



LyondellBasell Technology Business: Creating Value Through Innovation

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LyondellBasell at a Glance

- One of the world's largest plastics, chemical and refining companies
- Annual revenues of \$ 32.7 billion in 2015
- 13,000 employees worldwide
- A global leader in polyolefins technology, production and marketing
- Global reach addresses worldwide customer needs
- Sales in more than 100 countries
- 55 manufacturing sites and 6 technology centers in 18 countries

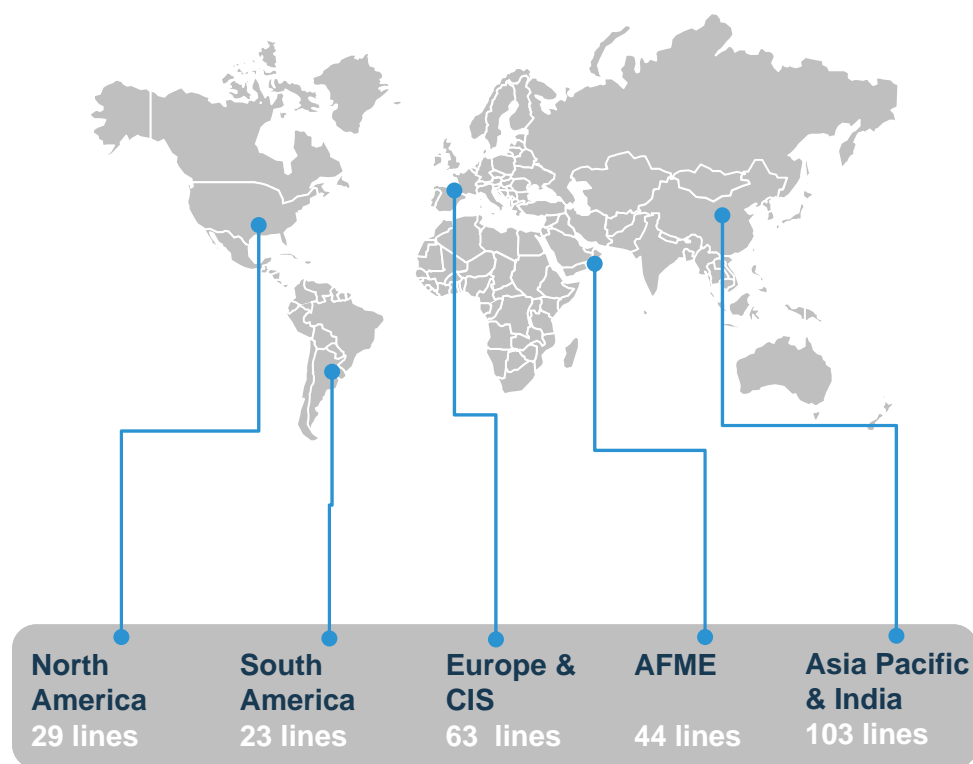


Growth Driven by Innovation

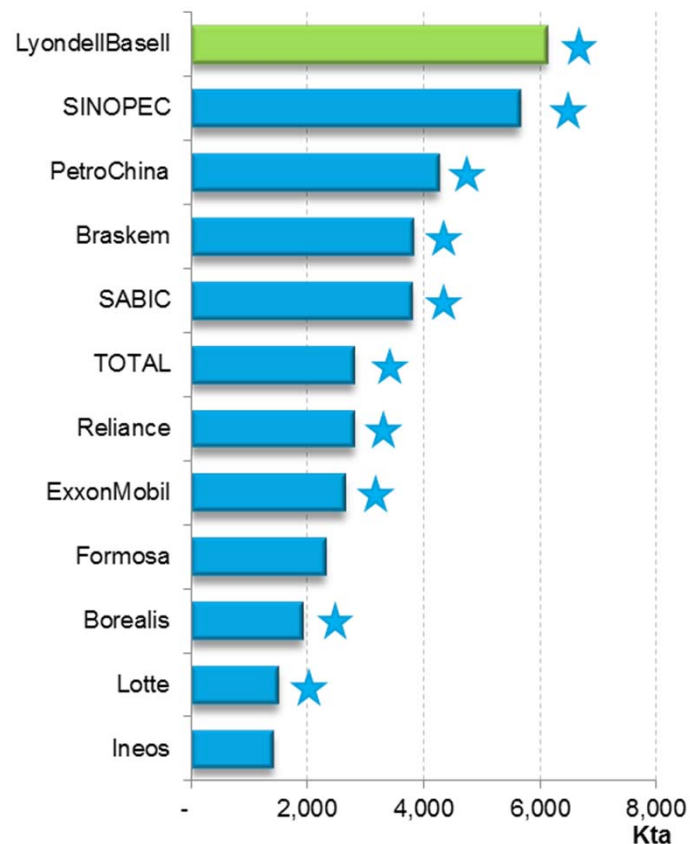
The LyondellBasell Technology Footprint

Over 250 polyolefin lines licensed with a total capacity in excess of 50 MM t/a

9 of the top 10 PP producers operate LyondellBasell licensed processes



Incl. LYB captive



Source: 2014 Industry consultant data / LYB analysis

1. Capacity ranking includes LyondellBasell wholly owned capacity and 100% of JV capacity as of December 31, 2014.

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Megatrends that Shape Consumer Behaviour

Society

Population increase, access to water, food availability & preservation, health, urbanisation



Economy

Infrastructure, communication, transportation, globalisation, competitive intensity



