

# **“MARITIME NETWORK-CENTRIC ORGANIZATIONS”**

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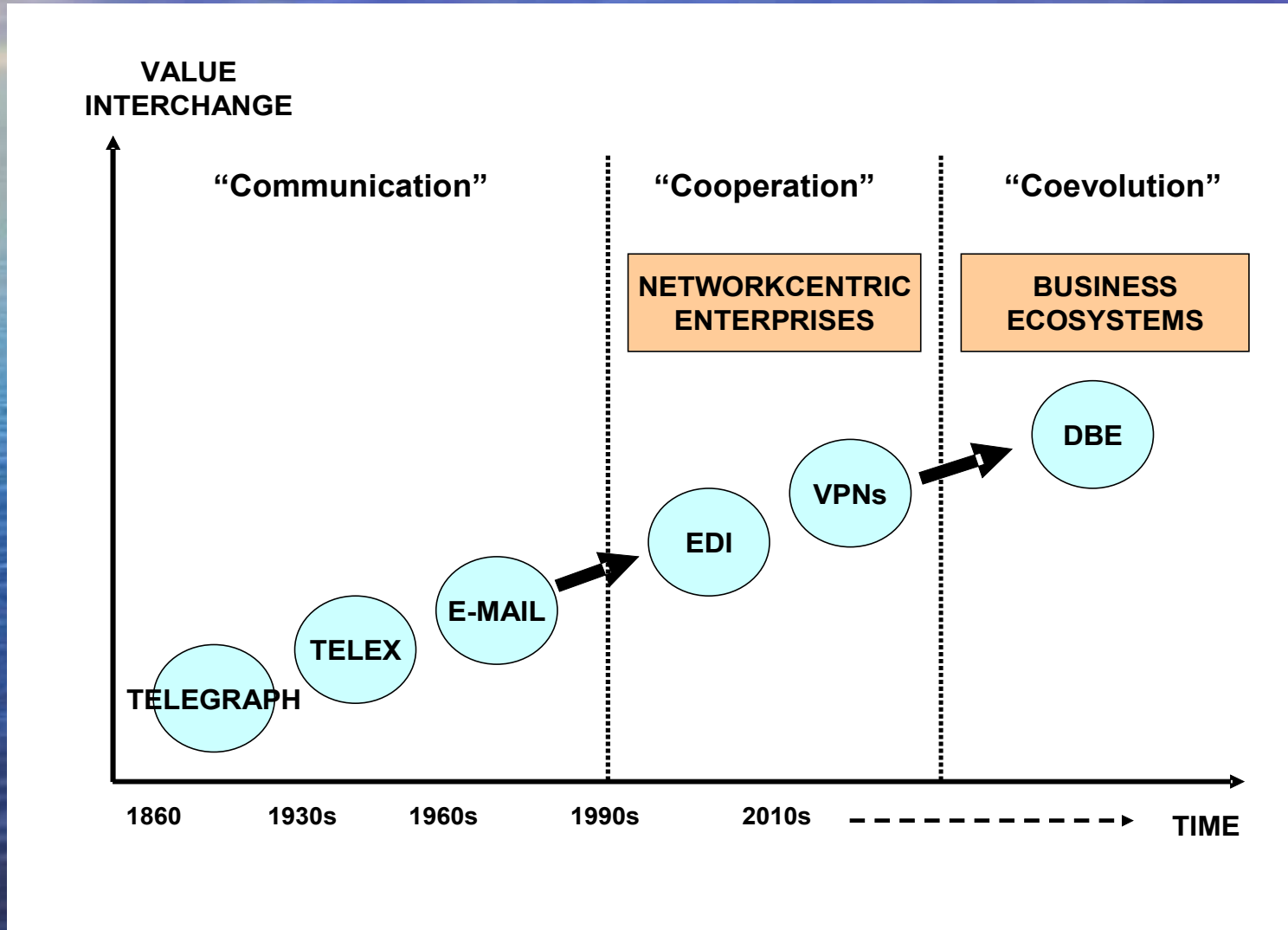
# **INTRODUCTION**

- **Shipping sector nature**
- **ICT have become a focal point for shipowners to gain a competitive advantage**
- **The aim is shipping companies to achieve greater ICT adoption in a dynamic business ecosystem**
- **Digital Business Ecosystem (DBE) concept**

