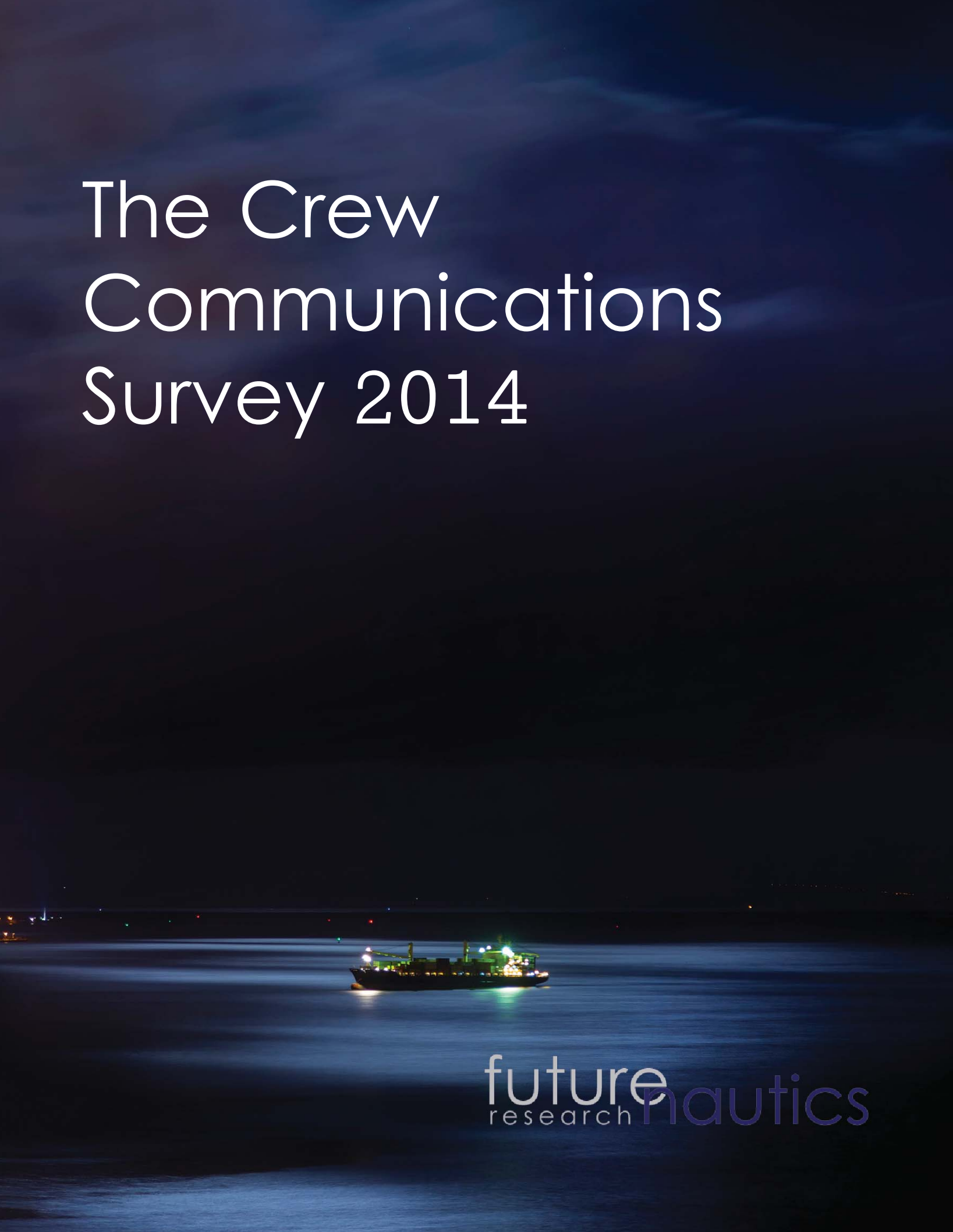
The Crew Communications Survey 2014



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Executive Summary

Access to crew communications is an improving picture, but it isn't good enough. And perhaps the key message from the 2014 Crew Communications Survey, is that this doesn't just disadvantage crew.

Despite the MLC2006 mandate—which should worry those in sectors like Container, Bulk and General Cargo where levels of provision are poorest, and where a good deal of the 6% of crew who never have access to crew communications work—it isn't on the dangers of non-compliance that operators should focus, but in the opportunities for improved operations, efficiency and margin.

In order to comply with MLC 2006 what is required is a definition of what constitutes 'reasonable' access and 'reasonable' cost. Only 56% of crew state they have access to crew communications either always or most of the time, and it could be argued that this figure must be far higher if the industry is to achieve anywhere near 'reasonable'.

Certainly the demands of seafarers could not be classed as unreasonable. The survey debunks the idea that what crew are desperate for is Internet access for high-bandwidth streaming of movies and music or online shopping experiences common ashore. Crew are a highly IT literate workforce which understands all too well how expensive connectivity is at sea and which spends most of its money on telephone voice calling. Despite being the most popular service amongst seafarers, telephone voice calling is only provided free by 6% of operators. As a result this IT literate workforce is solving the problem by using Internet access for VOIP and video chat, as alternatives to expensive satellite telephone voice calling.

On average crew are spending $134 per month at sea on crew communications, but drill down into exactly what crew are paying for an email, a minute of voice calling, or a megabyte of data and things become less clear. In short, seafarers in most cases have very little idea how pricing for crew communications works, or what they are actually paying for access. This is part of a wider issue of over-complexity. Most operators are simply extending the pricing they receive from their communications supplier out to the crew. The pricing is so complicated that it appears to have led to the welcome, but surprising, finding that almost half of operators who offer Internet access to crew do so free of charge. For many operators it's easier just to make it available than create pay-as-you-go pricing for crew.

A reduction in complexity and increased transparency are both required when it comes to pricing for crew communications services, and not just because of the benefit to seafarers. 36% of respondents expect their expenditure on crew communications to increase in the next 12 months; complex pricing structures can act as a brake on others doing the same so it is in the interests of communications suppliers to remove them.

But whereas crew are fairly sanguine about the cost of communications onboard ship, they are unhappy about the amount they are having to spend ashore. Of the 25% of those who use crew welfare facilities the overwhelming majority do so to use communications, but still expenditure on communications ashore is higher than at sea.

Crew are rightly frustrated that the place where connectivity is cheapest is costing them more than the deep ocean, and have identified simple solutions they'd welcome such as global roaming SIM cards—something which is so common in other industries, and yet for some reason have never been part of the maritime communications product range. But the most important thing which crew want to see in the future is free port WiFi, something which would transform their communications expenditure.

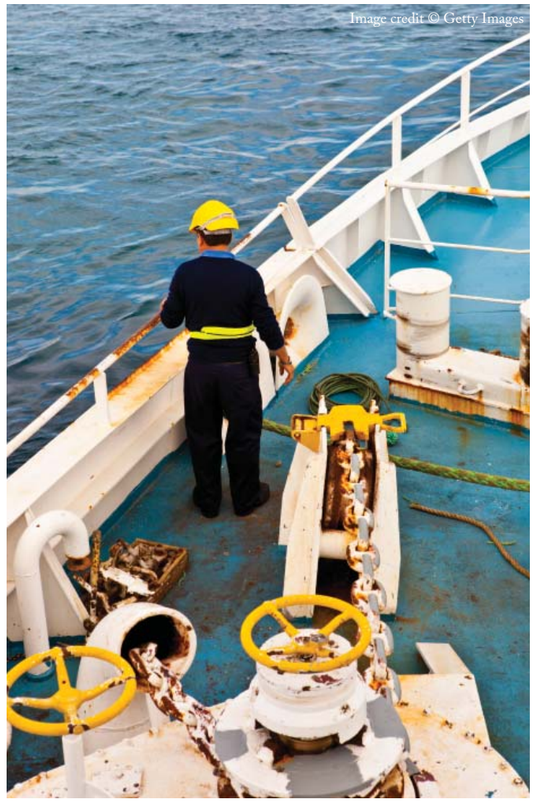
In fact when looking at what crew want in future, their interest is not really in high-tech, innovative services. The focus for crew is on reducing the costs of their favourite type of communication—voice calling or video chat. In this context it would appear that the new satellite-ready Skype product promised by Inmarsat's GlobalXpress high throughput service should be well received by crews, but looking at the trends, video chat would be even better. There is undoubtedly potential for communications providers to develop new VOIP and video calling products. IP satellite systems may be high-tech, but what seafarers want from them overwhelmingly is a cost effective way to speak to, and see, their loved ones.

Access to crew communications, whilst an improving picture, isn't good enough. And the message from the 2014 survey is that this doesn't just disadvantage crew.

The survey found that today almost 40% of crew are provided Internet access on board, a statistic by which the industry should be encouraged. Even more significant is that 50% of that crew is given access free of charge by ship operators. But the variation amongst different sectors is striking. General Cargo, Bulk and Container lag the rest of the industry significantly, whilst the sectors where VSAT and FleetBroadband IP systems have the greatest penetration offer the best access to crew communications.

These systems may have been fitted with improvements in crew retention and recruitment in mind, but for most improved connectivity represented a wider business decision to enhance operational efficiency and leverage better technology on board. What these operators have enabled are not just happier crew, but according to respondents, safer, more knowledgeable, and more productive crew.

The survey shows that in general crew believe that access to crew communications has impacted safety and operations on board positively. The ability to access everything from world and regional news to medical and company information on any one of the multiple technology/communications devices crew are taking on board is changing things subtly but irrevocably. Trends such as Bring Your Own Device (BYOD) are as strong in shipping as anywhere else: they could, and should, be leveraged to the advantage of operators, and the benefit of seafarers.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If there has been equivocation in the past as to whether access to crew communications affects the choice of employer, now there's a definitive answer from crew. It is an emphatic, yes. 69% of crew report that access to communications influences their decision and crucially it is more important to those with higher IT skills, those who understand the increasingly complex technological operation of equipment and machinery on board. In short, precisely the kind of employees ship operators should be looking for.

The survey shows that the trends and attitudes of the Millennial generation are beginning to percolate through shipping as elsewhere. The new generation of seafarers appear to want less sea-time, but are also far happier to be trained at sea. They are also already demonstrating that

their use of mobile payments, together with the fact that smartphones are now more common than cell phones at sea could form the basis for new and better ways to charge crew for services.

One of the most important findings of the survey speaks to the obvious question which all the demands for services raises: how do we pay for them? There is no question that seafarers want live audio or video communications, and they want to have them as frequently as possible, but in order to deliver that maritime communications suppliers, ship operators, ports, welfare organisations and wider stakeholders need to begin looking at new business models.

When asked whether they would be prepared to allow access to their online usage data in return for free Internet access, the result was overwhelming. 81% of seafarers would be happy to allow access to their data in exchange for free Internet access provision. This sentiment did not vary considerably between age groups, rank or IT competency and is a clear signal that redesigned, simple service propositions based on the exhaust data from crews would have a good chance of widespread take-up.

There is no doubt that access to crew communications continues to improve, but interestingly crew themselves don't overwhelmingly recognise that. 50% of crew believe that access has not improved in the past two years, despite overwhelming evidence to the contrary. This perception is perhaps a function of the fact that land-based connectivity is accelerating at such a pace that, despite its improvements, shipping continues to be left behind.

However, with the imminent arrival of the first high throughput satellite system, Inmarsat's Global Xpress, reportedly promising unheard of speeds of up to 50Mb, commercial maritime is about to witness another step change in connectivity, and maritime communications suppliers new competition from non-maritime domain specific applications providers.

Operators are recognising the operational efficiencies improved connectivity for vessels can deliver. One hopes that this clear evidence from seafarers of the additional benefits delivered by improving crew communications—not just with family and friends, but with colleagues and company—will encourage more to see the potential.

The overwhelming message from this survey is that crew want to speak to, or see their loved ones on video, regularly and affordably. Addressing that one wish would mean a massive positive change in the lives of seafarers. The industry has the technology to enable that. And increasingly not simply a moral and regulatory, but a commercial imperative to deliver it.

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Introduction

For generations of seafarers a passage on the open ocean was a treacherous, and lonely, undertaking. Following the widespread adoption of Marconi's radio at the beginning of the twentieth century the ability to communicate with vessels at sea improved significantly, but it wasn't until 1979 when the Treaty organisation Inmarsat was formed that the maritime industry, its crews and passengers could, for the first time, be virtually guaranteed global satellite connectivity.

It was a step-change in maritime communications, but the challenges and costs involved in developing, launching and maintaining the spacecraft and infrastructure meant that the original L-band airtime was expensive. And ship operators weren't in a position to buy just any satellite system. The complexities of operating sensitive equipment with moving parts effectively and safely in the harshest of environments meant that maritime systems were far more expensive than their land-based counterparts. In short, maritime satellite communications was both difficult and expensive.

In this context it's not hard to understand why the vast majority of ship operators chose to equip their vessels with the minimum level of GMDSS compliant communications: enough to keep their crew and assets in contact with HQ and emergency help if necessary. But whereas the first satellite communications networks were conceived with one primary consideration – improving the safety of seafarers and their vessels, as technology advanced the requirements for sending data ship to ship and ship to shore increased, as did the demand for operators to open communications facilities up to their crews.

To satisfy the needs of operators to get the maximum benefit from their satellite connections a range of providers sprang up writing maritime-specific software designed to compress and optimise data for transmission over the expensive high-latency links. From email to early web-browsing, operators were able to maximise their use of expensive airtime using these maritime applications. But, due to prohibitive cost and the inability to deploy them effectively over the satellite link, the type of sophisticated programmes in routine use throughout land-based businesses couldn't be extended the out to vessels.

For some operators there was an early recognition that even though the pay-per-megabyte nature of L-band meant costs could be high, the potential benefits for retaining expensive, trained crew meant that allowing crew access to the ship's communications systems had its own value.

Historically the only alternative to demand-assigned services such as Inmarsat's per-minute/per-megabyte tariffs were even more expensive Single Channel Per Carrier (SCPC) VSAT networks. SCPC VSAT was already deployed by a minority in commercial maritime, but far more commonly found in the cruise industry, where operators were able to monetise the traffic. With the advent of Time Division Multiple Access (TDMA) VSAT networks, however, the landscape of maritime communications changed. Offering a comparable service to SCPC networks but sharing and segmenting bandwidth across vessels, suddenly high speed, always-on, flat-rate VSAT connectivity appeared to be within reach of everyone within the maritime community.

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Driven by the promise of cheap, reliable, high-speed IP connectivity which enabled communications to be opened up to crew, many operators installed VSAT systems. For some, due to a failure to specify on one side, or failure to deliver the kind of connectivity and performance needed on the other, the promise wasn't realised. For others though their VSAT and also Inmarsat's IP FleetBroadband systems opened the door to a new era of crew communications.

But despite the advances, research several years ago showed that for most operators, 'broadband' was a relative term, with the average VSAT connection speed at a gla-

cial 256kbps. With shore-based communications speeds increasing and more applications accessed online, the gap between land and sea continued to widen. For the new generation of seafarers, brought up on the Internet and social media, expectations around the level of connectivity also continued to increase.

Whereas voice calling had always been the primary requirement of crew, the perception is that access to social media sites such as Facebook, and web browsing for everything from news and sports to shopping and recruitment sites, is taking its place. With surveys suggesting that in the general population a high proportion of the Internet generation—or Millennials—consider access to the Internet as important as access to food and water, the implications for the maritime industry are likely to be significant.

But along with the Millennials is coming a new generation of connectivity. The new so-called High Throughput Satellite (HTS) networks including Intelsat EPIC, Iridium NEXT, and Inmarsat's GlobalXpress will all come into service within the next few years. In the case of GlobalXpress, the system is reportedly promising unheard of speeds for maritime connectivity of up to 50Mbps and is due to go into commercial service in July of this year.

For operators managing bandwidth between mission-critical applications and crew communications, the new HTS systems could offer opportunities unthinkable a decade ago. But while the costs of that kind of connectivity will undoubtedly fall, with both Inmarsat and Intelsat investing over $1bn each in their new platforms, satellite communications will remain comparatively more expensive than land-based connectivity.

But with or without HTS, the availability of communications for crew has gone from being something enlightened ship operators provided because it was good business, to a mandatory requirement. The Maritime Labour Convention (MLC 2006) now ratified by more than 54 countries means that 'reasonable access' to ship-shore telephone, email and Internet facilities, at 'reasonable' charge is now part of the responsibility of the ship operator.