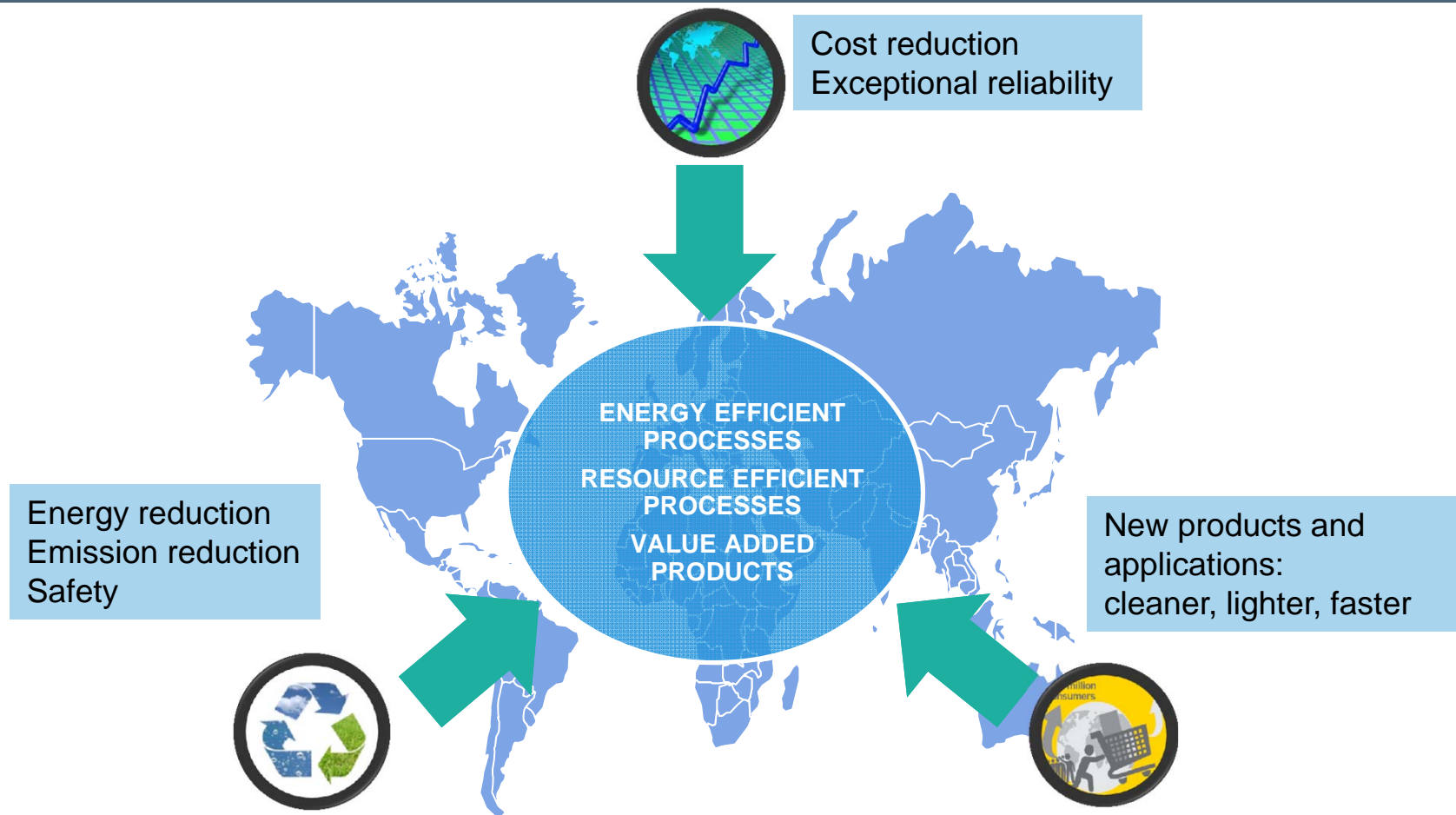
Sustainability

Climate change, resource efficiency, process and product safety



Society is challenged with population increases and climate and economic changes, creating unprecedented pressure on resource management

