

Defence **iQ**

OFFSHORE PATROL VESSELS

TRENDS AND ANALYSIS REPORT

2016



CONTENTS

About the research	3
Analysis of priority technologies and capabilities for the modern opv	4
Buying new vs. modernising	5
Overview of key opv functions over the next decade	6
OPV combat role	7
Analysis of most attractive or lucrative market over next decade	8
Demand for OPVs over 10 years	9
Modularity to deliver one-size-fits-all capability	10
Analysis of ability to combat threats	11
Analysis of military's biggest challenge for buying or modernising OPVs	12
Offshore Patrol Vessels 2016	13

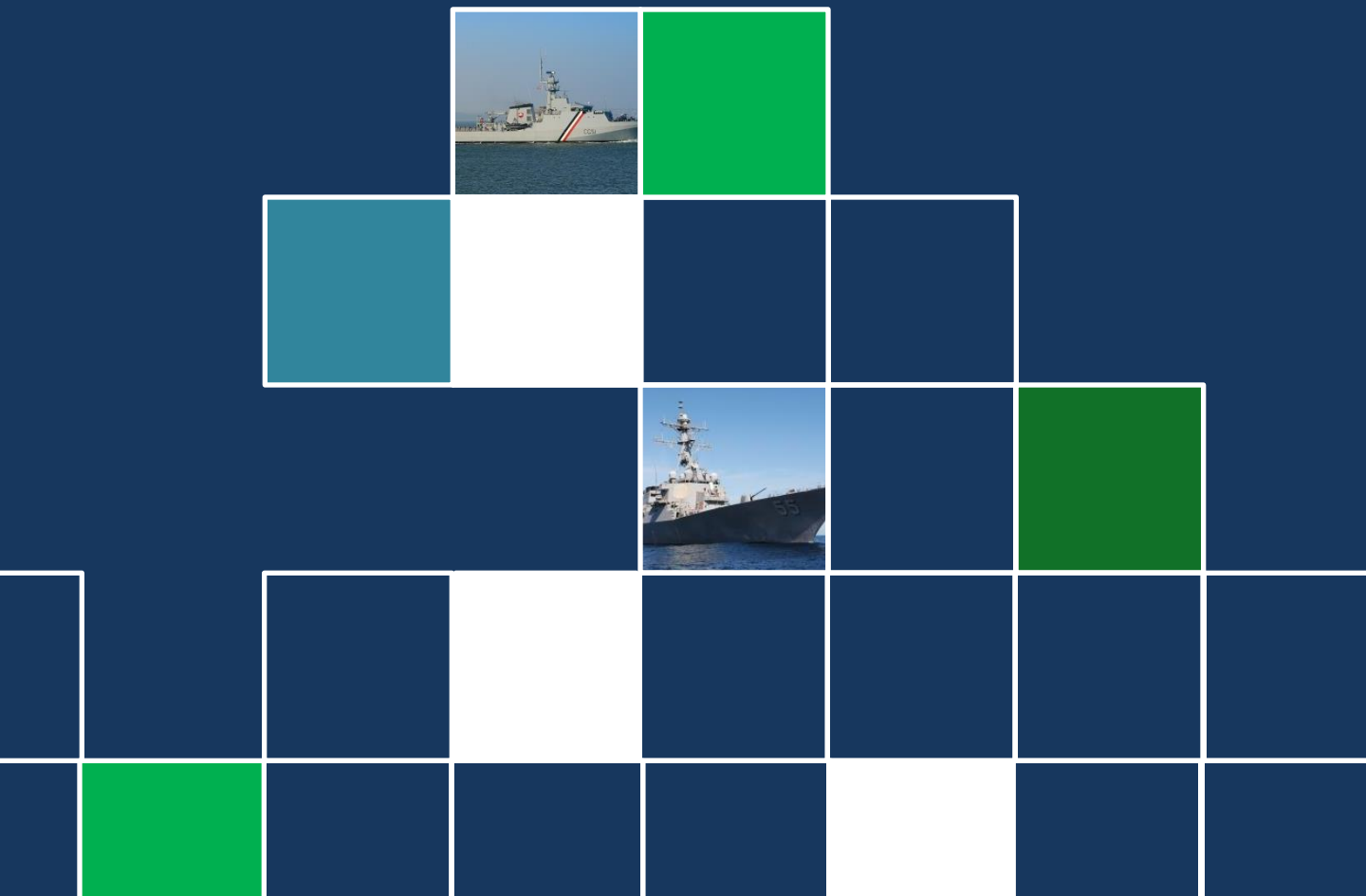
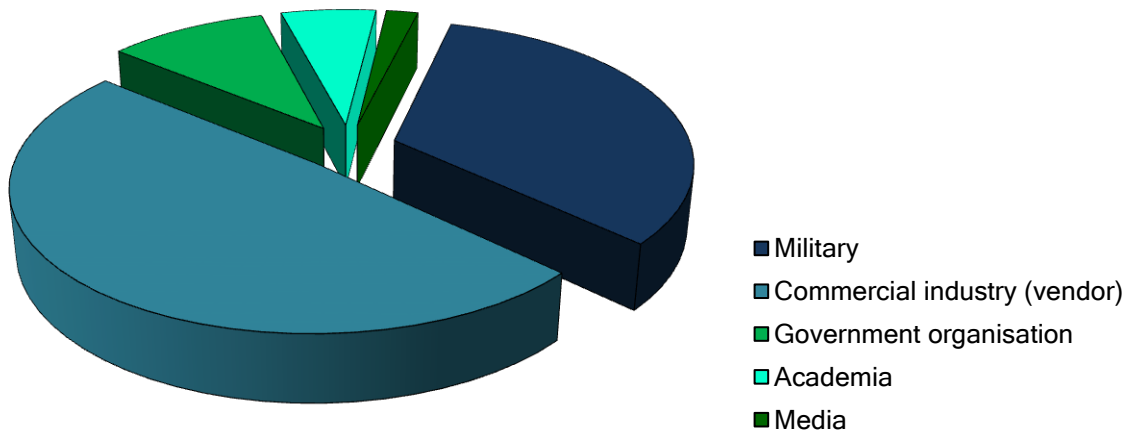