But what is 'reasonable'? What is the reality of crew communications for seafarers and how does it differ across sectors, ages and seniority? How do ship operators reliably benchmark their provision to ensure they're compliant, and how do seafarers really judge what they should reasonably expect on board in today's market? And what will new crew consider to be essential tomorrow? What new services and solutions should network, hardware, software, equipment and applications providers be preparing to deliver to ship operators to continue meeting the crew communications challenge?

The answers to these questions can only come from a comprehensive survey of seafarers worldwide. In 2012, in association with Astrium Services, (now Airbus Defence and Space), Futurenautics Research (formerly Stark Moore Macmillan) undertook the first Crew Communications Survey. An abridged version of the dataset was released as a whitepaper giving insight into seafarers level of spend on, and access to, communications, payment methods, and popular websites.

The response to the survey was hugely positive and so in 2013 Futurenautics Research decided to repeat the survey, but with a far larger respondent base. With invaluable assistance from a range of organisations including Philippine Transmarine Carriers, InterManager, BIMCO, ISWAN and CrewToo, the resulting 2014 Crew Communications Survey Report with almost 3,000 respondents from over 30 countries is now without question the largest and most comprehensive dataset available.

Independently conducted and analysed, the report and it's full dataset is being made available free of charge for the benefit of the shipping and maritime industry, its seafarers, regulators and wider stakeholders.

The data allows ship operators to understand and benchmark provision across sectors and age groups; gives insight for suppliers into the changing requirements, habits and spending power of seafarers, and, perhaps most importantly, gives seafarers themselves the opportunity to have their collective voices heard across the industry. This is crew, communicating.

We would like to take this opportunity to thank each and every one of them for their contribution.

Market Value

Futurenautics estimates the market value for crew communications at sea in the major sectors at $1.39bn USD per annum. *(Table 1)* This estimate is based on the expenditure by officers and ratings in each sector. With the exception of the Passenger and Offshore sectors it is based on 20 crew members per vessel with a split of 8 officers to 12 ratings. It also takes in account those that do not have access to any form of crew communications services, those that choose not to use them as well as those that are provided the services free of charge by the ship operator.

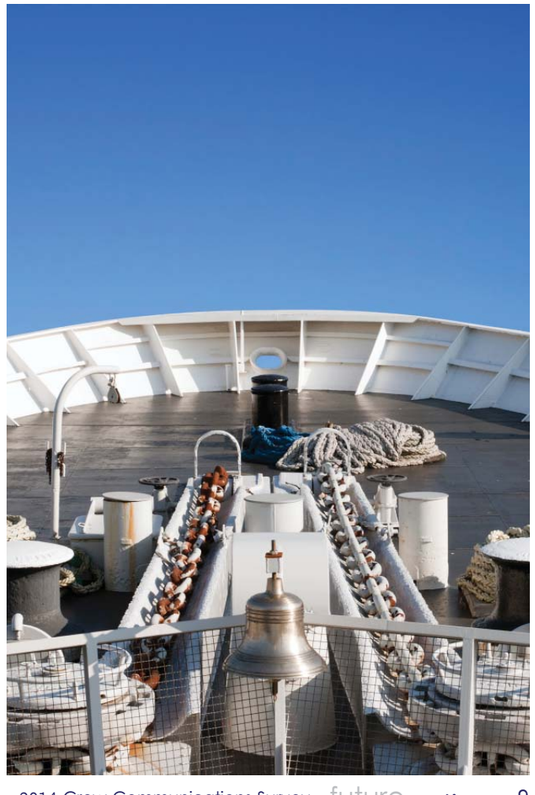
The Passenger and Tanker sectors are the most significant markets for crew communications. The Passenger market is important because of the disproportionate number of crew in this sector in comparison to other commercial sectors. Despite the large difference in rating and officer expenditure this is still the largest market by spend. The Tanker market (here we include crude, product and chemical tankers) is the largest sector by vessel numbers and expenditure by both ratings and officers is high. Bulk Carrier and Container markets are significant and the Container sector is only one of two where we see higher expenditure by ratings than officers.

Futurenautics estimates the shore based crew communications market at $1.22bn per annum. *(Table 2)* This estimate is based on expenditure by officers and crew from each sector whilst ashore or in coastal waters where terrestrial (non satellite) communications solutions are available. The estimate accounts for those crew members who do not get ashore during port calls.

The Bulk Carrier and Tanker sectors are the most significant markets, in terms of value, for the shore based crew communications markets.

Officer's expenditure was higher in all sectors apart from the Gas Carrier sector. Expenditure by officers in the other sectors was significantly higher than for ratings – in some cases over double. The Passenger sector, despite crew getting ashore more often than all the other sectors, is not as significant a market as it is for crew communications services at sea.

Combined, the shore-based and sea-based crew communications market is worth in excess of $2.6bn per annum.



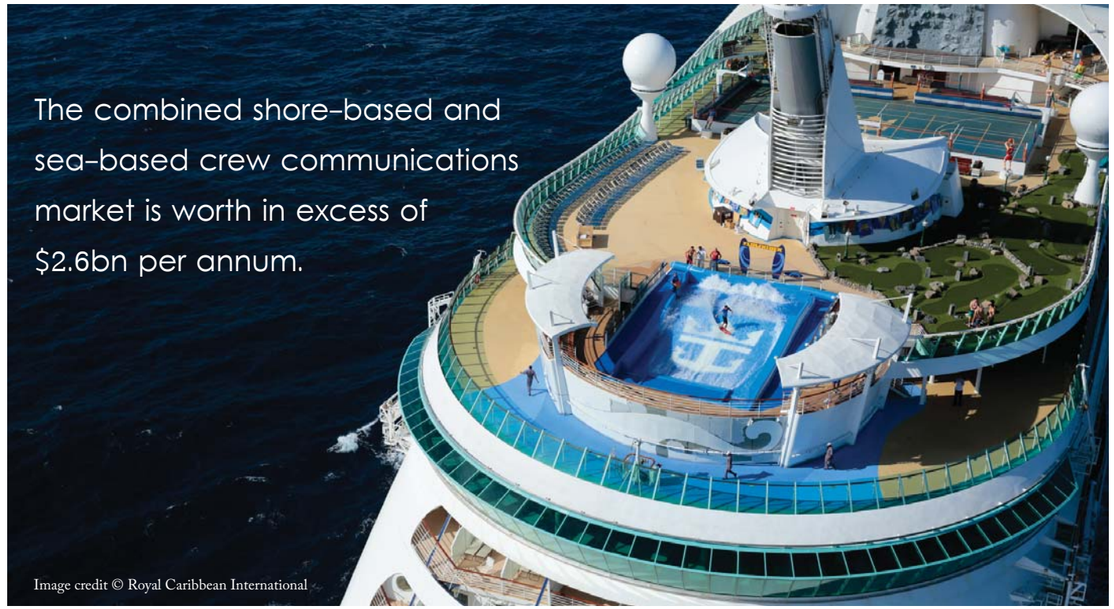


Table 1 | Expenditure at Sea

Sector	No. Vessels*	No. of Crew	Ratings	Officers	Market Value $m
Tanker	15,501	310,020	$136.39	$157.10	$406
Gas Carrier	1,628	32,560	$93.75	$118.52	$29
Car Carrier	762	15,240	$49.03	$157.17	$11
Bulk Carrier	11,958	239,160	$105.92	$145.52	$243
General Cargo	4,366	87,320	$82.38	$202.51	$90
Container	5,116	102,320	$115.37	$111.75	$103
Offshore	7,176	86,112	$121.00	$103.72	$97
Passenger	6,775	380,580	$84.40	$223.74	$412
Other	7,038	140,760			
Total	**60,320**	**1,394,072**			**$1,390**

* Clarksons Research

Table 2 | Expenditure Ashore

Sector	No. Vessels	No. of Crew	Ratings	Officers	Market Value $m
Tanker	15,501	310,020	$101.83	$148.31	$314
Gas Carrier	1,628	32,560	$140.47	$124.14	$34
Car Carrier	762	15,240	$48.17	$80.70	$9
Bulk Carrier	11,958	239,160	$98.87	$196.06	$346
General Cargo	4,366	87,320	$99.01	$234.14	$140
Container	5,116	102,320	$104.36	$159.44	$132
Offshore	7,176	86,112	$104.61	$138.66	$74
Passenger	6,775	380,580	$37.28	$80.70	$175
Other	7,038	140,760			
Total	**60,320**	**1,394,072**			**$1,223**

Fig. 1 | Top Ten Nationalities

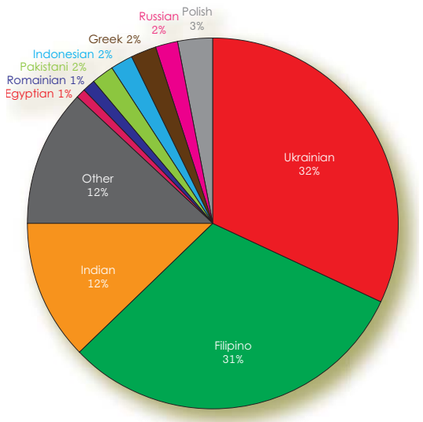
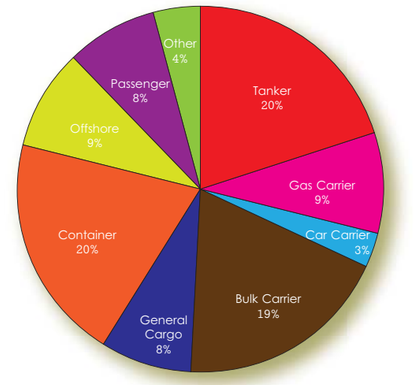


Fig. 2 | Vessel Type By Respondent



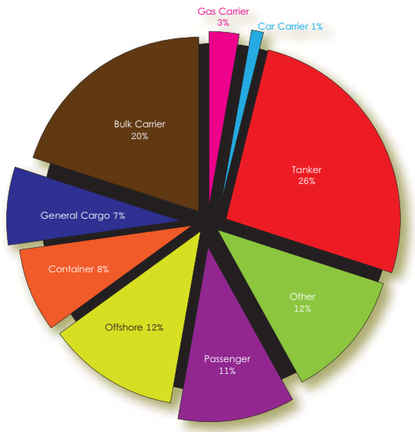


Fig. 3 | World Fleet By Vessel Type

The Survey

The Crew Communications Survey took place between December 2013 and March 2014. The survey was completed either digitally, online or via a paper-based questionnaire. Responses were then collated, paper-based questionnaire data manually keyed, cleansed, and the results calculated and analysed.

We are indebted to a range of organisations for assisting in the dissemination of the survey link and paper questionnaires. Philippine Transmarine Carriers, a leader in the Philippine maritime industry deploying over 35,000 Filipino global maritime professionals on board close to 700 vessels, and offering an integrated value chain of services, continued their support in 2013/4 by making the survey available to all crew passing through their facilities, then collecting and mailing completed questionnaires for analysis.

Both InterManager, the international ship management organisation known as 'the voice of shipmanagement', ISWAN—the International Seafarers Welfare and Assistance Network—and BIMCO were instrumental in lending their support to the survey and promoting the completion of surveys by the crews of their memberships. Crew social networking site CrewToo, part of the KVH Media Group also offered invaluable assistance in creating awareness of the survey amongst their 80,000 strong—and growing—online community.

Respondents

Thanks to the efforts of all involved the total number of respondents was in excess of 2,850 representing over 30 different nationalities. The top ten nationalities represented were Ukrainian (32%), Filipino (31%), Indian (12%) followed by Polish, Russian, Greek, Pakistani, Indonesian, Romanian and Egyptian. (*Figure 1)*

Of the total respondent base, 61% were officers whilst 39% of respondents were ratings. The balance between officers and ratings does not correspond to the typical balance on an average commercial vessel, however wherever meaningful the results are broken down by officers/ratings, to enable accurate reporting, analysis and conclusions to be drawn.

We asked all respondents to give us information about themselves including to which age group they belonged: 18-24 years; 25-34 years; 35-44 years; and 45 years or over. We also asked respondents about their marital and family status. The youngest age group represented the smallest number of respondents at 400, the 25-34 year age group the largest at 1022 respondents, and the remaining 35-44 and 45+ age groups 750 and 576 respondents respectively. The highest number of officers were represented in the 45+ group at 75%, whilst the lowest number of officers were in the 18-24 youngest age group at 36%. In this group only were there more rating respondents than officers.

Of the total respondent base 67% were married and 62% had children.

Sectors

Of our respondents, 96% worked on vessels in the major sectors; namely, Tanker, Bulk, Gas, Car/Truck (PCTC), Offshore, General Cargo, Container and Passenger. Although a further 15 sectors were represented—everything from coastal vessels and tugs to super yachts—analysis centres around the key sectors for the commercial maritime market. *(Figure 2)*

The percentage of respondents from each of these sectors corresponds closely to the spread of vessel type across the world fleet. *(Figure 3)* For example, General Cargo is 7% of the world fleet and 8% of survey respondents; Passenger is 11% of the world fleet and 8% of survey respondents; Bulk Carriers are 20% of the world fleet and 19% of survey respondents. Most sectors are within +/- 2-3% of the world fleet figures, other than the Container sector, where the survey respondents at 20% are significantly higher than the world fleet figure of 8%.

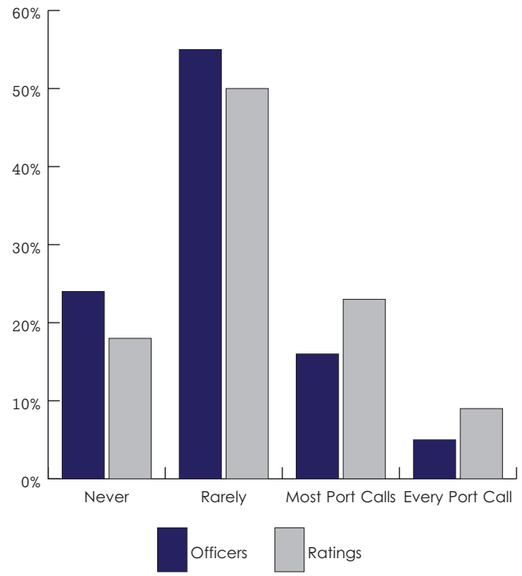
Sea Time

On average respondents spent 7.3 months per year at sea. Ratings spent 7.5 months at sea, slightly more than officers who spent 7.1 months per year at sea. When looking at this data in terms of age groups we can see that those aged between 18-24 spent the least amount of time at sea at 6.8 months. This could be accounted for by the fact that more of these younger crew undertook training ashore. It is also possible that this Millennial age group is beginning to demonstrate a decreased appetite for prolonged seatime in comparison to older seafarers in line with reported trends and anecdotal industry evidence.

Port Calls

When asked about port calls, respondents reported that 34% of port calls were greater than 24 hours duration. 38% of port calls were less than 12 hours in duration and 28% were 12-24 hrs in duration. 76% of respondents either never, or were rarely able to go ashore during these

Fig. 4| How Often Do You Go Ashore?



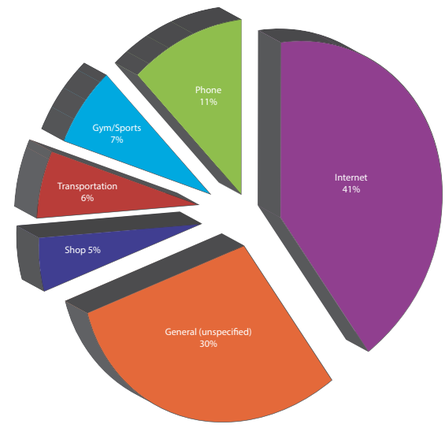
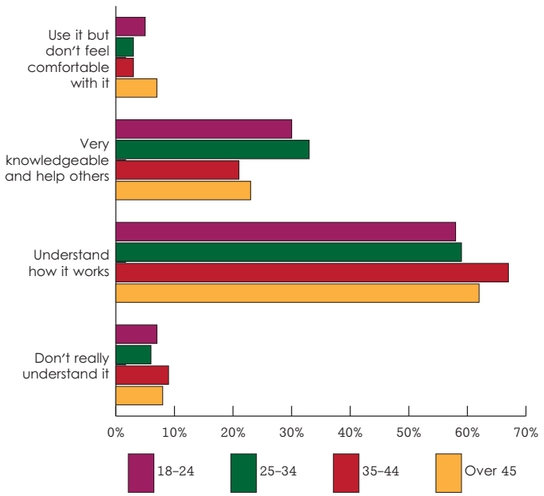


Fig. 5 | Crew Welfare Facilities Used In Port

Fig. 6 | IT Skills By Age



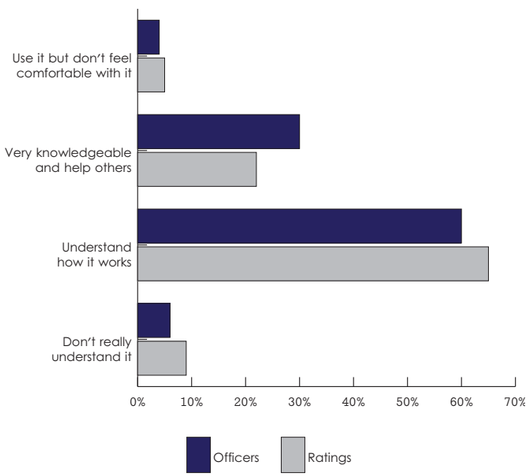


Fig. 7 | IT Skills By Rank

port calls. 18% said that they were able to go ashore on most port calls and 6% said they were able to go ashore during every port call. *(Figure 4)* A higher percentage of officers 'never' or 'rarely' were able to go ashore during port calls, whereas a higher percentage of ratings were able to go ashore during most of every port call.