# **THE PAPER**

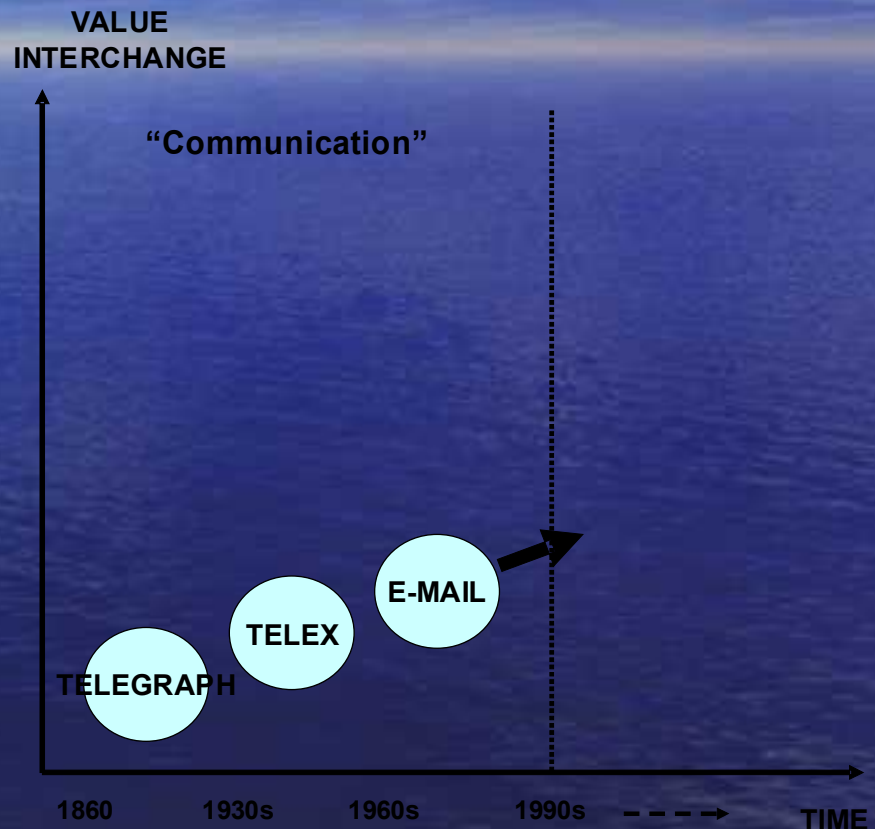
- **Focus on the ICT adoption in Shipping**
- **The potential business ecosystem concept applied in shipping sector is considered**
- **A conceptual model of a business platform supporting e-services is presented**

# THE ADOPTION PHASES OF ICT IN SHIPPING



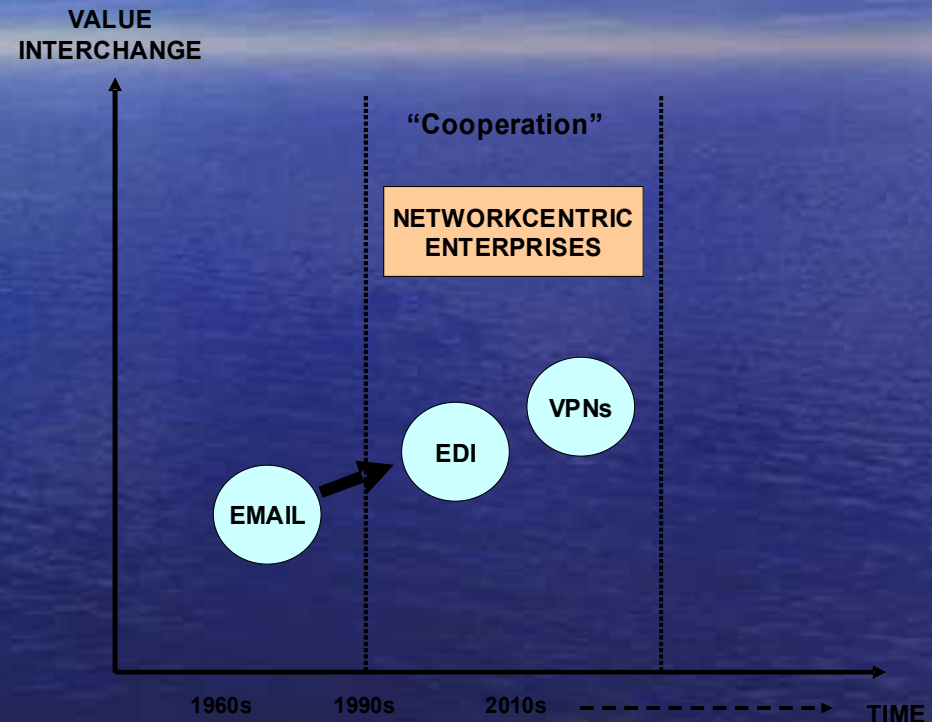
# The “communication” phase

- Over 150 y technology
- Basic tasks stayed unchanged except cost which is lower
- Revolution in 60s (computer) and 90s (networks)
- The usage of Internet led to the next phase.

