

Effective Ship Management

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Scope of the lecture

WHAT ARE THE
TRENDS AND
WHICH ARE THE
CHALLENGES
FACED BY SHIP
MANAGERS



WHAT DO SHIP
MANAGERS NEED
TO ACHIEVE IN THE
FACE OF THE
TRENDS AND
CHALLENGES



HOW ARE
THEY
GOING TO
ACHIEVE
IT

Trends and challenges in ship management

- Increase in running costs
- Limits on crew resources
- Environmental and safety requirements
- Achieving competitiveness: differences in customer strategy
- Adding value
- Shipping market volatility

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Response to challenges in ship management

Challenges

- Increase in running costs
- Limits on crew resources
- Environmental and safety
- Competition and achieving competitiveness
- Adding value
- Shipping market volatility

Response

- Control running costs
- Crew retention and management
- Environmental and safety management
- Strategies to achieve competitiveness
- Innovate
- Dynamic performance management

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Challenge 1: Increase in running costs



Challenge 1: Increase in operating and voyage costs

- Performance is always relative to inputs (into the production process) and results into a given quantity and quality of outputs
- Inputs in terms of costs for ship operation are volatile
- Clients always measure performance relative to budget
- Performance must be measured systematically relative to changes in operating costs
- Traditional business performance measures do not reflect accurately the context of measurement

Challenge 1: Increase in operating and voyage costs

- Shipping is characterized by the quest to cut costs
- Many severe cost-cutting measures have an impact on areas beyond the financial statements
- Yet the impact on those areas will not be readily apparent to the stakeholders and shareholders of the company
- Economies of scale – there should be a system and measure to reflect the achievement or otherwise of scale economies in ship operation

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Solution to challenge 1: Identify areas to control costs

Current situation	Areas of improvement	Examples of Ideas
• Large annual costs for spare parts	Operational improvements	➤ Improve maintenance – prolong life
	Purchasing effectiveness	➤ More quotes; relationship with supplier
	Technical issues	➤ Optimize spare part specifications (parts that can be used in more than 1 ship)
	Supply chain optimization	➤ Optimize spare part supply delivery

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Conclusion - Challenge 1: Increase in running costs

- *Running costs rise and the rate of change over a year is uncertain*
- KPIs can be used to indicate the level of cost optimization for companies, i.e. change in running costs relative to change in the quality of the operations
- KPIs must reflect processes to reduce running costs

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Challenge 2: Limits on crew resources

- One of the most pressing problems for shipping companies and ship operators
- Ship operators should increase crew retention

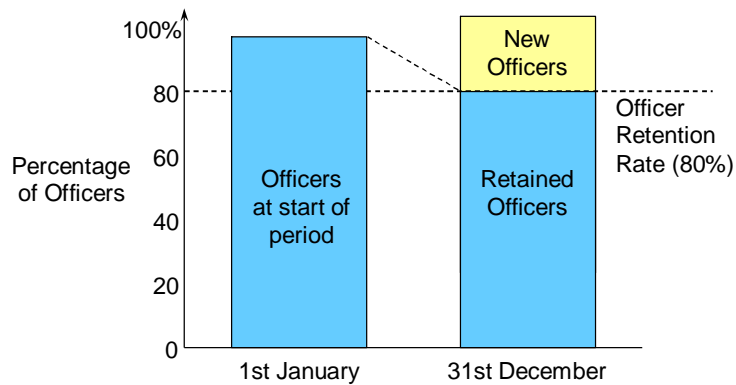
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Solution to challenge 2: Need to analyze crew needs and retention

- Retention requires managing through specific KPIs
- Ex. Period of employment and timing for potential re-employment of individual crew members in the database; proactive engagement of crew members
- Ex. Retention rate of officers

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Example: Retention of officers

