

ROBUST AND EFFECTIVE HUMAN RESOURCE SYSTEMS FOR MARITIME INDUSTRY

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Abstract

The progression of the marine sector toward digitization and decarbonization over the last several years has caused a gap between curriculum, syllabus, and course content vs industry expectations, which has had a detrimental influence on employability. On 17th of February 2022, IMRC (International Maritime Research Confluence) hosted a panel with **Capt Belal Ahmed** (*Chairman of IMEC, & MD of Western Shipping based in Singapore*), **Capt Sankalp Shukla** (*Chairman of FOSMA*), **Capt Bhasin** (*Chairman MASSA, Secretary General CMMI, MD M.sc Crewing Service*), and **Capt (Dr) Ashutosh Apandkar** (*Principal of T. S. Rahman*), discussing the aforementioned and more issues on Maritime HR and Training that the industry is facing at the moment. This paper covers some topical queries and issues that were discussed and a few solutions for them.

Keywords: IMRC, Maritime, Human-resource, Training, Marine, Automation, MET, Education.

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1. COMPETENCY OF COMPANIES TO TRANSFORM MARITIME EDUCATION AND TRAINING TO BEST FIT THE NEW TRENDS IN INDUSTRY:

Major developments are placing a lot of strain on the marine industry. Simulator-based training is evolving in response to new advances, and cloud-based simulators can be viewed as a tool for overcoming the ever-increasing obstacles in human resource training. In terms of fuel adjustments, corporations appear to be responding effectively to the IGF code, which was recently amended in India for ethanol fuels.

Under the framework of the execution of rules and IGF Code revisions, new projects and research are giving outstanding instruments to counteract the ever-increasing concern of climate change. The new hybrid fuel system and GHG strategy, which aim to reduce CO₂ emissions by 70% by 2050 compared to 2008, have imposed additional laws and restrictions that seafarers may not agree with. Following a rigorous examination of previous courses given by some of the world's most prominent institutes, a paper published in the Australian Journal of Maritime & Ocean Affairs suggests a complete course (Omer Berkehan Inal, 2021).

On the technological front, Adonis AS and Tritan Software Corporation's new integrated Human Resources, Health, and Safety Solution, which combines Adonis' crewing and payroll systems with Tritan's Health Information and Incident Management platform, enables cruise and ferry organizations to re-enter the market safely and aggressively as the global economy recovers from the COVID-19 pandemic (AJ Gutierrez, 2021).

IBM's Maximo Software for the Maritime and Offshore Sectors, which just received DNV GL accreditation, is a solution that assists ship owners in keeping their vessels in compliance with international rules. This will be an incredible tool for seafarers. As a result, technological improvements have always kept the marine sector abreast of industry trends (Carrie, 2021).

However, given the current rate of advancement, MET in India has yet to demonstrate to the world that it has a strong MET basis, as the entire world is looking for better trained officers for these contemporary ships.

2. EVOLUTION OF MET TO PROVIDE TRAINING AND RETRAINING AND MONITOR ACADEMIC DRIFT:

With technological innovation and the rapid adoption of automated systems, the maritime sector is facing significant changes. To keep up with rising industry demand and rapid technological progress, the worldwide standard for marine training and certification will need to be revised and adapted.

According to research conducted by the Arab Academy for Science, Technology, and Maritime Transport, the existing training module is only relevant for seafarers for the next 20-30 years. It recommends that maritime universities, colleges, training institutes, and maritime authorities actively monitor the development of MASS, supply relatively new information, and enhance modes of maritime education in order to generate talents fit for the advancement of navigation technology (Aboul-Dahab, 2021).

As the economy has quickly digitalized, the use of blockchain appears to be increasingly successful in providing a decentralized supply chain capable of combating the newly emerging problems. MASSA, a significant figure in the sector, has recently been at the forefront of blockchain research, as well as focusing on offering LNG fuelling courses to satisfy the needs of every seafarer in terms of understanding modern fuelling systems, vessel operations, and efficient trading.

Although the competency matrix remains a key barrier for organizations, and despite the progress that the MET in India has achieved so far, there is still a lot that has to be done in terms of addressing the gaps between the Certificate of Competency and real requirements on the field.

3. HR CPABILITIES OF MARITIME INDUSTRY TO GRAPPLE WITH THE REALITY OF COVID-19:

Throughout the duration of COVID-19, the wellbeing of crew members and their mental health has been especially tricky. The human challenges that mariners experience is no different from

those others face in an office or political setting, hence the necessity for leadership has become apparent and critical.

