



HOW WILL E-NAVIGATION AFFECT THE LIFE OF THE MARINER, SERVICE PROVIDER AND EQUIPMENT MANUFACTURER?

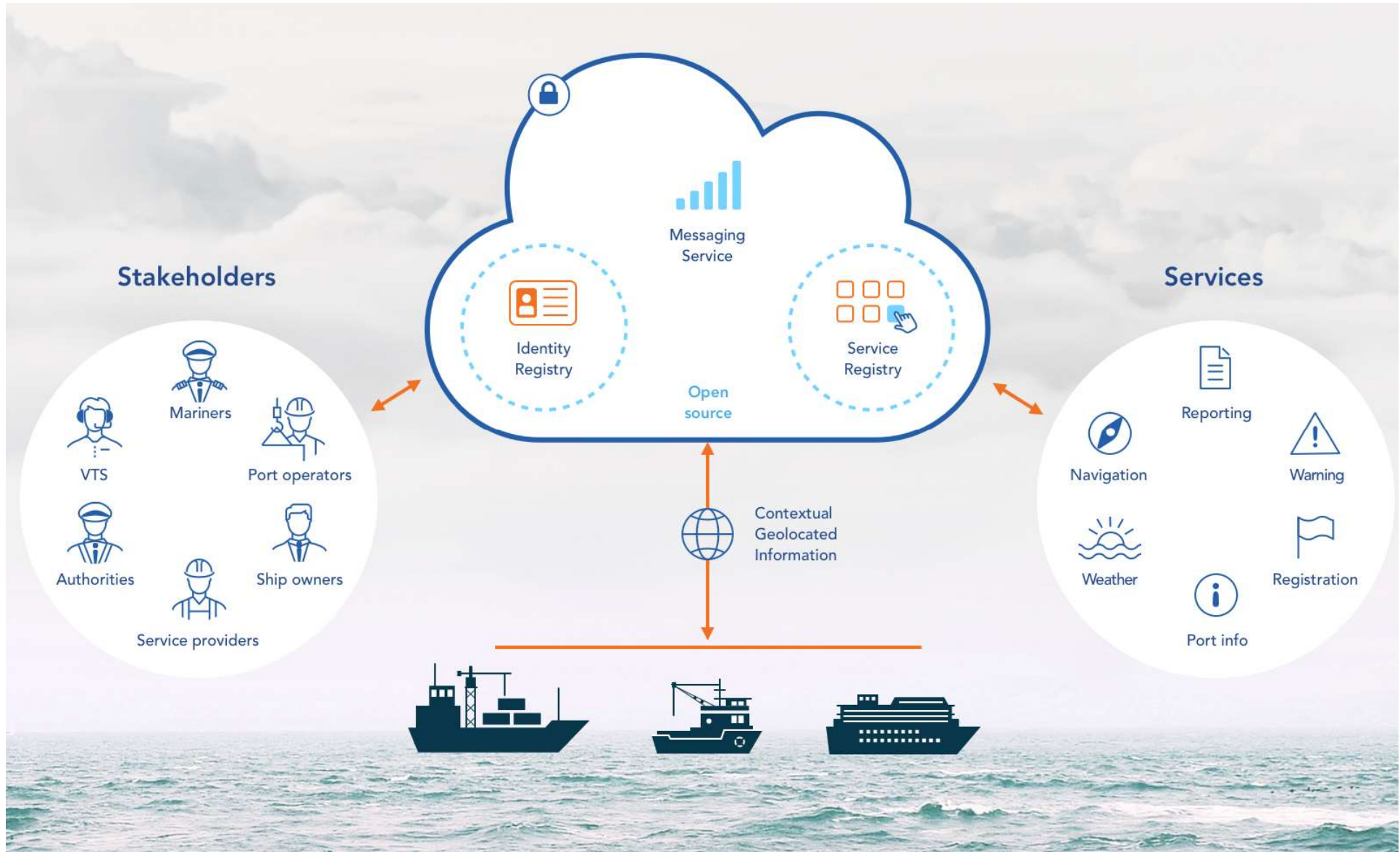
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The Maritime Cloud

(Identity and service portfolio management & roaming)



Value Proposition:



versus Google



- **Identity Management**
 - Roles, permissions and trust chain
 - We need to be able to trust the information source
 - The source of Information *must* control who gets it
 - **Georeferenced Service Discovery**
 - I am located here, and have these permissions
 - Pull - Which services are available to me?
 - **Roaming management and Geocasting**
 - Mobile platforms so data must be routed dynamically
 - Push – You must see this Navigational Warning?
 - **Maritime Messaging Service**
 - addressed text messaging
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The Connectivity Glue