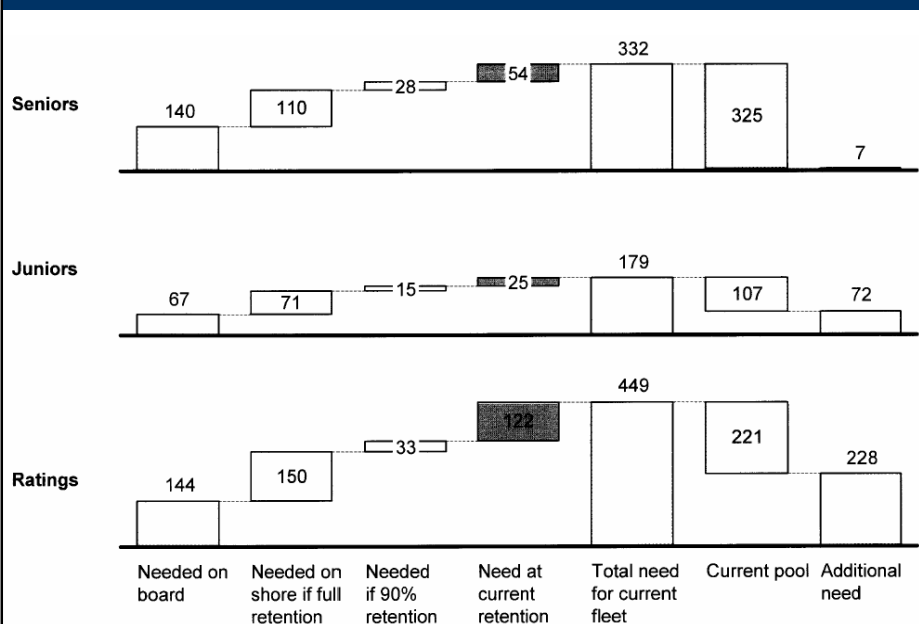


$$\text{Retention Rate} = \frac{\text{No. of officers at year end who were in our employment at the beginning of the year}}{\text{No. of officers at the beginning of the year}} \times 100$$

Source: Bain & Co

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Solution to challenge 2: Need to analyze crew needs and retention



Solution to challenge 2: Increase employee loyalty and productivity

- A performance management system gauges employee productivity
- It can be made part of individual KPIs, goals and a reward system (bonus scheme)

Conclusion – Challenge 2: Limits on crew resources

- *Limits on crew resources requires the management of crew and the measurement of performance*

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Challenge 3 - Environmental concerns safety and implications

- Oil majors impose strict requirements to tanker owners
- Vessel inspection assessments are rigorous and exhaustive
- Assessments include corporate policies as well as on-board facilities operations
- Oil majors (OCIMF) developed the TMSA which has imposed additional burdens for tracking and reporting performance
- Major industrial shipowners may insist on compliance with safety standards, environmental emission policies, systematic crew training procedures and 'best in class' procedures for comparing operating performance between the various ships employed

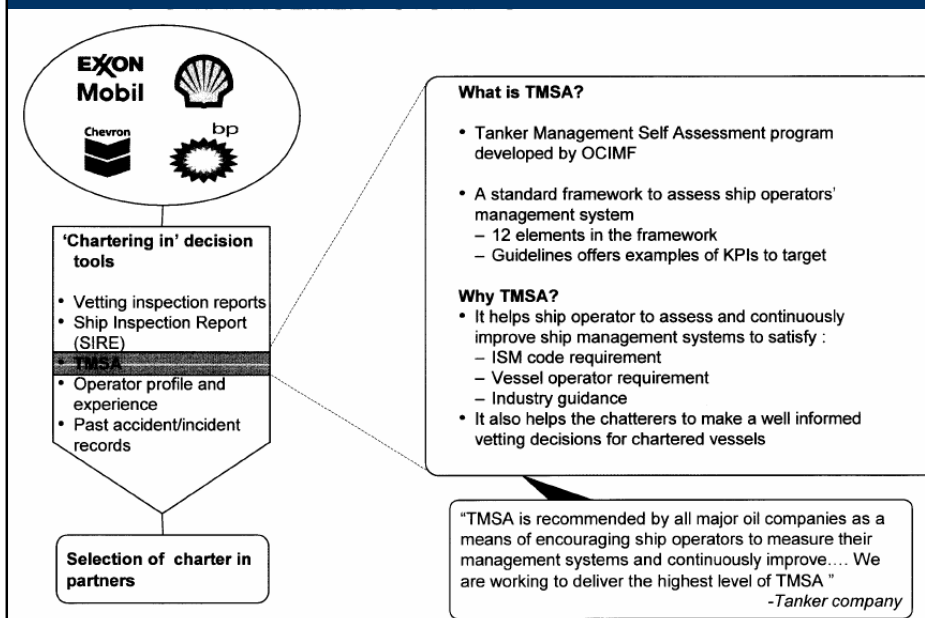
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Challenge 3: Environmental concerns safety and implications - Extracts from recent oil majors' vetting report to ship manager

- "There is no documented requirement for an independent cross check of the line and valve settings by another deck officer prior to commencement of loading or discharging operations"
- "To ensure continued integrity consideration should be given to ensuring the routine maintenance and inspection of explosion proof light fittings is contained in the planned maintenance system and makes specific reference to manufacturers instructions"
- "The Master appears to have sole responsibility for monitoring the hours of work and any deviations. Due to the increased importance of this legislation we suggest that you may wish to investigate a system whereby the managing office also monitors any deviations on a monthly basis"

