Success in a Complex World

Tanker Operator Conference
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Outline

- What is complexity?
- Is it a complex (shipping)world?
 - Complex Market?
 - Complex Regulation?
 - Complex Company?
- Can you succeed in the face of complexity?
 - Choices
 - Resilience
 - Leadership
 - People

Simple

Understood by everyone

Changes are predictable

Complicated

Can be modelled and understood with some effort

Changes may generate surprises

Complex

System as a whole cannot be understood by individuals

Changes generate emergent rather than designed behaviour

Reduce Complexity

moams Complex Adaptive Systems





Behaviour

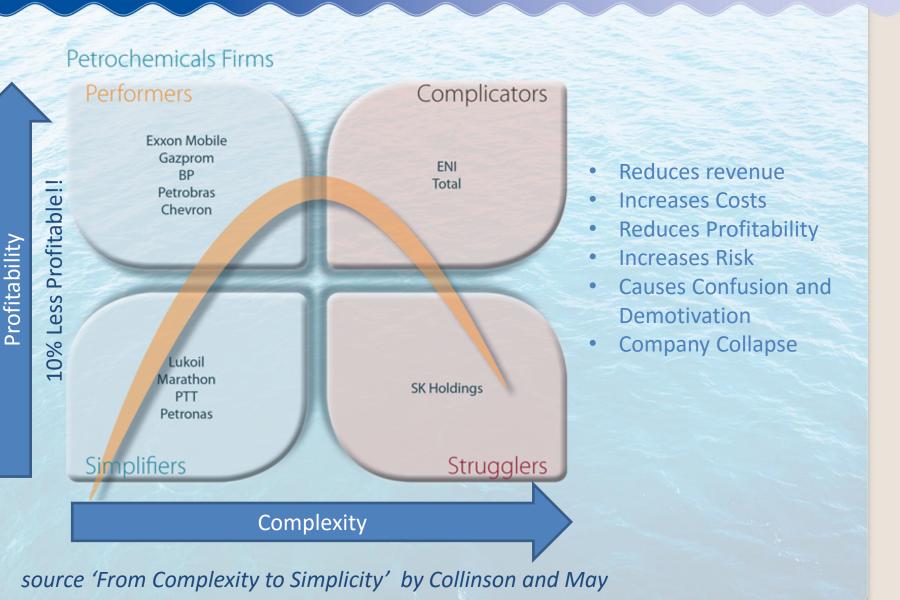
- Alive
- Emergent (Surprising)
- Organised then suddenly disorganised
- Explainable after the event

Features

- Competing for scarce resources
- Goals /Perverse incentive?
- Open system
- Large number of interactions
- > Agents:-
 - influenced by history and feedback
 - can adapt to improve performance



moams Why worry about complexity?





10 years of surprises?

World Economy/Politics

- China boom
- No more 'boom and bust'!!
- Credit crunch
- Recession and depression
- Low inflation and interest rates
- Arab spring....Syria
- Ukraine

Oil Markets

- US importer or exporter?
- Shale oil and tar sands
- Oil demand growth or not?
- Oil price rise and fall
- Global warming and climate change

Shipping

- Freight market and shipbuilding boom
- Shipping corporate failures
- Shipping Finance
 - o Private equity
 - o Rise and fall of MLP's?
 - Activist investors in shipping

What's next?? Who knows??

Complex Markets - Tanker Demand

Tonne demand

World economic growth? Oil price sensitivity Efficiency Climate change Security and politics