According to research conducted by the ITF Seafarer's Trust and Yale University, 25% of seafarers who completed a patient health questionnaire had scores that indicated depression. Around 17% of sailors were found to have anxiety disorder, and around 20% of seafarers polled reported suicide ideation, either many days (12.5%), more than half of the days (5%), or practically every day (2%) in the two weeks before to conducting the survey (Rafael Y. Lefkowitz, 2019).

Maritime employees face a number of physical and psychological challenges. Recent study has concentrated on particular issues such as fatigue and discontent, as well as disorders such as depression. Post-traumatic stress disorder (PTSD) is common among mariners (piracy, accidents, threats). Coronavirus disease 2019 (COVID-19) has an impact on seafarers, with an estimated 400,000 once trapped aboard ships throughout the world, with extended time on board, problems with repatriation, and financial issues of the unexpectedly unemployed. The International Maritime Organization established the Seafarer Crisis Action Team to aid them. In the previous ten months, a specialized contact centre in France received 142 calls from 32 mariners for psychiatric phone consultations, the vast majority of which were connected to this era. As the COVID-19 scenario worsens, seafarers will seek psychological health treatment, repatriation, and financial solutions (David Lucas, 2021).

4. COMPANIELS APPROACH TOWARDS MAXIMIZING PERFORMANCE FROM ITS COMPETENT SEAFARERS:

With an average of 2.3 problems per inspection, the Ship Inspection Report Programme inspection, also known as SIRE, had reached its constraints and served its purpose. However, SIRE 2.0 with a completely new perspective — human views — has demonstrated encouraging outcomes. However, people fail in a particular eco-system, and the culprit has always been deemed to be the seafarer. Only a thorough investigation will establish whether the seafarer was deliberately set up to fail rather than succeed.

The reality of the industry as it stands is for a CEO, their company is like a beautiful picture, but for other managers, it's like a Whack-A-Mole game in which children sit with a hammer striking a mole that appears from nowhere. Competency matrix, which has already been phased out due to a greater awareness that age and experience are not the only elements to consider.

The systems that surround the seafarer must be improved. As an industry, we are better understanding Human Factors; more research is being conducted, and rules are being developed with this focus in mind.

5. SOLUTIONS FOR MARITIME EDUCATION & TRAINING – THE STATE OF TRAINING AND INTERNSHIP PROGRAMMES:

If a new generation of seamen and women are to be recruited, seafarer training must improve. Fewer young people regard shipping as a viable career option, which is one reason why new methodologies and technologies must be implemented – whether for training, marine recruitment, or improving candidate engagement, and of course, actually running and navigating vessels.

Internship programmes, as they now exist, do not provide interns with on-the-job training. The practical environment is critical in knowing and learning about the obstacles and risks that a seafarer may experience. Furthermore, a key concern created by these internship programmes is the absence of real exposure to a more functional sector in the vessels or bunking operations. The theoretical paradigm may be insufficient as we move toward a more digitally enhanced and sophisticated work environment based on cutting-edge technologies and vessels. The typical industrial internship training also does not provide enough time, particularly for students, to comprehend the technical aspects of a practical work environment in the business. For eager potential mariners, a more demanding and maybe longer internship programme is required (NMF),

5.1 The Intelligent tutoring and training system

Learning ultimately could possess its own reward, but many businesses have long realized that

it is also important to their commercial success. As a result, they spend billions of dollars on intensive training each year.

About 20 years ago, Prof. Benjamin Bloom and his colleagues discovered that students who get one-on-one teaching outperform pupils in typical classes by two standard deviations. That is, the mean tutored student outperformed the top 2% of classroom instruction students. However, in most circumstances, it is too expensive to assign one trainer to each student. The problem therefore is to encapsulate in software the subject matter expertise and teaching abilities of a company's finest instructors or mentors in order to give the benefits of intelligent, one-on-one training at a low cost.

Consider each learner in a classroom or WBT situation to have a personal training assistant who attends to the participant's learning requirements, examines, and diagnoses difficulties, and gives assistance as required. Many basic instructional interventions might be performed by the assistant and learning issues that are too challenging for it could be reported to the instructor. The helper would free up the instructor's time to focus on training topics that required more knowledge by taking on simple support responsibilities. Most firms' training budgets do not allow for providing a personal training assistance to each student. A virtual training assistant, on the other hand, which captures the subject information and teaching ability of professional trainers, offers an enticing new alternative. The concept, known as intelligent tutoring systems (ITS) or intelligent computer-aided instruction (ICAI), has been explored for more than three decades by educators, psychologists, and artificial intelligence researchers.