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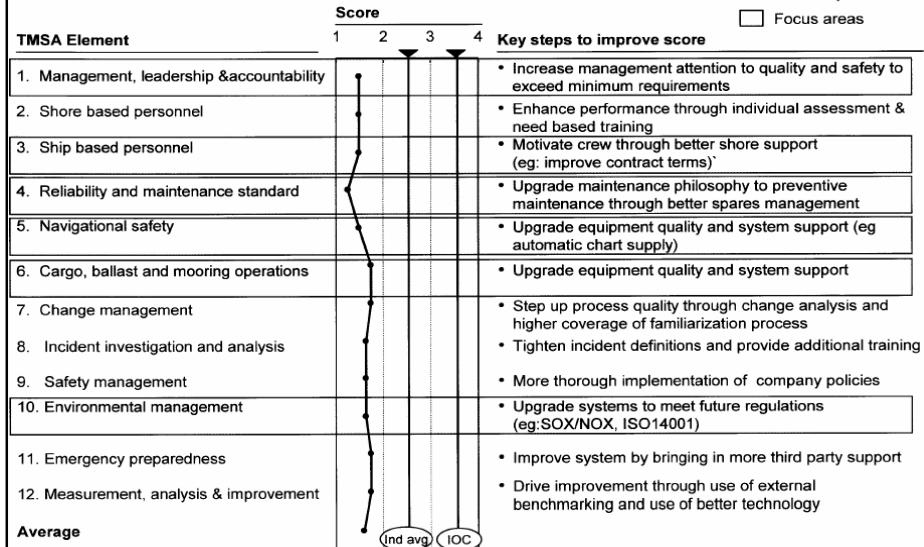
Solution to challenge 3: TMSA – A quality management tool



Solution to challenge 3: TMSA

A. TMSA ANALYSIS IS USEFUL TO IDENTIFY DEVELOPMENT AREAS IN MANAGEMENT PROCESSES

- 1 Meets minimum requirement
 - 2 Average player
 - 3 Better than most
 - 4 Sets industry standard
- Focus areas



Conclusion – Challenge 3: Environmental concerns safety and implications

- **Increasing and more complex requirements impose the necessity of a performance management system with specific KPIs**
- **The system can and should work together in conjunction to other performance or quality management systems such as the TMSA**

Challenge 4: Fierce competition

- Competition is quite fierce among many sectors in the shipping industry
- Companies must achieve competitiveness and in doing so they pursue different strategies

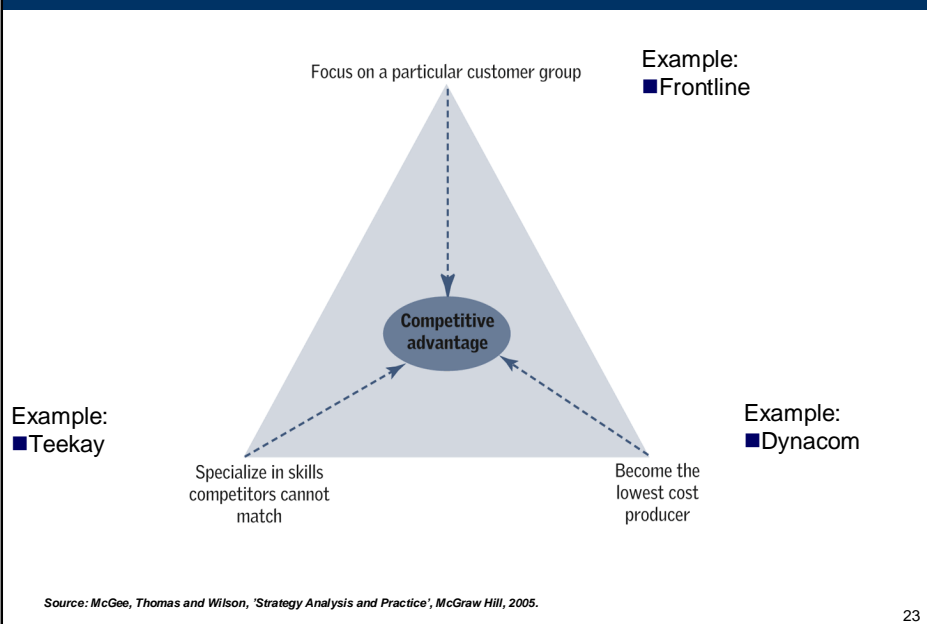
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Challenge 4: Solution - Achieving competitiveness: differences in company strategy

Company	Strategy	Key success factors
Teekay – Segment strategy	<ul style="list-style-type: none"> • Strong position in selected segments offers unique possibilities for servicing customers and increases fleet utilization • Unique/strong presence in several segments may reduce cyclicalty 	<ul style="list-style-type: none"> • Ability to grow fleet • Managing a portfolio of segments • Obtaining unique/strong presence in specific segments
Frontline – Equity market strategy	<ul style="list-style-type: none"> • Create value proposition for equity markets by focusing on one segment and maintaining market leadership in that segment 	<ul style="list-style-type: none"> • Accessing and understanding financial markets (equity and debt)
Dynacom – Opportunistic strategy	<ul style="list-style-type: none"> • Opportunistic purchase of affordable vessels • Trade vessel until profit can be obtained in S&P market • Minimum cost operation 	<ul style="list-style-type: none"> • Fast decision making • Accept risk • Understand cyclicalty of segments • No policies for age/type of vessels • Strategy applies to smaller players (liquidity of assets)