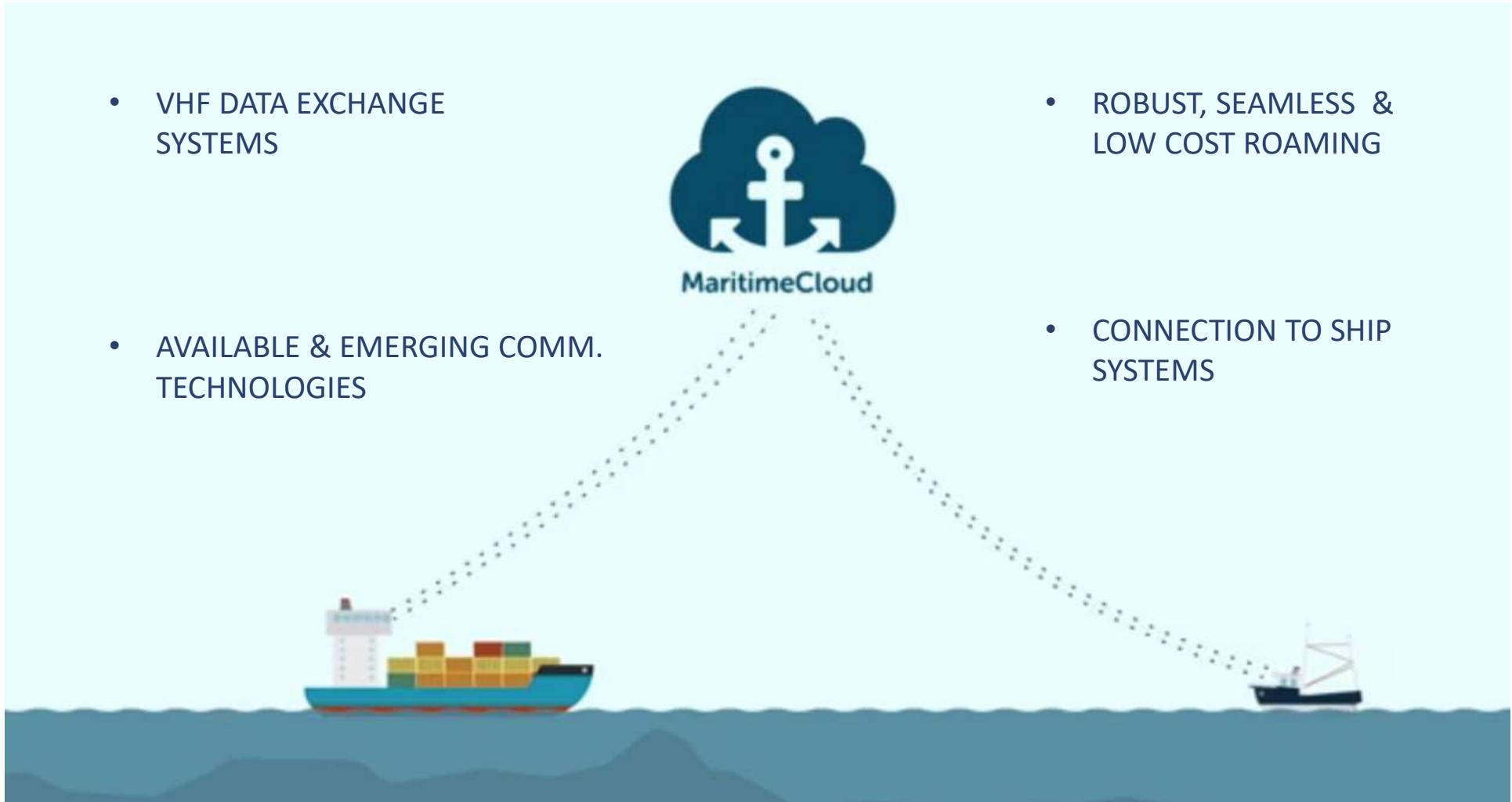
- VHF DATA EXCHANGE SYSTEMS

- AVAILABLE & EMERGING COMM. TECHNOLOGIES



- ROBUST, SEAMLESS & LOW COST ROAMING

- CONNECTION TO SHIP SYSTEMS



The Marketplace – is a bonus

Connectivity enables all types of services



Connectivity

Connectivity has transformed our lives



Mariners Perspective (today)



- Administrative burdens is taking focus from navigation
 - We are at the mercy of the equipment providers (vendor lock-in)
 - Interoperability of systems is a street in Siberia so we must handle multiple screens and panels to do our work
 - The engineers who designed our old systems forgot the human factors
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Mariners Perspective (tomorrow)