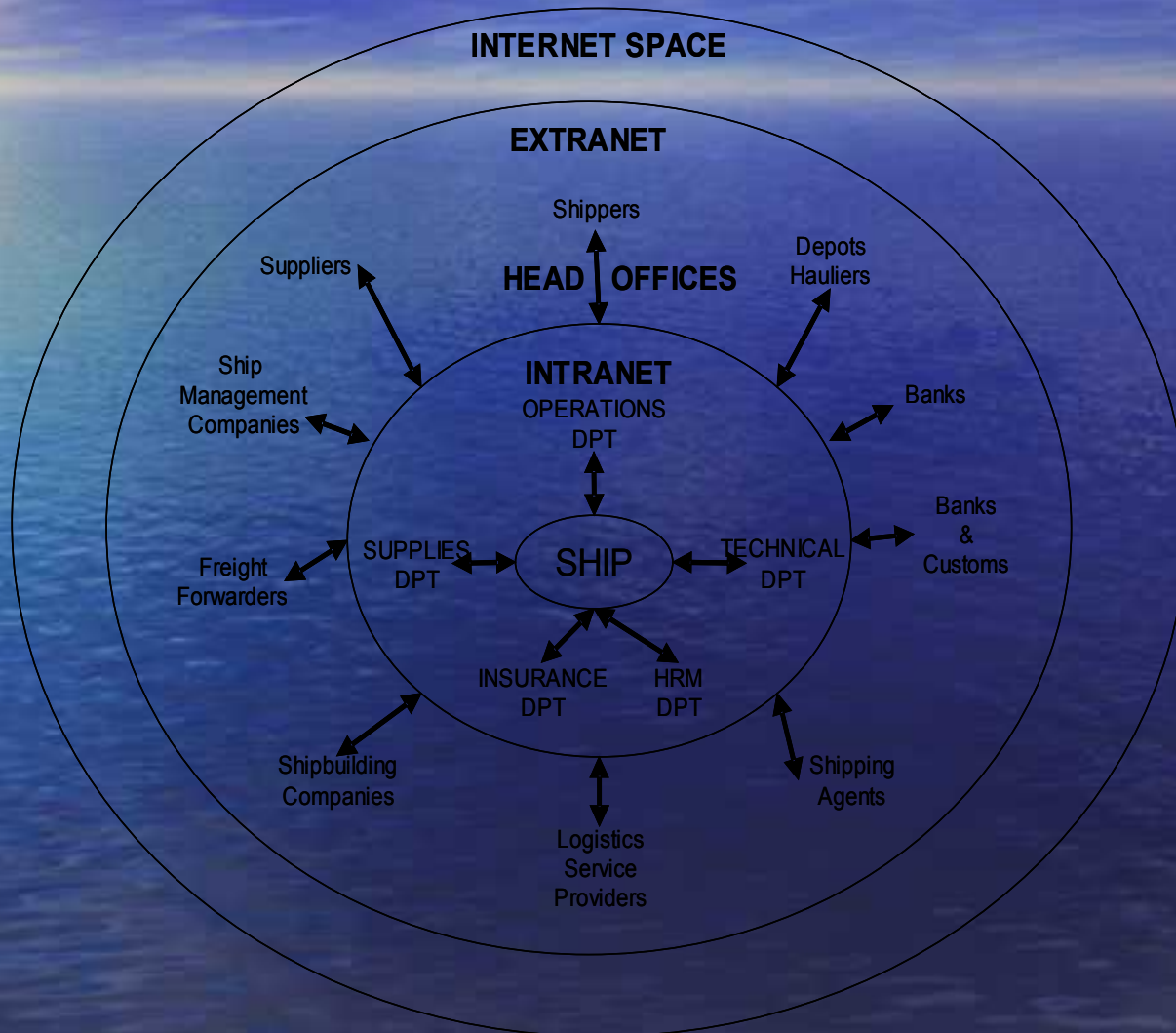


# The “cooperation” phase

- Commercial cooperation on-line
- First step was EDIs
- Second step was the network development
- Internet technology and Network Centric Enterprises (NCEs)
- Coordination of value chains through Virtual Private Networks (VPNs)