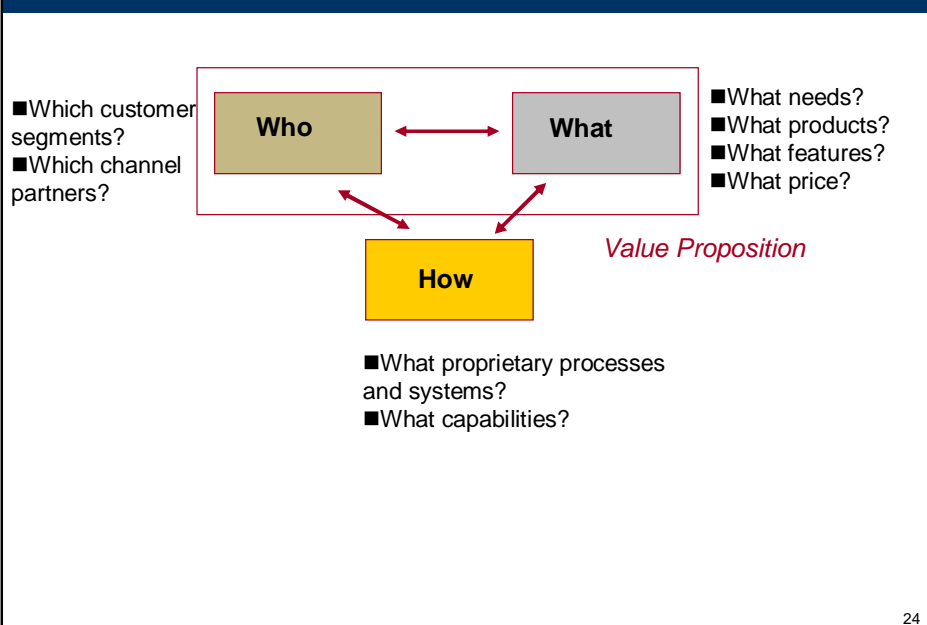
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Strategies for differentiation



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A company's strategy



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Teekay's strategy and value proposition

Mission: To be the premier provider of marine services in the oil and gas industry

Core purpose: To be the first choice of our customers in the shipping industry; and to uphold the Teekay Standard as a respected symbol of quality. In fulfilling this purpose, we will create enduring value for our shareholders.

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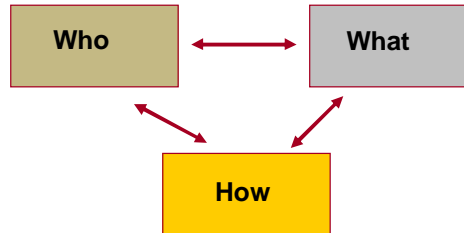
Teekay's strategy and value proposition

From a traditional shipping company

- Owner and operator of Aframax tankers
- Mainly spot contracts
- Regional

To a differentiated player in the 'Marine Midstream' sector

■ Major oil companies



Solutions oriented (cross-sales)

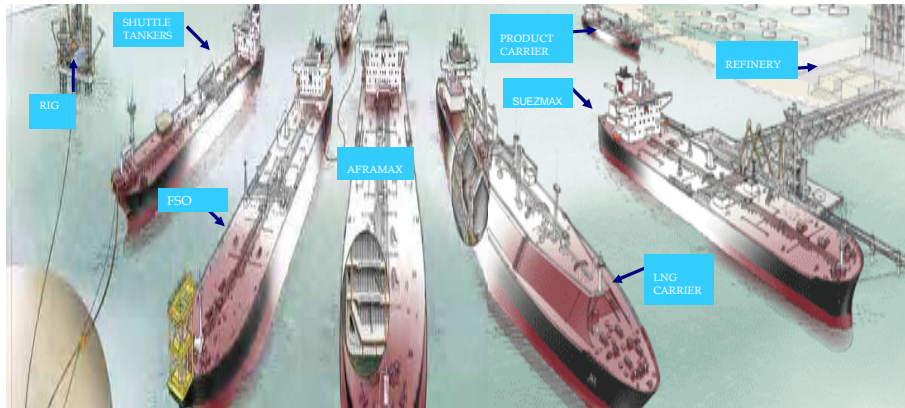
- Shuttle tankers
- Oil tankers
- FPSO

Focus on higher value added segments (LNG, LPG, CNG)
North sea oil production

- Innovation (project management, financial engineering)
- Mixture of spot and fixed contracts
- Strong technical skills
- Operational excellence
- Staff loyalty

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Teekay's strategy and value proposition: the floating pipeline



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Conclusion – Challenge 4: Achieving competitiveness: differences in company strategy

- *Competition in shipping is fierce; shipping companies have different strategies*
- Current KPI systems may not accurately/adequately reflect the link between strategy and performance
- Universal KPIs may not support this concept
- Competitiveness is related to strategy (strategic posture, position in the value chain)
- KPIs and performance measurement should reflect this
- Companies must recognize how strategies change over time and develop systems and KPIs reflecting those strategies

