

Blue Ocean Strategy

Presentation for Yara International

March 10th 2017

**A strategic planning and analysis approach
for shipping and cargo owning companies**

**Increase the impact of excellence in
supply chain management**

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Blue Ocean Strategy

Provides a platform for top management to explore alternative strategic scenarios



CFO and Chartering Manager discusses outlook

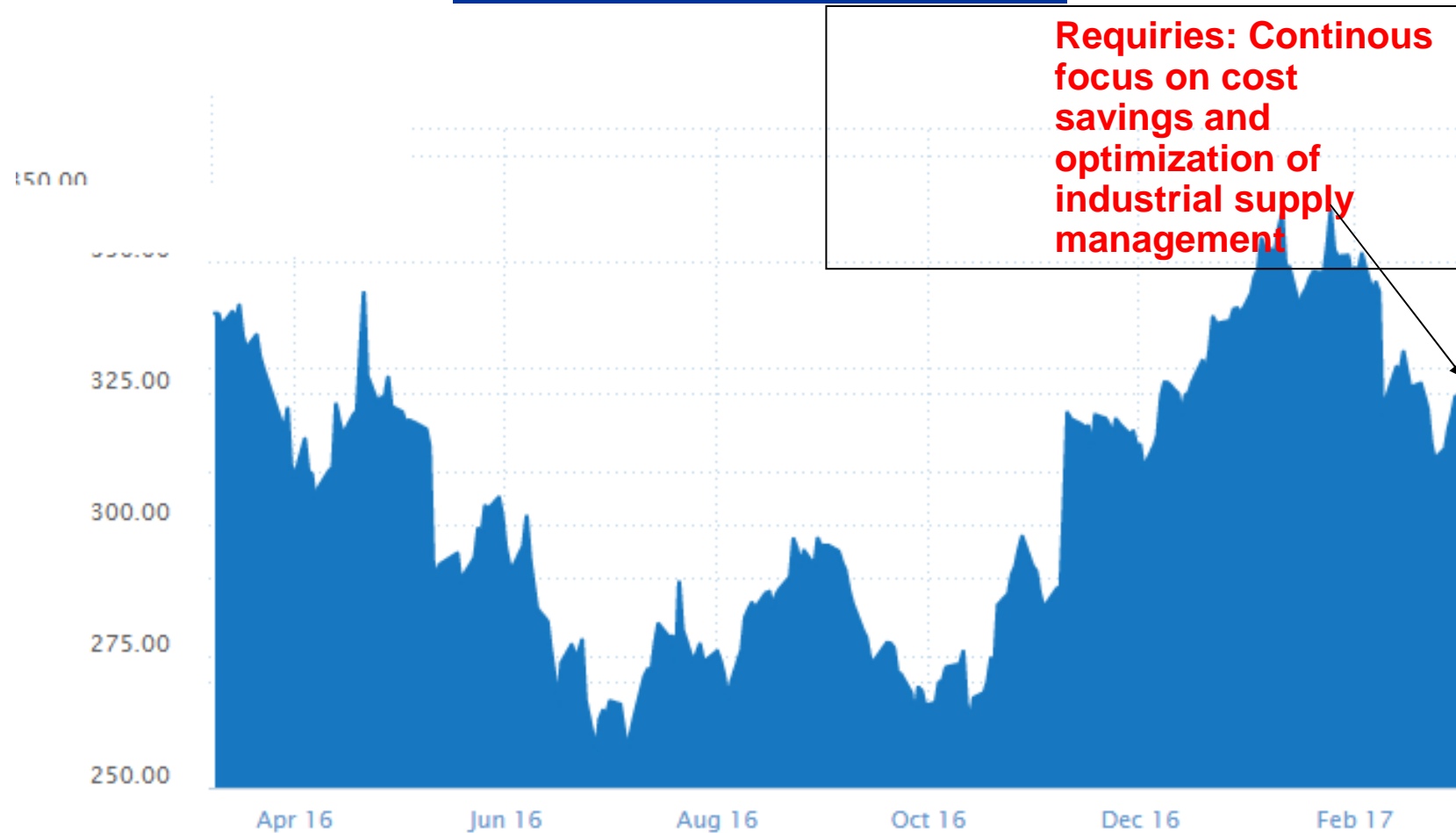


All data are provided into Blue Ocean Strategy

- 1 Planning and budgeting horizon
 - Rolling budget next 12 months
 - 2017, 2018 etc

- 2 Fleet TC results and EBITDA numbers are generated
 - Blue Ocean Strategy calculates very quickly alternative input scenarios and enable comparison and risk measurements

Yara International – Stock price at OSL March 2016 – March 2017



Yara International: Objectives and Volumes

	NH3	Nitrate s	NPK
Yara # in world	2	1	1
Yara Production Mill tons 2015	8.4	7.4	5.3

"Our focus going forward is to continue the journey to supply chain excellence, by ensuring smooth transfer of best practices and good ideas – from one region to the next"

Objectives for 2017: Supply Chain optimizes Yara's integrated business model, planning material flows between segments and locations and arranging maritime transport, constantly reviewing what products should be produced and to where they should be distributed.