- All the information we need is readily available at our fingertips and we do not get information overload
 - We can buy equipment from anyone and be sure it will connect and talk to other systems
 - Our Maritime AppStore has all the Service Apps you could dream of – and they are not expensive
 - We have a multitude of decision support tools available helping us to navigate safer and more efficiently
 - All reporting is automated through our Shipbook
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Service Providers (today)



- Today we deliver Maritime Safety Information manually by voice, radio and on paper
 - we must hunt each customer down one by one to get any business
 - it is very much to do with who knows whom
 - It takes a lot of effort to gain marked shares
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Service Providers (tomorrow)



- Maritime Safety Information is now being delivered automatically directly into the navigation display and georeferenced
 - Our business model has changed – we are now competing on the value proposition of our services and not our network and customer hunting capabilities
 - The customer has easy access to my services via MC so if my services create good value, the customers come to me
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Equipment Manufacturers (today)



- Today we build very long and lasting relationships with our customers
 - We make sure they get thoroughly locked into our products
 - We are the only ones who can maintain the equipment, so we charge well for maintenance
 - We also spend a lot of money on developing new and innovative products
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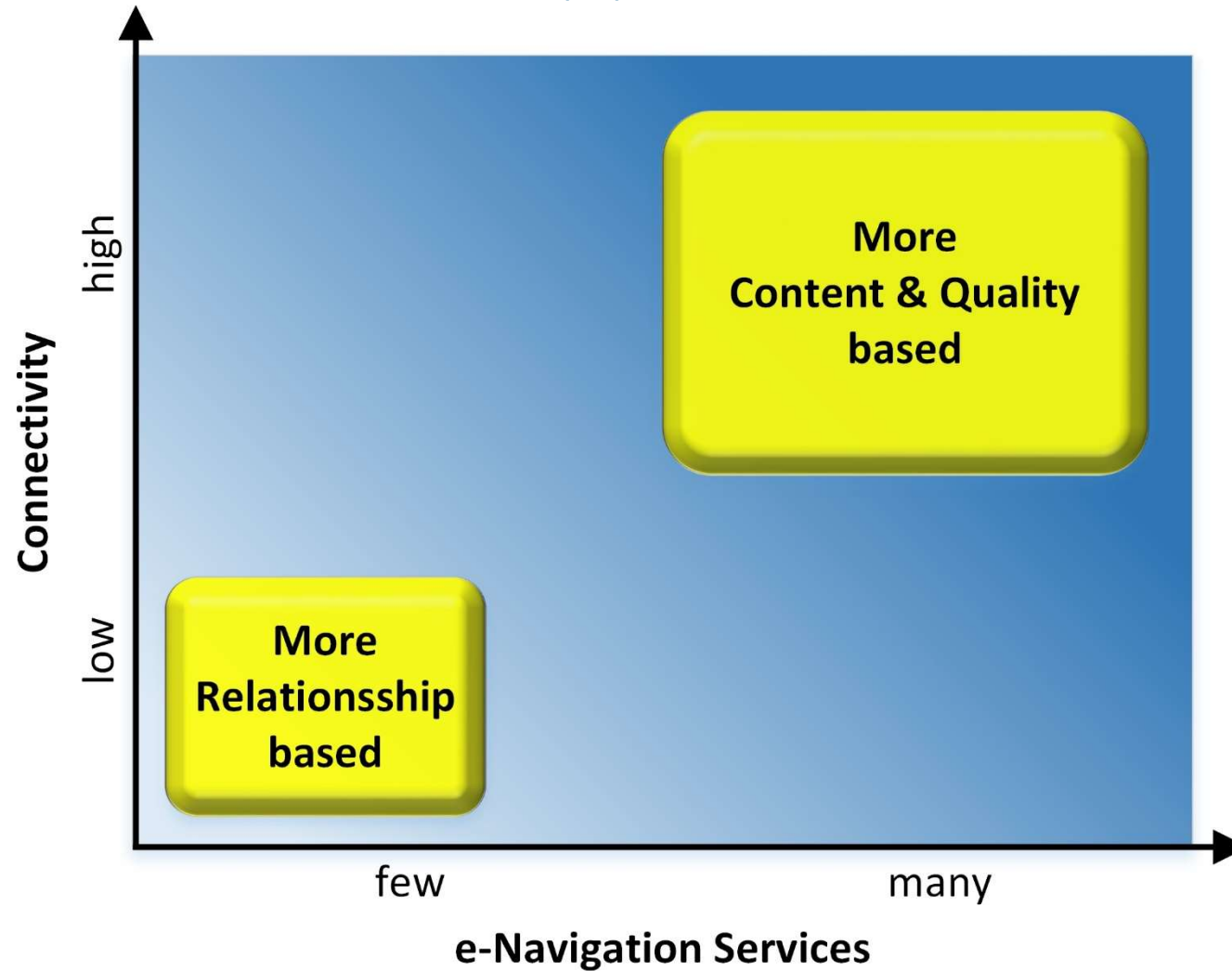
Equipment Manufacturers (tomorrow)