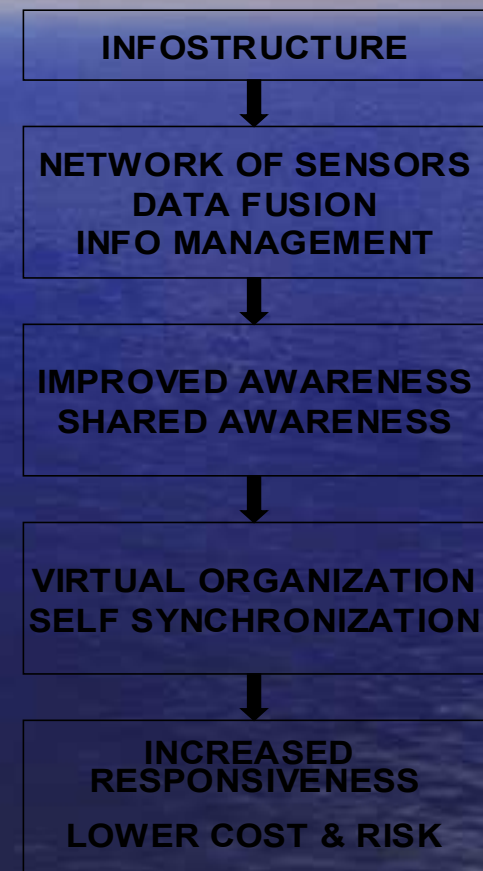


# Shipping Community over VPN's and Internet



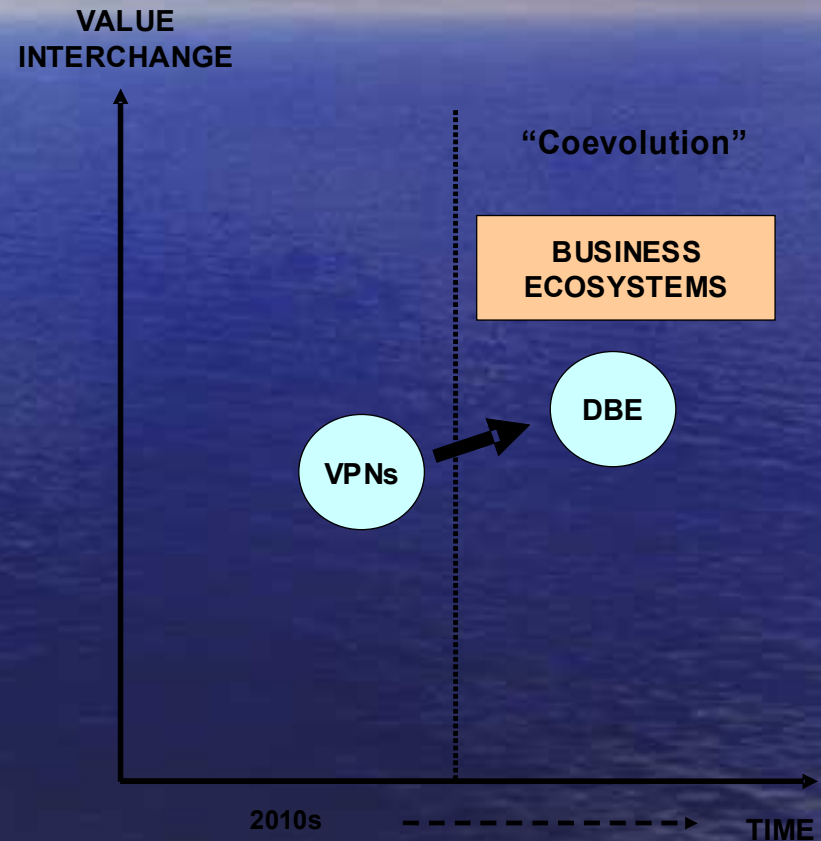
# NETWORKCENTRIC ENTERPRISES (NCEs)

- Main characteristic of NCE is to view players as a continuous adaptive ecosystem
- Main point is to generate and exploit competitive awareness
- Information Superiority
- Shipping companies that achieve information superiority are able to lower operating cost and risk and increase the reliability and responsiveness of their services



# The “coevolution” phase

- Digital Business Ecosystem (DBE) is a “digital environment” populated by “digital species” which could be software components, applications, services and business models (*Nachira 2002*)
- To support DBE scenario in shipping a further stage in ICT adoption is required which exploits the dynamic interaction (with cooperation and competition) of several players in order to produce innovation and economic development



# **CHARACTERISTICS OF SHIPPING INDUSTRY** **CONNECTED WITH ICT ADOPTION**

- Shipping is an information intensive operation.
- IT has already differentiated the patterns of shipping operation.
- However, there are some constrains such: Cost, interoperability and integration.