Market Demand Shapes our Industry



Innovation is key to success in this constantly changing environment

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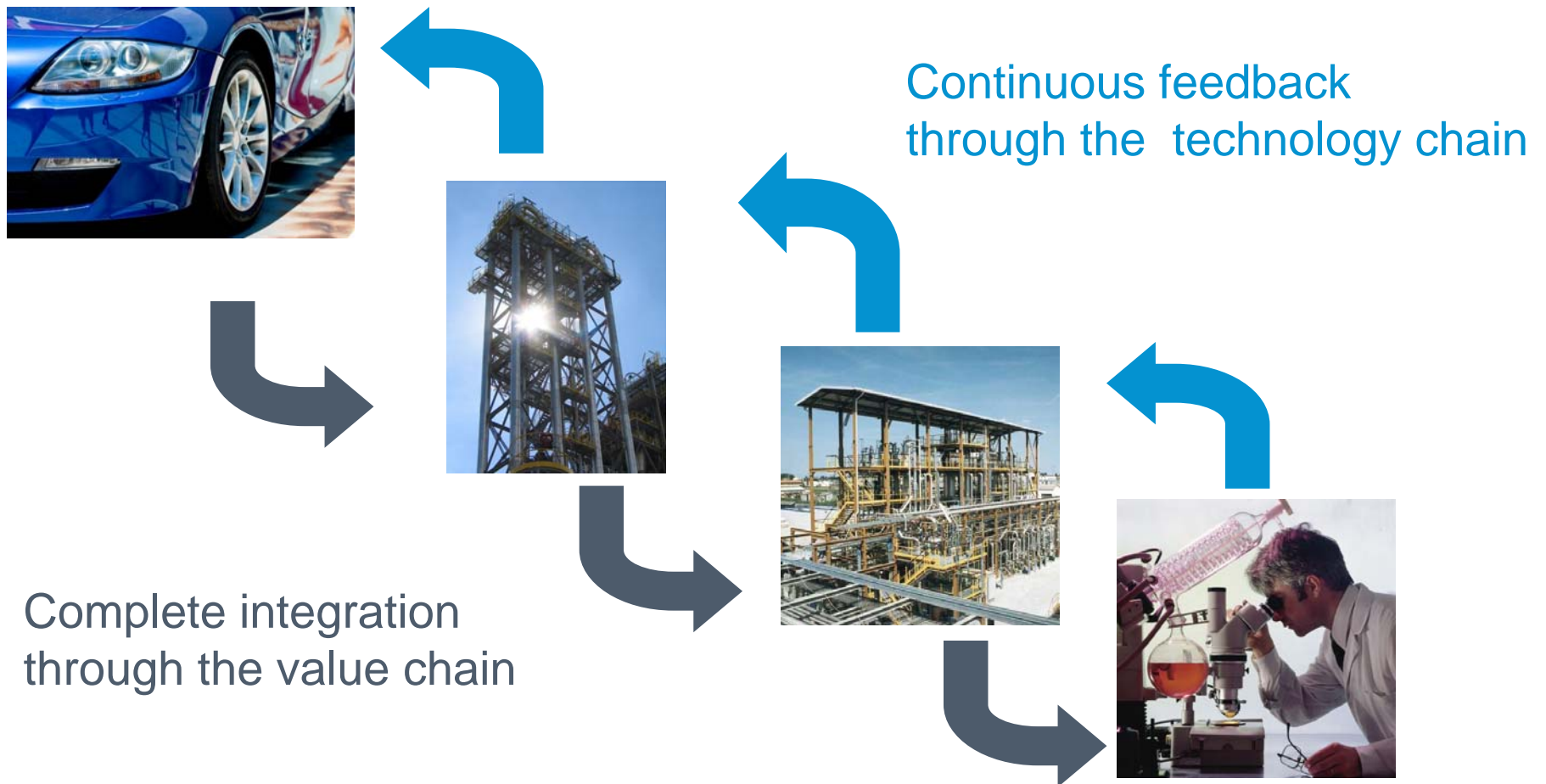
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The Innovation Cycle