FIGURE 1:
ANALYSIS OF RESPONDENT BY TYPE



The market for offshore patrol vessels (OPVs) is buoyant as countries seek to modernise, upgrade, and replace platforms to keep up with the pace of technology change and the evolving threat spectrum. Their multi-role capabilities also makes them a popular choice for militaries and governments as they seek to get more bang for their buck.

Ahead of the Offshore Patrol Vessels conference (14 - 16 September, 2016 - Glasgow, UK), Defence IQ commissioned a survey of naval experts and industry professionals to gauge how the market is evolving and to identify the key trends in the market over the next ten years.

Based on a survey of 429 industry experts and military stakeholders, this report looks to analyse the data and provide an insight into the OPV market. It focuses on the key challenges for modernising the platforms, looks at the potentially game-changing new technologies coming to market, the benefits of modularity, and the regional markets targeted for growth.

Almost half of respondents (49%) represent the commercial sector while a third (33%) are military professionals and 10% work for government organisations or agencies. The remaining respondents are comprised of academics (6%) and media professionals (2%).

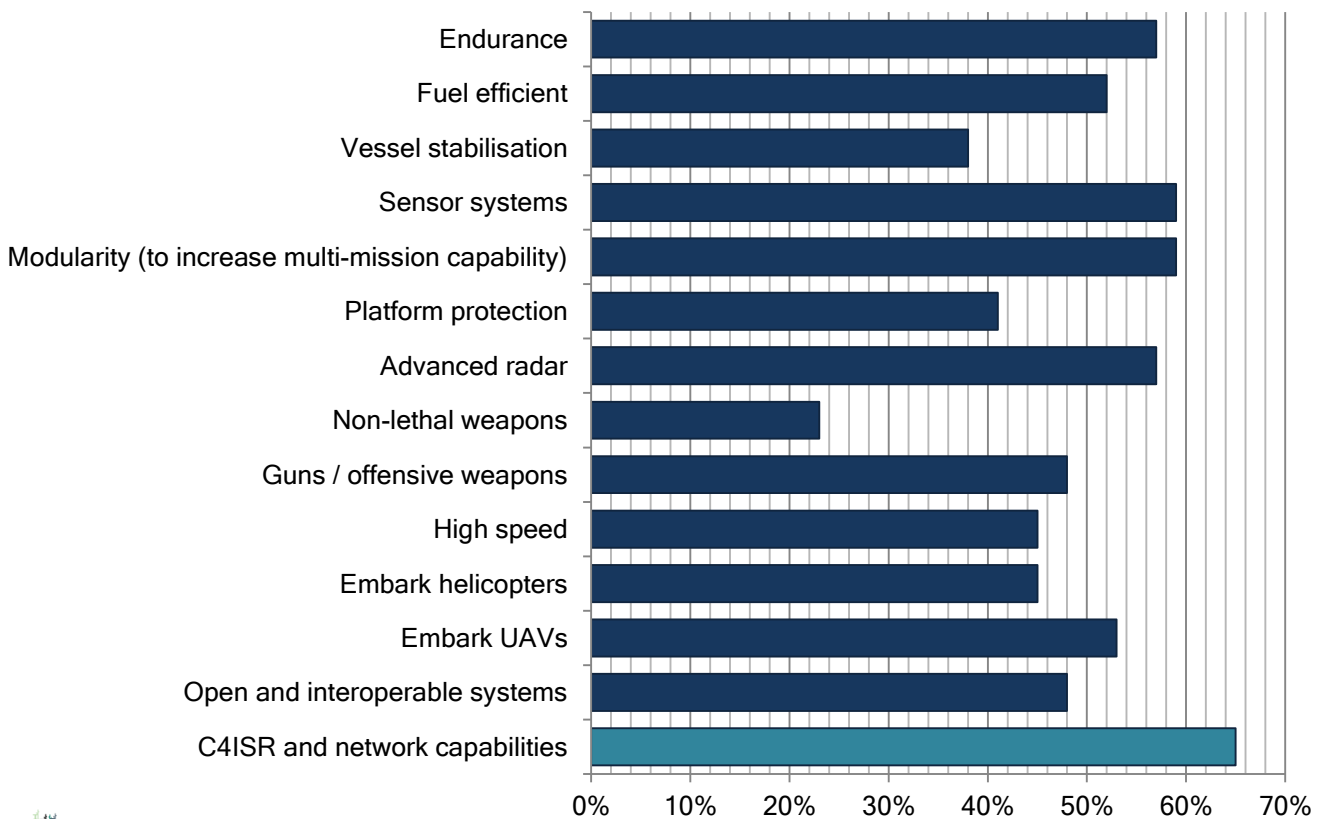
PRIORITY CAPABILITIES

One of the key advantages of an OPV platform is the multi-role capabilities it offers, which is highlighted by the broad range of answers with high response rates in Figure 2 below. Half of the answers had more than 50% of respondents indicating that the technology or capability should be considered a