What is the impact of industry consolidation

Company	Revenue 2015 (bill USD)
YARA	13.4
Agrium	14.1
Mosaic	8.9
PCS	6.3
K+S	4.6
ICL	5,4
CF	4.7

Use Blue Ocean strategy to analyse the impact of consolidating portfolios	Portfolio
YARA	Cargoes + Ships in fleet (own or tc)
ADDING	Combined portfolio
Fertilizer company X	Cargoes + ships in fleet (own or tc)
CONSOLIDATED RESULTS. Total profit or cost	

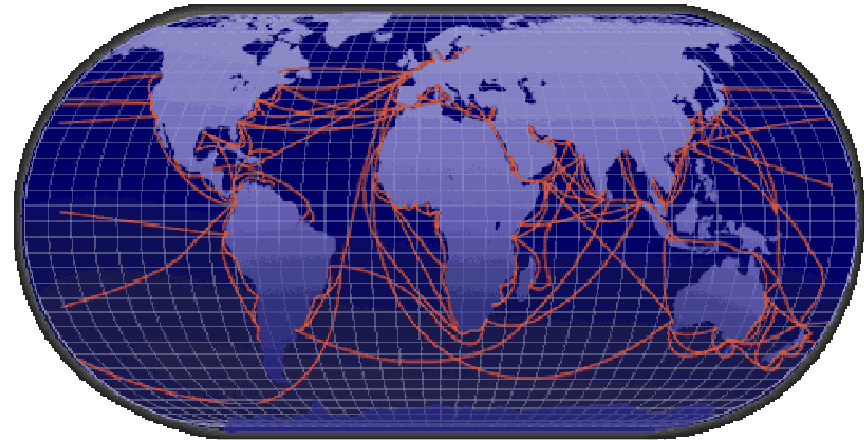
What is the impact of pooling with other major industrial cargo owner

Company	Revenue 2015 (bill USD)	Use Blue Ocean strategy to analyse the impact of consolidating portfolios	Portfolio
YARA	13.4	YARA	Cargoes + Ships in fleet (own or tc)
Major industrial cargo owner 1		ADDING	Combined portfolio
Major industrial cargo owner 2			
Major industrial cargo owner 3			
...		Major Industrial Cargo owner X	Cargoes + ships in fleet (own or tc)
..			
..		CONSOLIDATED RESULTS. Total profit or cost	

What is Route99 ?

It is a powerful engine

- **Route99** is the core "engine" that allows optimization and analysis within a Blue Ocean Strategy analysis
- **Route99** contains powerful algorithms that allow very advanced studies of fleet scheduling, cargo supply analysis and synergy analysis
- **Route99** can in many ways enhance manual scheduling and offer the chartering team a powerful Analytics tool.



Profit, Cost, Production or inventory management What are we aiming to optimize ?

Profit Centre

Cost Centre

Trading Centre

Production Centre

- If the operation is a profit centre, Route99 will use freight rates as income and all voyage costs as expenses
- If the operation is a cost centre, Route99 will disregard any freight rates and minimize the total voyage costs (fuel, port expenses, canal expenses etc)
- If the operation involves trading, Route99 can deal with the trading opportunities and find a schedule that maximizes the total profit where income element are salesprice less purchase price less all voyage related costs
- If we want to include production and inventory levels as part of the overall scheduling

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Basic Supply Chain Management Analysis



Own Ships

Pool ships

Ships on tc
into our fleet

Contractual
cargoes

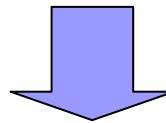
Spot
cargoes

Ships fixed out
on tc

Blue Ocean Strategy

Alternative scenarios:

- Low spot market rates
- Increased fuel costs
- New COA
- More vessels fixed out on tc
- Etc..



Reports and graphs:

- Monthly cashflow projections
- Sensitivity
- Contract coverage
- Etc..

BLUE OCEAN STRATEGY

Key Data Sources

OWN/POOL VESSELS

NAME
DWT
SPEED/CONSUMPTION
CUBIC CAP
OPEN IN PORT
DATE OPEN
ETC.