Miles demand

Changing consumers Changing producers



Tonne-miles demand for oil tankers

Trade routes-miles



Crude tanker substitutes Pipelines Mid East Refineries

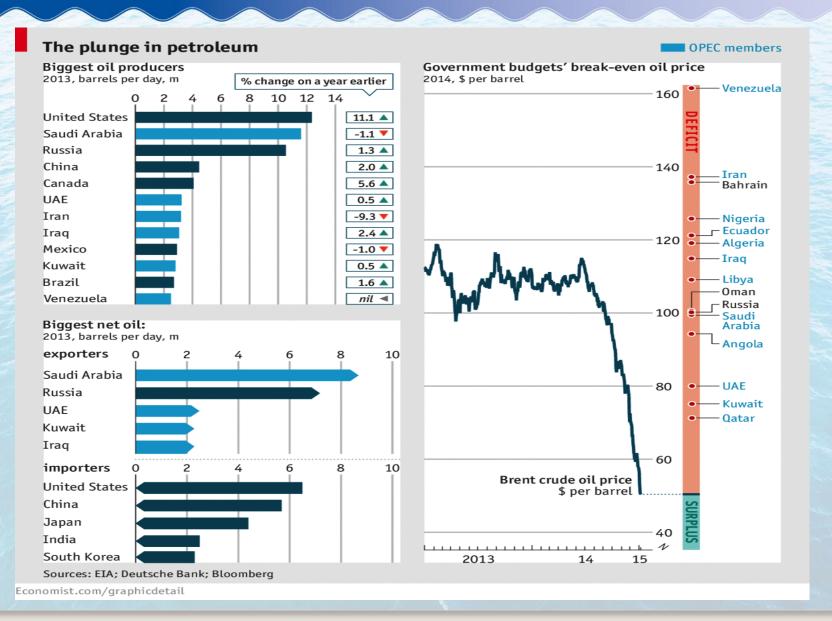


Oil substitutes

Renewables Nuclear



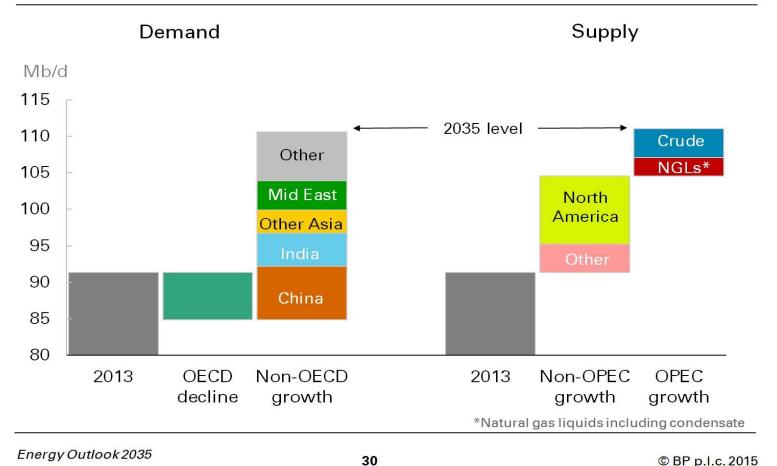
Breakeven Prices



moams Long Term World Oil Growth?





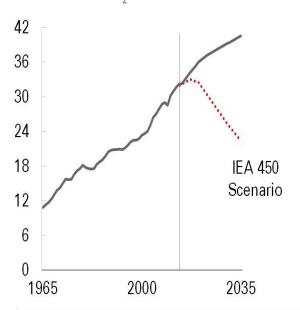


moams The Elephant in the Room

Carbon emissions

Global emissions

Billion tonnes CO₂



Energy Outlook 2035

- Current oil forecasts heading for 6 degrees
- IEA scenarios 450=2 degrees
 - Reducing CO2 emissions by 2017
 - 25% reduction in CO2...more in oil?
- Gas still creates carbon
- Paris Climate Change Meeting
- Waves of Interest/Pools of Anxiety