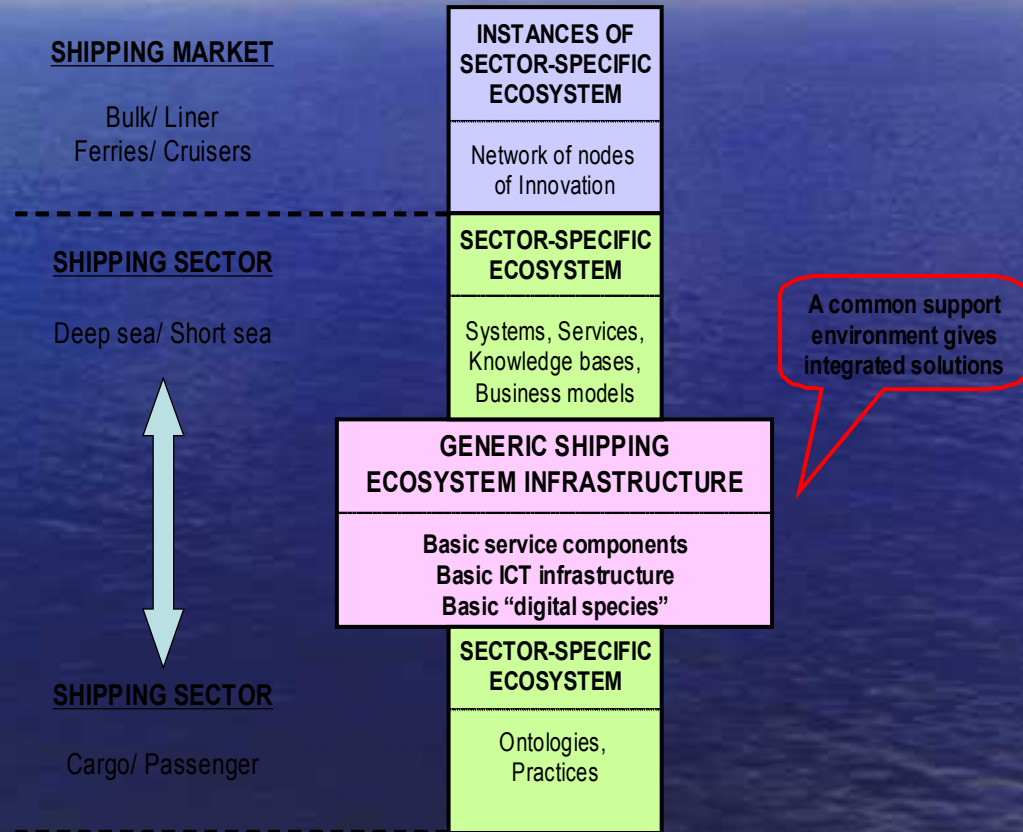
## **SOLUTIONS ARE:**

- **Widely acceptance of XML based integration standards**
- **Upgrading ICT infrastructures at ships and ashore**

