



**ShipTek 2010 Conference – Dubai, April 18th, 2010**  
***IT-supported reliability centered maintenance***



## Navigating through this presentation

### *Content*

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This paper is about

*how IT software systems can support the definition and implementation of reliability centered maintenance (RCM) strategies.*

- Maintenance strategies
- RCM in the maritime context
- RCM as a mean to foster *true asset management*
- IT system landscapes
- Benefits and key messages

## How and where RCM fits into the big picture

### *Variety of maintenance approaches*

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#### **Corrective maintenance**

*is required when an item has failed or worn out, to bring it back to working condition*

#### **Preventive maintenance**

*is performed before an equipment or system fails*

##### **Planned maintenance**

time-based or operation  
count-based intervals

##### **Condition-based maintenance (CBM)**

only when it is  
actually necessary

##### **Predictive maintenance**

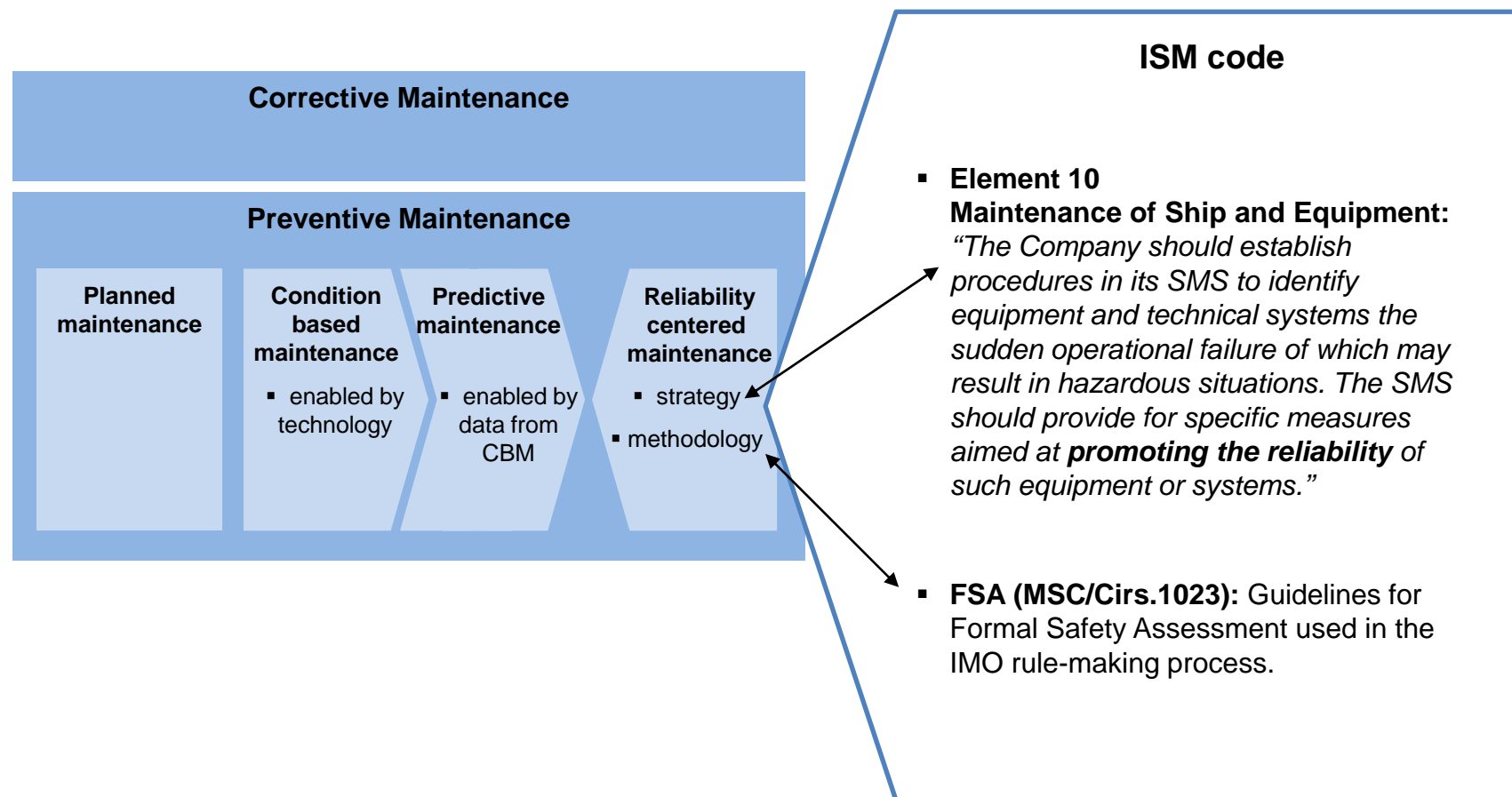
gather operational  
data and compare  
it with statistical  
information to  
identify trend  
of condition and  
to determine appro-  
priate point in time  
for maintenance

