Borstar® technology to develop polyolefin solutions that are tailored to customers' needs**
- **Developing our Base Chemicals business**
- **5,400 employees in around 20 countries**
- **Ownership 64% IPIC / 36% OMV**
- **Joint venture in Middle East and Asia: Borouge (Abu Dhabi)**



Borealis and Borouge locations

● Borealis Locations

Customer Service Centres

Abu Dhabi, Austria, Belgium, Finland, Germany, Italy, Russia, Singapore, Turkey, United States

Production Plants

Austria, Belgium, Brazil, Finland, Germany, Italy, Sweden, United States

Innovation Centres

Austria, Finland, Sweden

Head Office

Austria

● Borouge Locations

Customer Service Centres

Abu Dhabi (UAE), China, India, Singapore

Sales Offices

Abu Dhabi (UAE), Australia, China, Lebanon, New Zealand, Saudi Arabia

Production Plants

Ruwais (UAE)

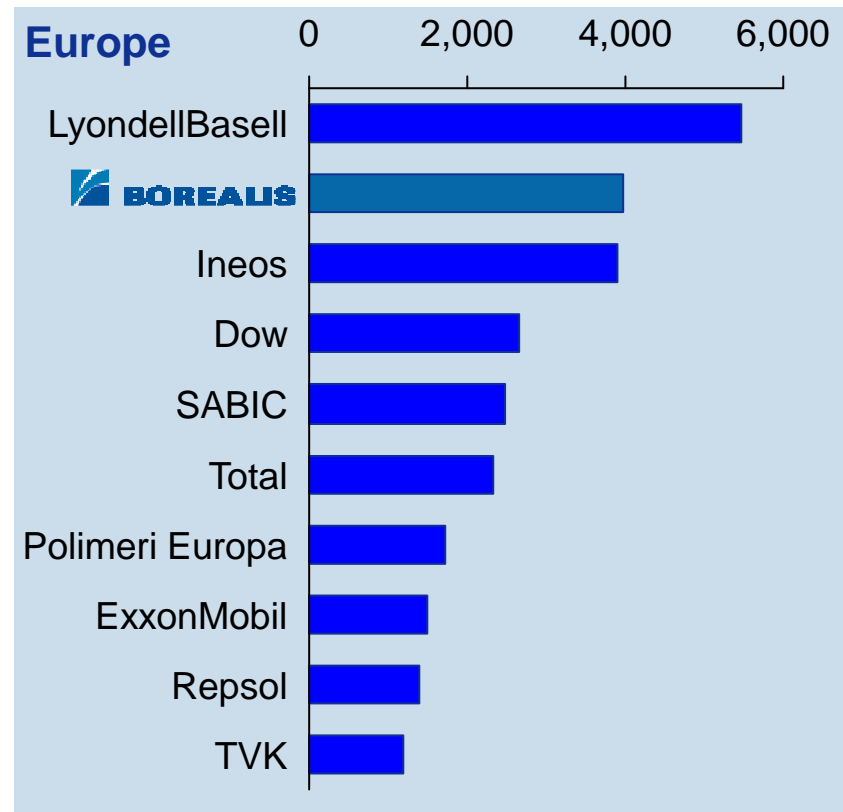
Head Offices

Abu Dhabi (UAE), Singapore



Global polyolefin producers 2008: Borealis no. 8 and no. 2 in Europe

Nameplate capacity 2008, ktpa



* Incl. Borouge
Source: Borealis/CMAI

Providing solutions in Polyolefins



Infrastructure



Automotive



Advanced Packaging

Automotive: Light Weight Rear Seat Carrier (BMW 7-series)

The challenge

- Increasing pressure on better fuel efficiency by weight saving
- Fulfilling demanding safety requirements for Seats

The solution

- High Performance short glass fibre PP
- Material suitable for film blowing, extrusion and injection moulding

The benefits

- High dimensional stability
- Weight saving of approx. 35%



Investments in Europe

- **Burghausen, Germany: Inauguration of Borstar® PP 2G plant**
- **Stenungsund, Sweden: low density PE plant on track for start-up in late 2009**
- **Schwechat, Austria: Four-reactor configuration of PP plant completed and Borstar® PP pilot plant on track for start-up in 2009**
- **Linz, Austria: Groundbreaking of international Innovation Headquarters**



Expansion in the Middle East and Asia

- **Good performance of Borouge, advancing reputation and business in the Middle East and Asia**
- **Borouge 2 on track for start-up in 2010, expand production capacity from 600,000 t/y of PE to 2 million t/y of both PE and PP**
- **Groundbreaking for 2 new logistic hubs in Shanghai and Guangzhou, China**
- **New compounding unit to be built in Shanghai**
- **Feasibility study for Borouge 3 to add an additional 2.5 million t/y of capacity**