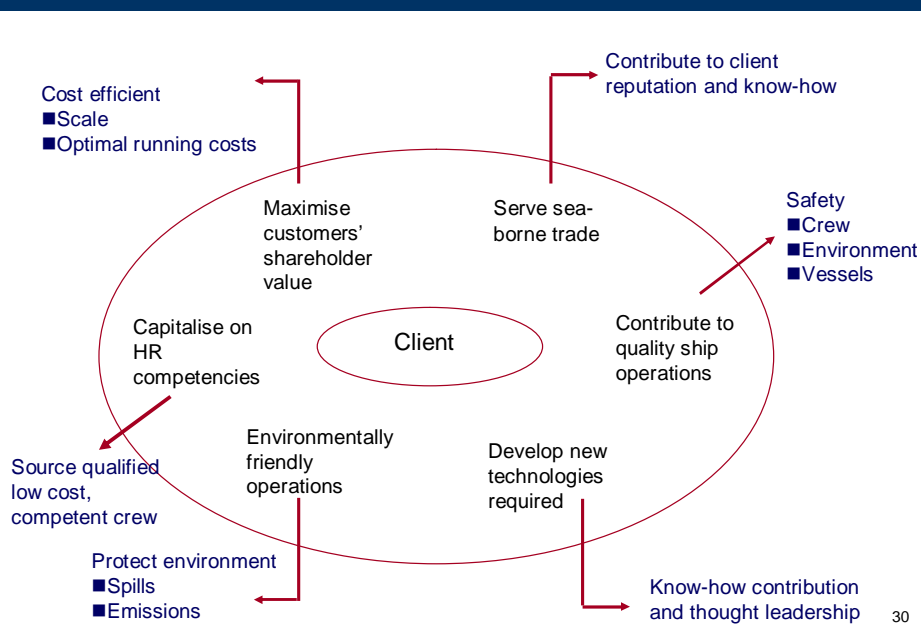
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Challenge 5: Adding value

- Need to add value to customers and to own company through operations

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Challenge 5: Adding value to customers: Solution – Identify areas for adding value in ship management



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Challenge 5: Adding value- Solution

- The real assets of many shipping firms today that create and add value are not captured in the tangible fixed assets that are reported in the financial statements
- Competence of seafarers, quality of operations, experience of management are value creating, yet un-captured intangible assets
- Financial measures are not relevant to many organization levels in shipping
- For example, financial measures of performance are not relevant to shipboard operations
- Yet shore based management needs to exercise control and measure performance of shipboard operations
- Financial measures are abstractions compiled by rolling measures from different departments; they can be unrecognizable and useless in the decision-making of most managers and employees

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Challenge 5: Adding value - Solution

- Many shipping firms are today publicly quoted
- Image and reputation should be gauged, benchmarked, improved through appropriate KPIs as they represent added value to shareholders
- Ships may be in full employment, however in the process many ships have been rejected by blue chip customers
- Financial measures indicate earnings, revenues but rejection rate may be a KPI to quality and future added value to shareholders

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Challenge 5: Adding value - Solution

- Customer loyalty may not be gauged in traditional financial measures
- Yet it is an indicator of value added to the company

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Conclusion: Challenge 5 - Adding value

- *Measures of performance should capture the areas for adding value and the value added to the company and its customers through its operations; financial measures alone are inadequate in capturing and reporting such value*

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Challenge 6: Shipping market volatility



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Challenge 6: Shipping market volatility



Revenues in June 2008 fell. Yet KPIs will reflect revenues relative to market trends
A system of performance is dynamic and takes into account the context

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Challenge 6: Solution to Shipping Market Volatility

- Performance is always relative to external market trends
- Accurate and holistic measures of performance must be related to market trends

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Conclusion: Challenge 6 - Shipping Market Volatility

- *Markets in the shipping industry are highly volatile and a dynamic system of performance is required*

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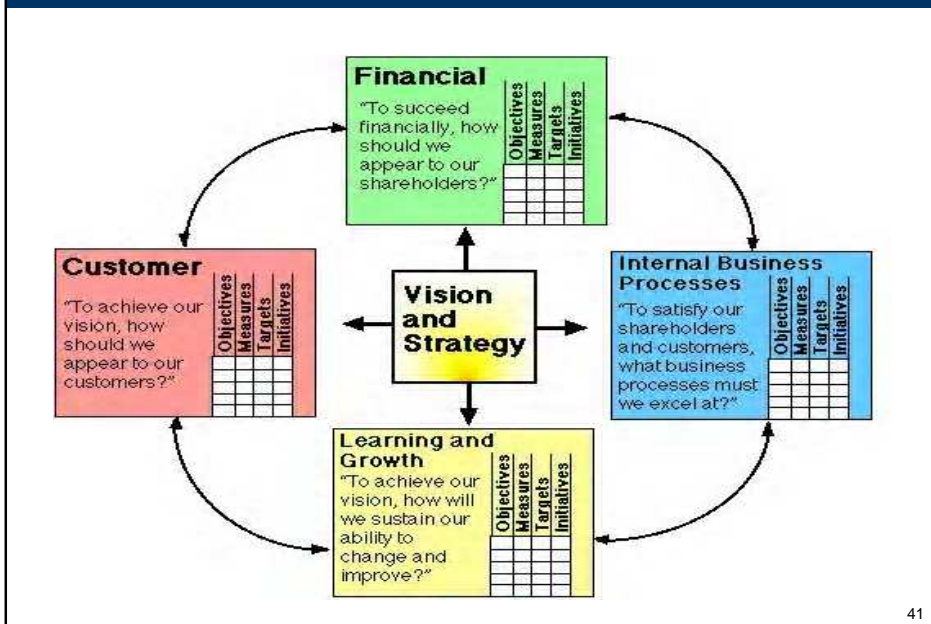
Trends and challenges in shipping and the need for performance measurement			
Trend	Challenge	Solution	Method
Increase OPEX	High OPEX	Control OPEX	KPIs and Performance Measurement
Crew limits	Retention	Increase loyalty	
Environmental concerns/safety	Minimize Pollution/incidents	Safety/environment management	
Competition	Competitiveness – set strategy	Conceptualize and control	
Add value	Recognize areas	Innovate	
Market volatility	Track	Assimilate	