##### **Reliability centered maintenance**

methodology to  
determine the  
maintenance strategy

## How RCM relates to the maritime regulations framework

### Example



## How RCM relates to the role of the classification societies

The Class is the link between yards & OEMs (design & construction phase) and shipowners (operation & maintenance)



Shipowners have to comply with the duty to inform the Class in case of incidents.



Challenge for the Class is to understand from maintenance reports the cause of repair or replacement. This requires expected wear information from OEMs and performance data of equipment during operation.



Class has limited access to that data including maintenance history and operational performance data.



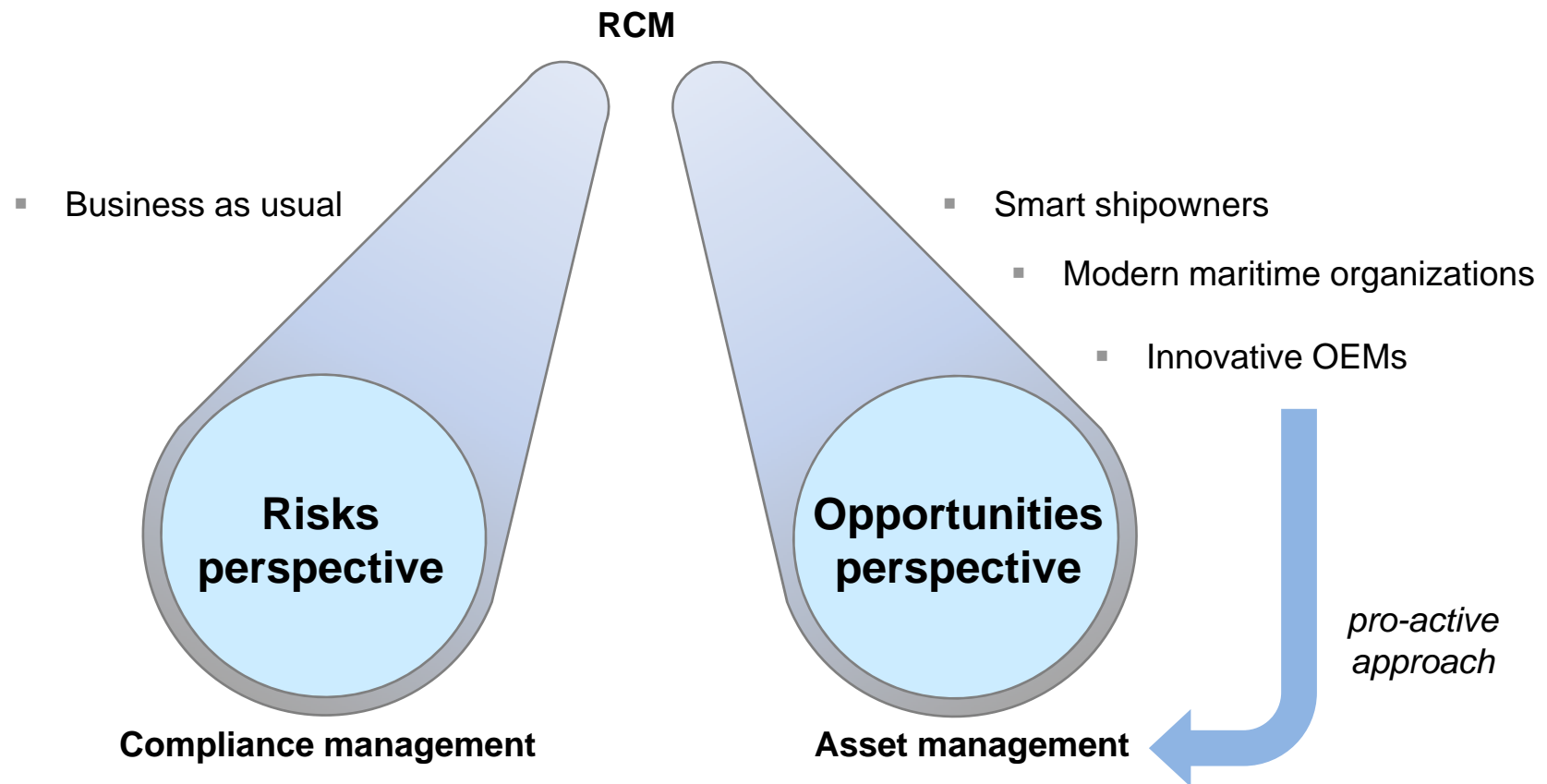
Challenge for the Class is to gather and then analyzing maintenance and operational data in order to derive corrective measures and general recommendations regarding maintenance strategies to mitigate risks.