priority, which is highly unusual for a question of this nature. Of those identified, C4ISR and network capabilities had the highest response rate with 65% of participants underlining it as an important - *the most important* - capability for modern OPVs. This

was followed by modularity and sensor systems (both 59%), endurance and advanced radar (both 57%), ability to embark UAVs (53%) and being fuel efficient (52%).

Respondents also highlighted survivability in particular as an important capability, indicating the need for OPVs to be deployed in a combat role, or at least being prepared for these types of missions. Other capabilities mentioned included low operational and through-life costs, requiring low maintenance, availability of COTS parts for repair, and the ability to transit shallow waters.

FIGURE 2:
ANALYSIS OF PRIORITY TECHNOLOGIES AND CAPABILITIES FOR THE MODERN OPV



BUYING NEW VS. MODERNISING

This question really struck a chord with respondents, and particularly with those in the military who clearly struggle to get government to appreciate the balance between upfront costs and through-life costs. While procuring new OPVs requires significant cash and time resources, is it a more cost-effective and strategically sound option than modernising or adapting current vessels in the long-term?

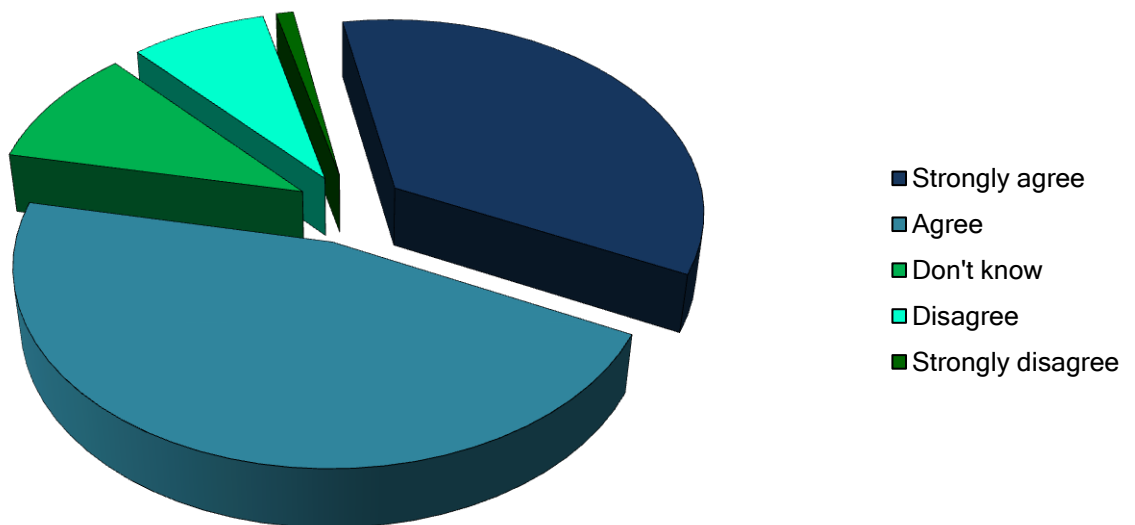
According to 81% of those surveyed, yes. More than a third (35%) 'strongly agreed' with this notion and 46% 'agreed'. While 10% abstained, just 9% of respondents

said that buying new platforms is not more cost-effective in the long-term over the full life cycle of an OPV.