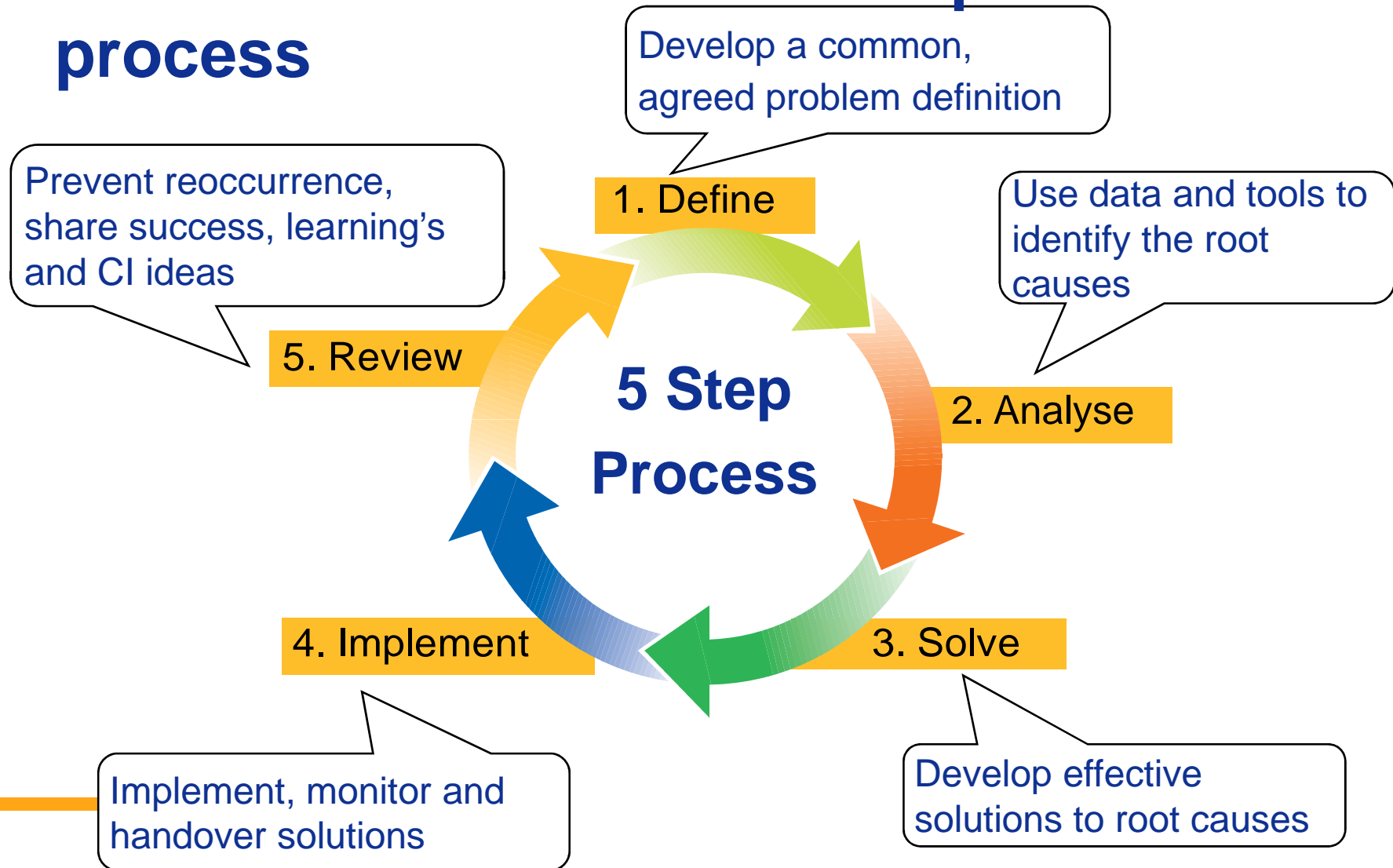
How Do We Currently Solve Problems?

Often We 'Solve' a Problem Only to Have It Happen Again - We Are Tackling the **Symptoms** of the Problem Rather Than the **Root Cause**

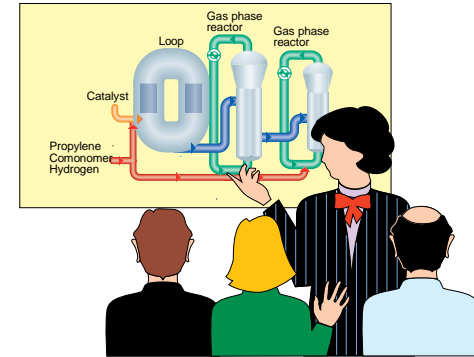


We are fire fighting!