With polyolefins expertise at every stage, LYB is uniquely positioned to develop the right solutions to meet our customers needs

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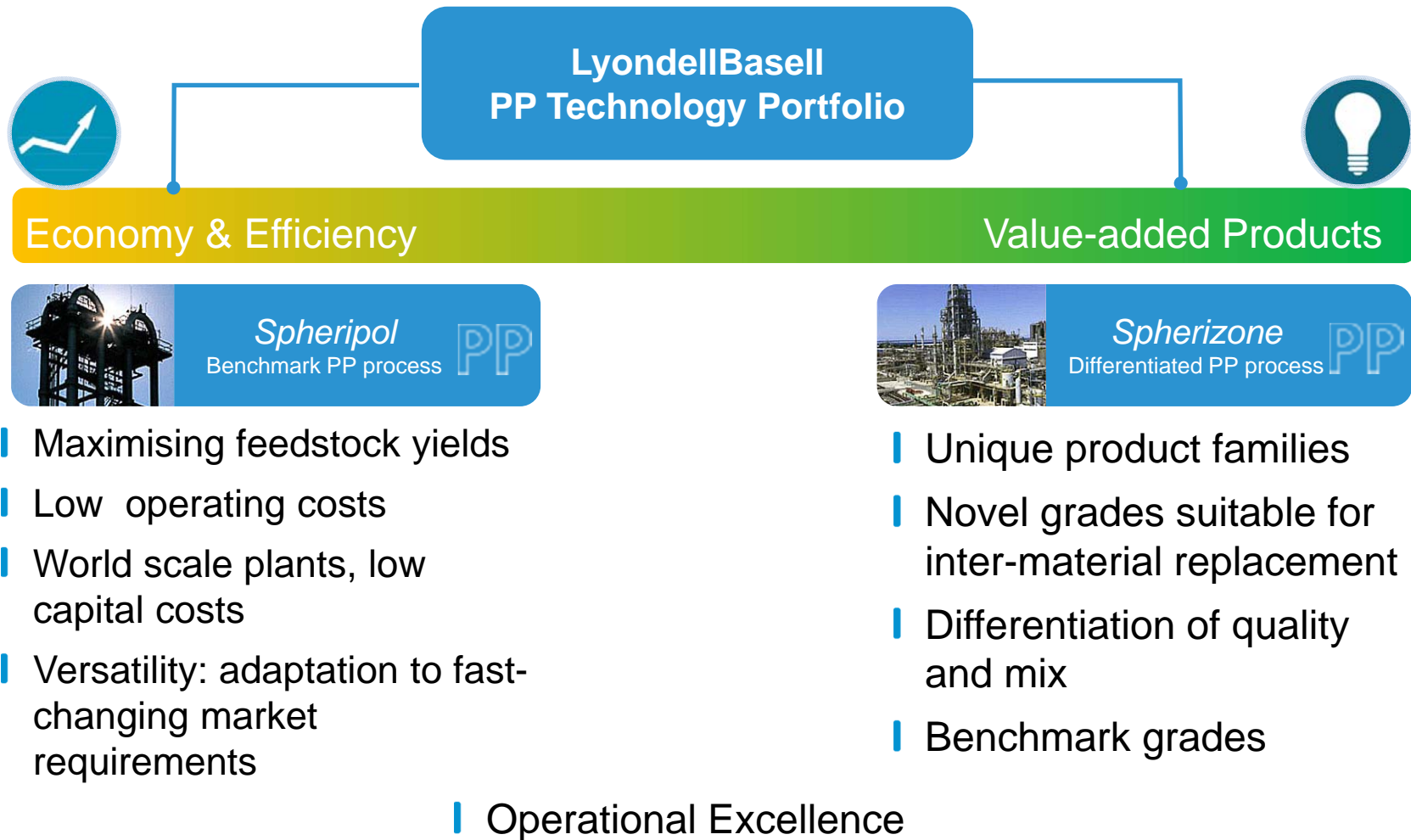
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Achieving Differential Performance