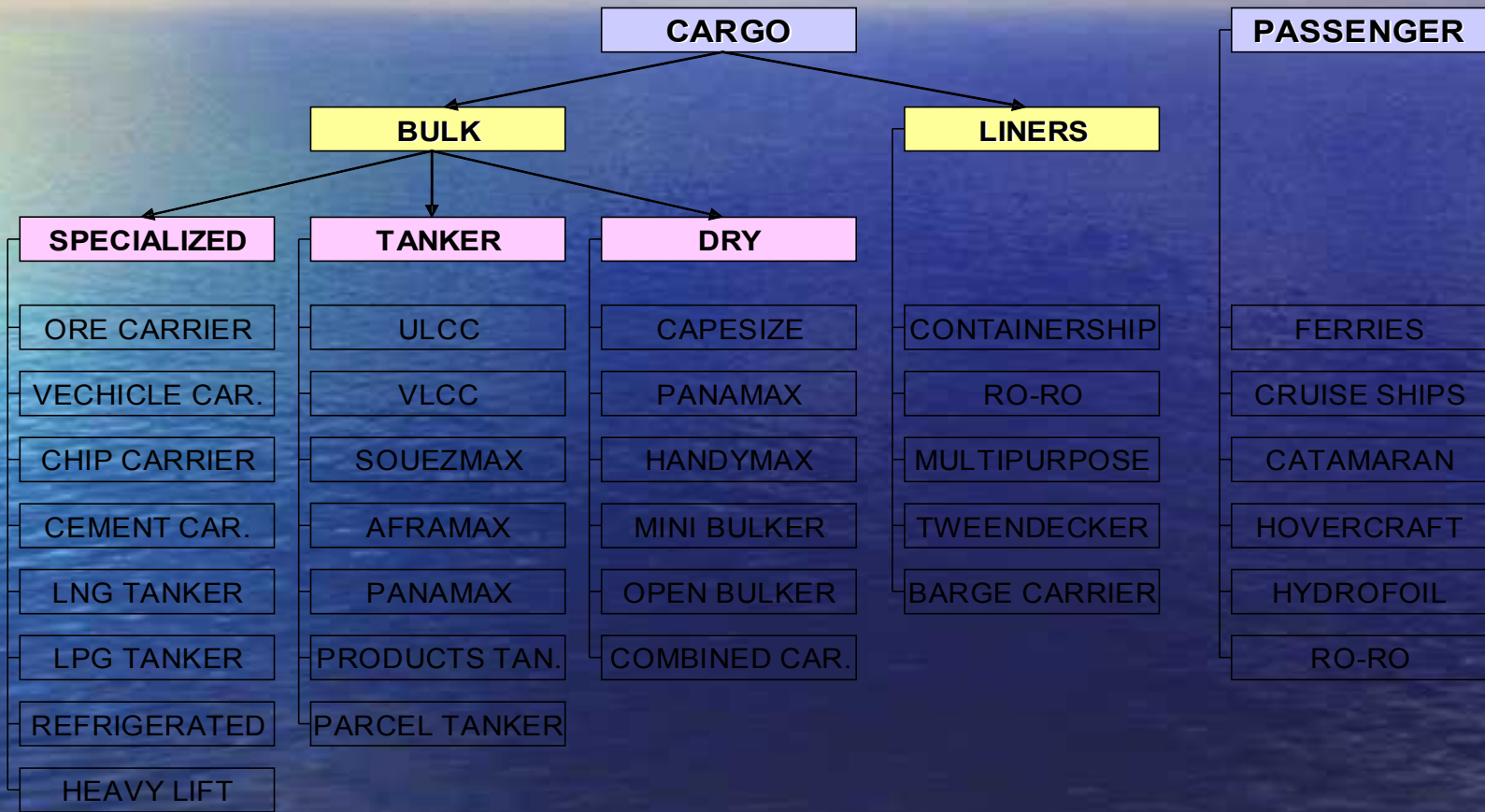
# THE CONCEPT OF DBE IN SHIPPING

- **3 layers:**
  - **Generic shipping ecosystem infrastructure (common environment)**
  - **Sector-specific ecosystems (transport area/ carrying units)**
  - **Instances of the sector specific ecosystem (shipping markets)**

*Shipping markets can be divided more in order to cover any shipping market connected with technical characteristic of ship class or carrying units*