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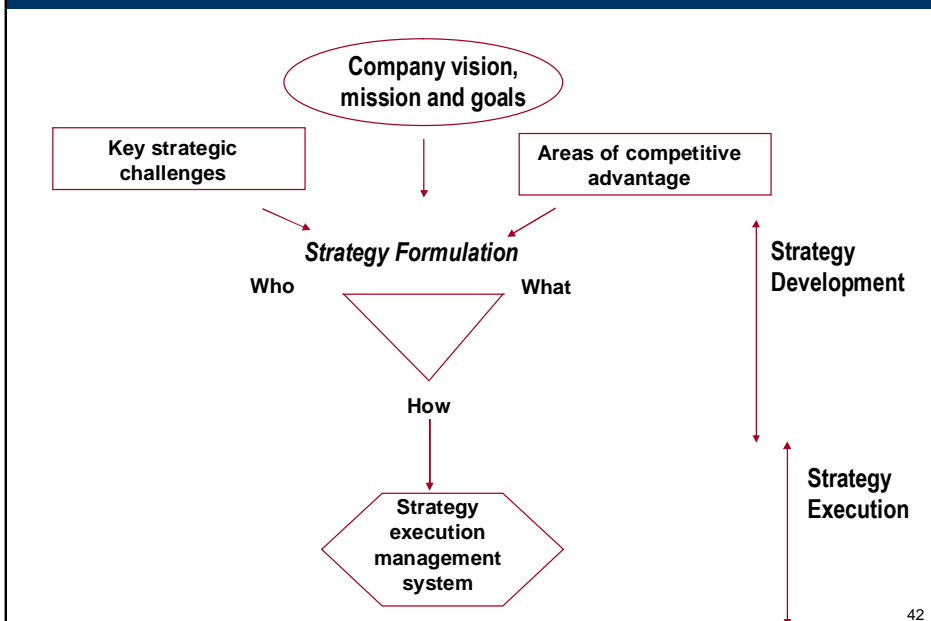
Trends and challenges in shipping and the need for performance measurement			
Shareholders, customers, processes, learning			
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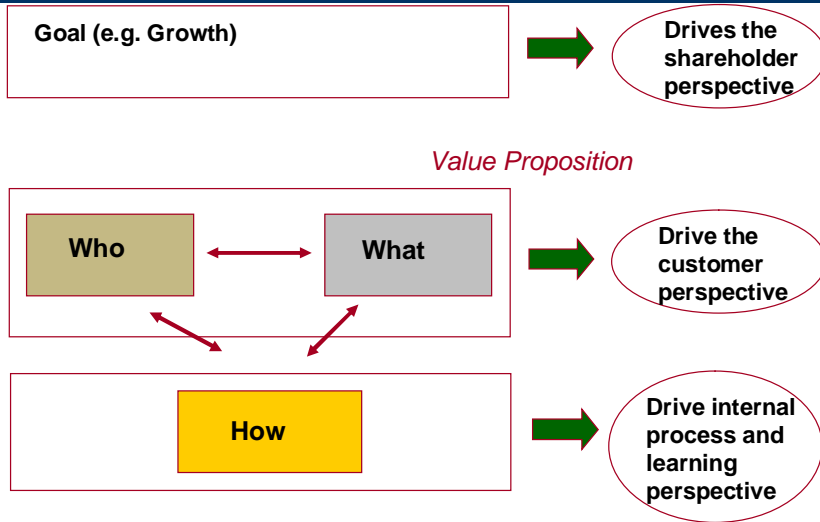
Proposed concept to deal with the challenges: The Balanced Scorecard



The strategy approach: applying the Balanced Scorecard



Goals and strategy drive performance objectives and KPIs



BSC objectives are the critical success factors for delivering strategy and achieving the goals