These figures for time spent in port and the ability to go ashore could account for the fact that of the total respondent base only 25% of crew used crew welfare facilities whilst in port. There was no difference in the experience of officers and ratings in relation to their use of crew welfare facilities.

Of the 25% of respondents who reported using crew welfare facilities whilst in port, the most popular services according to crew and those used most by them, were those relating to crew communications, namely Internet access, telephone access and purchase of SIM cards. *(Figure 5)*

IT Skills and Perception

With the significant increase in technology use both in the operation of vessels and in terms personal devices, respondents were asked to rate their perception of their own IT skills and literacy.

Only 11% reported that they felt uncomfortable with technology and didn't really understand how it worked.

62% of respondents reported that they understood how the technology they used worked, and felt comfortable using it. Nearly 30% thought they were very knowledgeable and could help others onboard with technology. Taken together these two groups represent 89% of respondents, clearly demonstrating seafarers are a highly IT-literate workforce, used to using technology and comfortable with it. This is also reflected in the type and variety of devices being brought aboard.

When the responses are considered by age group, we see that those in the millennial generation age groups are most knowledgeable about IT matters. *(Figure 6)*

The over-45 year old age group is the most uncomfortable with technology, but not by a significant margin. Whilst one might expect the older age group to be the least comfortable, slightly less predictable was that the youngest age group of 18-24 years old also feel quite uncomfortable with technology. It is possible however that this youngest age group is reflecting a lack of conversance with shipboard technology as opposed to personal IT equipment and skills; understandable in the least experienced seafarers.

Ratios of IT skills between officer and rating are most noticeably different in the 'very knowledgeable and help others' category. *(Figure 7)* Only 22% of ratings considered themselves very knowledgeable and able to help others, as opposed to 30% of officers. In general officers' perception of their IT skills are more positive than ratings'.

Overall it is clear that shipping has a highly IT and technology literate workforce who do not perceive themselves to be struggling with increases in onboard technology and systems.

Access to Crew Communications Services

When asked about their access to crew communications services 56% of respondents reported that they had access to some form of crew communications either 'always' or 'most' of the time. *(Figure 8)* Generally speaking officers enjoyed better access than crew, but this should be seen in the context of officers often having access within their cabins, and using communications systems for operational business as part of their duties.

Perhaps of more concern is that 39% of seafarers report having access to crew communications services only 'sometimes', and 6% never have access at all whilst onboard. Extrapolated to the global seafarer population, this would equate to 78,000 seafarers who regularly have no access to crew communications at all. Not all of these seafarers will fall under the MLC 2006 mandate, but a significant proportion are likely to.

Considering the recent ratification of the Maritime Labour Convention 2006 which stipulates that ship operators should give crew reasonable access to communications at a reasonable cost, it seems clear that meeting this provision is proving challenging to operators.

Access Within Different Sectors

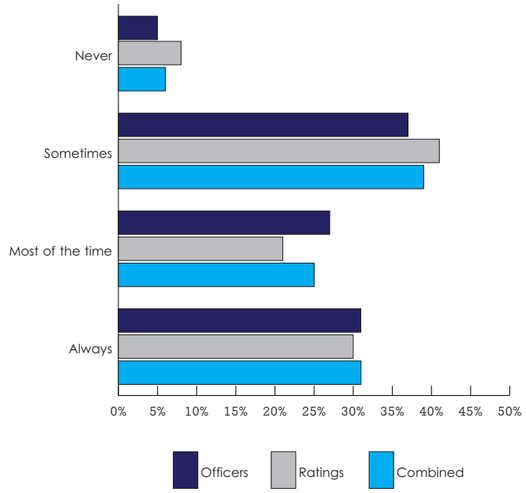
Access to crew communications varied significantly between different sectors. The percentage of crew reporting never having access to communications was as low as 1% in the car carrier sector and as high as 13% in the Container sector. In fact the Container and Bulk sectors provide the lowest levels of access to crew communications. *(Figure 9)*

The highest figure at 18% was seen in the 'other' category, however this is explained by the number of coastal/workboats in this group. These vessels typically would not spend long periods away from port, and will have regular access to terrestrial GSM networks. In addition, many of these vessels will not fall under the MLC 2006 mandate.

We asked those respondents who reported having access to crew communications to identify the communications services provided on board. *(Figure 10)*

Telephone - the most common form of communications to which seafarers have access across all sectors is voice calling, usually via satellite telephone. On average

Fig. 8 | Access To Crew Communications



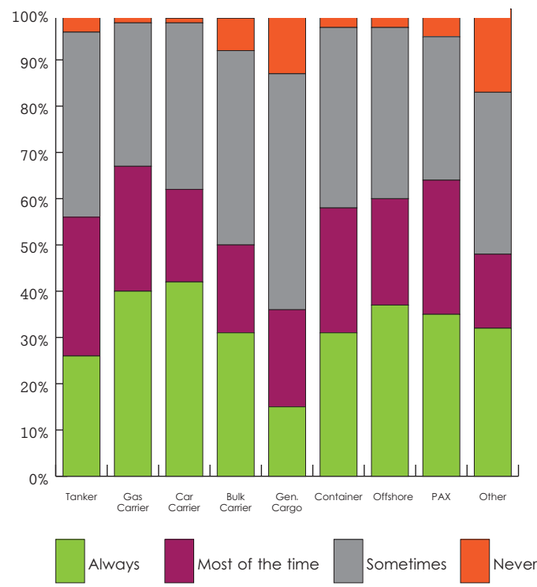
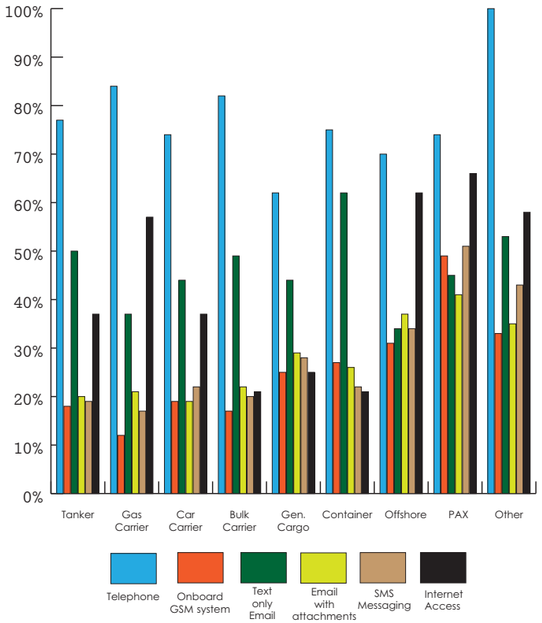


Fig. 9 | Access To Crew Communications By Vessel Type

Fig. 10 | Crew Communications Services Provided Onboard



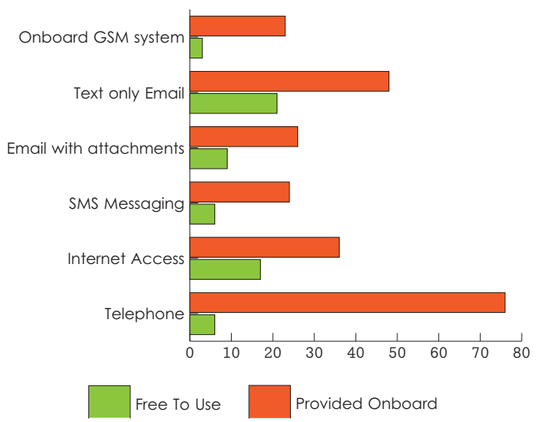


Fig 11 | Provision of Free Services

across all sectors 76% of seafarers with access to some form of crew communications have access to telephone calling, but in some sectors like Container, over 30% of respondents still report that they do not have access to a telephone.

Onboard GSM – This could be either satellite or terrestrial GSM and on average is available to 23% of respondents to whom crew communications are provided onboard. Low levels of onboard GSM are seen in most commercial sectors apart from Offshore and Passenger where there are high levels of VSAT installations and hence a satellite distributed GSM solution is likely. The relatively high levels of onboard GSM seen in the Container and General Cargo sectors may be explained by the higher reliance on terrestrial GSM for those vessels engaged in liner and short-sea trades.

Text only email – provided on average by 48% of vessels across sectors, text only email is still the most common form of Internet-based crew communications, with very high levels seen in the Container sector at 62%.

Email with attachments – at 26% on average there are generally relatively low levels of access to email solutions which allow attachments. This could be explained in part by the increased levels of Internet access and the move towards the use of web based email solutions. (See Crew's favourite websites.)

SMS Messaging – Generally provided via a PC except for the Passenger sector where routed via a distributed GSM solution. At 24% the level of provision is broadly low across most sectors.

Internet Access – With average availability of Internet access across all sectors 36%, access is an improving picture. Notably the Passenger and Offshore sectors report close to 70% provision, with Gas Carriers at almost 60%. This relatively high level of provision in Passenger and Offshore reflects the correspondingly high VSAT penetration levels in those sectors.

The comparatively buoyant Gas Carrier market has also driven the sector to fit increasingly sophisticated communications systems for operational efficiency and competitive advantage. The improvement in crew access to the Internet is most likely part of a trickle-down effect.

However, the Container, Bulk and General Cargo sectors are still lagging behind the rest of the industry, with provision of Internet access at 21%, 21% and 25% respectively, despite the increase in installations of Inmarsat FleetBroadband, of which there are now 40,000 worldwide.

Provision of Free Services

Respondents were asked to identify which of the services provided on board were available to use free of charge. *(Figure 11)* Text only email solutions are still the most commonly provided free crew communications service, but the most significant figures relate to Internet access. With almost 40% of respondents indicating that Internet access was provided onboard, approximately half of those that had access to the Internet were given it free of charge.

These figures represent an increase in Internet access per se, which can be explained by the increase in Internet-enabled platforms such as Inmarsat FleetBroadband and VSAT, and increased demand from crew for Internet access whilst at sea. Whilst only 6% of ship operators offering access to a telephone are doing so free of charge, when it comes to Internet access, that figure is almost three times as high.

It seems likely that the explanation for this lies in the complexity of implementation. In short, designing, implementing and managing a pay-as-you-go or paid-for service for Internet access is perceived—rightly or wrongly—by ship operators as sufficiently complicated that it's more cost effective to provide the service for free to crew.

Also striking amongst the results is the low levels of free access to telephone calls. This does however explain the large percentage of expenditure amongst crew on voice calling (see Crew Communications Expenditure). It also indicates why crew are so keen on communications alternatives such as video chat/VOIP and also free port WiFi all of which leverage IP technology to deliver live audio/visual contact.

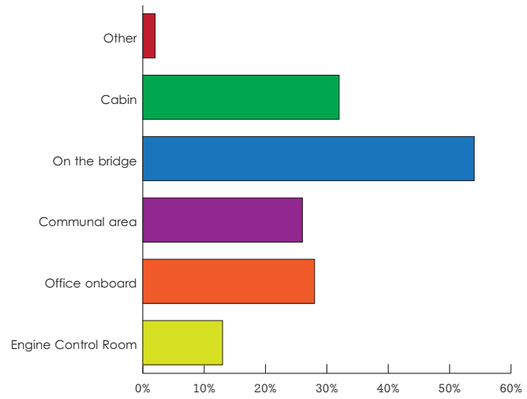
In general ratings were provided more free access than officers across all sectors, other than in text only emails where there was a substantially larger percentage of officers (26%) who had access to this service free of charge, as opposed to ratings (14%).

Where is access provided?

The most common place for crew to access communications services is still on the ship's bridge. *(Figure 12)* However, more interestingly, the second most common place to access communications is now in the crew member's cabin, with 34% reporting access here. The comparatively higher number of officer respondents within the survey is not responsible for distorting this figure, as both officers and ratings report similar levels of access within their cabins.

Significant differences do exist between sectors however. As expected, the Passenger sector has highest levels of in-cabin communications services for crew along with those sectors with high levels of broadband (VSAT) installations such as the Gas Carrier and Offshore sectors. But again, crew within the Bulk, Container and General Cargo sectors fared worst with high levels of access via the

Fig 12 | Where Onboard Can Crew Communications Be Accessed?



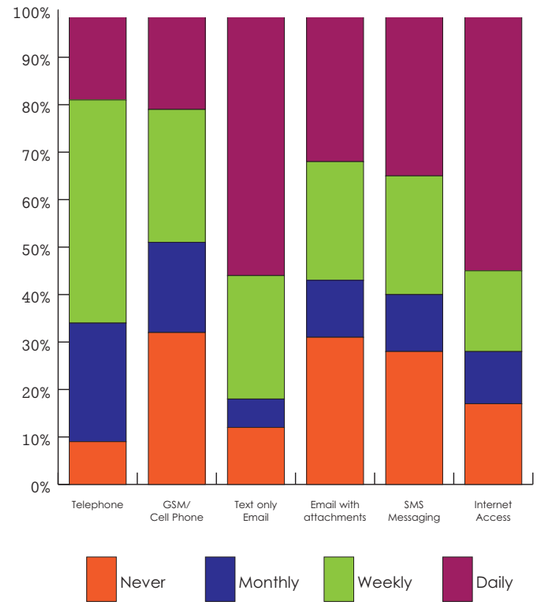
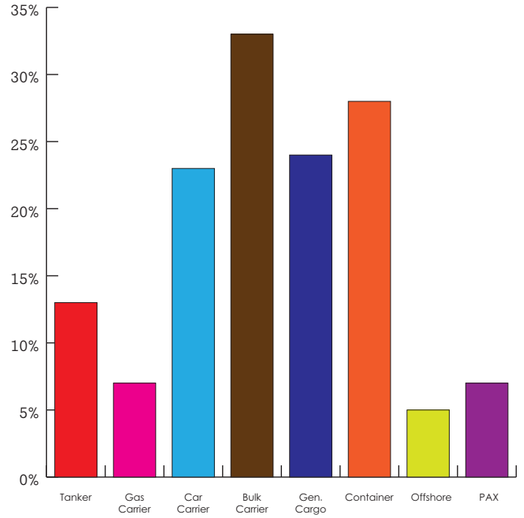


Fig 13 | Frequency Of Service Use

Fig 14 | Never Use Internet By Sector



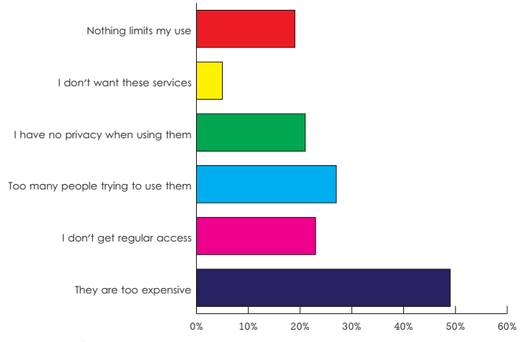


Fig 15 | What Limits Crew Comms Usage?

bridge and ships office – i.e. where there was no privacy.

Frequency of Service Use

The majority of services are accessed by crew no more frequently than once a week. The only services accessed more frequently than that are text only email and the Internet with the majority (56%) of crew provided these services using them on a daily basis. *(Figure 13)*

Interestingly 17% of respondents never used the Internet. This was highest in the lowest age group 18-24 years, where 28% never used the Internet services provided. It is not clear whether this is an access or cost issue, but is most likely a combination of the two.