# Basic Ship Types According Carrying Units



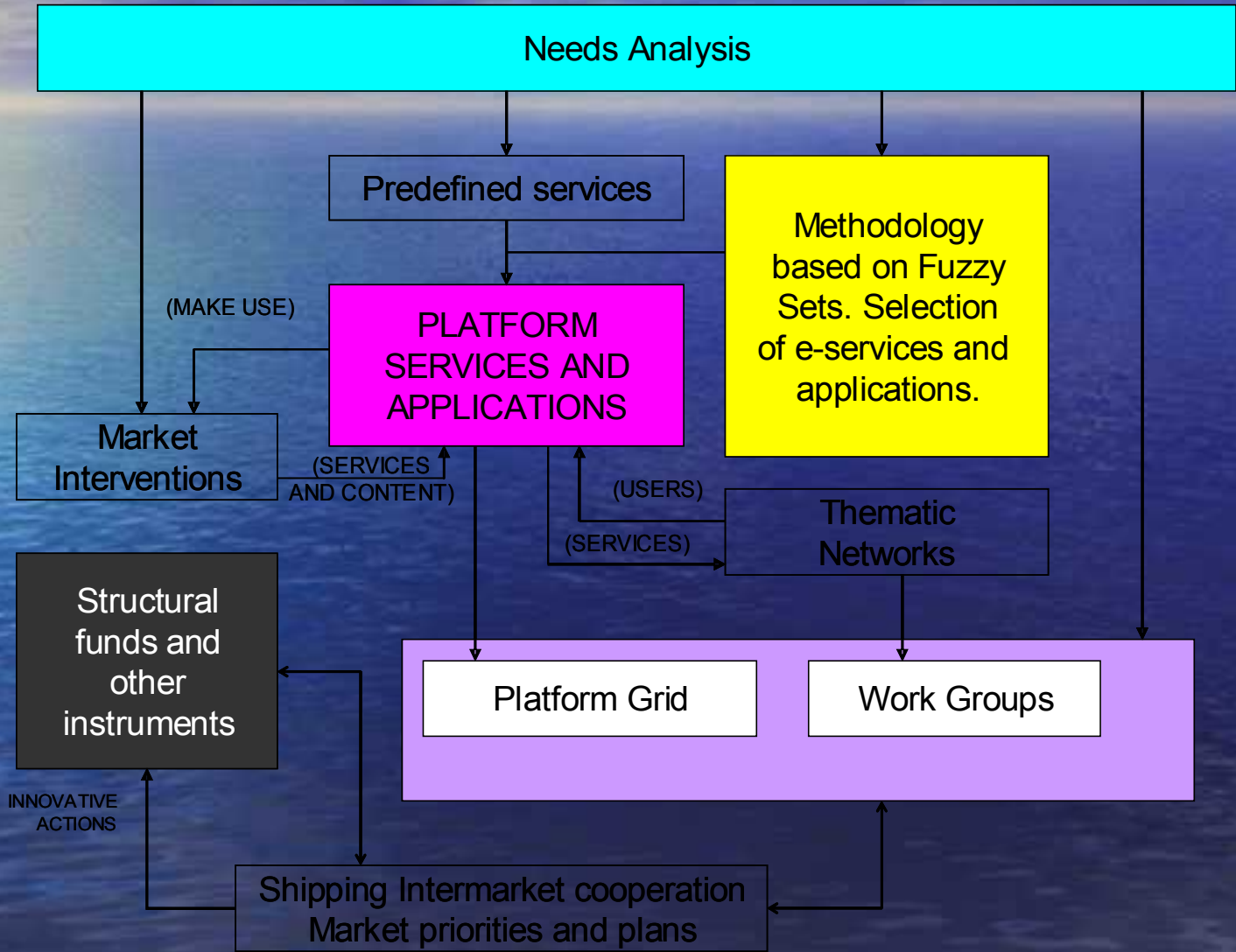
# Facets of DBE in Shipping

	<u>KNOWLEDGE FACET</u>	<u>BUSINESS FACET</u>	<u>TECHNOLOGY FACET</u>
	<ul style="list-style-type: none"> <li>- Shared knowledge base</li> <li>- E-learning modules</li> </ul>	<ul style="list-style-type: none"> <li>- Information based Strategies:</li> <li>- In 4 markets (freight, secondhand ships, newbuildings, scrapping)</li> <li>- In ship finance</li> </ul>	<ul style="list-style-type: none"> <li>- ICT Investments</li> <li>- INMARSAT environment</li> <li>- E-Business using XML</li> </ul>
<b>Shipping market implementation</b>	Instantiated ecosystem in a market network of innovation nodes (one in each market)		
<b>Shipping sector-specific and infrastructural components</b>	Sector-specific components, systems, services, business models (common to all markets)		
<b>Basic network support infrastructure and services</b>	Basic components and services, generic Knowledge (common to all sectors)		