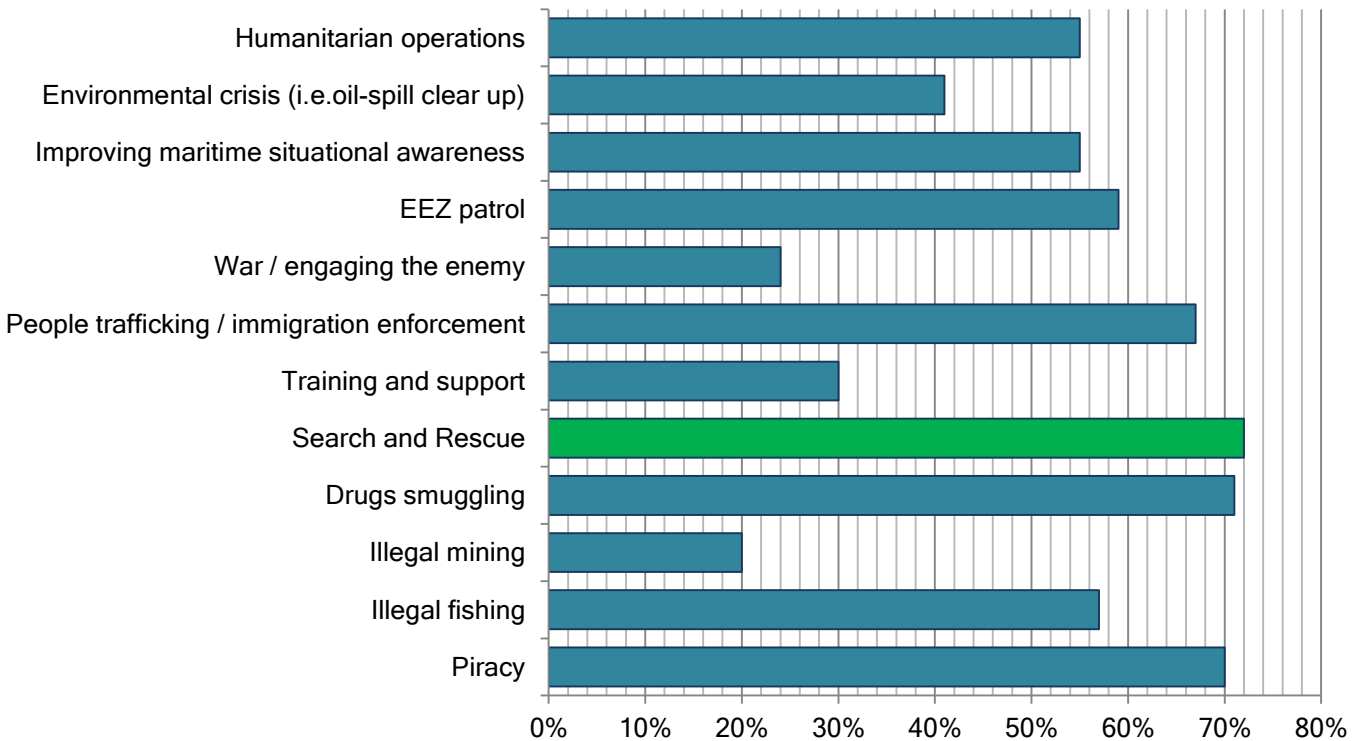
The circumstances under which an old OPV is modernised or a new one procured will of course vary drastically considering budgets, threats, and requirements. However, the general principal remains: buying new is a more strategically sound option than bolting on new technologies to an old platform. The difficulty for militaries is that this is true for the *long-term*; getting those who hold the purse strings in government to appreciate long-term strategic military capabilities can be quite an ask.

FIGURE 3:
BUYING NEW VS. MODERNISING

To what extent do you agree with the following statement: "Building a new OPV is typically a more cost-effective and strategically sound option than modernising or adapting current vessels in the long-term."



**FIGURE 4:
OVERVIEW OF KEY OPV FUNCTIONS OVER THE NEXT DECADE**



KEY FUNCTIONS

While OPVs are an attractive option for navies and coast guards due to their multi-role capabilities, which functions in particular will OPVs be most widely used for or to combat over the next ten years? Search and rescue (72%), counter-narcotics and drugs smuggling (71%), and counter-piracy (70%) were identified by respondents as the three essential tasks for offshore patrol vessels over the next decade.

Other functions highlighted by respondents included patrol and surveillance of offshore assets such

as oil platforms, oceanographic research, convoy protection, and anti-mine missions.

Given that the P stands for Patrol, it was expected that the primary functions identified for OPVs would come under the surveillance umbrella.

Just 24% indicated that a key function for OPVs should be for engaged in the enemy, taking on a warship-lite role. The use of OPVs in combat scenarios is hotly debated and covered in greater detail in Figure 5 later in this report.

FIGURE 5: OPV COMBAT ROLE

To what extent do you agree with the following statement:
"The traditional OPV patrol role has never required substantial combat capabilities and never will."