Source BP Energy Outlook 2035

Complex Markets - Tanker Supply

New Tonnage
Newbuilding
Finance
Technical Requirements
Shipbuilder push



Expands capacity

Competitors

Importer fleets
Exporter fleets
Oil company fleets
Trader fleets
Cabotage

Squeezes capacity

Tonnage of fleet

Tonne-miles supply available to independents

Miles



Utilisation factors

Speed
Availability and docking
Slow steaming
Port delays and turnaround
Canals

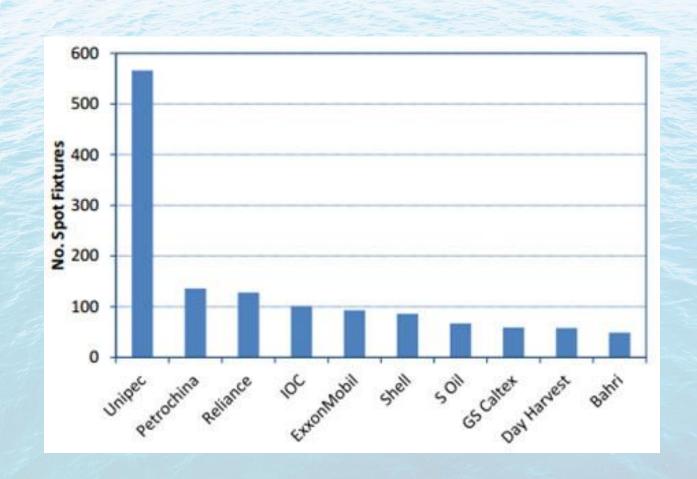


Squeezes capacity

Exits

Scrapping
Conversions
Obsolescence
Declassing
Layup and floating storage

moams Who's the customer for VLCC's?



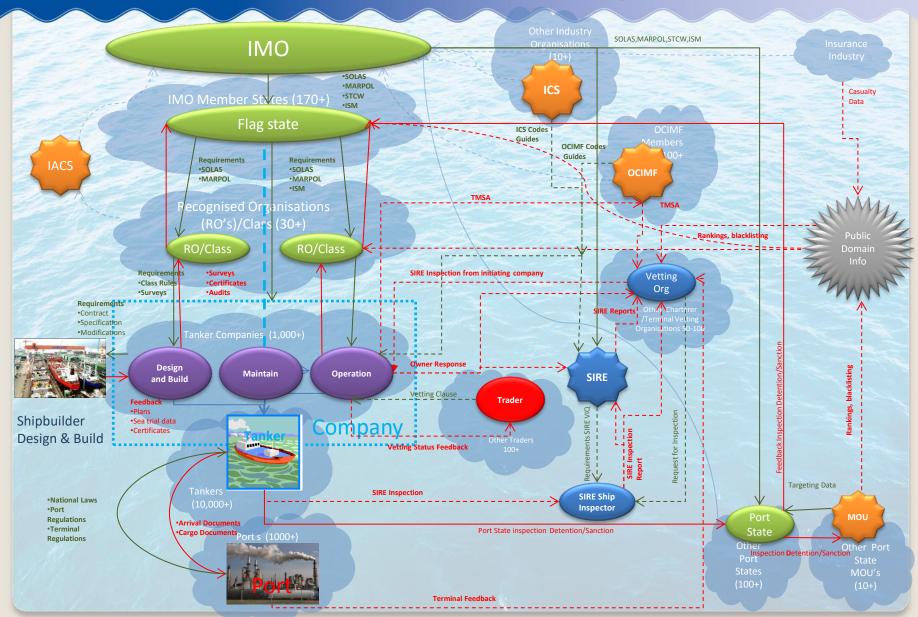
Source Potens

moams Top 30 Tanker Companies



Complex Regulation

Complex Regulation





moams Influences-simpler view?

