Technology and its many faces

Technology breeds technology. In the world of superyachts there has never been a truer statement. To anyone who is aware of both the leaps in modern technology and the specific needs of superyacht owners, it is immediately apparent that friction occurs when trying to integrate such huge advances with unique vessel designs, which are often works of genius in their own right. Add to this the operational needs of the owner and it becomes a real challenge.

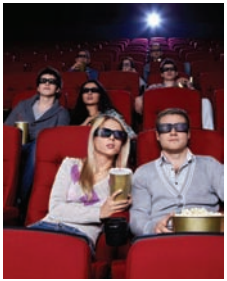
Integrated entertainment technologies are high in demand on board superyachts, but this setting inevitably throws up unique challenges when designing the perfect system. Many questions need to be asked to ensure the user will get full value from their investment. Although certain developments, such as 3D TV are well set to be the standard requirement of the future, other apparent certainties, such as Wi-Fi internet, deserve a critical look to ascertain whether their performance meets the mark. The following pages will consider the benefits of 3D TV and Wi-Fi or cable internet, within the broader debate of reliability versus convenience as well as suitability at sea. It will also explore some of the most cutting edge technologies available today and how they could be used creatively on board a superyacht to entertain.

Any comfort electronic system has to meet four basic requirements: to entertain, inspire, inform and impress. If not, then it has added no value to the end user and disappointment ensues.

Engineers can be brilliant people, but they often forget one thing; that you must translate an operational need into a technological solution, not the other way around. Any technology or system has to be designed with the user in mind. If this means that the solution is an older proven technology, then so be it. Unfortunately, technology is not always about progress, in many cases it's about cost reduction and sometimes that comes at the expense of reliability.

DOES A 'TYPICAL' SYSTEM EXIST?

In many cases - no. People process information in many different ways, so



the art of the technology provider is to break the information about the product down into smaller, more manageable and understandable chunks. This way the end user can actually have a meaningful input into the design of the system, again adding value. No one brand exists that meets everybody's needs; the technology partner must therefore bring together 'best of breed' and create the solution.

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The integrated entertainment industry is fortunate in that it has a captive audience. An honest provider should never actually need to sell anything. Rather, they should offer a solution that meets the client's needs, whether this be the need to watch a 3D Premier League football match in the Indian Ocean, or to light up the surrounding waters in synchronisation with their favourite music.

THE FUTURE OF 3D TV

Believe it or not, 3D TV was an experiment in 1928. John Logie Baird successfully created 3D imaging way back then and some 83 years later, we finally have the opportunity to embrace a soon to be mature technology.

This major breakthrough in the entertainment sector offers an unprecedented 'wow' factor to technology driven superyacht owners and users alike. This is an exciting development and whilst some may see it as a gimmick, the major manufacturers do not see it this way; they are currently funding the leading content providers thereby expanding the channels available. 3D is now here to stay.

At the moment the only reliable way for multiple viewings, is for viewers to wear specialist glasses. Although the technology is amazing, the physics are quite simple; the picture on the screen is a slightly offset superimposed image. When looked at through the naked eye it just looks blurred, but if you then put on your glasses, your eyes see two slightly different images. The brain is then fooled into seeing this as one single image and hey presto, you have 3D.

There are two methods that are almost certainly our 3D future. The most reliable at the moment is the eclipse method. This synchronises an active LCD pair of glasses with the screen and in turn, the shutter opens and closes with the frames on the screen and gives the perception of three dimensional viewing. The second is the lenticular method that has a corrugated display, much like the postcards of yesteryear.

ABOVE: Virtual imaging is now here to stay, could this be the next step?

The glasses barrier will almost certainly be breached at some point in the future. Current estimates are at 2015 for lenticular technology to be perfected, but very soon it will be the norm to expect 3D, in much the same way that we no longer accept black and white or standard definition TV.

Virtual imaging is now here to stay. And the next step? Holographic technology; a series of lasers which build a 360 degree virtual image, it's a huge investment but it's reality… virtually.

The advances in electronics are also broad and fragmented. Again, we see the boundaries being pushed by innovative IT solutions. But once more, the technology provider faces a major obstacle - the fight between content management and copyright. High-bandwidth Digital Copy Protection (HDCP) is an example of a smart emerging technology, unfortunately it is still not very widespread.

However, in our constant quest for better and faster technology we often fall into the trap of taking the path of convenience over performance, not least because sometimes the information on new technology is somewhat limited to those 'in the know'.

With superyacht owners actively pursuing the latest must have devices, we are increasingly squeezing more and more information into an ever decreasing space, in the case of Wi-Fi (Wireless Fidelity) this is the segment of space the unit is allowed to transmit within (the spectrum).

CABLE OR WI-FI?

Like never before in this industry we are seeing a torrent of innovation, and with the constant struggle to simplify systems, we then have to decide between the convenience of wireless and the brute strength of traditional cabling. Is there really a difference? The answer is a resounding yes.

In order to get true 'fidelity' from any system the output needs to be as original as possible to the source, whether that be data, audio or video.

Resistance is the biggest enemy of any signal; the lower the resistance the better the fidelity, simple really.

We have all seen the different cables, lower end being aluminium to copper, higher end being gold to silver. The misconception is that the conductivity of the metal used is the reason for the construction. This is only part of the truth, the real reason is the longevity of the cable's integrity; gold, silver and oxygen free products resist corrosion. Of course, with fibre the problem is virtually eradicated, as all such compositions last a lot longer and maintain their performance. In the environment in question, this is paramount.