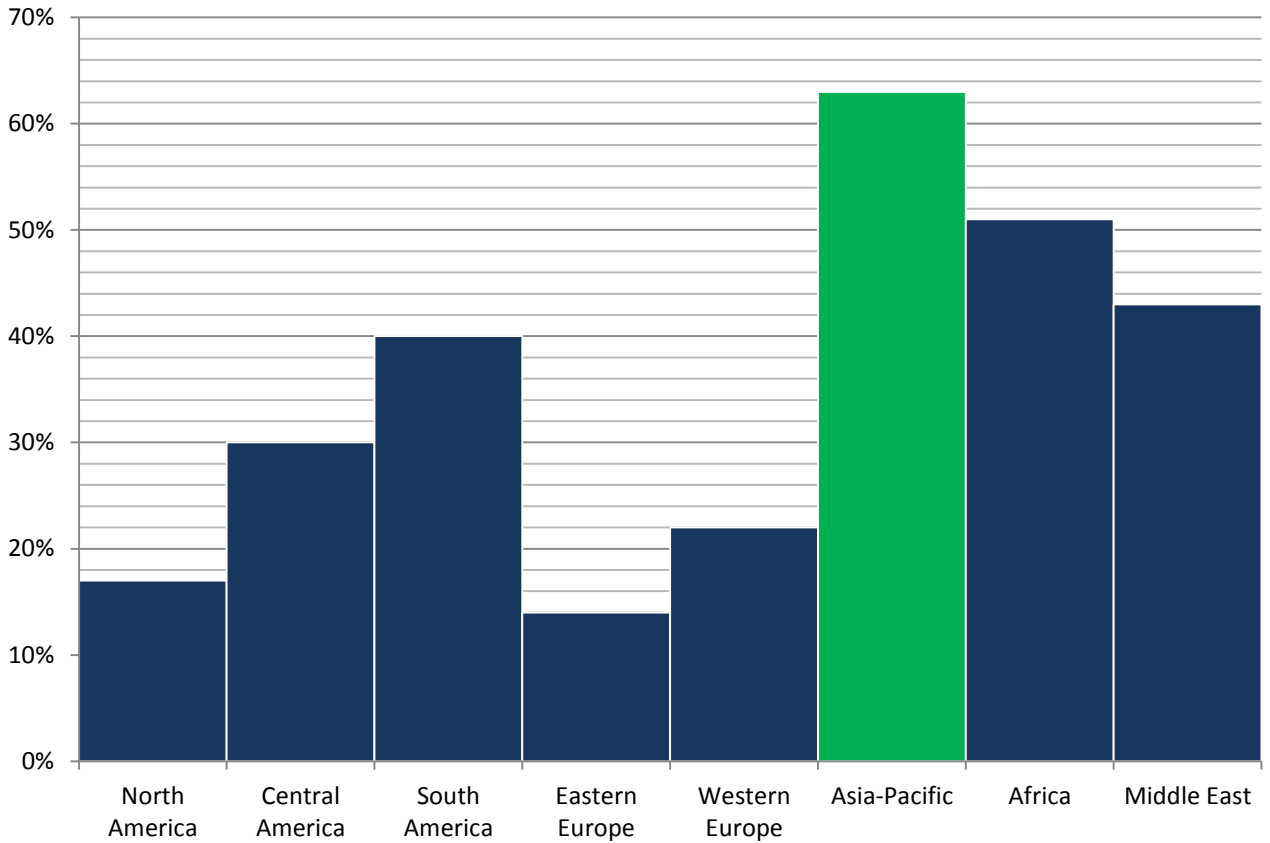
COMBAT ROLE QUESTIONED

When asked to state to what extent they agreed with the statement about OPVs requiring combat capabilities, respondents were split right down the middle. While 10% 'didn't know', 38% 'agreed' and 37% 'disagreed'; and remarkably 7% 'strongly agreed' and 8% 'strongly disagreed'. The responses were almost exactly aligned, with no clear answer discernable. Since just 15% of respondents had a 'strong' response to the statement, one simple conclusion that can be drawn is that few people have a strong opinion about OPVs in combat roles. But instinct and experience tells us that this probably isn't true.

There is an argument that the size of OPVs makes them a better coastal defence vessel than some of the larger warships, along with the belief that maritime threats are increasing in both volume and severity, meaning these platforms must be prepared for any eventuality.

But perspective is critical here. One respondent said that the only place this statement is not true is within the DMZ area between North and South Korea. Another said that while not a primary function for a patrol vessel, combat capabilities are required to allow flexibility in crisis management.

**FIGURE 6:
ANALYSIS OF MOST ATTRACTIVE OR LUCRATIVE MARKET OVER NEXT DECADE**



GLOBAL GROWTH MARKETS

According to the majority of respondents (63%), Asia-Pacific is the most attractive and potentially lucrative market for offshore patrol vessels over the next ten years. This is followed by Africa (51%), the Middle East (43%), and South America (40%).

The results are inline with expectations as Asia has the largest proportion of the world’s current OPV fleet (46%). The region also boasts the highest number of OPVs on order, accounting for 49% of the global total. Japan and India hold

almost half (46%) of the region’s vessels between them, while India alone has 25% of the total vessels on order worldwide. Australia, India, South Korea, New Zealand, Pakistan, the Philippines, Sri Lanka, Thailand, and Vietnam all have ongoing or future patrol vessel programmes and requirements.

