

COMMUNICATIONS

Making communications work harder

Digital Ship held a conference to look at how shipping companies can gain more value out of their ship-shore communications. There were some interesting ideas

THE LAST DAY OF DIGITAL SHIP 2002, featured the latest developments in ship-shore applications, starting off with Panagiotis Nomikos of the Maritime Consultancy Network, who has worked with Stelmar tankers for 10 years. His presentation gave an insight into Stelmar's ICT strategy.

The company operates 31 tankers (36 in 2003) and "has been obsessed with getting results, also from using technology," said Mr Nomikos.

Having a close integration between the ship and the shore was central to Stelmar's strategy, he continued, which would also mirror in the IT infrastructure.

"Openness and transparency are central parts of Stelmar's philosophy. It gives people responsibility for their jobs," Mr Nomikos said.

Therefore, Stelmar would feature flat hierarchies. All information was passed around the company, which was a reason why e-mail was used departmentally rather than individually. The same applied to crew e-mail, the audience heard.

Mr Nomikos spoke about a high degree of computerization and automation in order for the fleet to be managed by little

staff. Faxes and other paper-less systems were abolished, he said.

Companies that were interested in working with Stelmar, e.g. suppliers, would have to raise their standards, too, in order to be able to communicate with the shipping company.



Haydn Jones, ChartCo

Stelmar is using Vector's Infoplasm system to integrate the vessels to the office. The systems features Java-based applications onboard and an Oracle-based database ashore.

Daily, Stelmar transfers forms automat-

ically and updates the shore-based libraries, which would result in 2-3 data exchanges per day altogether, whereby the computers onboard were updated automatically with maintenance information relevant to them.

As results, Mr Nomikos mentioned a "positive experience"; the purchasing cycle, for instance, has become "very fast and efficient".

In the future, Stelmar will enhance software according to the opportunities offered by Inmarsat Fleet 77 in order to "even closer integrate our vessels into the shore-based system."

However Mr Nomikos also complained about the current cost of communication which would hinder developments towards achieving this goal.

He also referred to a new non-profit organisation, AMMITEC (Association of Maritime Managers of Information Technology), whose aim is to "promote the correct use of ICT in shipping." AMMITEC aims to act as a forum for decision-makers in shipping, "shaping ICT policy throughout Greece and beyond."

Fleet 77 trials

On the topic of Fleet 77, Kim Gram of Thrane & Thrane gave an update of the beta tests of Fleet, which have been conducted in Danish waters, the Baltic Sea, the North Sea and the North Atlantic.

"Under roughest conditions," he said.

His company had received 375 orders so far for Fleet 77 terminals, he continued, "a very high proportion of which is already in operation."

Most ships use the system for fax, e-mail, data and some specific vessels even do video-conferencing. In Mr Gram's eyes, "the best advertising is now that it is being used and that it does work." He also mentioned a couple of disadvantages of the systems, which was downgraded for voice to the 2.4kpbs level of the Mini-M. The fax originally allowed for G4 faxes, i.e. digital fax, but due to complaints, this is now being amended.

Mr Gram said that his company was keen to track the process "building up a reference database to keep track of applications that can be used for the system. Therefore, we invite application providers to test their systems with our hardware." Besides the functions already in use, future applications would allow for web-browsing, remote monitoring and extended intranet, he predicted.

On the application side, Kevin Garner of Xantic, presented Crew Connect, an e-mail system especially designed for the onboard crew. "They want to send SMS messages as well as e-mail," he commented, "50m SMS messages are sent per day in the UK; in the Philippines, twice as many people have access to SMS messages than e-mail, because there are fewer landlines. Also, 6 out of 10 calls in the Philippines go to GSM phones.

"The issue with crew communications is that only few have credit cards and we don't want to be sending bills around the world, i.e. we had to think of a solution that is pre-paid. Also, there is no batching, i.e. no delay for sending a message. It works like a chat: family and friends can send and receive messages within 15 seconds. The cost for SMS is at about \$ 1 for 460 characters."

Variety of comms channels

Björn D Johansson of Telia presented a cost-effective, narrow-band data solution via Iridium, which offers both a "dial-up" Internet connection at 2.4kpbs and a "Direct Internet" spoofing service at an effective rate of 9.6kpbs using a special data kit. Mr Johansson also referred to Telia's own MariCom Office Connect, a "two-way" mobile log-on server which can reach send and receive data via the same channel. Compared to e-mail traffic out-bounding via smtp and in-bounding via pop3 servers, the time- (i.e. cost-) saving can be around 80 percent.

Faith Cohen of Telaurus spoke about the communications hub her company has built up. The unique features of the system were "prenotification of how much messages will cost, unified billing and real-time data transfers," she said. In short, the user was aware of how much he'd spent in advance, even if the choice of comms channel was not known to him, she continued. "It is in our own interest to send the data the cheapest way possible; the shipowner knows the price in advance."



Stefan Gottwald, Frequentis and Lars Brodje, Lagumar Marine

Consolidating all existing means of communications for shipping, together with an optimised transfer technology, would even enable Telaurus to bill data by volume sent rather than the time it takes to send the data, i.e. it doesn't matter to the ship owner whether a narrowband or broadband connection is being used as long as the data can be sent straight away and at the least cost, said Ms Cohen. An additional benefit was that nothing has to change onboard as existing equipment would be facilitated, she concluded.