Drivers of success



Unique technology offering matching customer needs

Spheripol

Benchmark PP technology



Spheripol
Benchmark PP process **PP**

Advantaged Economics

Best
class
monomer
efficiency

12%
Lower
electricity
consumption

Benchmark Products



1st
installed
capacity

World Scale

600 kta
Largest single
line capacity



Operational Excellence

14 MM
hours without
incident

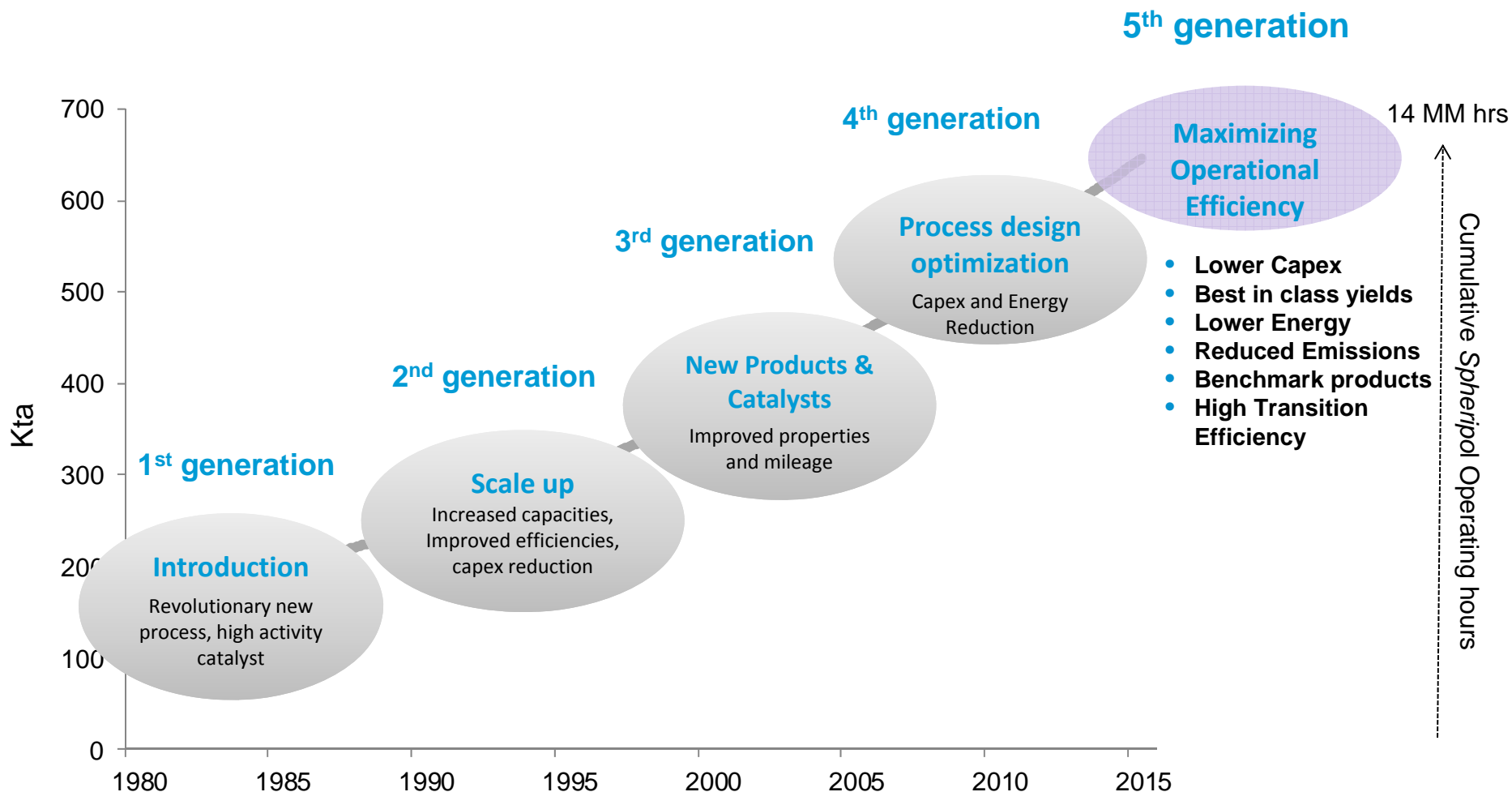
>100
Production
lines in
operation