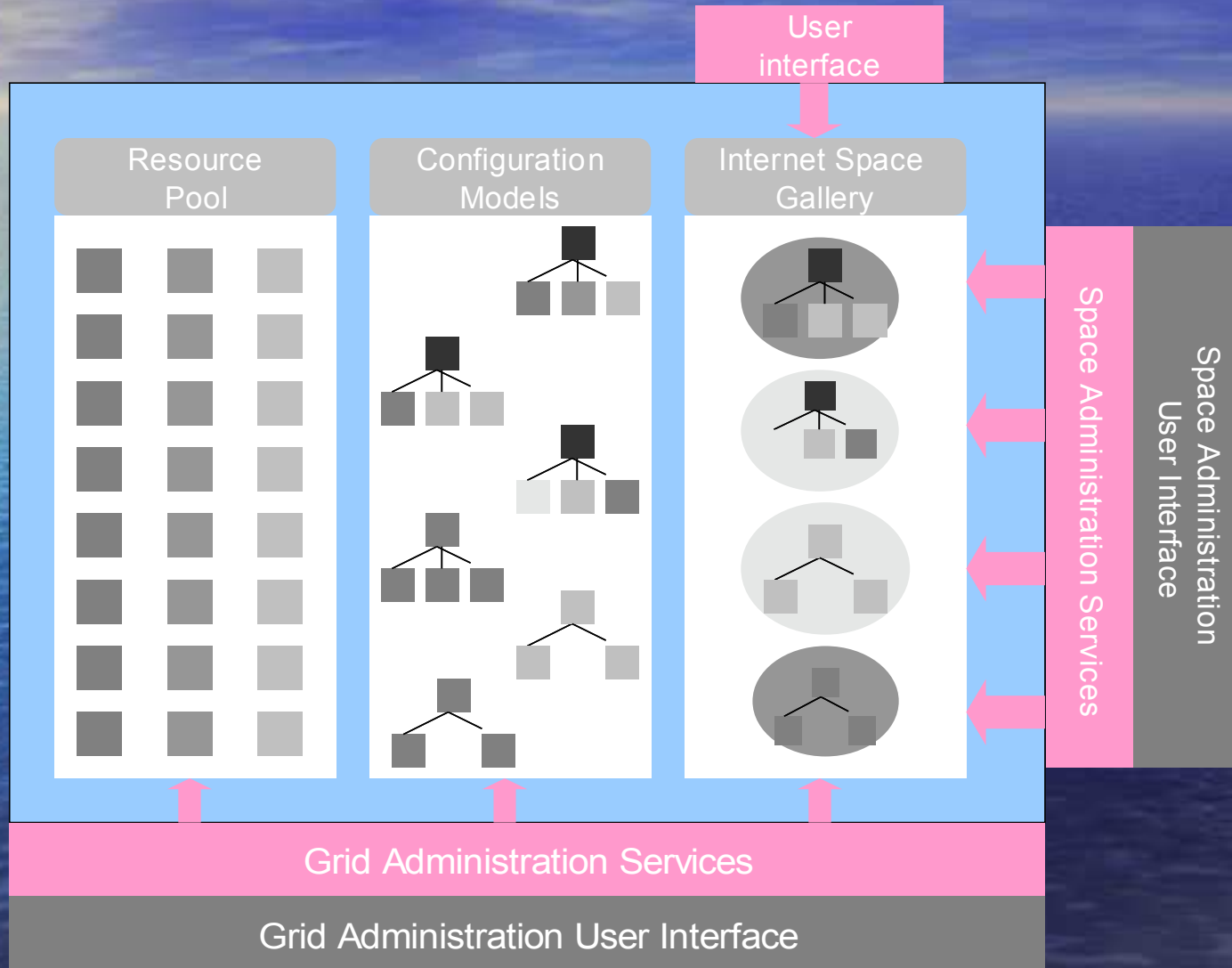
# Implementation of DBE Concept in Shipping

- **Developing a model of a business platform**
- **This platform is a digital shipping business ecosystem (populated by e-services) based on a grid architecture and open source software**
- **Entities are shipping companies which can attach and exploit a mass of e-services provided from the platform**

# The Structure Model of the Platform



# The Conceptual Model of the Platform



## **Platform can help shipping companies by:**

- **Lowering cost of IT**
- **Bringing access to resources not available**
- **Providing better collaboration (creation of virtual organizations)**
- **Providing a new vision**

# Conclusions

- Today ICT adoption in shipping develops the environment to form Network Centric Organizations
- Shipping companies, in coping with digital technologies, should be supported to move towards the “coevolution” phase of ICT adoption
- A lot of effort is undertaken to develop an open architecture that will permit nodes act as species of an DBE.
- Implementation of DBE in shipping builds a community
- The goal is to develop a system where the software can increase the efficiency of shipping markets
- A business platform could act as a dynamic ecosystem in shipping

# Looking to the Future

*The ICT adoption towards DBE potential, requires from shipping companies a strategic long-term vision and planning*

*Future will show if shipowners will respond to the new challenge to introduce advanced ICT in business process*



**Thank you  
for  
your attention!!**

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