A structured Team-based improvement process



Step 1 - Define



Objectives

- Agreed, common view of the problem definition
- An agreed, common view of the approach and time frame to solve the problem
- A clear idea of the project objectives

Outcomes

- A project charter, agreed between the team and the sponsor
- A process map and some information about the problem, where appropriate

Step 2 - Analyse

Objectives

- Identify the root cause(s) of the problem

Outcomes

- An interim report detailing the root causes found
- Supporting data and analysis



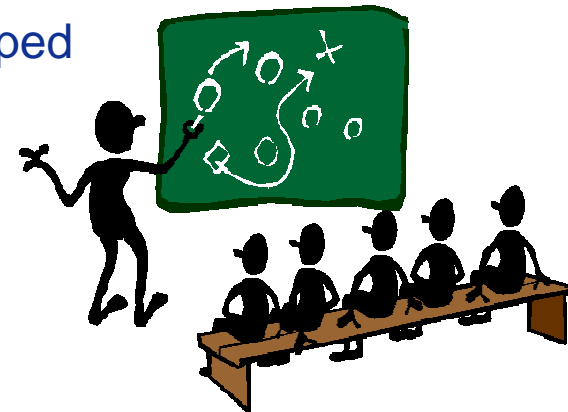
Step 3 - Solve

Objectives

- Identify possible solutions
- Select the best solution to eliminate the root causes found
- Business case for implementing the solutions

Outcomes

- An implementation plan
- A business case to sell the solutions developed
- Supporting information



Step 4 - Implement

Objectives

- Implement the solutions
- Monitor the results
- Measure actual against predicted benefits

Outcomes

- Successfully implemented solutions
- Proof of results



Step 5 - Review

Objectives

- Close off project and agree benefits
- Identify any further work
- Share learning

Outcomes

- Close out report
- Communication of project outcomes to appropriate forums



The heart of The Borealis Way

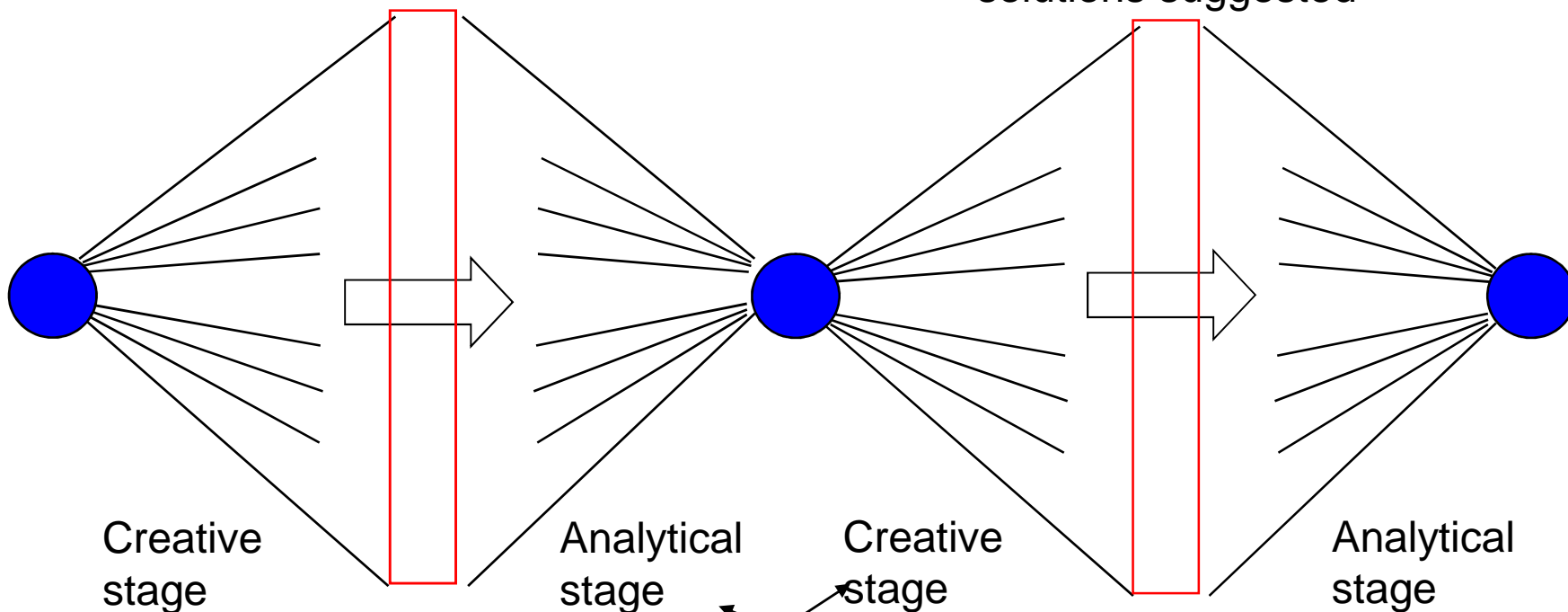
Step 1: Define the problem

Step 2: Analyse to prove root causes

Step 3: Solve to find best solution

Many possible causes identified

Many alternative solutions suggested



Creative stage

Analytical stage

Creative stage

Analytical stage

Innovations & creativity tools can be used here!

Data analysis tools can be used here!

Personal impressions

- Wide spread, interesting range of topics
- Very positive for personal development
- Contact to other companies
- Very open discussions in our small group of 10 people
- Valuable contacts, meetings after course was finished




BOREALIS

SHAPING *the* FUTURE *with* PLASTICS

Thank you for your attention!





End of presentation
Nicolas Hirvonen
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