Although demand from European markets is expected to be muted over the next decade, a number of respondents highlighted the crisis in the Mediterranean as a potential catalyst for a reevaluation of patrol capabilities in the region.

DEMAND REMAINS HIGH

Confidence in the mid-term future of the offshore patrol vessel market is high with over half of respondents (58%) indicating that demand will rise and procurement will increase. The market has been growing for a number of years and there are few signs that this is expected to slow down or reverse anytime soon.

At least 36 countries are known to have a total of 167 OPVs on order and 28 countries have plans for up to another 239 at a total value of over \$60 billion. The total number of OPVs on order has increased by 23% in the last year, although the number planned has decreased by 13% as plans have transferred to orders.

FIGURE 7:
WHICH STATEMENT MOST ACCURATELY DESCRIBES THE
OPV MARKET OVER THE NEXT 10 YEARS?

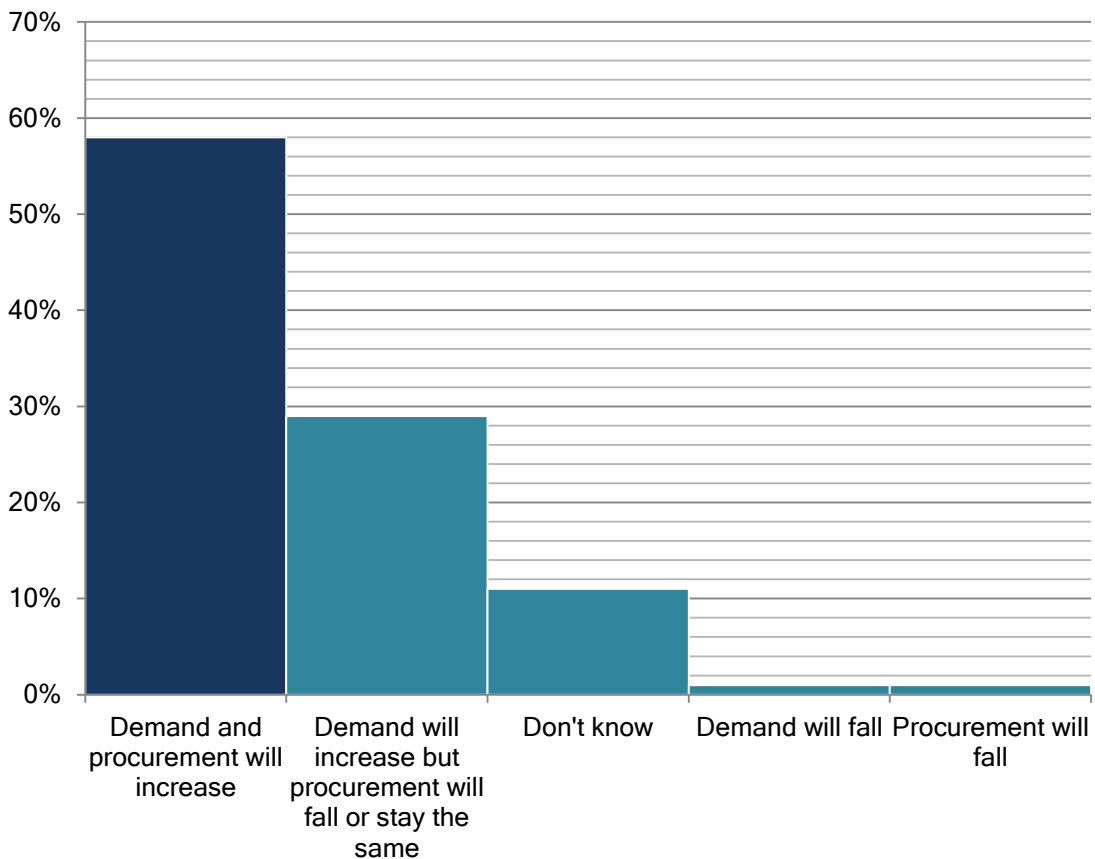
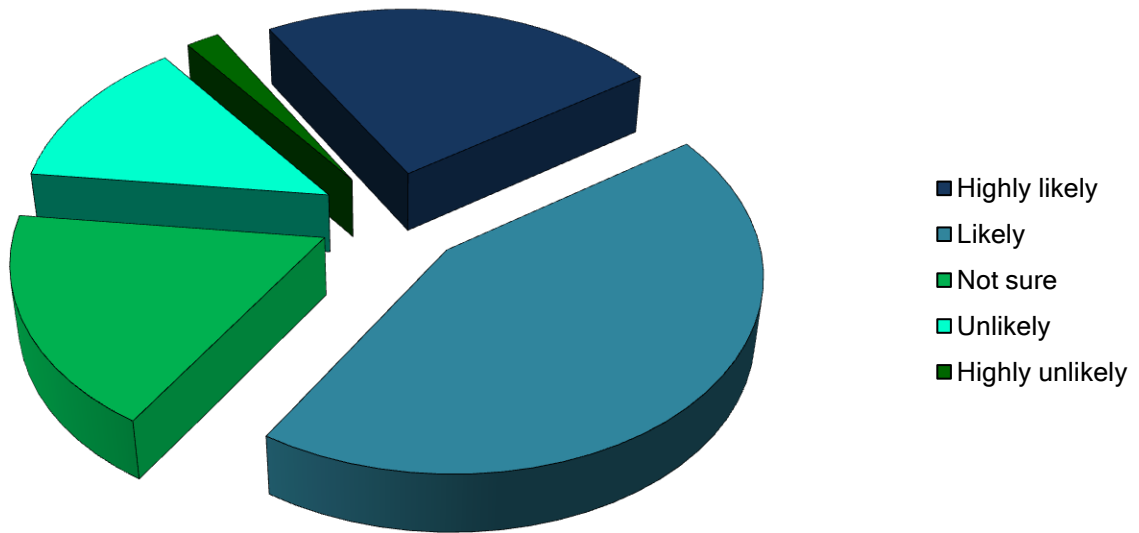