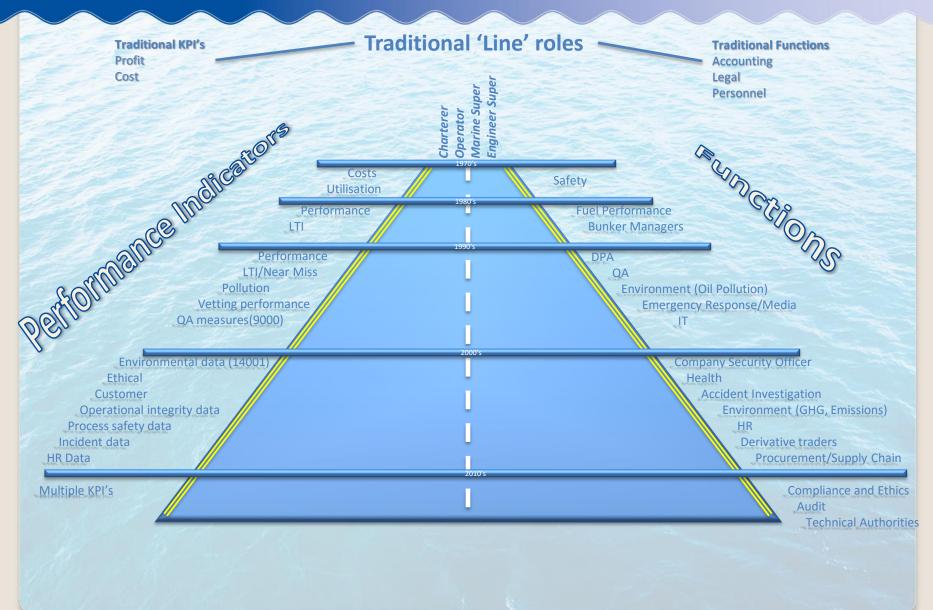


Its not you...Its me!!!

The Cost of Inept Responses to Complexity Since 1955 business complexity, as measured by the number of requirements companies have to satisfy, has risen steadily. To address each new requirement, companies typically set up a dedicated function and then create systems to coordinate it with other functions. That explains why organizational complicatedness (the number of procedures, vertical layers, interface structures, coordination bodies, and decision approvals) has seen an even sharper increase. This complicatedness hurts productivity and employee engagement. COMPLICATEDNESS INDEX 1955 1982 2010 COMPLEXITY INDEX SOURCE BCG ANALYSIS

- Increasing number of functions, teams etc
- Increasing silo mentality
- Number of performance targets increased from a handful to 40-50 in ten years
- Increasing number of signatures required for decisions

moams The road to complexity



moams What does it feel like aboard ship?

Conflicting Goals



Your priority is safety, emissions, greenhouse gas piracy, security, making money, doing things quicker, ballast water, doing the paperwork

Duplicate / Conflicting Requirements

You need to follow the owners, charterers, flag states, port states, terminals rules and the qa system, chartering, accounts, purchasing department, procedures



Communications



Budgets
Planned Maintenance
Spare Gear and Stores
Risk Assessments
Incident Reports
Near Misses
Port and Cargo Info

ISO9001 ISO14001 ISM ISPS SIRE/CDI TMSA **Systems**



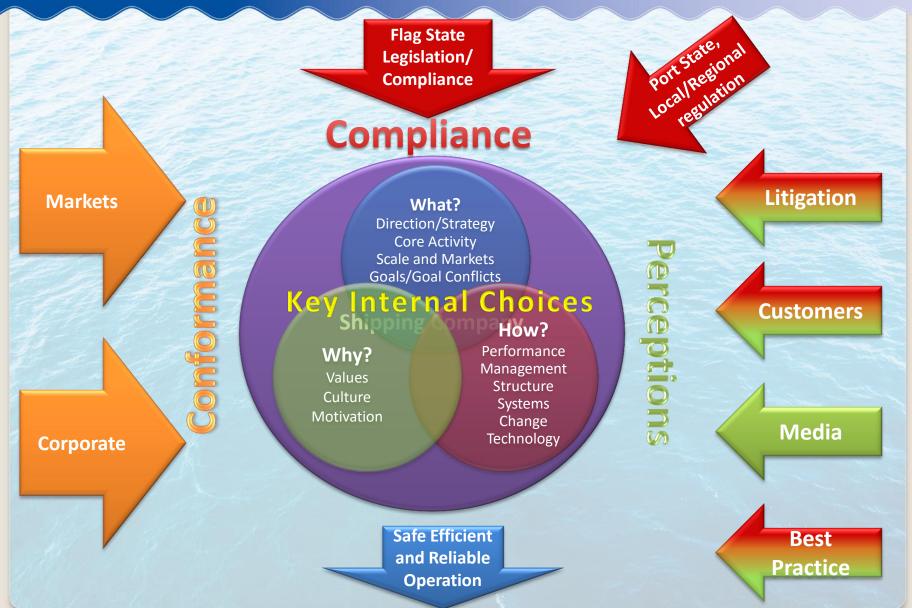
Complex Shipping?