Ratings used the Internet on a daily or weekly basis more often than officers. 69% officers used the Internet on a daily or weekly basis compared to 75% of ratings. This corresponds directly to the numbers of crew that never used the Internet, with 21% of officers, compared to 13% of crew.

Only 19% of crew access phone services on a daily basis—primarily as a result of cost and access—but more crew use the telephone than any other service provided.

Those respondents that never used the Internet were highest in the Bulk, General Cargo and Container sectors, which corresponds to the fact that these are the sectors with the lowest levels of Internet access provision. *(Figure 14)*

Harder to explain however are the high levels of respondents who report never using the Internet in the car carrier sector, where relatively high levels of provision exist. In this sector 64% use the Internet on a daily basis but 23% never use it. This does not appear to be either age or rank related, therefore we can only conclude that the small sample size in this sector may be responsible for this result.

Factors Limiting Crew use of Communications

The factor that most (49%) limits crew use of communications services provided—unsurprisingly—is the cost of services provided. *(Figure 15)* There is evidence that the cost to ship operators of providing these services has reduced—particularly that of telephone calls—but there are issues around both the complexity of pricing to crew as end-customers and indeed whether ship operators are passing on the reductions in cost they have enjoyed. See the Crew Communications Expenditure section for further insight and analysis on these areas.

The other main issues limiting crew use of communications include: ***'I have no privacy when using these services'*** Despite the number of users that can now access communications from their cabins, privacy is still an issue. This is particularly acute in certain sectors such as Bulk, Container and General Cargo where much of access is still limited to the ship's bridge.

'Too many people trying to use them & I don't get regular access' 50% of respondents cited one of these two statements, indicating that these issues are as important as cost. Large volumes of crew trying to access communications impacts the frequency of use, but also, where limited bandwidth is concerned, also affects the quality of the service.

How do Crew want to access communications?

Overwhelmingly crew wanted to access communications services via a laptop connected to WiFi, except in the case of SMS services where the preferred method of access was via their smartphones. *(Figure 16)* This is borne out by the range of technology currently being taken on board, and the indications of new technology purchases within the next 12 months. These figures are all broadly in line with the BYOD (Bring Your Own Device) and ATAWAD (Any Time, Anywhere, Any Device) trends being seen in shipping and the wider population.

Respondents were also asked which service they would most want if ship operators could provide just one free of charge service. *(Figure 17)* At 77% the overwhelming majority chose free Internet access, with results consistent across all age groups and ranks. This may seem odd considering that current levels of expenditure by both officers and ratings are highest on voice calling (see Crew Communications expenditure section), which was the second most popular choice, identified as the most desirable free service by 9% of respondents. However this finding is explained by the way in which Internet access is used by crew, for VOIP and video chat, making satellite voice calling potentially redundant.

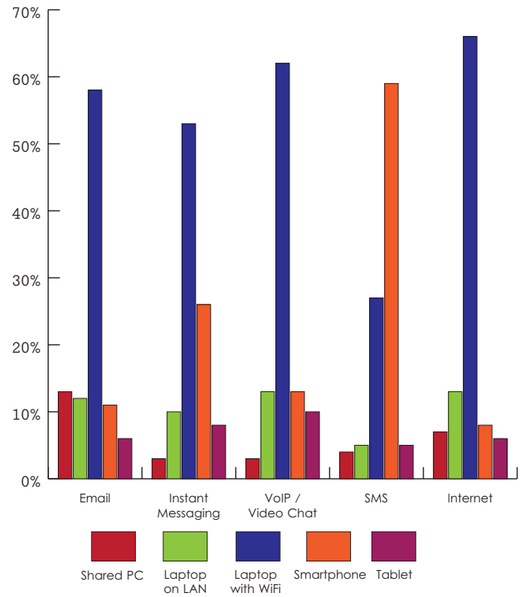
The Influence of Crew Communications on Recruitment

For some time now there has been a heated debate amongst ship operators as to whether or not the provision of crew communications impacted recruitment and retention of seafarers. *(Figure 18)*

The survey questioned respondents as to whether the level of crew communications services provided on board vessels influenced their decisions about which shipping companies they worked for. The answer was unambiguous.

69% of respondents said that the level of crew com-

Fig 16 | How Do Crew Want Access To Communications?



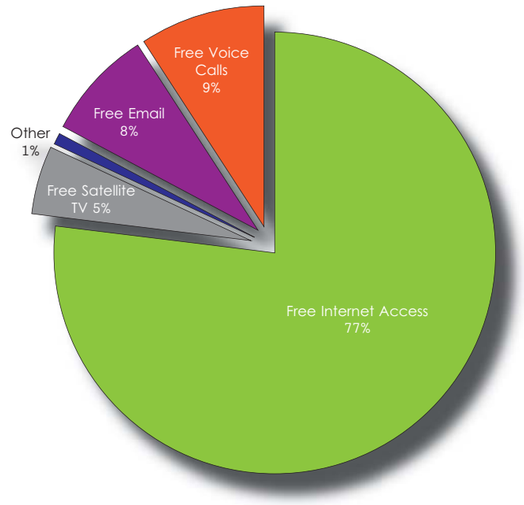
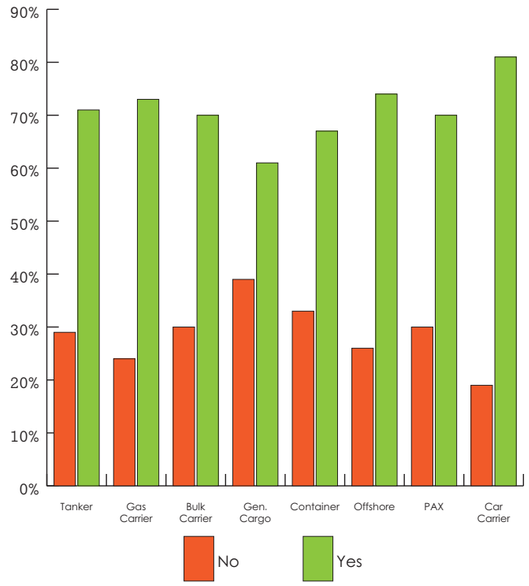


Fig 17 | If Ship Operators could provide one free service, what should it be?

Fig 18 | Influence on Crew Communications Provision on Recruitment



munications services provided onboard did influence their decisions about which shipping company they worked for. This sentiment varied little between officers and ratings and amongst age groups, but did vary significantly with IT skills. Those with lower IT skills were less influenced by the provision of crew communications services than those reporting higher IT skills.

The provision of crew communications had more influence in those sectors where higher VSAT/Internet penetrations levels existed, such as Car Carriers, Offshore and Gas Carriers. Provision had least influence upon crew in the sectors such as Container and General Cargo where low levels of VSAT/Internet connectivity exist.

Clearly, the provision of crew communications services is just one of a range of factors which will influence the choices seafarers make about which operators they work for. However, the magnitude of the yes vote means that whether or not it is a factor is no longer in question.

For ship operators evaluating the importance of crew communications to their own overall recruitment and retention policies, those within sectors where higher VSAT/Internet penetration levels exist are the most likely to be disadvantaged by a failure to provide a high calibre of crew communications access. For those operating in sectors with lower levels of penetration and therefore crew expectations, improving provision would appear to hold the potential for significant competitive advantage.

22% of respondents felt that crew communications had affected safety onboard the vessel. Of this 22%, more than half believed that it had impacted safety in a positive way.

The Impact of Crew Communications on Life and Operations at Sea

The increased levels of connectivity within the shipping industry as a whole and its impact upon life and operations at sea have been the subject of much speculation. We asked respondents a range of questions to establish how seafarers themselves believe improved communications have impacted their lives and jobs at sea.

Just under half of respondents (46%) believed that increased levels of, and access to, crew communications had reduced social interaction onboard. This sentiment was similar across most sectors except for Gas Carriers where the figure dropped to 33%, and the Offshore sector where it rose to a high of 53%. As might be expected, this reduction in social interaction was most keenly felt by the oldest group of respondents.

Of particular interest was the impact of crew communications upon safe operations. Respondents were first questioned as to whether they felt that crew communications had had any effect upon safety at sea. 22% of respondents felt that crew communications had affected safety onboard the vessel.

Of this 22% more than half—54%—believed that it had impacted safety in a positive way. This varied according to rank with 62% of ratings believing there was a positive impact compared to 46% of officers. For these respondents an increase in safety stemmed from:

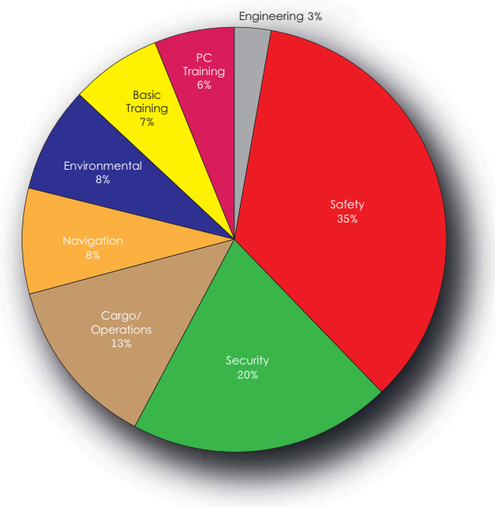
- **Greater awareness and access to information:** including home/family, company and world news. Seafarers felt that if the ship operator/company did not provide particular information which they needed, there was now an alternative means of access to it. One respondent highlighted an incident where access to the Internet enabled officers to find out medical information for a sick colleague.
- **Happier crew:** better access to friends and family reduced stress amongst seafarers which in turn led to improved focus and ultimately fewer mistakes. There was also a perception that the reduction in the urgent need to go ashore to access communications services whilst in port resulted in more concentrated, more focussed crew and therefore a corresponding reduction in general risk.

Of the 46% of respondents that believed safety had been negatively affected on board this stemmed from:

- **Increased levels of fatigue**: in those who had been accessing crew communications services during their rest periods.
- **Poor focus:** caused by a lack of contact from family, or bad news which led to the crew member not giving the job in hand their full attention, and consequent mistakes and injuries.
- **Distraction:** was cited as a major issue. Safety was reportedly affected by crew members using communications services on watch on the bridge whilst at sea. Whilst in port the ability to make and receive calls via the crew member's mobile phone was also a cause of distraction during loading and discharge operations.
- **Unauthorised communications:** this included both the malicious and accidental transmission of company or vessel information. Examples ranged from giving away the position of the vessel as it was transiting an area known for piracy attacks, to the unauthorised transmission of company specific information.
- **Equipment risk:** some respondents cited the risks of personal communications equipment on board. For example, there are possible risks of sparks from mobile phones and smartphones which are routinely used in port.

Only 38% of ratings believed that there had been a negative effect on safety compared to 54% of officers. It is likely that these figures represent the new risks which improved connectivity brings to those in positions of oversight, management and responsibility. For crew, access to communications is simply of personal benefit, whereas for those responsible for the vessel, along with the personal benefit comes the need to respond dynamically to the changes in behaviour of the crew and the potential impact upon safe and efficient operations.

Fig 19 | Computer Based Training Onboard



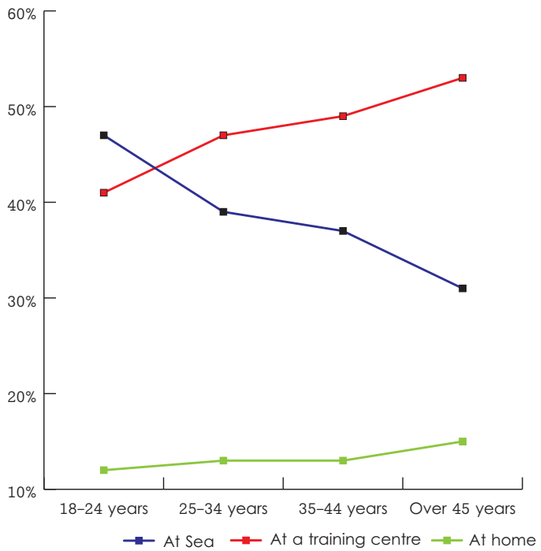


Fig 20 | Where Would You Prefer To Undertake Training?

Fig 21 | Average Monthly Expenditure

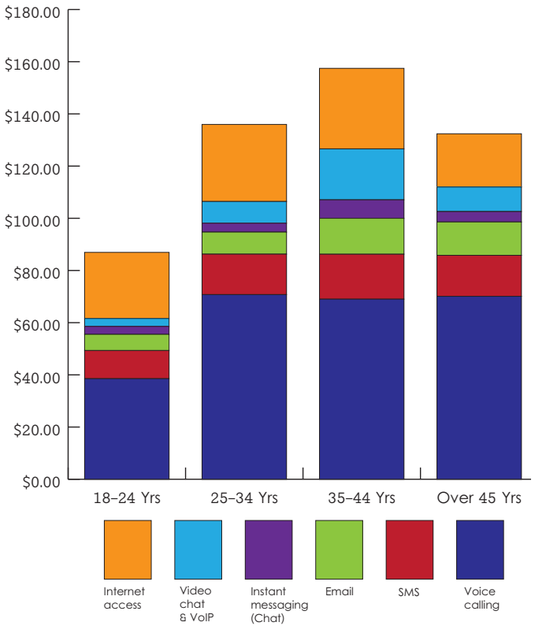


Fig 22 | Expenditure At Sea – By Age

Overall, the vast majority of seafarers do not believe that improved access to crew communications has had a negative impact upon safety onboard the ship. However, for officers and for ship operators there is an ongoing need for awareness as to how shipboard life is changing, and to develop and implement the necessary policies to manage any downside risk.

Training and Other Services provided on board

At 79%, Videos and DVDs were the most commonly provided service onboard. Satellite TV was only available to 25% of respondents, as were online training materials. E-books and publications were available to 14% of seafarers. This is reinforced by the growing number of tablets and e-readers now taken onboard. (See Technology/ Communications Devices Onboard.)

Training

42% of respondents had undertaken some form of Computer Based Training (CBT) on their last vessel. *(Figure 19)* This training typically related to either safety or security. Officers undertook more computer based training than ratings at 48% compared to 38%. The Offshore and Passenger sectors provided least CBT to their crew members. Only 22% of Passenger ship crew were provided any form of CBT and this was, in the main, basic language training. In the Offshore sector this figure was 32% and consisted mainly of compliance related safety training.

Despite the fact that the majority of respondents (77%) said that the ship was a good place to undertake training, when given the choice the majority (48%) of respondents preferred to undertake training at a training centre ashore. More officers than ratings would prefer to be trained ashore but the most striking difference was by age group.

The 18-24 year olds are the only group that would prefer to be trained at sea rather than ashore. As age increases so does the desire to be trained ashore, with the oldest group least amenable to being trained at sea. *(Figure 20)* This reinforces another Millennial trait amongst the generation more comfortable with online training or training on the job.

Crew Communications Expenditure

On average respondents spend $134.00/month on crew communications whilst at sea, and spend $139.00/ month whilst ashore. *(Figure 21)* The largest expenditure both at sea and ashore is accounted for by voice communications, but this expenditure on voice calling was significantly higher at sea, given the premium cost of satellite calls. Expenditure on SMS and email was comparable at sea and ashore. However, there was significantly higher expenditure ashore on Internet based services—Internet access, VOIP and video chat, and instant messaging. This increased the total expenditure ashore above that at sea.

Lower expenditure at sea reflects the lower levels of access to Internet services—especially in certain sectors. It does demonstrate that when access to both is equal (i.e. ashore), expenditure on Internet based services is higher than voice.

The overall higher expenditure figures ashore as compared to at sea is accounted for by the significantly higher spend of officers than ratings when ashore and in coastal waters. A clear split has emerged between the two groups, with ratings spending more at sea than ashore, and officers spending more ashore than at sea.

Comparison of expenditure by age group

The youngest respondent group spent the least of any age group on crew communications both at sea and ashore/ coastal waters. (*Figures 22 & 23*)

This 18-24 age group spent approximately 50% of other groups on voice communications both as sea and ashore. This is likely to be influenced by two main factors, firstly, junior crew are paid less and therefore have less disposable income.

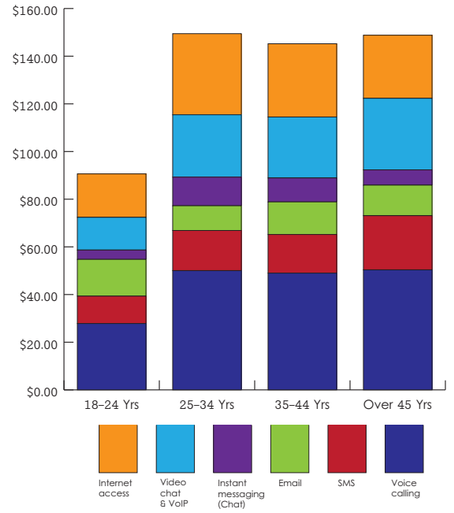
Secondly, these Millennial generation seafarers could be exhibiting behaviour typical of that generational cohort, more used to using social media and instant messaging rather than voice communications. This would appear to be borne out by the fact that their Internet expenditure is equal to that of the other age groups.