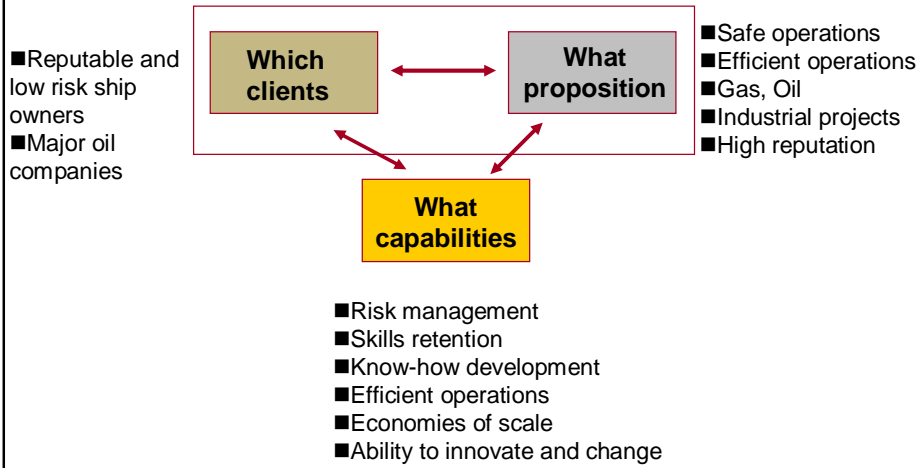
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The case of a ship manager: Company goals

- To achieve profitable growth without jeopardizing safety and quality
- Grow number of ships under management
- Enhance reputation
- Cost efficient (optimal running costs, scale)

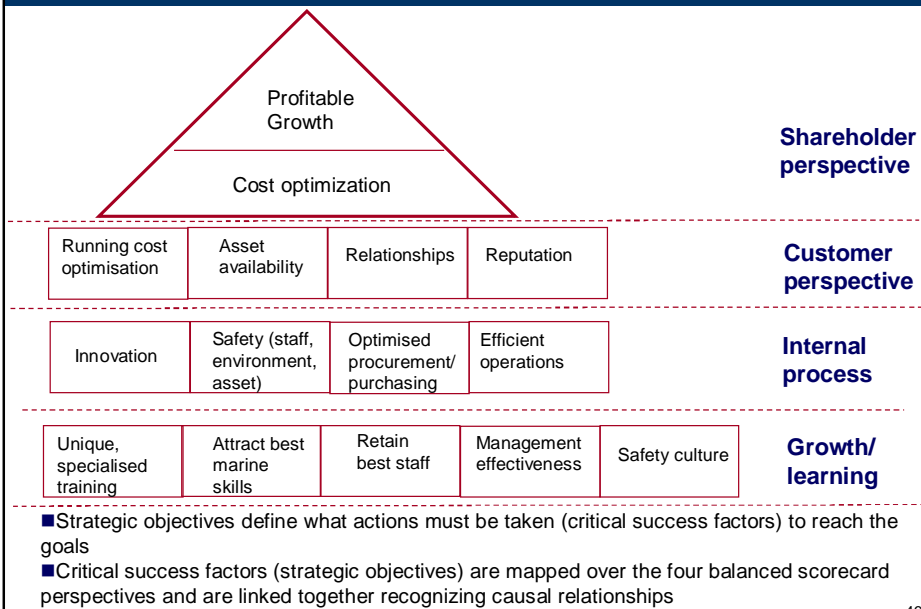
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The case of a ship manager: company strategy



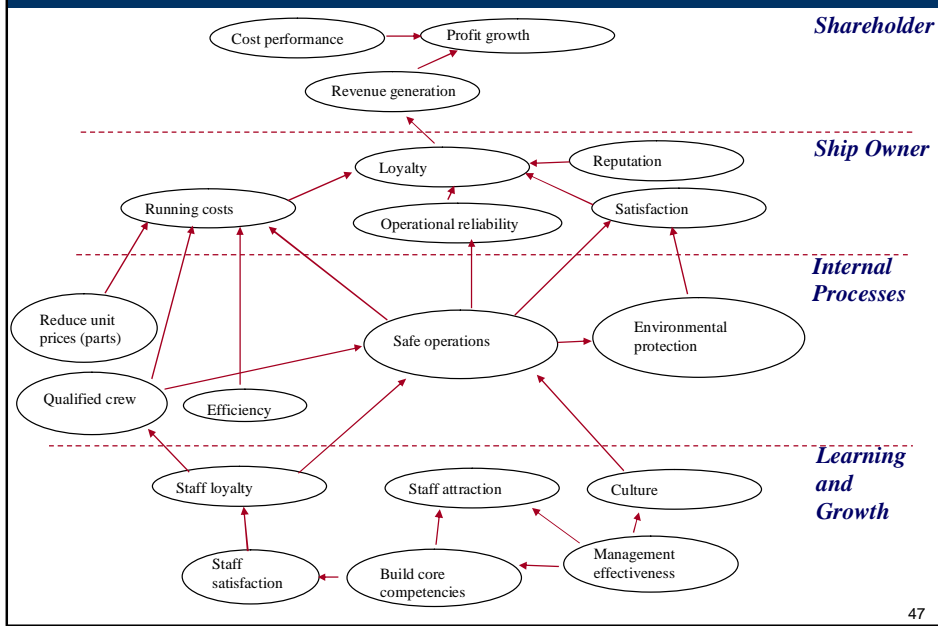
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The process of incorporating strategy into the balanced scorecard