FIGURE 8:
HOW LIKELY IS IT THAT MODULARITY WILL BE ABLE TO DELIVER A ONE-SIZE-FITS ALL OPV THAT CATERERS FOR A NATION'S FULL OPV MISSION SET?



BENEFITS OF MODULARITY

Exactly two-thirds of respondents (66%) believe that in the future modularity will be able to deliver a one-size-fits-all OPV that caters for a nation's full OPV mission set. Of those, 24% think it is 'highly likely'. While it is clear that no platform can ever do everything for everyone, the results here suggest that a smart design approach where modularity is built in from the start has the potential to ultimately satisfy the majority of requirements for a broad range of customers.

It is also dependent on resources, for example, as some countries buy OPVs because they cannot afford more complex and expensive warships so are willing to compromise on OPV capabilities.

There was also a word of caution from one respondent: "Modularity is a good concept but if the LCS programme showed us anything, a versatile ship good in many areas is cheaper and better than one which you have to remission should the needs change."

IS GOOD ENOUGH, GOOD ENOUGH?

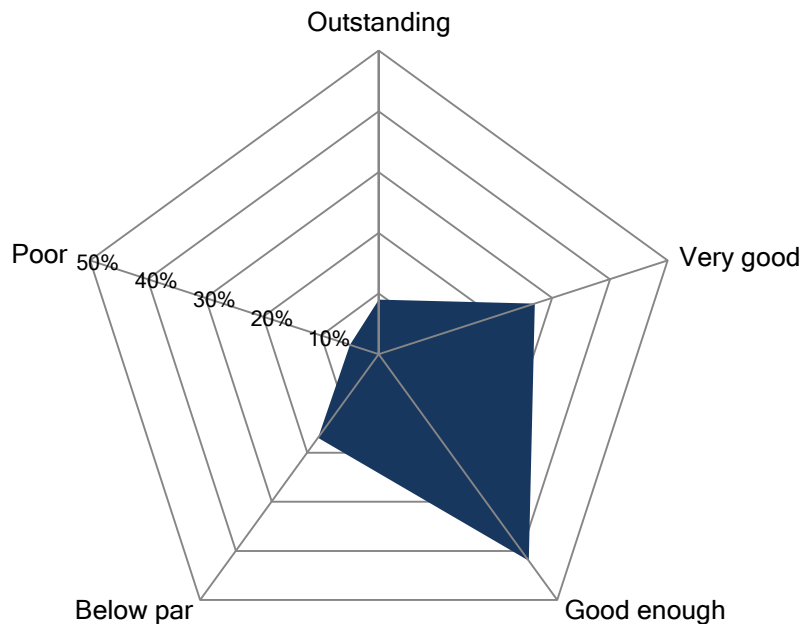
The next two graphs are from questions just asked to the military respondents and indicate the current state of OPV fleets around the world and the current challenges with acquiring or upgrading platforms.

When asked to rate the ability of their current OPVs to combat the threats they face, 42% of military respondents said that the platforms