The highest expenditure at sea is within the 35-44 year age group, but drops significantly in the over 45 year old category. It is in the over 45 year category where we see least expenditure on Internet access. Expenditure on email whilst at sea also increases with age, suggesting that this is a technology with which older age groups are more familiar and comfortable.

Expenditure ashore is almost identical in the 25-34, 35-44, and over 45 age groups. The youngest, 18-24 age group, also spent significantly less ashore than any other age group.

When ashore the 18-24 year olds also spend less than any other group on Internet access, which suggests this is more of an income issue than a generational one.

Fig 23 | Expenditure Ashore – By Age



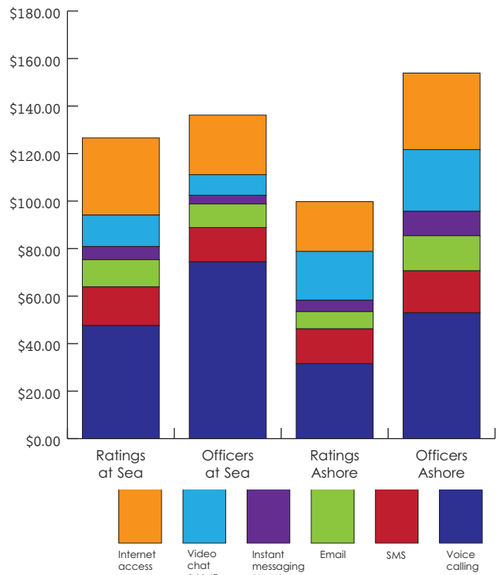
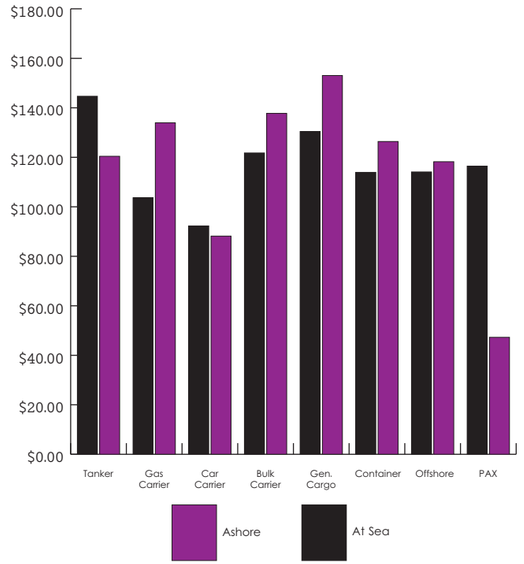


Fig 24 | Expenditure By Rank

Fig 25 | Average Expenditure By Sector



Expenditure by Rank

Overall ratings spent less than officers on crew communications both at sea and ashore. Ratings spent more on communications at sea than ashore whilst officers spent more ashore than at sea. *(Figure 24)*

Ratings' expenditure at sea and ashore was roughly split 50:50 between non-Internet based services (telephone and SMS) and Internet based services (email, chat, web acccess). With officers it was a 70:30 split between non-Internet based services and Internet based services. When ashore, like ratings, the split for officers was approaching 50:50.

Despite spending more on voice communication than any other service, ratings still spent significantly less on voice communications than officers. However, they spent more than officers on every other service, especially on Internet based services.

Ratings spent approxmately 20% less on shore based communications services than when at sea. Officers spent 13% more whilst ashore or in coastal waters. This highlights that the higher levels of overall expenditure ashore is generated by officers not ratings.

A weighted average taking account of a 40:60 ratio between officers and ratings would bring the figure to $121.60 per month for spending at sea. A weighted average for expenditure at sea would be $130 per month.

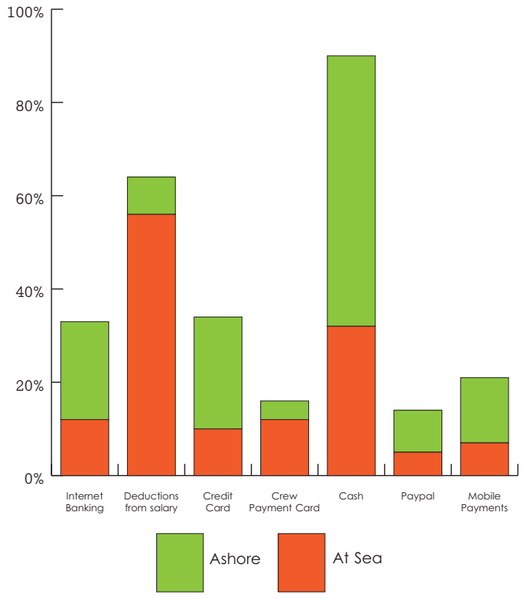


Fig 26 | Payment Methods At Sea and Ashore

Expenditure by Sector

Crew in those sectors with least access to crew communications (Bulk, General Cargo) spent significantly more than their counterparts in other sectors on communications whilst ashore/in coastal waters, reflecting the relatively low levels of service provision and access in these sectors. *(Figure 25)*

In most sectors crew's expenditure is higher ashore than at sea and this is likely a reflection of the 60:40 split of officers to crew in the survey sample. In the Passenger sector crew expenditure at sea is nearly 3 times higher than that ashore, reflecting the better provision of services on these vessels and also the relatively low ratio of officers in this sample group, as officers spend more ashore.

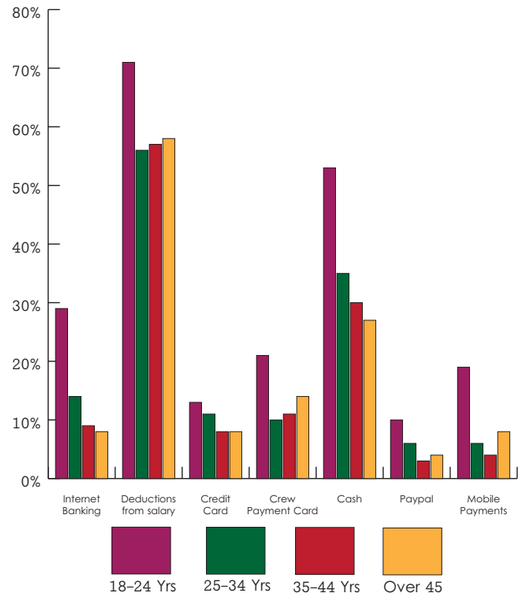
Future Spend

When questioned about their likely expenditure on crew communications services over the next 12 months, exactly half of respondents believed that their expenditure would remain the same.

However, despite complaints concerning the cost of these services 36% thought their expenditure would increase. In total 86% of crew believe that their expenditure will either stay the same or increase. Only 14% anticipate that they will cut their expenditure on crew communications in the next 12 months.

These results were consistent across both officers and ratings, and also largely across age range. It was the youngest age group 18-24 year olds, which had the largest percentage of respondents (42%) reporting an expectation that their expenditure would rise. This finding would support the hypothesis that the prime factor limiting this group's expenditure is lack of income.

Fig 27 | Payment Methods At Sea By Age



Payment Methods

In general deductions from salary and cash still dominate the payment methods used by seafarers at sea, but crew payment cards and Internet banking are also starting to make inroads. Credit card usage at sea remains low, but of the respondents overall 34% had a credit card. *(Figure 26)*

Payment Methods At Sea – Age Groups

When the data is examined in terms of age groups there are some interesting potentially emerging trends. The 18-24 year age group shows the highest levels of Internet banking of any age group, perhaps because this Millennial cohort is more used to using, and more trusting of such service delivery. *(Figure 27)*

This age group also shows the highest levels of mobile payments and the highest levels of Paypal usage. In general the new generation of seafarers demonstrate they are the most comfortable with online banking/payment methods. This age group also have, by a small margin, the highest levels of credit card use of all seafarers.

Payment Methods Ashore - Age Groups

The 18-24 year age group once again used more payment methods than any other group. Whilst cash was still the dominant method of payment whilst ashore by some margin, credit cards and Internet banking come next. *(Figure 28)*

However, lack of access to Internet services onboard has limited the use of these payment methods whilst at sea. Notable is the emergence of mobile payments, which, coupled with the increasing numbers of smartphones being taken on board, and increasing WiFi access, could po-

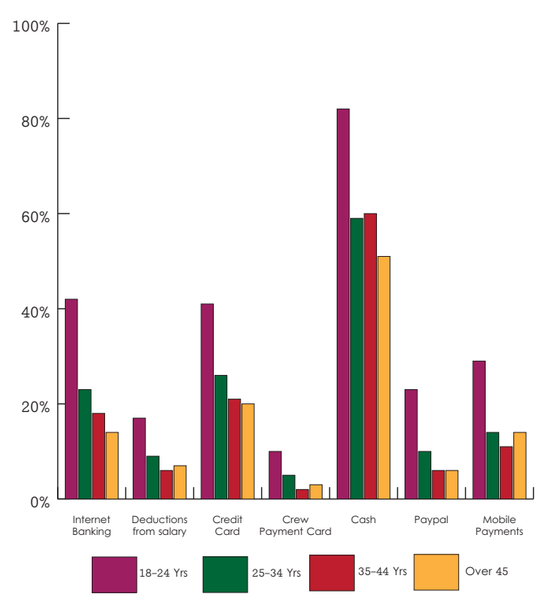
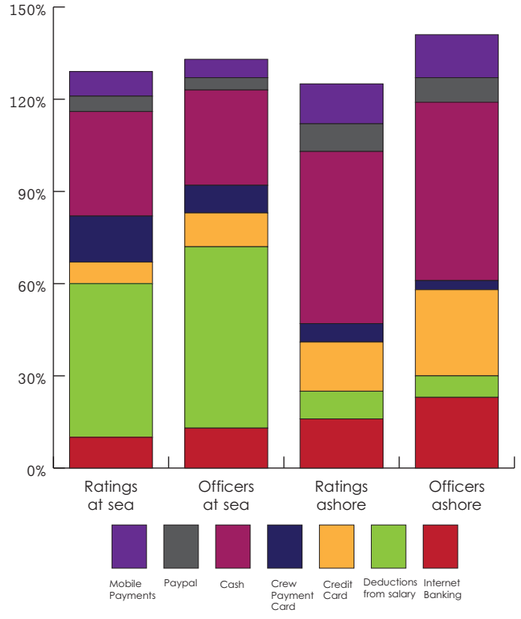


Fig 28 | Payment Methods Ashore By Age

Fig 29 | Payment Methods By Rank



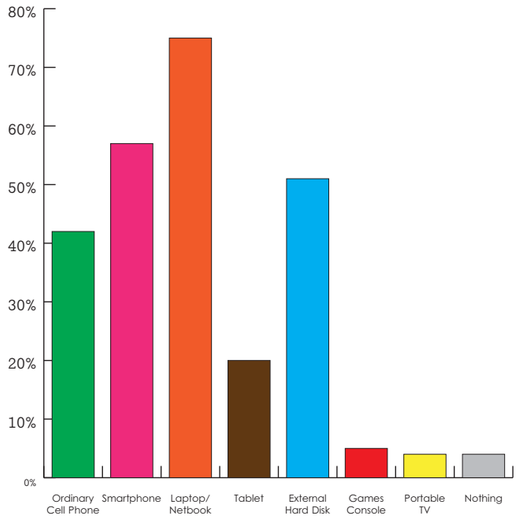


Fig 30 | Communications & Entertainment Devices Taken Onboard

tentially offer a new method for taking payments from crew in the future.

When examining methods of payment favoured by different ranks it's clear that officers use more Internet banking both when at sea and whilst ashore. They also use credit cards significantly more than ratings, especially when ashore. *(Figure 29)*

There are similarly high levels of cash usage by both groups both at sea and ashore, and also of Paypal and mobile payments, which again reinforces the possibility that these may be potentially more universal payment methods in the future as opposed to credit cards etc.

Technology/Communications Devices Onboard

We asked crew about the technology/communications devices taken on board in order to understand what effect this has on the services they used, what they wanted in future, and how they would like to access these services. The key finding is that seafarers already carry a lot of technology/communications devices on board, the majority taking multiple devices. This finding is in line with broader commercial and consumer trends such as BYOD and ATAWAD, and demonstrates that shipping not only has a highly IT literate workforce, it also has a device-literate workforce.

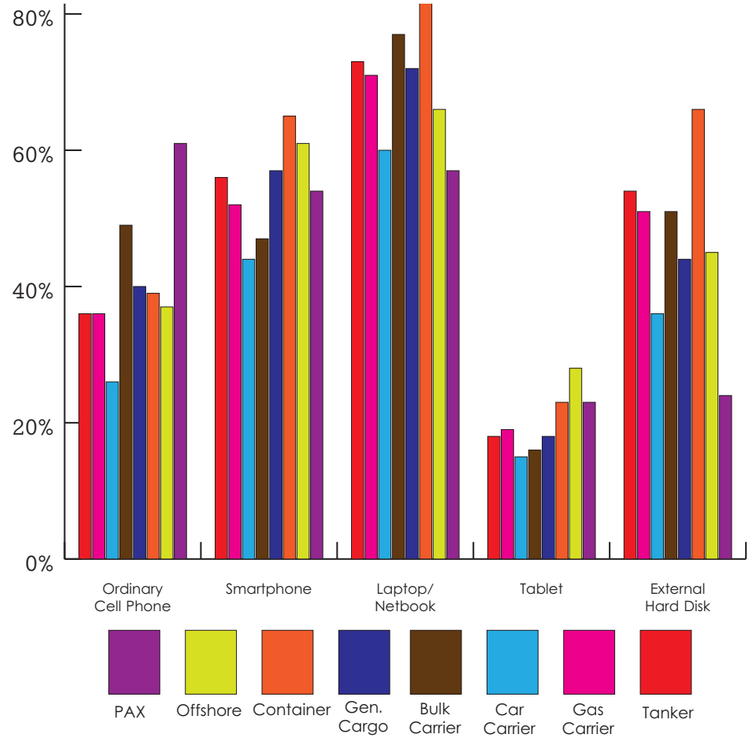
The most common device taken onboard by crew members was a laptop PC, carried on board by 75% of crew. *(Figure 30)* This goes some way to explaining why the majority of seafarers would like to be able to access crew communications from a laptop (their own) via WiFi. The percentage of those taking their own laptop on board was highest amongst officers, with 81% reporting they take a personal laptop on board.

The second most common device taken onboard is a smart phone, with 57% of respondents taking this device on board. Interestingly, the percentage of those taking a smartphone on board is as high as 68% among those who rated their IT skills highest. Significantly, the smartphone is now more common than the ordinary cell phone on board the commercial fleet, and is set to increase in numbers. This helps us to understand why the majority of crew want to access SMS on a smartphone as opposed to a PC or other device.

Also fairly common are external hard disks, taken aboard by 50% of seafarers as a means of storing more media content. There are now also a significant number of tablets being taken onboard vessels with 20% of respondents reportedly carrying these onboard, and this figure looks set to rise.

4% of respondents did not take any kind of technology

Fig 31 | Communications & Entertainment Devices Taken Onboard By Sector



onboard the vessel, not even a mobile phone.

Technology/Communications Devices By Sector

The Container and Bulk sectors reported the highest levels of technology/communications devices. *(Figure 31)* The Container and Bulk sectors provide the lowest levels of additional services onboard, hence crew take their own equipment onboard to supplement the existing services. (See Access To Crew Communications Services)

Similarly, the Passenger sector has high levels of additional services onboard, as do Car Carriers and as a consequence crew in these sectors take relatively low levels of technology/communications devices aboard with them.