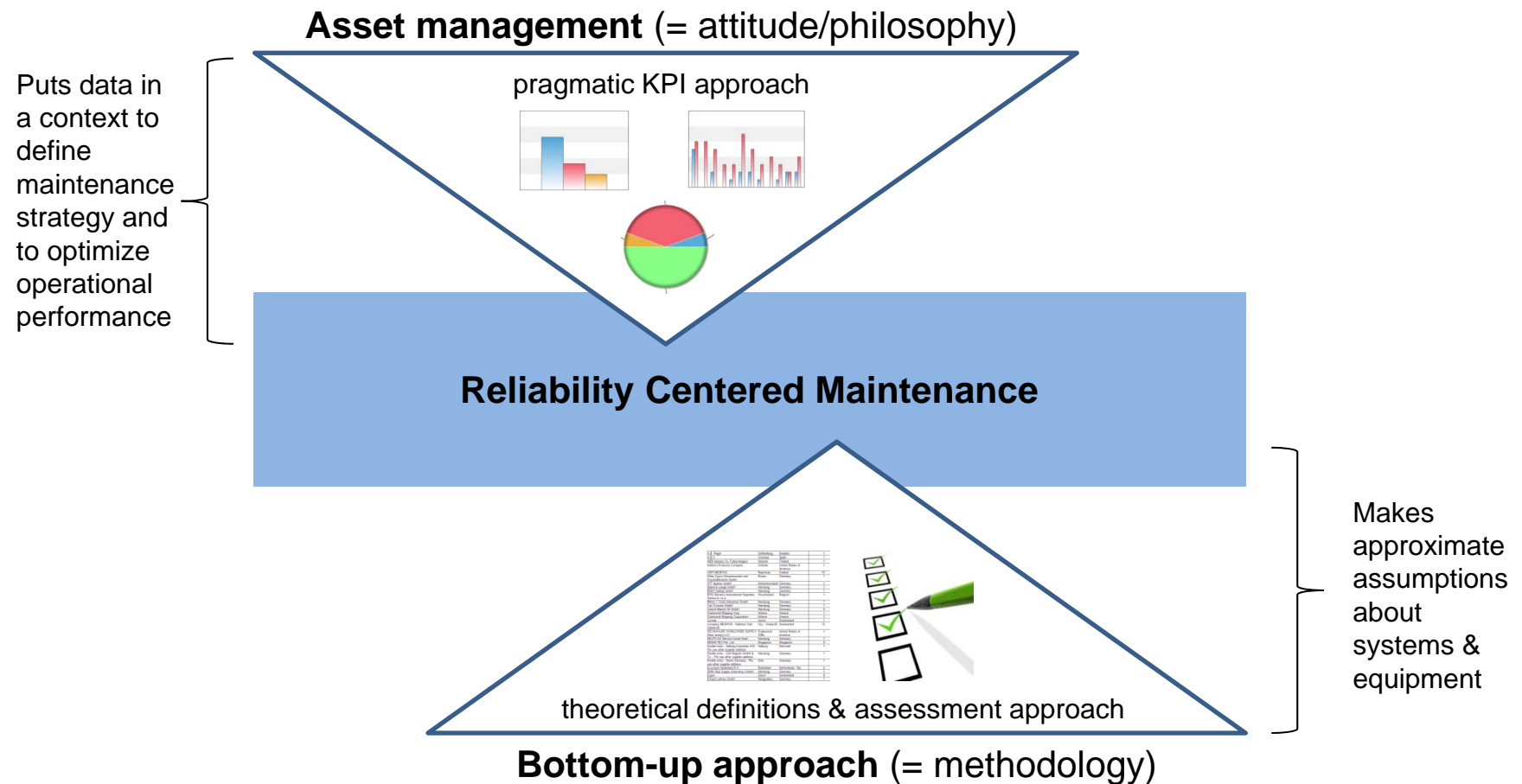
Findings of data analysis could motivate crews to perform and document maintenance as per the **shipowner's RCM strategy**.  
(plus insurance fee incentives viable)

similar interests as **shipowners'**  
plus shipowners have a direct cost concern