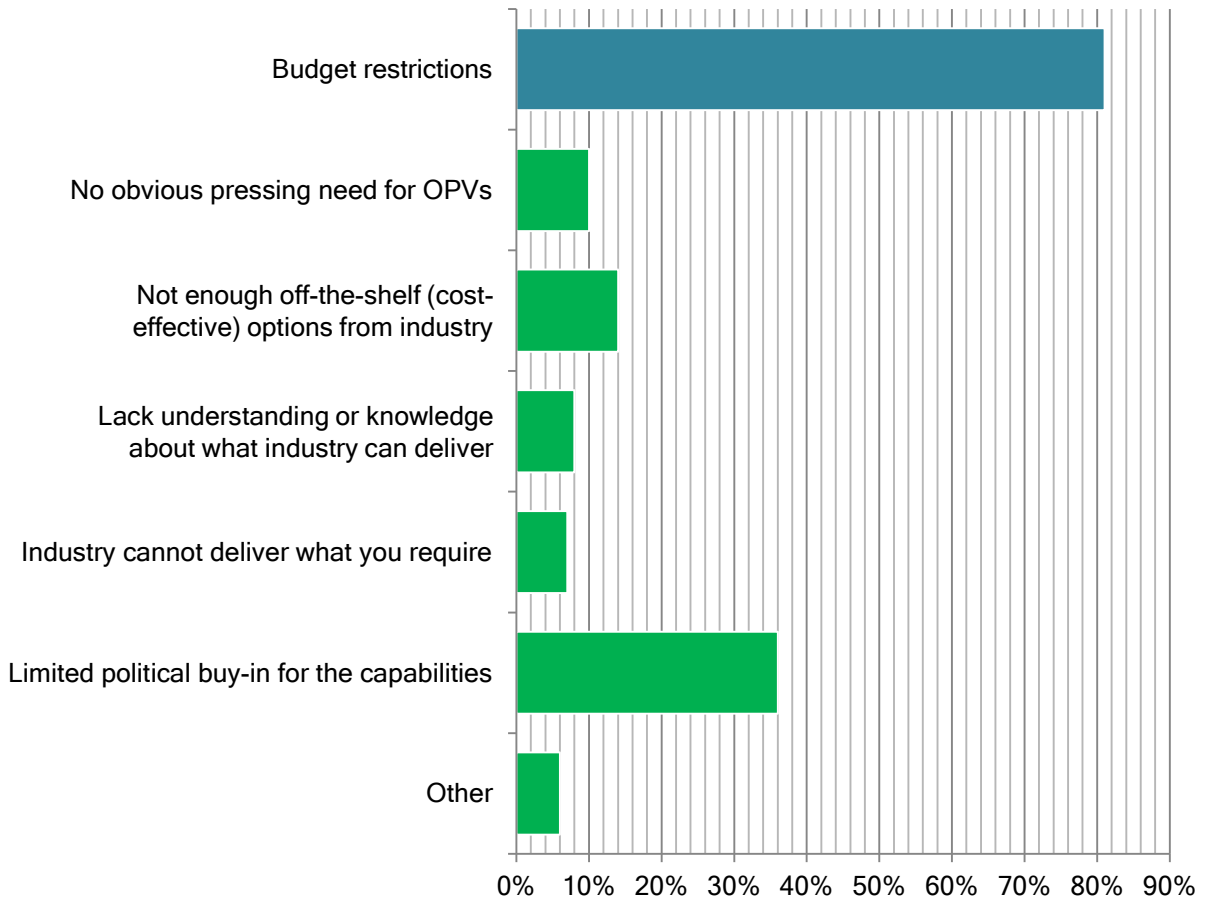
were 'good enough', with 27% indicating they were 'very good' and 9% even claiming them to be 'outstanding'.

Nearly a quarter (23%) said that their current OPV fleets were 'poor' or 'below par', which certainly backs up the high demand for new platforms to combat the increasingly complex threats faced by militaries at sea.

FIGURE 9:
HOW WOULD YOU RATE THE ABILITY OF
YOUR CURRENT OPVs TO COMBAT THREATS?



**FIGURE 10:
ANALYSIS OF MILITARY'S BIGGEST CHALLENGE FOR BUYING OR MODERNISING OPVs**



BUDGET LIMITATIONS

Despite the trend seeing global defence budgets steadily rising, securing funding for offshore patrol vessels is the most significant challenge, according to 81% of military respondents.

Interestingly, the next biggest challenge is getting political buy-in for OPVs and associated

capabilities. While ring-fencing a budget for patrol vessels is clearly the biggest challenge, for many militaries the stage before this can also be problematic.

Other challenges mentioned included broken or antiquated acquisition systems, and end-users requiring more capabilities than they are willing (or able) to pay for.



13 - 15 September, 2016 (Glasgow, UK)

Offshore Patrol Vessels 2016 comes at a time when navies and coastguards in the Mediterranean, Aegean and South Pacific regions are facing the unprecedented challenges posed by mass migration, and related anti-human-trafficking operations. Along with this, navies must balance the need to maintain OPVs that are capable of performing their traditional recon and patrol operations. This means multi-role functionality is a key requirement, and modular platforms the best solution.

OPV 2016 will bring together all the shared experience, knowledge and insight necessary to enable industry and military alike to ensure they are able to rise to new challenges, and capitalise on the modular OPV as a force multiplier in an increasingly complex world.

Attending OPVs 2016 will therefore give you:

- In-depth technical understanding of the latest OPV designs with presentations from public and private sector shipyards
- Strategic engagement with Admirals from navies and coastguards to discuss the current mission sets of OPVs
- The opportunity to shape the debate on how to deliver maritime security
- Contribute ideas and solutions and take advantage of opportunities to ask questions and interact with senior officers
- The chance to share lessons from recent capacity building and modernization programs from both an industry and military perspective
- An exclusive tour of a brand new Batch-2 River Class Patrol Vessel, and a rare opportunity to visit BAE shipyard facilities

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