Planned Technology/Communications Device Purchases

In order to understand future BYOD/ATAWAD trends we asked respondents about their planned pur-

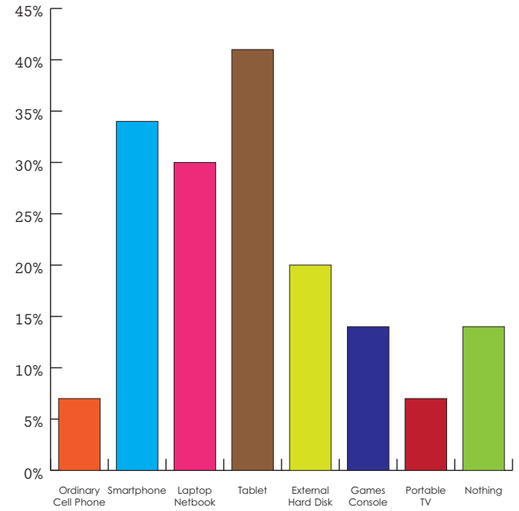
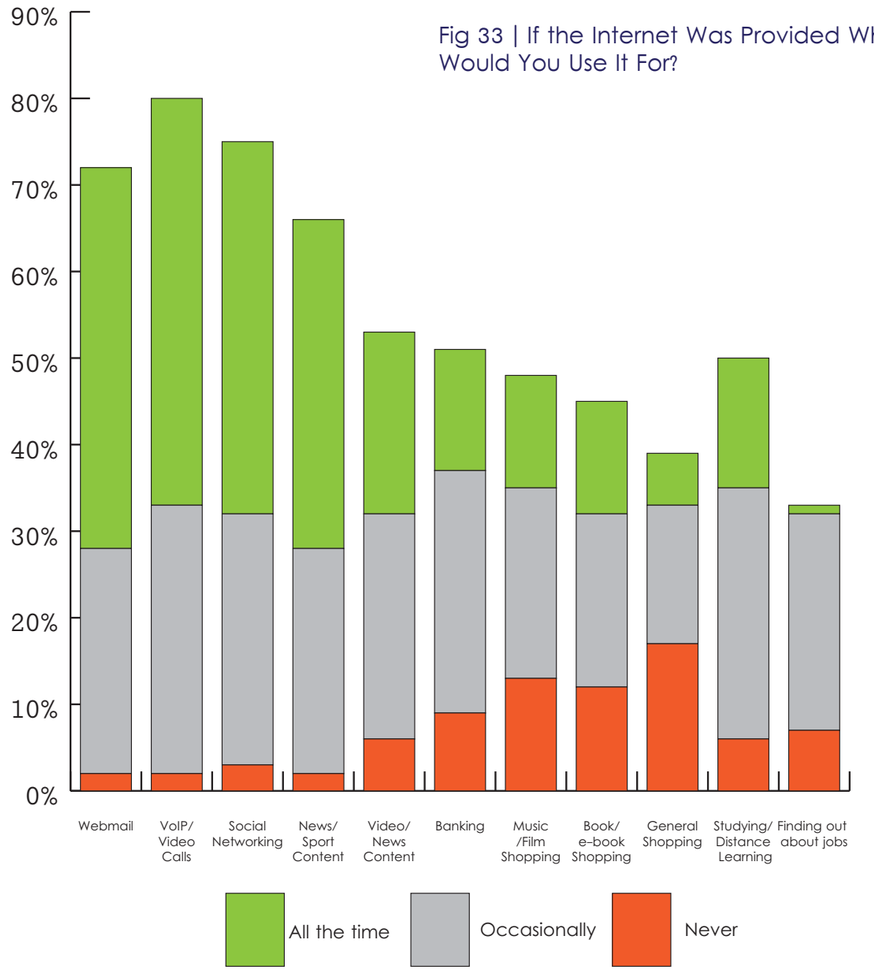


Fig 32 | Planned Purchases of Communications & Entertainment Devices

Fig 33 | If the Internet Was Provided What Would You Use It For?



chases over the next 12 months. Over 40% of respondents said that they planned to purchase a tablet PC for use onboard. *(Figure 32).* Only slightly fewer respondents reported their intention to purchase a smartphone, at 35%.

Already the second most common device onboard, if this sentiment translates into purchases, smartphones look set to increase their dominance onboard. A further 30% indicated that they planned to purchase a laptop for the first time, or as a replacement to an existing device.

The level of technology currently carried onboard, and that which is likely to be carried on board in the near future, provides significant opportunities for service providers and ship operators alike. With smartphones, tablets and laptops all increasing in number new ways to disseminate services, training and other information and content utilising wireless networks and personal devices are possible. Coupled with the clear finding that seafarers consider themselves to be highly IT literate, it seems likely that such services would be welcomed by seafarers.

If seafarers were provided with Internet access what would they use it for?

To understand what seafarers really wanted to use the Internet for we asked them to choose from a range of services and tell us how frequently they would use them. Unsurprisingly, traditional crew communications services such as email rate highly. However, the emerging trend is towards VOIP and video chat. *(Figure 33)*

Social media is still of significant interest to crews, as is content, suggesting that crews still don't have sufficient access to the news and sports content they desire. However, interest in content does not extend to that which can

be purchased and downloaded, e.g. music, film and books which all fared poorly. There was even less appetite for general shopping which scored highest in the 'would never use' rankings of any category. Despite 12% of respondents reportedly using online banking whilst at sea, banking fared poorly, with crew indicating they would only use it on an occasional basis. It does appear though that more widespread Internet access would drive an increase in usage. However, it should be borne in mind that banking services may not need to be accessed on a daily or even weekly basis dependent upon the complexity of finances.

From a training perspective there were an encouraging number of respondents wishing to use Internet access for some form of distance learning/studying. However, finding out about jobs online scored the lowest of all categories, with accessing recruitment information of little interest to seafarers whilst at sea.

Crew Communications Costs

To understand what crew paid for their communications we asked them to specify how much they paid for a minute of voice, an email, and a megabyte of Internet access.

According to the data, the average price paid by seafarers for telephone calls was $1.42 per minute. This varied from users paying just a few cents per minute—most likely VSAT users—to those paying in excess of $2.00 per minute. However, this data comes with a significant caveat, namely that of all the questions in the survey, those about costs and pricing clearly caused a good deal of confusion amongst respondents who struggled to answer them.

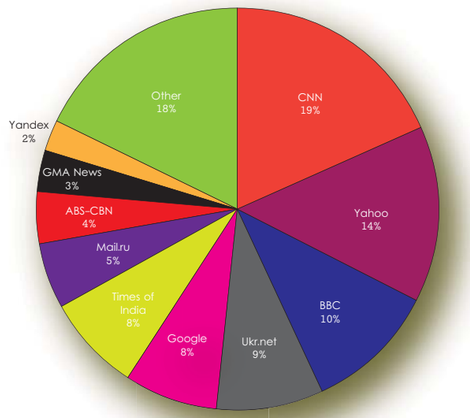
However, although the figures provided by crew concerning what they actually spend should be approached with a degree of caution, their answers have highlighted some very important issues around how crew communications services are provided and charged to seafarers.

Most importantly, many seafarers clearly didn't understand what they were being charged for a minute of voice calling. Many respondents quantified the figure as monthly spend, indicating they knew how much they spent, but not how many minutes that equated to, or the advertised price per minute. Considering that this is the service on which seafarers spend the most, their lack of familiarity with the charging structure and pricing of that service is a concern.

Crew generally had a better idea of what they were spending on email, although some answers were clearly not accurate. The average price paid for an email was $0.27, but many respondents appear to be charged a fixed fee for text only email—most likely via a dedicated crew communications system.

When it came to Internet access, the average price paid for 1 megabyte of Internet access was $0.42. However, the

Fig 34 | Top 10 News Sites



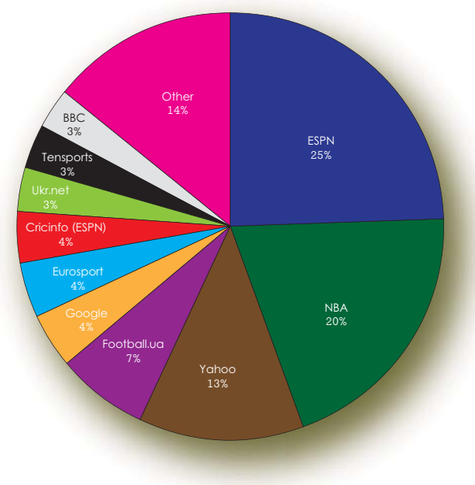
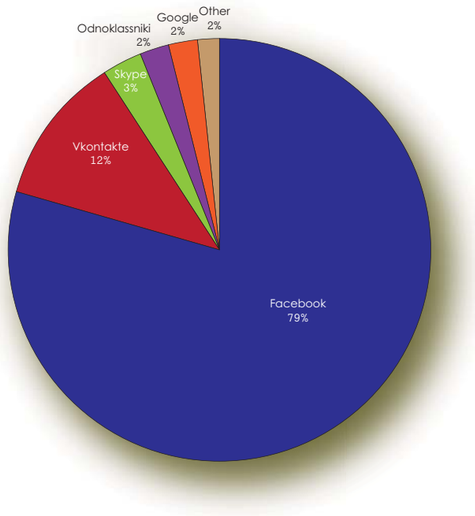


Fig 35 | Top 10 Sports Sites

Fig 36 | Top 5 Social Networking Sites



spread of prices suggests that of all the pricing and cost data, this should be treated as the most unreliable. Respondents found this questions very difficult to answer, due to the fact that:

- those provided with Internet access were given a free allowance and when they went over that allowance were charged for a block of data.
- those charged had paid for a block of megabytes or for a period of time, thus making it extremely difficult for them to understand what they were paying for a megabyte of data.

The data indicates that a substantial proportion of crew have no real conception of what they are being charged for voice, email or particularly Internet access.

Clearly ship operators are not making the costs or the pricing structure clear enough for their crews. However, in their defence, ship operators in the majority of cases are just passing on a pricing structure imposed upon them by their communications supplier—pricing structures which are so complex that, particularly in the case of Internet access for crew, are resulting in the service either not being made available at all, or being given away free of charge.

The overall conclusion is that communications suppliers offering overly-complex pricing structures in some cases are preventing services being made available more widely to crew, and could therefore ultimately be acting as a brake upon usage and potentially profits.

Crew's Favourite Websites

Respondents were asked to identify their favourite websites for a range of information. The most popular single dedicated news site was CNN, cited by 19% of respondents, with the BBC the second at 10% followed by the Times of India at 8%. *(Figure 34)* The remaining sites were typically more regionally focussed. These included Ukr.net, which offers recent news from Ukraine and free email, and ABS-CBN and GMA News Online which offer Phillipines news.

Search engines Google, Yahoo and Yandex were all cited as news site, as was Mail.ru, a free Russian email site similar to Yahoo with a social media community.

The top ten most popular sports sites for crew were dominated by ESPN at 25% and the NBA at 20%. *(Figure 35)* Once again Yahoo scored highly with 13% citing it as a favourite sports site. The remaining sites included CricInfo, a cricket offshoot of ESPN and Tensports, and Indian owned site offering news, blogs and timings for live sporting action from the world of cricket, football, tennis, WWE, rugby and motorsports.

In terms of social networking sites, Facebook continues its dominance amongst seafarers with 79% citing it as their favourite social network. *(Figure 36)* Of the top five most popular sites, aside from search engine Google—which does offer the social network Google+—and Skype, the remainder are Vkontakte, the largest European social network with over a 100 million active users, and Odnoklassniki—classmates in Russian—a social network service for classmates and old friends popular in Russia and former Soviet Republics.

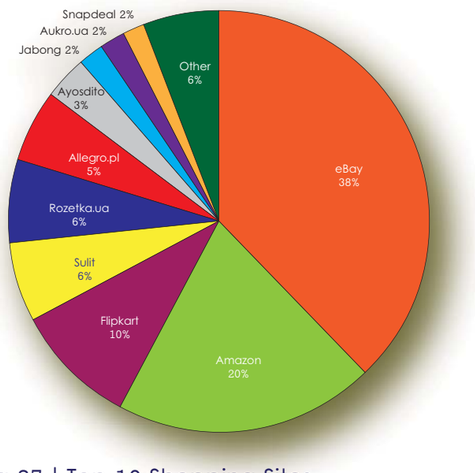


Fig 37 | Top 10 Shopping Sites

It is interesting to note that no shipping or maritime specific websites offering industry news were cited by any respondents. Also noteworthy is the high level of major portals, such as search engines cited by respondents. It seems likely that there is a trend towards use of portals rather than individual sites, particularly when useful services such as free email are offered.

This could also reflect the fact that portals which aggregate and curate content, make searches etc. more efficient—of significance when crew are being charged per megabyte or minute for web access.

When asked to name their favourite shopping websites seafarers overwhelmingly chose eBay at 38% and Amazon at 20%. *(Figure 37)*

Popular Maritime Websites

Respondents were asked to name their favourite maritime recruitment website. *(Figure 38)* Of the top ten most popular maritime recruitment websites Jobships led with 14%, closely followed by Jobatsea (12%) Pinoyseaman (11%), Seajobs (10%) and Seaman Jobsite (10%). Perhaps surprisingly none of the major maritime recruitment agencies featured in the responses from seafarers, aside from Rigzone at just 4%.

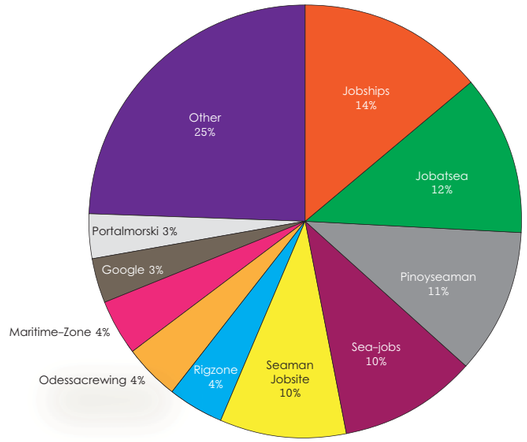
Considering that the sample contained a significant number of officers, and those who may be looking to transition to shore-based positions, it is particularly noteworthy that none of the most recognisable names in maritime recruitment were mentioned.

The conclusion has to be that the traditional recruitment agencies are either finding it difficult to compete online with web-based recruiting sites, or potentially that maritime recruiters have not yet grasped the importance or potential of connecting with those at sea.

When respondents were asked to name their favourite maritime website they clearly struggled. *(Figure 39)* The question was poorly answered in terms of number of respondents, and their responses paint a highly fragmented picture.

The most popular website was Crewtoo with 16%, followed by Marinetraffic at 11% and IMO at 9%. The rest of the top ten, including Marineinsight and gCaptain had no more than single digit percentage shares, leaving a significant number of individual maritime websites to make up the remaining 29%.

Fig 38 | Top 10 Maritime Recruitment Sites



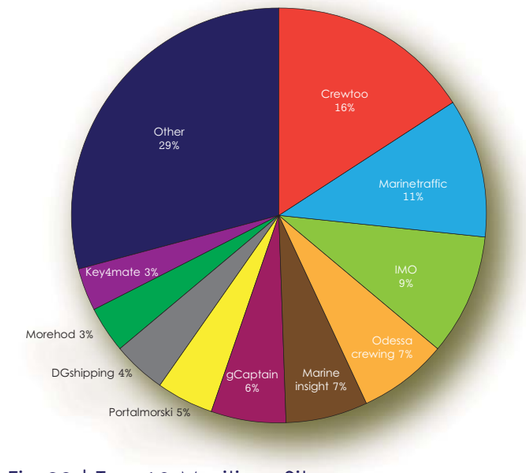
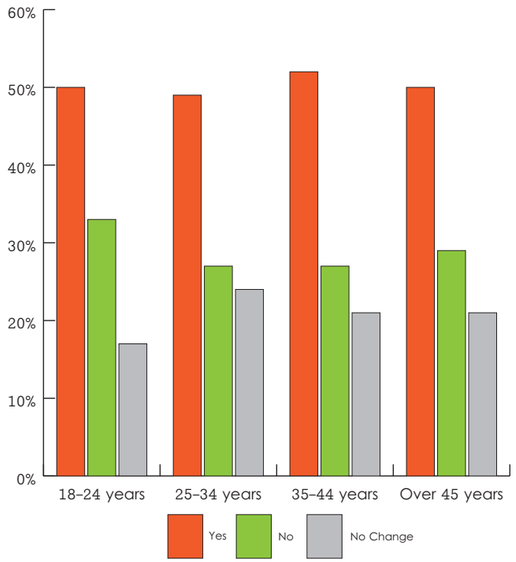


Fig 39 | Top 10 Maritime Sites

Fig 40 | Has Access To Crew Communications Improved In the Past 2 Years/By Age



Has Access To Crew Communications Improved?

When asked whether access to crew communications had improved in the two years since the original Crew Communications Survey in 2012, respondents were equally split. *(Figure 40)* Exactly half of the respondents felt that access to services had improved, whilst the other half felt that there had been no improvement in access to crew communications in that period.