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The strategy map: identifying causal relationships and critical success factors



Ship manager example – KPIs from the shareholder perspective

Objective	KPI	Target	Owner
Shareholder Perspective			
Profit growth	Increase in profit	8% CAGR	MD
Cost performance	Average running costs per day per ship type	Below industry average	Fleet Director
Revenue generation	Growth through new customers %turnover from new customers/increased turnover	2 new customers/year	MD

Ship manager example – KPIs from the customer perspective

Objective	KPI	Target	Owner
Customer Perspective			
Loyalty	Average number of years retained a client	Keep each client for minimum 3 years	MD
Reputation	Number of times turned down for charter	0	MD
Running costs	Average running costs per day per ship type	Below industry average	Fleet Director
Operational reliability	Fleet availability	99%	Fleet Director
Satisfaction	Change in number of client complaints	-5%	MD

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Ship manager example – KPIs from the internal process perspective

Objective	KPI	Target	Owner
Internal process perspective			
Safe operations	Lost time injuries Detentions by PSC	Less than x/million man hrs 0	Fleet/Operations
Environmental protection	No of MARPOL violations	0	Fleet
Reduce unit prices (parts)	Unit prices are compared with benchmark	Below benchmark	Purchasing
Qualified crew	Crew availability	100%	Crewing
Efficiency	Average running costs/day	Below market benchmark	Operations

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Ship manager example – KPIs from the learning and growth perspective

Objective	KPI	Target	Owner
Learning and Growth Perspective			
Staff loyalty	Retention rate	75% / year	Fleet
Staff attraction	No of qualified applicants for open positions	Increase 5%/year	MD
Staff satisfaction	Satisfaction index	100 Index score	Managers
Build core competencies	Investment in specific ship know-how	US\$	MD
Culture	Internal communication	No of internal courses	MD
Management effectiveness	TMSA	Stage 2 TMSA	MD

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Cascading

Department Scorecard			
Perspective	Objective	KPI	Target
Internal processes	Recruit quality crew	Number of early terminations	0

Team Scorecard			
Perspective	Objective	KPIs	Target
Internal processes	Effective recruitment process	Number of non-competent personnel recruited	0
		Number of personnel with medical problems undetected	0
		Change in number of unqualified personnel introduced by agencies	50%

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A plan for action

- Define your strategy and set corporate level objectives
- Develop a corporate balanced scorecard and link objectives
- Develop corporate KPIs, link KPIs to objectives, discontinue non-important KPIs
- Cascade objectives to Fleets, Departments, Units
- Develop scorecards and KPIs for the above
- Set targets and initiatives and align the organization (align process and intangible assets)
- Develop/acquire a computer software system so that data can be easily collected, visualized and made available to the right parties
- Train staff on how to use the system
- Implementation

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A plan for action – some practical issues

- Expected time for developing the corporate balanced scorecard is 3-4 weeks
- Expected time for cascading the balanced scorecard to one level is 4-5 weeks
- Significant part of the development is done by the project team
- How many KPIs? 20-25 corporate level, 10-15 per Unit thereafter
- All the above are estimates for a medium-size organization

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Work plan

	Key activities	Expected Duration
Step 1: Project planning	<ul style="list-style-type: none"> • Design phases, form team and kick-off project 	2 wks
Step 2: Mapping strategy	<ul style="list-style-type: none"> • Review strategy • Develop and finalize maps 	2 wks
Step 3: Corporate BS	<ul style="list-style-type: none"> • Meetings with stakeholders • Run workshops with managers to confirm first draft • Meetings for clarifications and receiving agreement 	4 wks
Step 4: Unit BS (2 levels)	<ul style="list-style-type: none"> • Meetings with stakeholders • Run workshops with managers to confirm first draft • Meetings for clarifications and receiving agreement 	6 wks
Step 5: Measurement	<ul style="list-style-type: none"> • Measurements gaps are identified and action plans to fill are developed • Initiatives are identified 	2 wks
Step 6: Reporting	<ul style="list-style-type: none"> • Management information is reviewed and new reports are created • Automation gaps are identified and action plans are developed 	2 wks
Step 7: Support processes	<ul style="list-style-type: none"> • Appraisal process is reviewed • A communications system is developed 	2 wks

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Conclusion

- Effective ship management is about responding to challenges in the shipping industry
- Challenges include increase in running costs, limits on crew resources, safety and environmental concerns, ability to differentiate, ability to add value, market volatility
- A holistic system to respond to these challenges is described and is based on the development of a performance management system that looks at the four pillars of a company's structure (shareholder, customer, processes, learning) and the development of Key Performance Indicators that serve as measures of performance, control and improvement

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