EXISTING CONTRACTS

LOAD/DISCH
MIN/MAX QUANTITIES
RATE
DRAFT
LAYDAYS
SUBLET RATE

MARKET OPPORTUNITIES

E.G.
USNH/MED
USG/CONT
AUST/UK

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Calculations

FLEET TC RESULT
and EBITDA numbers

FIX VESSELS IN ON TC

TC RATE
SPOT/PERIOD
OPTIONS
DELIVERY/RDELY

CONTRACTS TO BE NEGOTIATED

NR OF LIFTINGS
RATE IDEA
TERMS
LAYDAYS
ETC.

FIX VESSELS OUT ON TC

TC RATE
SPOT/PERIOD
OPTIONS
DELIVERY/RDELY

Blue Ocean Strategy

Can identify improvements in the alternative scenario



Task: Is it possible to improve the budget in order to see if one can maximize the Fleet Total Best Result (*)

TC result for own (pool) vessels
+ TC profit from vessels on TC
+ Relet profit
- Operating Costs
-- interests and installments
=TOTAL BEST RESULT

Blue Ocean Strategy enables scenario analysis of what the future can bring

	Optimistic scenario	Realistic scenario	Pessimistic scenario
Market assumptions	Industry full speed ahead	Moderate expectations about industry productions	Recession scenario Industry volumes at bottom
Revenues (Mill USD)	500	400	300
Fleet TC Result (Mill USD)	100	80	60
Ship days	10,900	8,900	7,600
Avg TC pr day (USD/day)	9,100	8,900	7,800
EBITDA (Mill USD)	50	37	22
Running Expenses			
Admin costs			
Loan expenses			
NET PROFIT			

Illustrative: Alternative budgets for 12 months 2018

Blue Ocean Strategy will identify potential for increased bottom line results through analysis of trading structure and hedging policies

Illustrative: Optimal scenario gives: 7% improvement

	Manual Scenario from simulation	Optimal Scenario Generated by Blue Ocean Strategy
Ship days	9,130	8,900
Pro-rated TC result	178.1 mill USD	190.6 mill USD
TC Pr day	19,500	21,400

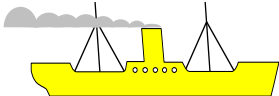
(*) A fleet of 50 handy size bulkers scheduled for a 6 months period scenario against a mix of contract cargoes/spot jobs and TC contracts.

Blue Ocean Strategy / Greener Scheduling: Calculating emissions based on budgets and scenarios

- Blue Ocean Strategy has a module that will calculate environmental consequences of their budgeting. This module is called **GreenerScheduling** and works seamless within Blue Ocean Strategy.
- **GreenerScheduling** will enable operators to estimate the green house gas emissions generated in their various budgets and scenarios.
- By using **GreenerScheduling** the operators can project what impact new governmental or national tariffs on emissions will have on their operation
- Scheduling of ships have traditionally taken into account trivial factors such as port costs, canal charges, fuel expenses and handling costs. Now they will also have to deal with cost of emissions. These costs will take various forms that will make scheduling a lot more complicated. This is where **GreenerScheduling** will assist.

Illustrative: Atlantic Highway 180 days

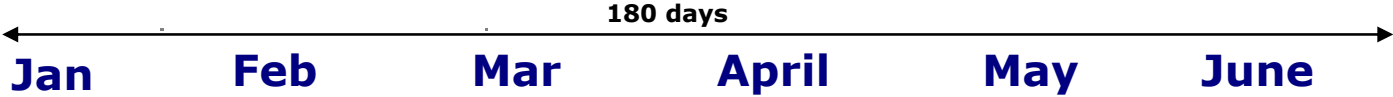
GreenerScheduling calculates the cost (*) of emissions from the budgetted employment



Atlantic Highway

55,000 dwt bulker
 14.5 kn on 40 mt pr day
 10,000 kw * 80 %

- CO2**
- SO2**
- NOX**
- CH4**
- CO**
- PM**
- NMVOC**



WCMED100	EUR/Jap	USWC/Japan
Total fuel consumption: 6,000 mt		
Total engine output: 30 mill kwh		

CO2	18,000 tons * 10 USD/ton = USD 180,000
SO2	200 tons * 80 USD/ton = USD 16,000
NOX	450 tons* 200 USD/ton = USD 90,000
CH4	7 tons
CO	50 tons
PM	30 tons
NMVOC	40 tons

(*) Cost of emissions is based on cost pr pollutant as stated by global or local authroities

Total voyage emission cost: USD 286,000

Yara Proposal - Summary

- **If YARA believes that Blue Ocean Strategy could be tested on their supply chain system including trading positions and production/inventory management**
 - We will set up a team to input data. YARA to provide their portfolio of ships, production and cargo flows
 - Assuming NDA or similar
 - If we can prove the merit in this tool, we will test out synergy alternatives with other fertilizer companies where there is a merit to identifying synergy improvements
 - A next step would be to identify potential pool partners operating in segments where there is no competition with YARA cargo flows.