	Markets	Regulation	Company
Features of Complex Systems			
Competing for Scarce Resources		$\overline{\mathbf{Q}}$	$\overline{\mathbf{Q}}$
Goals/Incentives	\square	\square	\square
Open System		\square	\square
Large number of interactions			Ø
'Agents' who learn and adapt to achieve goals			\square
Complex Systems Behaviours			
Alive			?
Emergent (Surprising)		\square	?
Organised then disorganised		\square	?
Explainable post event but not pre event	☑	$\overline{\mathbf{Q}}$?





moams Choices-Complex Company



Resilience not rigidity



Resilient organisation will adapt from normal operation to abnormal operation and recover. In emergency will be able to adapt further to avoid catastrophe



Brittle organisation will need all its resources to maintain normal operation leaving limited capacity to deal with the abnormal. Rule based mentality will be unable to cope with novel emergencies and will fail.

moams Leadership-Downward Resilience

Directing ✓ Developing Strategy ✓ Building the Organisation ✓ Outward Focus

Directing

Leading

Managing

Leading

- ✓ Motivating
- **√** Individual
- ✓ Teams
- ✓ Tasks

From the Art of Action by Stephen Bungay

Managing

- ✓ Resourcing
- ✓ Organising
- ✓ Controlling
- ✓ Performance

Your day at the office?

Direction

Should I be buying news ships? Should I be selling ships? What markets should I be in? What ship sizes should I be in? Should I get out of shipping? How do I finance the business? Is my business sustainable? How do I want my ships run? How do I want the office to run? What's important to me? Do I have to get rid of people?

Leadership

When did I last visit a ship? When did I last talk to the people in the office?

When did I last see a captain or chief engineer in the office? Do people really know what I want? Do I set the right example when I talk to people and visit ships? Do people know how to deal with

conflicts?

Are my managers doing their job properly

'Over –management DEMANDS your time, uses your energy and fills your diary



Management

Approve this procedure Authorise this expenditure Read this audit report Read these accounts Read this investigation report Attend this review meeting Resolve this dispute Deal with this oil major report Review this drydock spec Review these drydock tenders

'Direction' and 'Leadership' require your time and will drive the company's success

People-Upward Resilience

Train them

- Professional
- Human Element
- Management

Retain them

- Long term contracts,
- Fair pay
- Living conditions
- Respect

Motivate them

- Communicate direction
- •Involve them/listen
- Sensible reward
- Just culture

Believe in them

- Trust
- Delegation
- Decisions

moams Resilient Tanker Operator

Knowledge and Learning

Owner WHAT and WHY

Downward Resilience

Direction/Downward Resilience

What the Owner Wants

- ○Strategy
- OValues and philosophies
- oGoals and Goal Conflict

•How the owner wants it to work

- oCulture €
- OMotivation

How the owner is seen

- oLeadership
- ○Communication

Customer, Corporate etc Requirements (WHAT)



Operations Management HOW Regulators Requirements (WHAT)

People/Upward Resilience

•The Human Contribution and Motivation

○Not human error !!

Choosing the right people

- ○Selection
- Retention

•Learning and Training

- oTechnical Skills
- ONon technical skills
- (the human element)
- Decision making
- On board training/learning

Upward Resilience

People

Operations Management

- Learning and Knowledge
- •Change Management
- Procurement and technical backup
- Budgets and targets
- Managing Complexity
- Creating simple and useable process
- •Reinforcing owners goals
- Compliance

moams Can you deal with complexity?

- The oil market, tanker market and regulatory structure are complex....deal with it
- You have choices and options at the company level
- Leaders need to think strategically and maintain situational awareness
 - Leave the space to think
 - Keep your ears and eyes open
 - Direct Lead Manage
- Dealing with complexity
 - Manage the external complexity
 - Structure for simplicity
 - Design simplicity into the organisation
- You need to be able to change things quickly
 - Resilience
 - Communication and understanding
 - Get the right people, train them, retain them, motivate them, believe in them
- Look at yourself-are you adding complexity?