- Yesterdays Vendor lock-in has reduced, customers demand interoperability between systems
 - The equipment hardware is more or less the same from all manufacturers, and everything must be MC compatible
 - Our business model has changed – now we compete more with our software innovation and human centred design
 - Most of us are now also service providers
 - We are still making good profit
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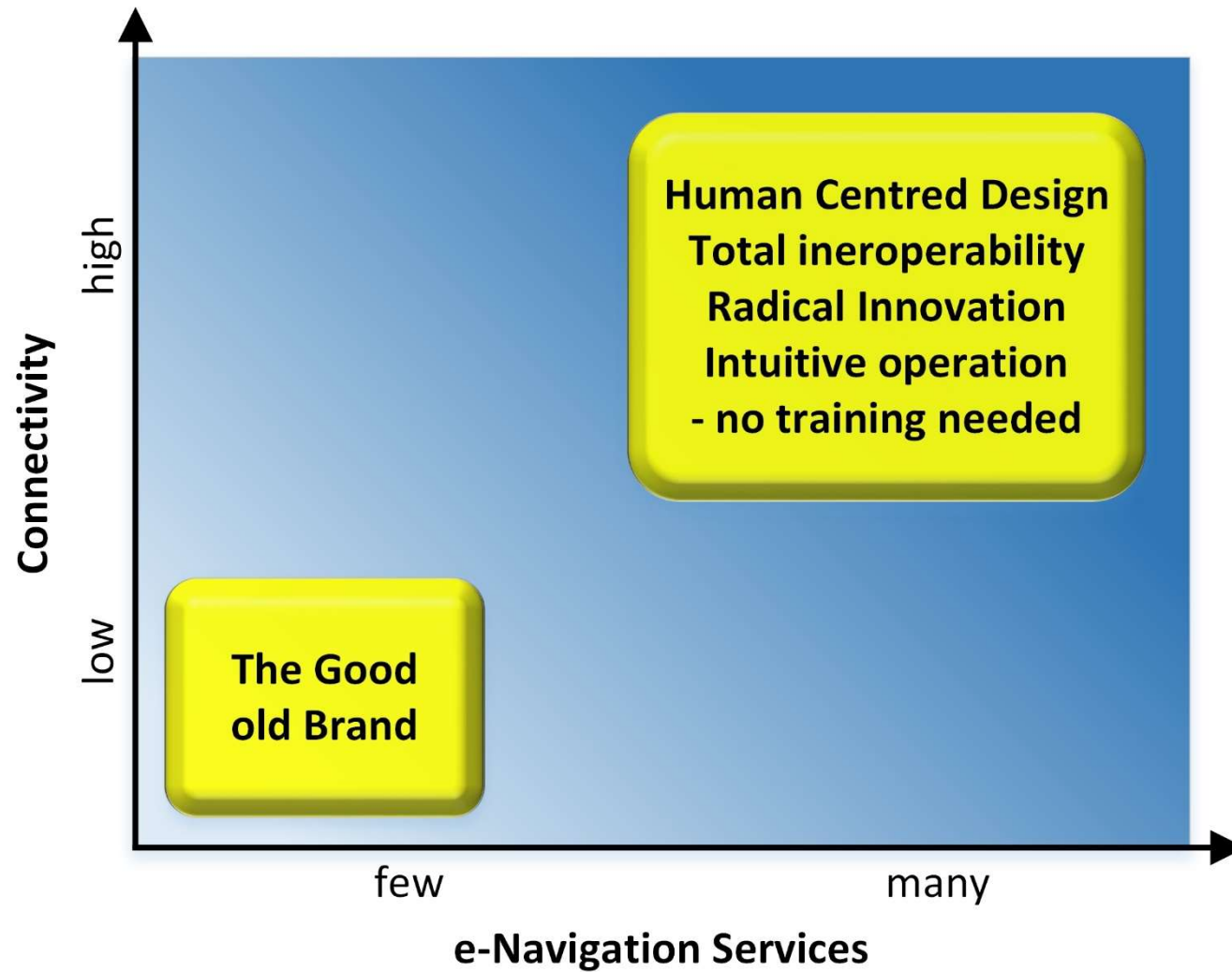
The Competitive Landscape

for Service Providers and Equipment Manufacturers



Expectation Landscape

Mariners and other users



Mariners of the future





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