The results did not vary significantly based on respondents' perceived level of IT skills. However 10% more crew than officers thought that access had improved which could show that crew are gradually achieving better access as compared to officers who, for operational reasons, have always had a higher degree of access.

In terms of sectors, the Bulk and Container sectors saw the least improvement, whilst Gas and Passenger sectors saw most. These findings are in line with the broader penetration of VSAT and other IP connectivity solutions within these sectors.

Where this finding is of particular interest though, is in relation to the perception of provision by crew. The results of the survey clearly show that access is an improving picture, particularly access to the Internet which nearly half of seafarers who have access to it are receiving free of charge from ship operators.

In short, the correct answer to this question, based on the respondent's own experiences, is that access to crew communications has demonstrably improved, and yet seafarers don't overwhelmingly see it that way.

Future Services

We asked respondents to consider a list of potential future services and asked them to choose the most important to them. *(Figure 41)*

When we consider the services seafarers want to see provided in the future we see further confirmation that there is little interest in on demand music, TV or film services. This reflects the responses given to the question of what seafarers would use the Internet for, were it provided to them.

Given the levels of expenditure in port/coastal waters it is perhaps inevitable that crew most want to see free WiFi access in port. The potential savings could be very significant for seafarers since their Internet related expenditure ashore is on average approximately $75 per month. Free WiFi service could provide access to even larger savings for crew, as it can also be used for VOIP and video calls, both of which are highly in demand.

There is a strong appetite for a low-cost global roaming SIM card that would allow low cost calls from any country. Currently seafarers find themselves purchasing SIM cards from port welfare facilities which, if not used, are worthless in another country.

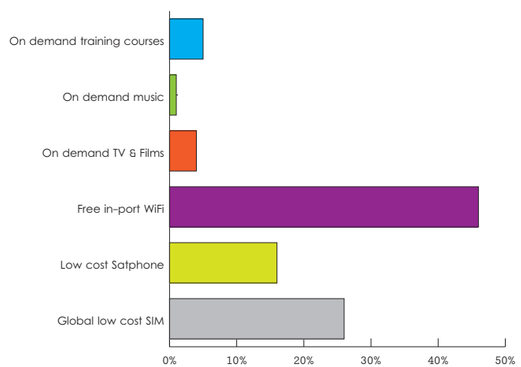


Fig 41 | What Future Services Would You Like To See Made Available?

Considering the wide availability of such global roaming SIMs and smartphone mobile apps, it is curious that none of the terrestrial providers of such services have recognised the opportunity to market these SIMs to seafarers, or that maritime communications suppliers have not added them to their product portfolios—especially considering the likely growth in smartphones. The significant interest in such SIMs would suggest that these cards represent the low hanging fruit of crew communications products, and failure to provide them is leaving money on the table.

The other product which scored highly among seafarers was a low cost satphone for crew that would allow voice calls to be made in privacy. Whether current maritime or wider suppliers are yet in a position to make a satphone which could retail cheaply enough to meet the requirements of the seafarer market is unclear. However, the data is once again highlighting the importance of voice calling for seafarers.

Upon analysis crew appear somewhat resigned to the costs of crew communications services at sea which they perceive as unavoidably expensive. However, they appear less happy with the amount of money they are having to spend ashore where they have to pay potentially high roaming charges, and also for Internet access, when land-based connectivity should be far more affordable.

Crew are not particularly looking for new and innovative service provision, but ways by which to reduce costs which they see as unnecessarily high ashore.

The other very significant finding is that Internet access, whilst utilising the latest IP technology is actually being leveraged to address the costs of the oldest and most traditional form of communications—that upon which they are still spending the most—voice calling, and increasingly, video chat.

Access To Data

But perhaps the most striking and important finding here lies in respondents' attitudes towards their online usage data. When asked whether they would be prepared to allow access to their online usage data in return for free Internet access, the result was overwhelming.

81% of seafarers would be happy to allow access to their data in exchange for free Internet access provision. *(Figure 42)*

This sentiment did not vary considerably between age groups, rank or IT competency and is a clear signal that redesigned, simple service propositions based on the exhaust data from crews would have a good chance of widespread take-up. The implications of this finding are pertinent not just to deep-sea connectivity suppliers and ship operators, but to shore-based stakeholders including ports and those providing crew welfare facilities within them, or local to them.

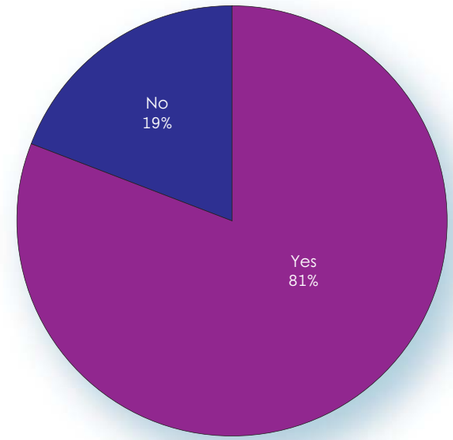


Fig 42 | Would You Be Prepared To Allow Access To Your Online Data In Exchange For Free Internet Access?

Conclusions

- On average respondents spent 7.3 months per year at sea, with ratings spending slightly more time at sea than officers. The 18-24 Millennial age group are those spending the least time at sea, perhaps a sign of decreased appetite for sea-time following broader trends. However, as this age group also undertakes a good deal of training ashore, this could account for some of the discrepancy.

- 38% of port calls are less than 12 hours in duration and 76% of respondents reported they were either never, or rarely able to go ashore whilst in port. More officers than ratings never or rarely went ashore, possibly reflecting the burden of management responsibility upon officers whilst in port.

- Possibly as a result of the limited opportunities to go ashore only 25% of the total respondent base used crew welfare facilities whilst in port. There was no difference between officers and ratings in terms of their use of crew welfare facilities. By far the most popular services provided by crew welfare facilities were those linked to communications, namely Internet access, telephone access and SIM cards.

- 89% of respondents considered that they both understood how the technology they used at sea worked, and were comfortable using it, or were so knowledgeable that they helped others on board with technology.

Clearly, seafarers are a highly IT-literate workforce which, coupled with the range of personal devices being brought onboard suggests there are significant opportunities for ship operators to utilise technology more, and in more innovative ways to drive efficiencies and safety of operations.

- 56% of respondents reported that they had access to some form of crew communications either 'always' or 'most' of the time. Generally speaking officers enjoyed better access than crew. However, of more concern is that 39% of seafarers report access only 'sometimes' and 6% never have access at all whilst on board. Access to crew communications varied significantly between different sectors.

The percentage of crew reporting never having access to communications was as low as 1% in the car carrier sector and as high as 13% in the Container sector. The Container and Bulk sectors provide the lowest levels of access to crew communications. These findings have serious implications for operators following the ratification of the Maritime Labour Convention (MLC) 2006 which mandates 'reasonable' access to crew communications at a 'reasonable' cost.

- Telephone was still the most common form of crew communications service provision with 76% of seafarers on average having access. In some sectors like General Cargo however, over 30% of respondents still have no access to a telephone.

- Text only email is the most common form of Internet-based crew communications provided on average to 48% of respondents, with significant variations between sectors.

- The most encouraging finding is that Internet access is now available on average in 36% of all sectors, with Passenger and Offshore where relatively high penetration levels of VSAT and Inmarsat FleetBroadband systems exist reporting close to 70% provision, and Gas Carriers—a relatively buoyant market—reporting close to 60%. However Container, Bulk Carriers and Containers are lagging behind the industry with around 20% provision.

- Perhaps one of the most interesting findings is the proportion of ship operators who are providing Internet access free of charge. Whilst text only emails are still the most commonly provided free crew communications ser-

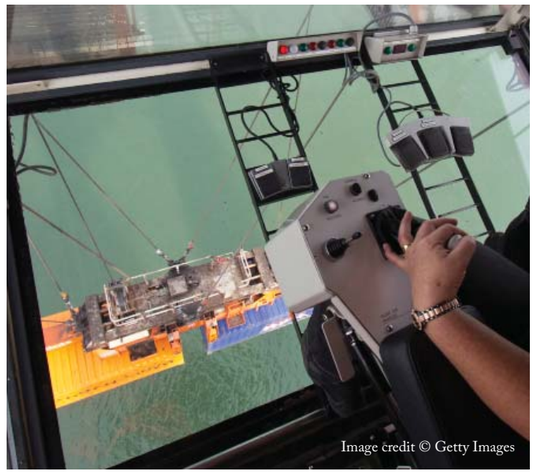


Image credit © Getty Images

vice, almost half of the 36% reporting Internet access are being provided it free of charge. This is compared to only 6% of crew who are being provided telephone voice calling free of charge.

It is likely that the complexity of designing and implementing a pay-as-you-go system for Internet access has led many ship operators to simply offer the service free. However, with voice calling still making up the lion's share of crews' expenditure on communications, the low levels of free provision of that service are seeing crew using Internet access to give them VOIP and video chat instead.

- The most common place for crew to access communications services is still on the ship's bridge, the second most common place is now in the crew member's cabin, with 34% reporting access here. Once again though significant differences exist between sectors with Bulk Carrier, Container and Container crew faring worst of all.

- The majority of services are accessed by crew no more frequently than once a week, other than text only email and the Internet, with the majority of crew (56%) using these on a daily basis. Only 17% of crew access phone services on a daily basis—primarily as a result of cost and access—but more crew use the telephone than any other service provided.

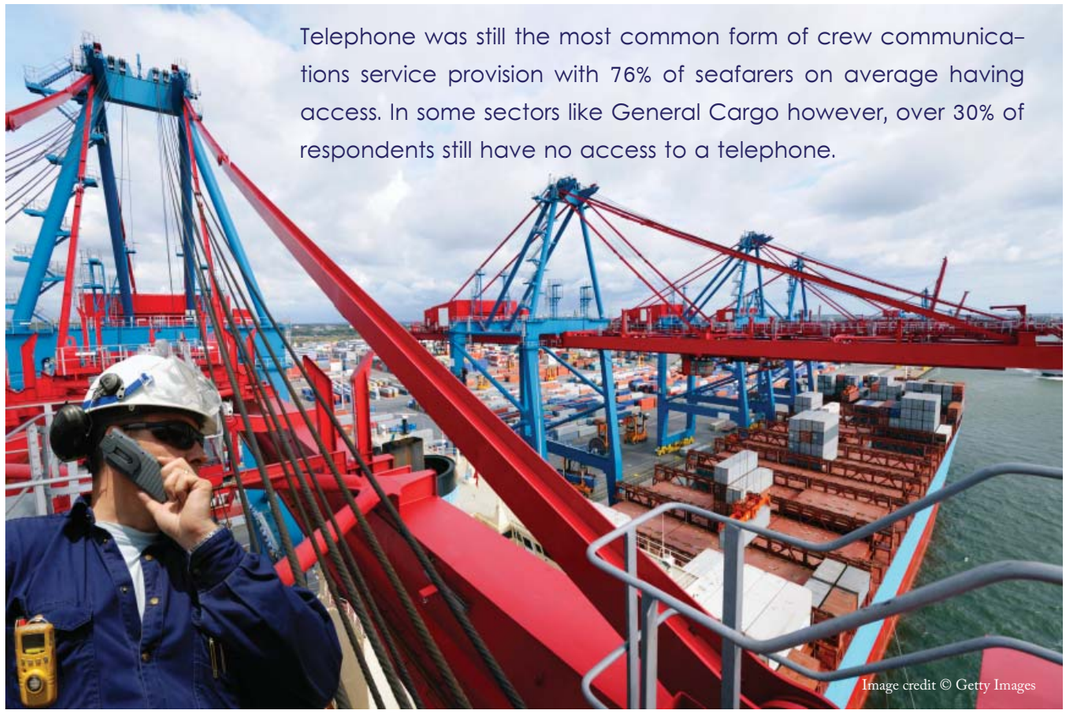


Image credit © Getty Images

- The main factors limiting the use of crew communications continue to be cost (49%), privacy and—where limited bandwidth exists—quality of service.

- There is evidence that the cost to ship operators of providing these services has reduced—particularly that of telephone calls—but there are issues around both the complexity of pricing to crew as end-customers and indeed whether ship operators are passing on the reductions in cost they have enjoyed. See the Crew Expenditure section for further insight and analysis on these areas.

- Overwhelmingly, crew want to access communications services via a laptop connected WiFi, except in the case of SMS services where the preferred method of access was via their smartphones.

- If crew could choose one free service, it would be free Internet access. 77% of respondents chose this with the results consistent across all age groups and ranks. Considering that telephone voice calling represents the greatest cost to crew, this may seem a strange finding, however, it is explained by the way in which Internet access is used by crew, i.e. for VOIP and video chat, making satellite voice calling potentially redundant.

- When asked whether the level of crew communications services provided onboard influenced their decisions about which shipping company that they worked for, seafarers' answer was unambiguous. 69% reported that it was a factor in their decisions.

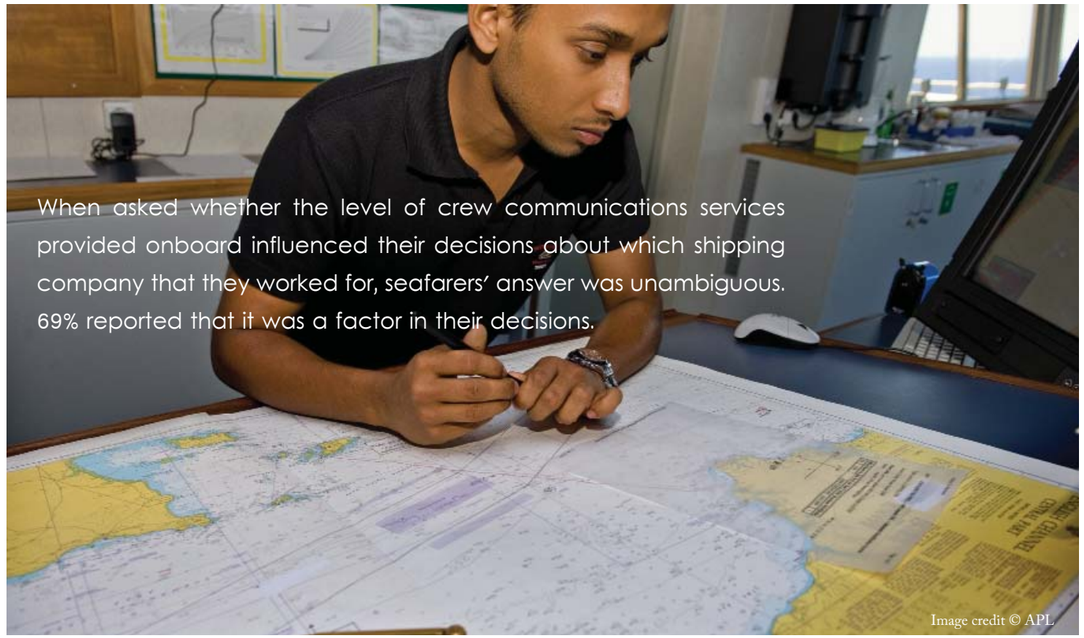


Image credit © APL

This sentiment varied little between officers and ratings and amongst age groups, but did vary significantly with IT skills. Those with lower IT skills were less influenced by the provision of crew communications services than those reporting higher IT skills. The most significant variations however, were among sectors. For ship operators evaluating the importance of crew communications to their own overall recruitment and retention policies, those within sectors where higher VSAT/Internet penetration levels exist are the most likely to be disadvantaged by a failure to provide a high calibre of crew communications access.

For those operating in sectors with lower levels of penetration and therefore crew expectations, improving provision would appear to hold the potential for significant competitive advantage.

- Just under half of respondents (46%) believed that increased levels of, and access to, crew communications had reduced social interaction onboard. 22% believed that access had affected safety onboard the vessel. Of those, more than half (54%) felt it had impacted safety in a positive way.

Only 38% of ratings believed that there had been a negative effect on safety compared to 54% of officers. It is likely that these figures represent the new risks which improved connectivity brings to those in positions of oversight, management and responsibility

- 42% of respondents had undertaken some form of Computer Based Training (CBT) on their last vessel. This training typically related to either safety or security. Officers undertook more computer based training than ratings at 48% compared to 38%.