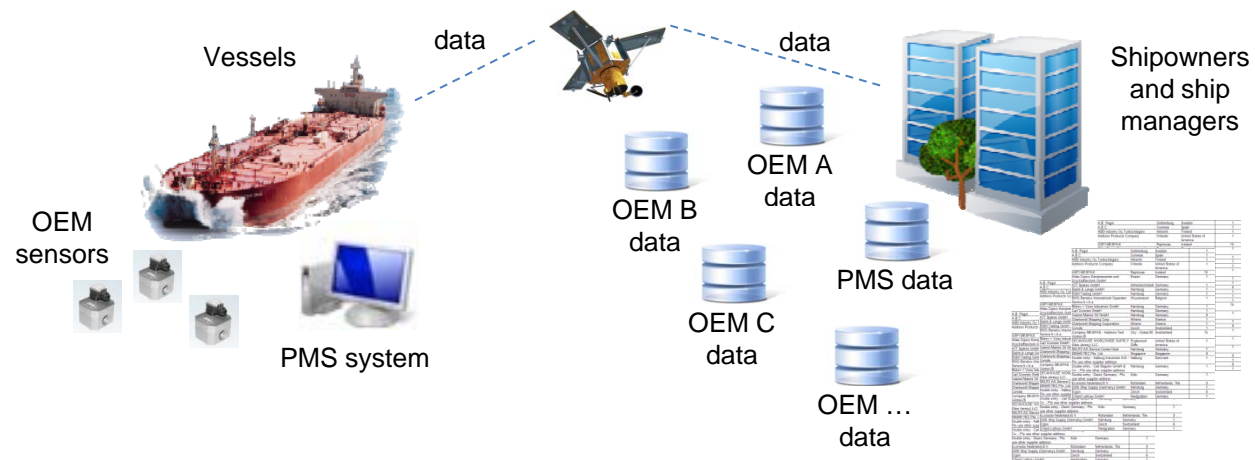
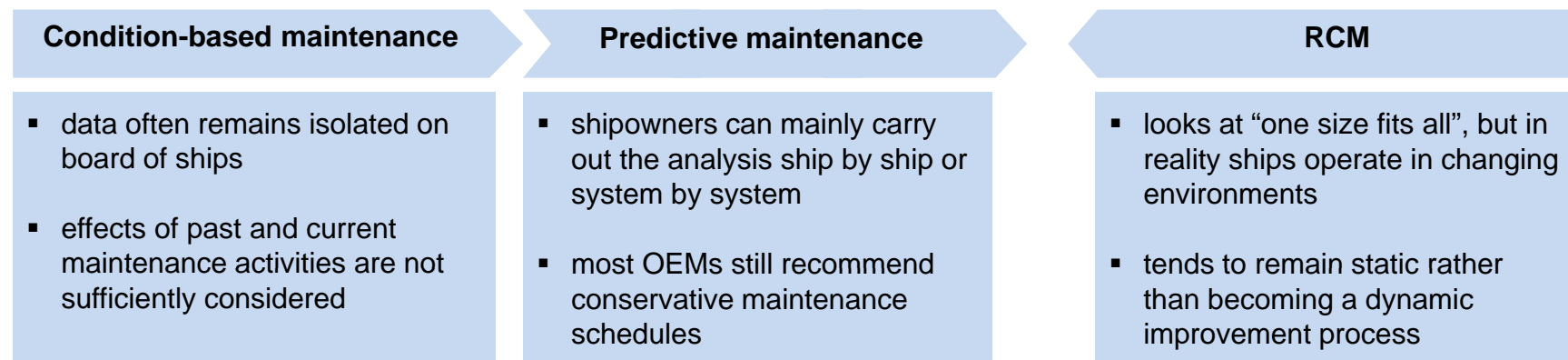
## There are two ways of looking at RCM