We have to get a firm grasp on what Wi-Fi can actually give us, or more importantly what it cannot. Simply put, the argument for Wi-Fi is convenience. Yes it's indispensable when you have no way of routing a cable, but in most cases it will be at the expense of speed, reliability and if not installed properly, interception security, making it no match for a cable. The small window of transmission frequency is home to everything from phones, car door fobs, garage openers, pretty much everything that is license free in the modern environment. Wi-Fi, once again is used for the transportation of the original signal to the end user. In a point to point situation with no external interference or influence it can be a reliable medium. Unfortunately, today, this environment no longer exists, especially in the modern marine world.

Cabling, including fibre optic (albeit dramatically simple), allows the luxury of larger volumes of data, video and audio with a virtual lockdown on security. When cable systems are designed, specified, installed and terminated properly they are unbeatable at delivering true fidelity. They have a long life expectancy and the quality of service is unparalleled.

Bottom line then, which is better - wired or wireless? Wi-Fi is superb for the convenience of mobility or if you want to be an early adopter of leading edge technology without the fuss. But if you want true fidelity, security and long life expectancy then cable wins every time.

TECHNOLOGY PULL-THROUGH

As we have seen, there is a plethora of technology and knowledge available to suit almost any situation, but does that

BELOW: Show off your yacht with a bit of theatrical flair.

always include a superyacht application? Thinking creatively about current technologies and how they can be adapted, organised or simplified to create a wow factor, the imagination begins to run wild with seemingly futuristic concepts, which the industry could pull-through and install on a superyacht.

Here are some interesting examples of ideas that combine old and new concepts in a superyacht setting. Not to be taken for granted that they will all work, these ideas illustrate the scope and possibilities that arise when you question the status quo.

PHOTO: ANT (ADVANCED NEW TECHNOLOGIES)

NEW WAYS TO PLAY OUTDOORS

Artificial climbing walls, both indoors and outdoors, are now regular attractions in play parks and on cruise ships. Imagine a retractable polyurethane or fibreglass construction located on the stern of your motor yacht, with the lovely warm, refreshing and safe sea water to fall into should you lose your grip!

NEW WAYS TO PLAY INDOORS

There is a wide range of full-size virtual motion video simulators, from golf to Formula 1 racing, military jet flying, skiing, horse riding, clay pigeon shooting and so on. Why not temporarily convert your 3D cinema or owner's lounge large screen HDMI TV into a simulator with a variety of programmes and motion simulators to provide the exact physical sensation of taking part in the activities of your choice? Pulse pounding, wind in the face, white knuckle, no-braking, 600 horsepower Indianapolis cart racing might be one of them.

Between charters or during maintenance periods the system could also be used for crew training with bridge simulation or security situations being enacted. Other training might include internal and external communication skills, situational awareness and seamanship of all levels, as well as being an excellent platform for team-building work.

ILLUMINATION

Superyachts are creations of amazing beauty that deserve to be shown off with a bit of theatrical flair. The lights and lasers developed on Broadway or London's West End could be used to accentuate the vessel or light up the night's sky.

SECURITY

Sometimes it is important to keep a few secrets, whether for security, safety or just for fun. Safes and safe rooms are a standard part of any vessel and using furniture as concealment is common, but what about dual use? Swivelling

furniture can change the ambience and use of a room instantly, for example a bookcase that revolves to expose a safe room or a drinks cabinet that conceals a fully kitted out medical store. The applications are wide, limited only by our imagination.

SAFETY

There are new ways to incorporate safety whilst preserving design aesthetics. The traditional large fire detector can play havoc with a ceiling design as well as interrupt the air conditioning flow. Wouldn't it be ideal in this situation to pull through the air sampling technology which allows a pin hole system to constantly monitor the air for smoke or carbon monoxide impurities?

PLAY

Passengers aren't always grown up and many yachts are a family affair. Let's not forget to factor in technological entertainment for the children too and this could literally mean painting with light. Kids can use a high technology kit to draw all over the walls or the bulkheads with a multicolour 'brush', an 'eraser', a 'magic wand' to bring their drawings to life and a 'bucket' to project the virtual drawings onto the wall. All this comes with no mess – a Chief Stewardess' delight!

SPLISH, SPLASH!

Instead of just focusing on keeping the water out, why not embrace it, shape it, colour it and use its natural beauty as a design feature. A water fountain within a swimming pool, columns jumping from side to side or plumes of coloured water shooting over the stern. This piece of live art could not only be operated when anchored off St Tropez but it could also be developed as an anti-piracy or boarding measure when on passage through hostile areas.

These are but a few ideas, which we hope will get the creative juices flowing. They also illustrate how we should be not only questioning the status quo but exploring what is possible on a superyacht compared with what is already available in other industries.

Technology adds immense value when adapted in the correct way. The marine environment however, throws up unique challenges which must be met. This is down to good project management, planning, proper structuring and adequate capitalisation. Then there are the added technological requirements of the system itself, space and weight restrictions, thermodynamics, power fluctuations and so on, again mostly overcome by additional technology, and so the cycle begins again. With so many new and inspirational technologies emerging, it is easy to forget older proven technologies or concepts. But when looked into these can prove potentially as relevant to superyachts as more recent innovations.

BELOW: Why not use the natural beauty of water as a design feature?