Source: 2014 Industry consultant data / LYB analysis. Calculation vs. average

Spheripol Technology Evolution

Maintaining leadership through continuous improvement

Leadership Through Five Generations – Optimized for the Future



Spherizone

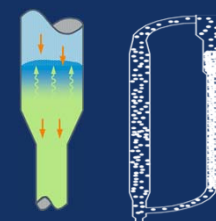
PP breakthrough technology



Spherizone
Differentiated PP process

PP

Unique Platform



2 in 1
Multizone
Circulating
reactor

Added Value Portfolio

**3 Unique
families**
Homo-Raco, dual-
Raco, Soft HeCo



Performance Products



45%
Weight Reduction
for novel Pipe
grades

Operational Excellence

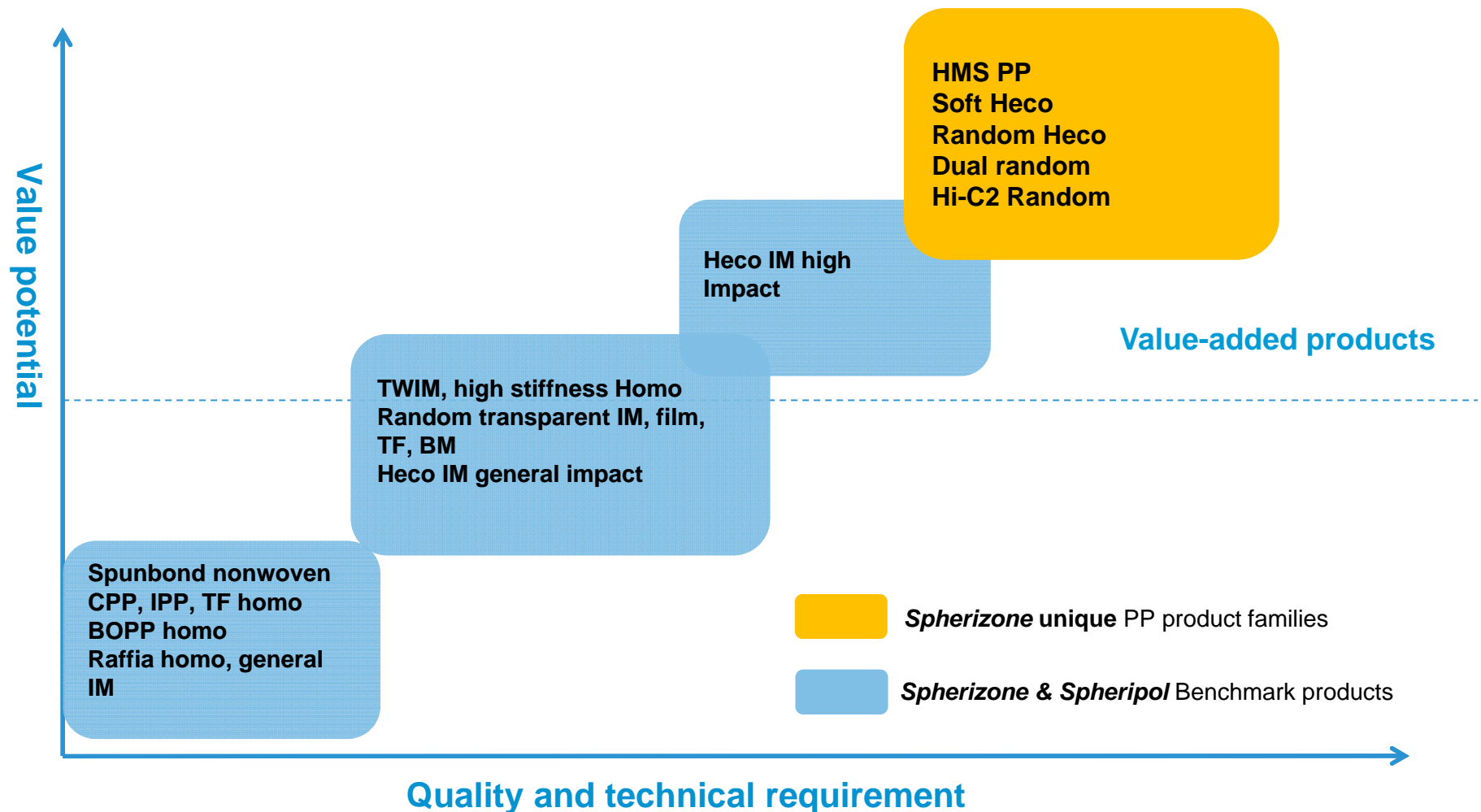
97%
Average Prime

>200
average
transitions a year

Source: 2014 Industry consultant data / LYB analysis

Polypropylene – Products and Application

Spherizone process delivering unique PP product families

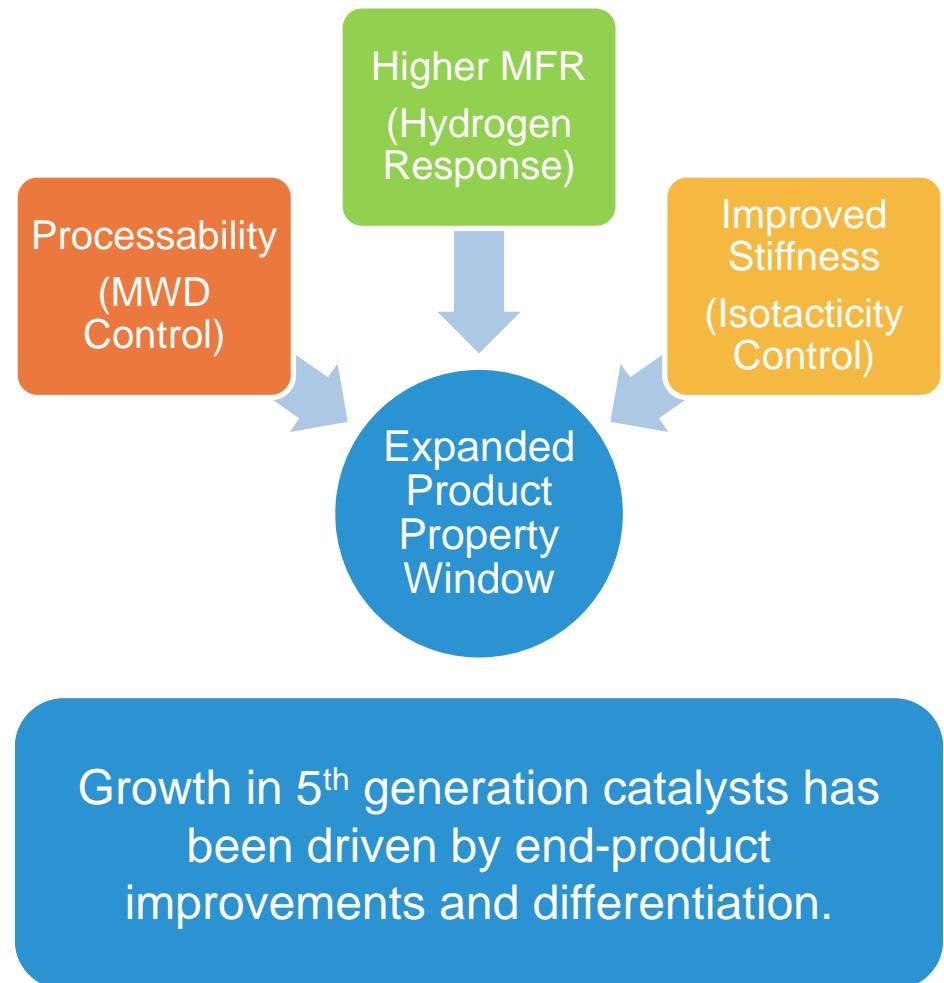


Spherizone process delivers value-added PP products

LyondellBasell 5th Generation Catalysts:

Growing strongly by enabling product differentiation

- I Phthalate (4th generation) catalysts continue to be main type used for global PP production.
- I LyondellBasell 5th generation catalysts are well proven and have significantly higher annual growth rates versus phthalate and earlier generations.
- I 5th generation catalysts have been selected in all regions and across various technologies.
 - I Diether
 - I Succinate
 - I Mixed diether-succinate

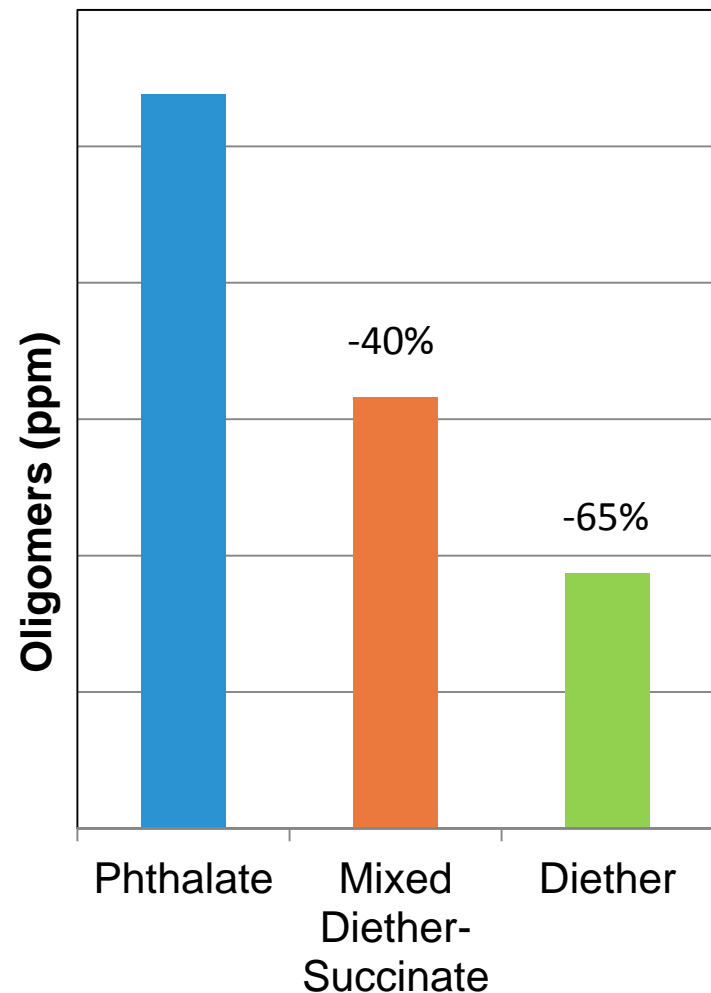


Source: LyondellBasell

LyondellBasell 5th Generation Catalysts:

Enabling cleaner, higher value products

- I Oligomers and volatile organic compounds (VOC) reduced by 40-65% with use of 5th generation catalyst
 - Example of as-polymerized impact copolymer 50 MFR, 18% rubber
- I Higher MFR targets without need for peroxides deliver improved organoleptics
 - Improved hydrogen response of 5th generation catalysts as enabler
 - Higher stiffness maintained
- I High catalyst yields for reduced ash content and efficient production
 - Enabling additive optimization



Source: LyondellBasell

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- Global megatrends place ever changing and more stringent demands on polyolefin technologies and products
- Technology selection is key to meet these demands over the lifetime of an investment
- LYB innovation focus has developed a complete portfolio of highly energy and resource efficient technologies, capable of pushing the boundaries in product performance
- Technology portfolio is supported by LYB industry expertise and operational excellence strategy
- LYB is uniquely positioned to support licensees in achieving differential performance, essential for long term success

LYB drives growth through innovation and differential performance

lyondellbasell

Thank you for your attention



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