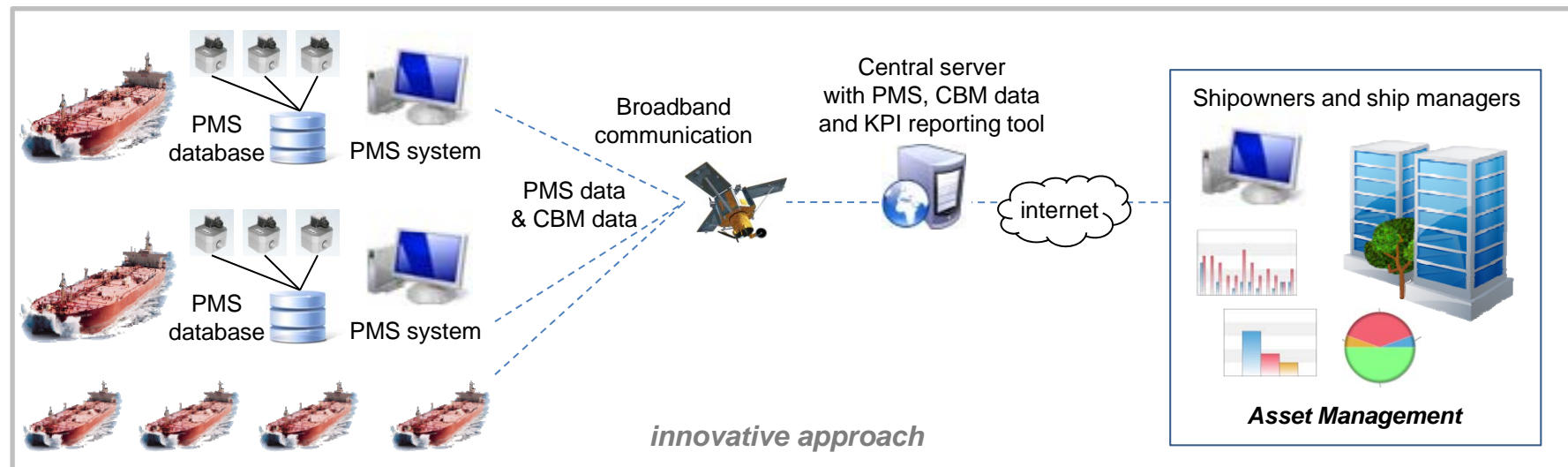
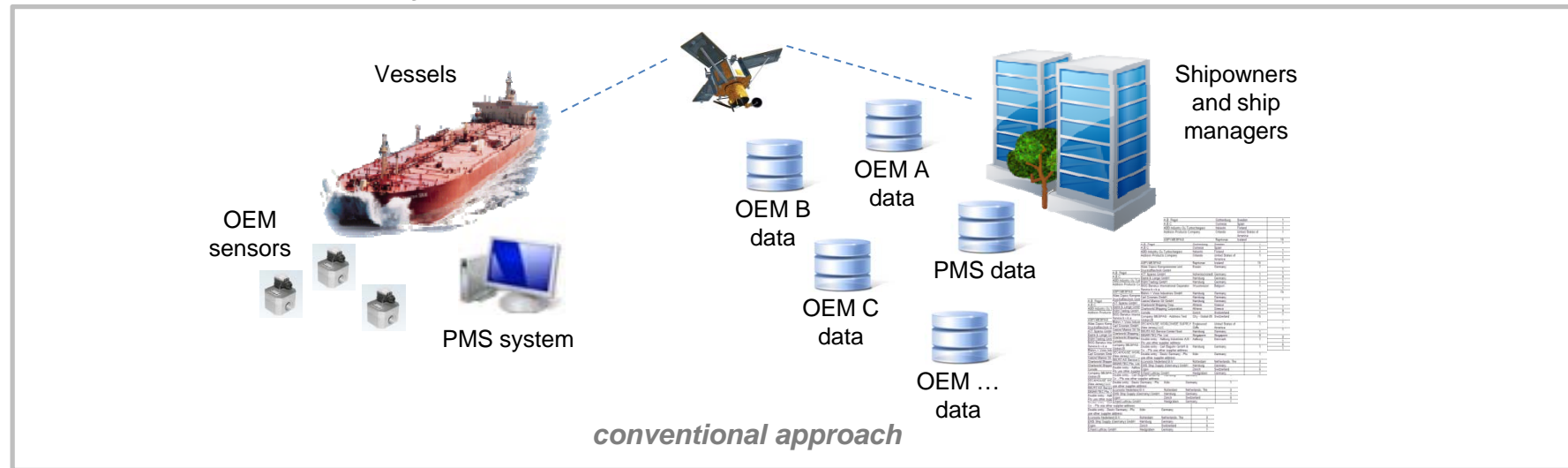
## Asset Management implies the involvement of OEMs and the utilization of cutting-edge IT software systems