Nowadays, prototype and functional ITS systems assist corporate training, K-12 and college education, and military training through practice-based learning. The technology is indeed ready for prime time. Adapting such technology is a reasonable investment that can deliver a much stronger future for Maritime Training and Education (James Ong, 2003).

5.2 The need to move with the times

In a traditionally conservative industry, the new generation of mariners is defying convention. After all, these are individuals who have grown up alongside computers in their classrooms and homes. It is inconceivable for them to live without a smartphone and to be continually switched on, hooked in, and unattached. So, if there is a variation in the way we converse and

obtain information, and fresh generations have shorter attention spans but are content to spend much of their free time gaming, doesn't it make logical sense for the shipping sector to modify itself in the way it attracts and develops new crew members and adjust towards a more interactive learning environment?

Millennials and Gen Z are frequently lambasted in the media, but the reality is that if our sector, or any industry, wants to teach the next generation of employees, it must connect with them on their terms. Millennials and Gen Z are, on the whole, enthusiasts of technology; they've grown older with it and utilize it in their everyday lives.

As a result, it stands to reason that adopting technology such as virtual, augmented, extended, and mixed reality, as well as everything that the experience of learning in that environment can give, makes learning a skill such as sailing more desirable. The VR, AR, XR, MR, Gamification and simulations will not merely deliver a more engaging learning experience for young sailors, but they'll additionally aid to increase their confidence due to the risk-free atmosphere they present.

5.3 Value opportunity that lies with adaptation of VR training

Classification societies and training organisations regard VR technology as the next step in using innovation to improve seafarer's skills and abilities. It takes design simulation and gaming technologies and modifies them for marine operations.

There is only so much that virtual reality training can provide. As beneficial as it has been in other areas, it may not have the same impact in maritime since a skilled sailor requires more practical expertise. We must also not dismiss the use of virtual reality training entirely. In sectors like as safety training, ship survey training, firefighting/rescue operations, E-learning, and so on, VR learning is already providing significant success to the industry for firms that are willing to adopt new generation training and learning methods.

The Immerse SDK allows businesses to manage and expand VR training, and it is at the heart of the Immerse Platform's architecture. The platform streamlines the user journey and makes IT system management immensely easier. Users can be verified onto the platform with Single Sign On (SSO), giving them safe accessibility to all of available learning programmes. You

may also export quantitative data assessments to your LMS, learning record store, or any other sort of business intelligence tool (Immerce - Content Overview).

VR, very much like its benefits, has certain restrictions. Due to the lack of more modern technologies that were required, some students may experience motion sickness. VR also fails to give a more authentic learning experience, which is necessary for certain mariners to avoid trembling with dread when confronted with a vast ocean, which is very different from a scanty virtual screen.

5.4 The new-age technology and VR alternatives

The next focus is on XR (extended reality learning), which delivers the finest real-time experience throughout the training. Varjo's technology innovations and its Varjo XR-3 and VR-3 headsets deliver the best resolution (over 70 ppd) ever seen in a simulation and learning environment. Users can read displays, controls, text, symbols, and distant elements with absolute clarity thanks to their human-eye resolution Bionic Display. The XR-3 and VR-3, which include Ultraleap hand tracking, delivering the most intuitive interactions and immersive training experience possible (Varjo Solutions - Training and Simulation).

Varjo Aero has 35 PPD edge-to-edge clarity, variable resolution aspheric lenses that eliminate God rays, and the same industry-leading Varjo eye tracking as the XR-3 and VR-3. Because of the lower hardware requirements, it is an excellent solution for bigger training operations and for example classroom instruction.

In practically every industry, XR technologies have the potential to increase security, productivity, and cost-effectiveness. As XR technology becomes more widely adopted in other areas, it is unavoidable that it will find its way into the marine business. Many segments of the marine business, in comparison to other industries, rely on risky, outmoded, or inadequate technologies for training. XR may assist to solve these issues, and the benefits of XR training will help to move the marine sector into the contemporary era – and keep it there.

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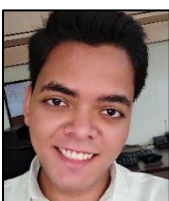
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