Broadband satellite

Lars Brodje of Lagumar Marine presented the latest developments in broadband communications. He also commented on the complaints by some shipping companies about the cost of satellite communications: "Despite the complaints, Inmarsat prices have dropped in the last decade (from over \$ 10 per minute to off-peak prices at rates lower than \$ 1 per minute from some providers."

However, VSAT was a good alternative

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for shipping companies who desire more bandwidth at monthly flat rates, he suggested. Mr Brodje said he sees a much bigger need to get information from shore to ship than vice versa. Especially with weather data and chart information being sent electronically nowadays, this demand is to increase even further.

Cruise ships already use VSAT to transfer pictures, authorise credit card payments and offer internet browsing. Even with the slightly different need of the merchant marine, some services such as the VSAT-on-demand service by Stratos, as presented by Steve McCabe of Stratos, can cater for those specific requirements.

Mr Brodje concluded that there was a lot of unused capacity throughout the world's satellite services that could be used as cost-effective and on-demand channels for transmitting data. Other means, such as Inmarsat, Iridium or even HF could act as back-channels

Mr McCabe predicted, "the market will get open to more users as the cost goes down." He said that consumer technology was moving into the maritime market. "With VSAT beams getting wider, we're getting a lot more coverage in the oceans." Mr McCabe confirmed that "the cruise market got onto the VSAT bandwagon very early on."

Remote Monitoring

With this range of various narrow- and broadband communications channels available to the maritime market, applications providers develop tools to keep the vessel's operations and equipment monitored. Nigel Bird of Monition spoke about equipment monitoring. His company has been active providing solutions to shore-based industries, but has also detected a niche in shipping.

"Fix it when it breaks just isn't efficient," Mr Bird said, "the equipment life can and should be prolonged, and equipment should be monitored based on its condition." However, there are different types of equipment; some is best "run to fail" and some is to be exchanged at a particular, most cost-effective point in time. This can only be calculated alongside condition monitoring as recommendations of OEMs are too general.

Also, "even if you have a calendar that tells you to exchange something every 12 months, it doesn't mean

that the equipment doesn't fail within the first couple of months." Therefore, vital equipment should be monitored - not just for economical but safety reasons, said Mr Bird. Monition solutions measure vibration via handheld or fixed devices, for instance, which can tell a lot about an engine's condition.

The data is collected onboard the vessel

and sent to shore via comms link. There, it is analysed and a diagnosis can be made. The cost of sending the data was worth what you get out of it, he claimed, for early breakdowns of vital parts would result in costs much more severe. In any case, this data could be sent by event or on a regular basis; it can also be filtered and compressed.

Monitoring equipment onboard is one

thing, but there is also the human element to take care of. In case of emergencies, the ship's crew has now got the opportunity to be in touch with a medical advisor ashore who can analyse and diagnose a crew member's condition, potentially saving a life and the immense cost that results from having to divert the vessel.

Chris Turner of Telemedic Systems pre-

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sented VitalLink, a device which both measures a patient's condition such as his pulse, heart rate and temperature as well as allows for voice and data communications to a 24/7 medical center ashore. An important feature of the device, which allows for untrained crew to be guided through a process of applying the instruments to the patient, is that once connect-

ed to the shore, it's functions can be initiated from the shore. Most importantly, vital recommendations on how to treat the patient can be made.

Weather and charts

Tim Thornton of Marine Computing spoke on providing real-time weather information to the vessel. He said that

real-time weather information on the web was free and would offer data on a wide range of areas, but the files were too large, i.e. expensive to access. Commercial services, on the other hand, send out raw data straight to the ship, they do not include graphics, however.

The Midas project, which is sponsored by the National Space Center, is now look-

ing at the use of remote sensing data for current weather data information. It would make most sense to synthesise real-time weather data with forecast data, said Mr Thornton.

Ole Berg of the Danish Hydrographic Office confirmed what many speakers had mentioned before, "we are drowning in information but thirsting for knowledge."

His topic of speech was ECDIS, the electronic chart display and information systems. According to Mr Berg, ECDIS is now taking off. AP Moller, for instance, is in the process of retrofitting 160 vessels with ECDIS.

He said, "this piece of equipment will reduce the workload on the bridge and improve your decision making. You have all the relevant information just in front of you. Chart corrections can be done automatically and sensors and weather data can be integrated into the system."

However, the biggest issue so far has been the limited coverage, which Mr Berg describes to have improved. According to him, the US water ways were covered, South America had ¾ of its coasts covered, but "they are still sitting on some of the ENCs and haven't released them for commercial use yet.

"Africa," he continued, "is indeed the dark continent, with only South Africa being covered by ENCs. Other areas, such as Europe and Asia were covered to a large extent, but some data hasn't been released. ECDIS was most needed in waters which are narrow and shallow, Mr Berg said. The best development towards wider acceptance was for hydrographic offices to procure ENCs and shipping companies asking their hydrographic offices for them. Mr Berg also suggested for organisations such as BIMCO, IACS, ICS, Inter-tanko, IMPA etc. to go to a political level to improve the acceptance and development of ENCs.

Haydn Jones of ChartCo concluded the chart debate speaking of the transitional period that would see a mixture of different chart types until, perhaps, paper charts were not required anymore. He said that ChartCo had 1000 ships installed or under pending installation. However, apart from the coverage issues, there was also the the question of the availability of bandwidth and the issues of data integrity for electronic chart updates via broadcast.

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