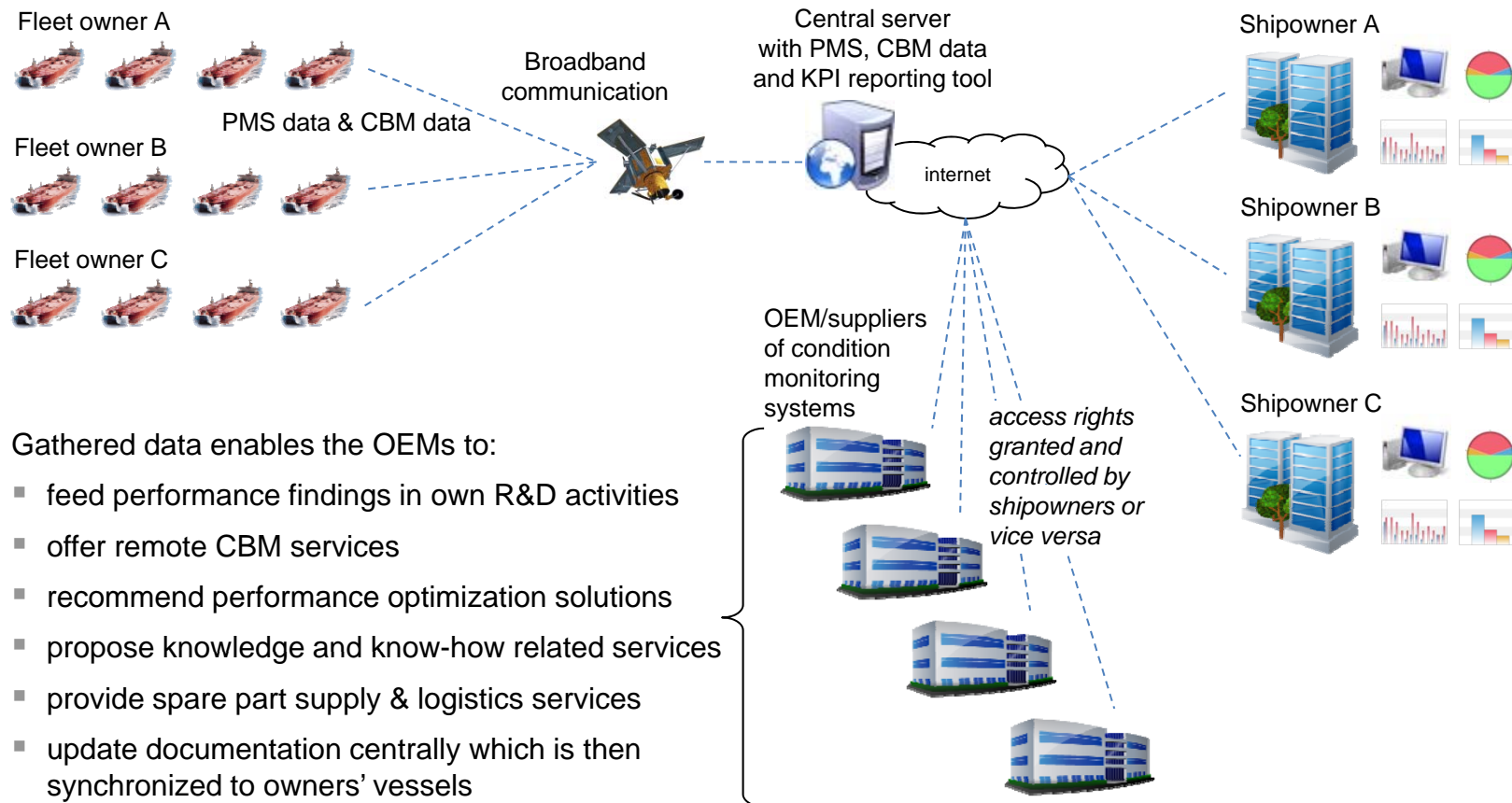
## Present challenges



## How innovative IT systems can provide a value added approach to RCM



## Bringing the innovative concept of a central server to the next level *Example Cloud Computing*



## Shipowner's benefits and key messages of IT supported RCM

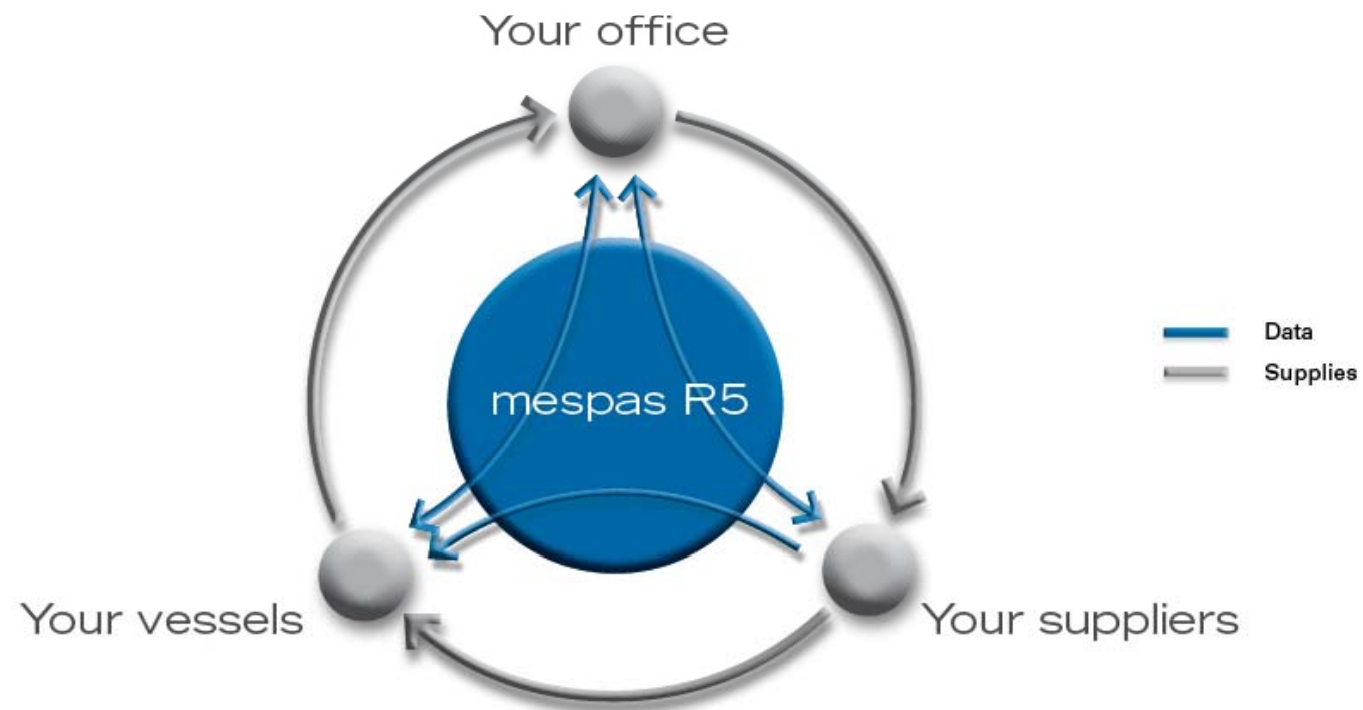
- Financial savings
  - Reduced total cost of ownership
  - Faster return on investment
- Vessel performance enhancements
  - Raised equipment reliability
  - Avoidance of non-productive maintenance tasks
  - Motivated crews by demonstrating KPIs
  - Increased safety standards
- Fleet management versus ship management
  - Fleet-wide performance overview
  - Streamlined IT systems landscape
  - Continuous improvement of maintenance strategy
  - New generation of service level agreements with suppliers

### IT systems enable true Asset Management

- Pro-active approach
- Data analysis by OEMs is key (expertise)
- Foster an opportunities culture
- It is about what you actually want to achieve and not about what you need
- It's the people behind the technology that make it ultimately work

## A future-proof IT solution for true asset management and for supporting RCM strategies?

*Yes, it already exists.*



***Thank you very much for your attention***

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