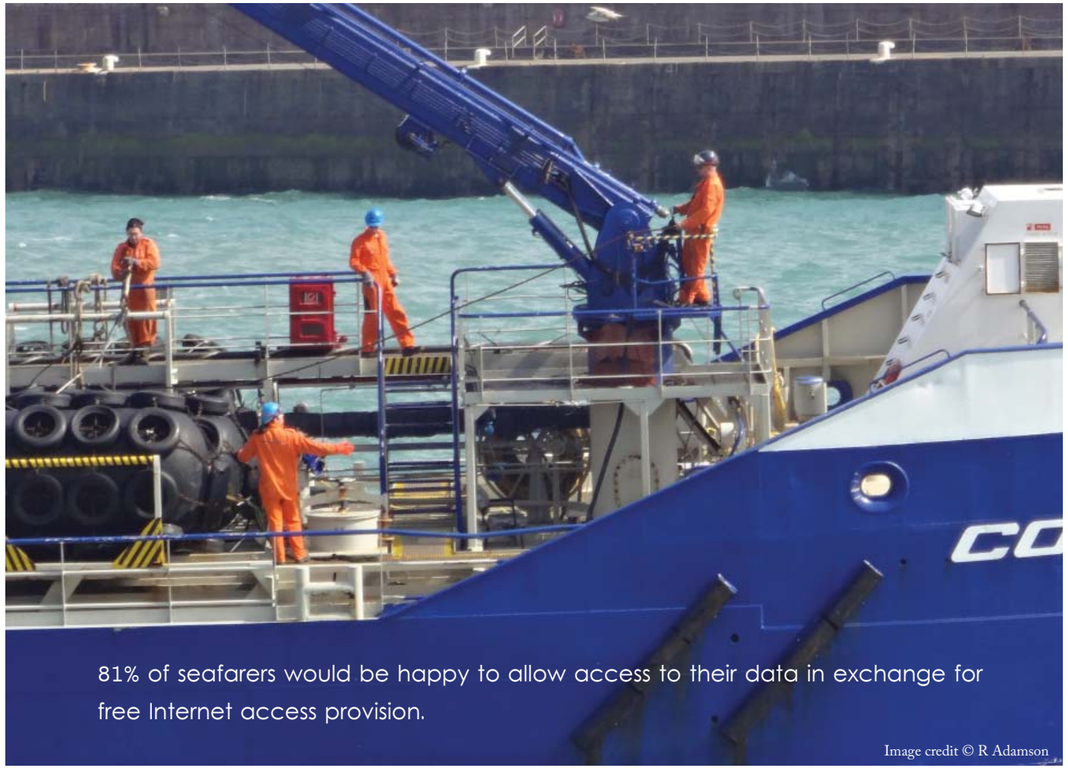
Despite the fact that the majority of respondents (77%) said that the ship was a good place to undertake training, when given the choice the majority (48%) of respondents preferred to undertake training at a training centre ashore.

The 18-24 year olds are the only group that would prefer to be trained at sea rather than ashore. As age increases so does the desire to be trained ashore, with the oldest group least amenable to being trained at sea.

- On average respondents spend $134.00/month on crew communications whilst at sea, and spend $139.00/month whilst ashore. The largest expenditure both at sea and ashore is accounted for by voice communications, but this expenditure on voice calling was significantly higher at sea, given the premium cost of satellite calls.

Expenditure on SMS and email was comparable at sea and ashore. However, there was significantly higher expenditure ashore on Internet based services—Internet access, VOIP and video chat, and instant messaging.

- At sea ratings' total expenditure was $126, and of-



ficers' $136. Ashore, ratings' total expenditure was $100, whilst officers spent $154 in total.

The youngest age group 18-24 spent the least on crew communications, influenced both by a lack of disposable income, and also potentially generational trends towards social media and instant messaging rather than voice.

This group had the largest percentage (42%) of those who expected their spend to rise in the next 12 months however. In total 86% of crew believe that their expenditure will either stay the same of increase in the next 12 months.

Deductions from salary and cash remain the dominant payment methods used by seafarers at sea, but crew payment cards and Internet banking are also starting to make inroads.

Notable is the emergence of mobile payments, which, coupled with the increasing numbers of smartphones being taken on board, and increasing WiFi access, could potentially offer a new method for taking payments from crew in the future.

Seafarers carry a lot of technology/communications devices on board, the majority taking multiple devices in line with broader BYOD and ATAWAD trends. 75% of crew take a laptop onboard and, significantly, smartphones at 57% are now more common in the fleet than cell phones.

Shipping not only has a highly IT literate workforce, it also has a device-literate workforce. Over 40% of respondents said that they planned to purchase a tablet PC for use onboard within the next 12 months. Only slightly fewer respondents reported their intention to purchase a smartphone, at 35%.

If provided with Internet access respondents would use it for traditional crew communications services such as email, but the emerging trend is towards VOIP and video chat. Social media is still of significant interest, as is access to news and sports content, but music, films and books, and general shopping is of limited interest. An encouraging number of respondents would use Internet access for some form of distance learning or studying, however, finding out about jobs online scored lowest of all categories.

The average prices paid by seafarers for telephone calls was $1.42 per minute, for an email was $0.27, and for a megabyte of data was $0.42, however this data should be treated with caution. The more significant finding is that in many cases crew have little idea what they are being charged.

Ship operators are not making the costs or the pricing structure clear enough for their crews, however, these are often pricing structures imposed upon them by their communications supplier—pricing structures which are so complex that, particularly in the case of Internet access for crew, are resulting in the service either not being made available at all, or being given away free of charge.

Communications suppliers offering overly-complex pricing structures in some cases are preventing services being made available more widely to crew, and could therefore ultimately be acting as a brake upon usage.

There are attendant questions raised by the data on pricing for crews, including whether ship operators have passed on recent reductions in communications costs, and whether making margin on crew communications services remains an ethical practice in the light of the new MLC2006 provisions.

When identifying their favourite websites crew chose major news and sports sites including CNN, the BBC and the NBA and also large search engines such as Google and Yahoo. eBay and Amazon are the top shopping sites. Facebook remains the most popular social networking site with 79% of seafarers citing is as their favourite. However, it is interesting that no maritime websites were mentioned by seafarers until asked specifically to name them.

The most popular maritime website was CrewToo with 16%, followed by Marinetraffic at 11% and IMO at 9%. The rest of the top ten, including Marineinsight and gCaptain had no more than single digit percentage shares. When asked to name their favourite maritime recruitment website Jobships led with 14%, closely followed by Jobatsea (12%) Pinoyseaman (11%), Seajobs (10%) and Seaman Jobsite (10%).

It is particularly noteworthy that none of the most recognisable names in maritime recruitment were mentioned aside from Rigzone at just 4%. It is possible that the traditional recruitment agencies are either finding it difficult to compete online with web-based recruiting sites, or potentially that maritime recruiters have not yet grasped the importance or potential of connecting with those at sea.

Also noteworthy is the high level of major portals, such as search engines cited by respondents. It seems likely that there is a trend towards use of portals rather than individual sites, particularly when useful services such as free email are offered. This could also reflect the fact that portals which aggregate and curate content, make searches etc. more efficient—of significance when crew are being charged for web access.

Respondents were equally split when asked whether access to crew communications had improved in the past two years. Exactly half of the respondents felt that access to services had improved, whilst the other half felt that there had been no improvement in access to crew communications in that period. More crew than officers felt that access had improved. Based on respondents' own answers to the survey it is clear that access is an improving picture, however seafarers don't overwhelmingly see it that way. This could be a function of the vastly better, and fast improving, connectivity ashore which means that despite shipping improving, the gap is continuing to widen.

In terms of future services, seafarers have little interest in on demand music, TV or film services. Primarily seafarers want to see free WiFi in port, which could offer the potentially significant savings. There is also a strong appetite for a low-cost global roaming SIM card, and a low-cost satphone. In summary, crew are not particularly looking for new and innovative service provision, but ways by which to reduce costs. Internet access, whilst utilising the latest IP technology is actually being leveraged to address the costs of the oldest and most traditional form of communications—that upon which they are still spending the most—voice calling, and increasingly, video chat.

Perhaps one of the most important findings of the survey lies in respondents' attitudes towards their online usage data. When asked whether they would be prepared to allow access to their online usage data in return for free Internet access, the result was overwhelming. 81% of seafarers would be happy to allow access to their data in exchange for free Internet access provision. This sentiment did not vary considerably between age groups, rank or IT competency. The implications of this finding are pertinent not just to deep-sea connectivity suppliers and ship operators, but to shore-based stakeholders including ports and those providing crew welfare facilities within them, or local to them.

For more information about the survey contact Roger Adamson, CEO, Futurenautics.

Supporting Organisations

Crewtoo

KVH Media group is the maritime industry's leading provider of rights-approved news, sports, music, and movies, including Walport maritime training films.

KVH is based in Middletown, RI, with facilities in Illinois, Denmark, Norway, the UK, Singapore, the Philippines, India, and Japan, and employs more than 500 people around the world. Home to popular maritime brands NEWSlink, MOVIElink, and TRAININGlink, KVH Media Group began the maritime social networking service Crewtoo for seafarers towards the end of 2011.

Crewtoo is the seafarer's community, aiming to let crew connect, share, learn and have a voice whether at sea or at home. Now with approximately 80,000 members, the service allows seafarers to create profiles, post comments and update their profiles from their ships, find colleagues with whom they may have lost touch, share opinions with the community, keep up to date with and comment on maritime news and also take part in Crewtoo polls and votes.

KVH Media Group is part of KVH Industries, a leading manufacturer of solutions that provide global high-speed Internet, television, and voice services via satellite to mobile users at sea, on land, and in the air, and is a leading producer of fiber optic gyros for guidance and stabilization.

In 2012, Euroconsult, NSR, and Comsys reported that KVH was the market share leader in global maritime VSAT.

PTC

Founded in 1979, PTC a one of the largest crew management and diversified maritime services companies in the Philippines. Its range of services include marine management, education and professional development, energy and logistics, healthcare, tourism, offshore processing, property development, microfinance and international professional placement.

Its pioneering initiative in crew management was the international deployment of a full-Filipino complement on three 50,000 DWT Ore Bulk Oil Carriers, a first in Philippine maritime history in 1984.

Today, PTC has grown beyond crew management. A leader in the Philippine maritime industry deploying over 45,000 Filipino global maritime professionals on board close to 1,100 vessels, PTC now offers an integrated value chain of services that spans Marine Management; Education and Professional Development; Energy and Logistics; Travel and Tourism; Healthcare; Offshore Processing; Property Development; Microfinance; Family Care Programs; International Professional Placement; and Information and Communications Technology.

Driven by a passion to make a difference and a commitment to longstanding partnerships with Principals who are themselves leaders in Europe, Asia and North America, the PTC Group continues to embrace its vision for a Filipino Global Maritime Professional to be on every vessel, in every sea, Moving the World.

InterManager

InterManager is the international trade association for the shipmanagement industry. Its members are in-house or third party ship managers, crew managers or related organisations and businesses from throughout the shipping industry.

Collectively InterManager members are involved in the management of almost 5,000 ships and responsible for some 250,000 seafarers. InterManager is the only organisation exclusively dedicated to representing the shipmanagement industry. It is a recognised and well-respected organisation which represents its members at international level, lobbying on their behalf to ensure their views and needs are taken into account within the world-wide maritime industry.

In addition, InterManager is committed to improving transparency and governance in the shipping world and ensuring high standards are maintained throughout the shipmanagement sector.

The directors and senior staff of InterManager member companies hold a number of external positions. Posts include advisers to governments, technical institutes, maritime academies and maritime courts on maritime affairs, as well as senior elected positions in environmental and business promotion organisations, representation on ICS, ISF, Intertanko, BIMCO and national shipowners' association boards or committees and official positions in local branches of The Nautical Institute. InterManager is the voice of shipmanagement.

BIMCO

Bimco has continuously advocated for the economic well-being of shipping, whilst promoting safety and environmental protection, and always acting in the best interests of its members. Bimco has existed through an era of immense change in transportation and economic growth, and has built its strength upon its ability to move with the times and adapt to economic and political realities.

Bimco's mission is to provide a first class service to its membership representing all segments of the shipping industry by Facilitating state-of-the-art access to quality information and advice, Developing standard contracts and clauses, Promoting fair business practices, free trade and open access to markets, Enhancing the proficiency and qualifications within the industry through its educational programmes, Pro-actively participating in all developments which serve to enhance harmonisation and help to maintain a level playing field within the international shipping industry.

Bimco also offers a broad range of practical knowledge and services, complemented by voluntary reporting and input from the membership. BIMCO's website – www.bimco.org, is possibly the largest single compilation of contemporary and practical shipping information, with more than 175,000 pages on all aspects of vessel operations including port and cargo databases and an array of other shipping-related data.

www.crewtoo.com/

www.ptc.com.ph/

www.intermanager.org/

www.bimco.org/

"Almost half of operators who offer Internet access to crew, do so free of charge."

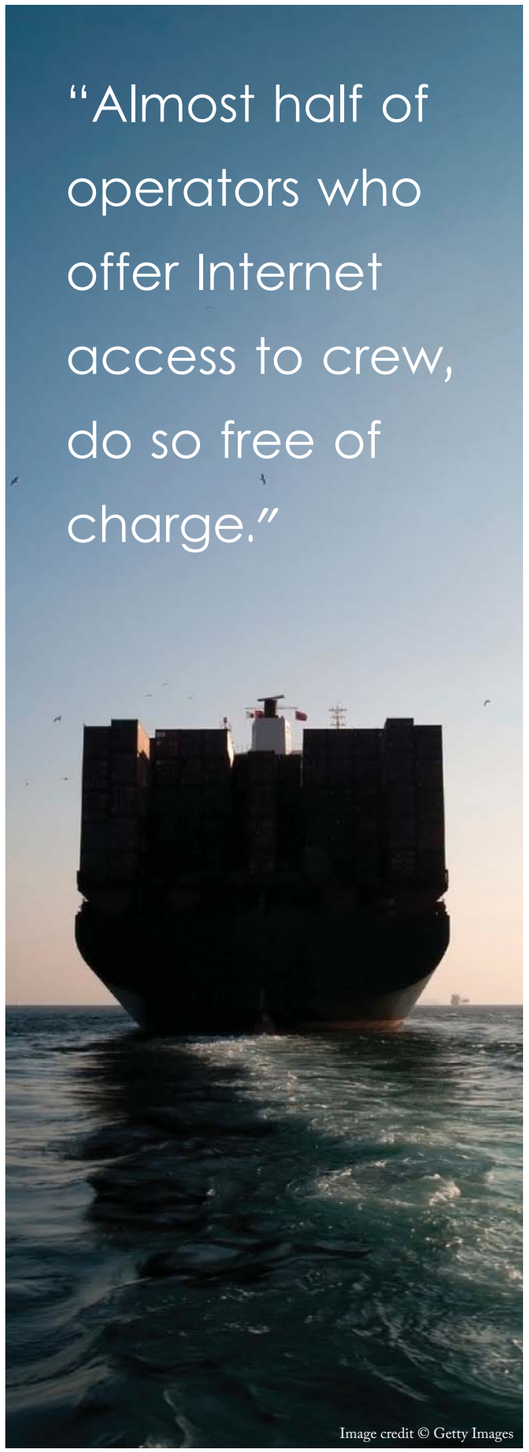


Image credit © Getty Images

ISWAN

The International Seafarers Welfare and Assistance Network promotes seafarers welfare worldwide and directly serves seafarers by providing a 24 hour helpline. ISWAN is the result of a merger between the International Committee on Seafarers' Welfare (ICSW) and the International Seafarers Assistance Network (ISAN). ISWAN is a membership organisation with the International Shipping Federation, The International Transport Workers Federation and the International Christian Maritime Association as the core members.

ISWAN provides direct welfare services to seafarers. The 24 hour multilingual helpline, seafarerhelp, runs every day of the year and is free for seafarers to call from anywhere in the world. ISWAN also runs an emergency welfare fund for seafarers in dire need, produces health information for seafarers, and provides information on the location of seafarer centres.

ISWAN works to support the welfare of seafarers all over the world. It works in support of organisations and bodies that provide direct welfare services to seafarers. It works to enable the establishment of welfare facilities and services in port and on ships. ISWAN brings together and supports its members to share learning and experiences to improve seafarers' welfare both onboard and ashore. In particular, ISWAN works for the implementation of the ILO Maritime Labour Convention 2006. ISWAN works with companies, unions, governments, welfare organisations (secular and faith based), and ports for the benefit of seafarers' welfare.

ISWAN is funded by membership subscriptions, grants from foundations, sponsorship, and earned income.

ISWAN

www.seafarerswelfare.org/

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