Enriching Seafarers in the 3rd Millennium: IAMU Options

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ABSTRACT

Despite the technological sophistication that abounds shipping and its environs today, the challenges and responsibilities of contemporary seafarers are as daunting as those of their predecessors. The intense work environment and increasing responsibilities mandated by local, national and supranational agencies along with the ship-owners' enhancement of minimum acceptable performance metrics have exacerbated the challenges facing seafarers today. Accordingly, there is a dire need for enriching the skill sets of seafarers so that they are better prepared for the contemporary era. Furthermore, one also ought to note the very high turnover rate among seafarers worldwide. As many of the seafarers seeking career advancement options are likely to go their alma mater--a maritime university where they *learned their ropes*--it is only pertinent that such institutions enrich the lives of their alumni through the offering of appropriate advanced educational programs and enhance their lifelong employability in related fields. This would facilitate the intellectual and professional growth of the recipients besides being a contributor toward economic growth and societal welfare in general. The International Association of Maritime Universities constitutes an excellent gathering of providers of high caliber maritime education with a proven track-record and is ideally placed to take the leadership in enriching seafarers in the 3rd millennium.

The paper will document and analyze the requisite skill sets required to function effectively in the contemporary workplace. It discusses a newly proposed model of higher education that stresses building core foundational skills in college graduates for enrichment and lifelong learning and employability. Application of the model to maritime education and training will show the superiority of maritime universities in fostering these core foundational skill sets among their graduates compared to traditional universities. Those areas where the maritime universities are deficient in enriching their graduates will also be highlighted. As a real-world case study, a Maine Maritime Academy model will be discussed to exemplify how enrichment takes place in one particular academic division.

A follow-up study, if approved by IAMU, will expand the scope of the study and involve in-depth primary research. It will document how IAMU member institutions foster the four basic foundational skills among its graduates and enrich their lives for lifelong employability in the 3rd millennium. All IAMU institutions will benefit from such a study as it will serve as a useful compilation of educational enrichment options among member institutions. The organization itself will benefit from such a project as it could be used for promotional purposes besides

serving as a useful supporting document while seeking grants from governmental and/or non-governmental agencies.

1. Introduction

Enriching the lives of seafarers is a noble thought for a number of reasons. For one, despite the innumerable advances in technology and navigational aids, seafaring is still an extremely demanding profession with no room for error. It takes a strong and unique individual to be a successful seafarer as well reflected in the most recent BIMCO/ISF Manpower Study (2000) according to which 30 percent of those recruited for maritime education and training do not even complete their training. Furthermore, there is a declining inclination among the current youth to pursue a career that is often perceived negatively and is beset with numerous hardships ranging from psychological to political in nature. The geopolitical events of the 21st century witnessed so far have only exacerbated the agonies and dilemmas of a typical seafarer. In a world that is becoming increasingly skeptical and cautious, seafarers are often perceived as potential terrorists rather than as ambassadors of global commerce. Accordingly, the very high wastage rates among seafarers, depicted in Table 1 is not surprising.

Table 1: Seafarer Wastage Rate

	Nationality Groups				
Category	**OECD**	**Eastern Europe**	**Africa/Latin America**	**Far East**	**Indian Sub-continent**
Officers	6.6	4.6	1.8	5.4	5.0
Ratings	4.1	5.2	2.0	5.3	4.7

Source: BIMCO/ISF 2000 Manpower Update, Table 5.5, p. 28

Post-secondary school education is undergoing rapid changes in many parts of the world. Many universities, including those of the maritime ilk, refer to the promotion of lifelong learning as one of their institutional objectives. There is a ground swell of thought that what is more relevant in today's employment market is lifelong employability rather than lifelong employment and that professional knowledge one gains in a university is transient at best. Given these circumstances, how can seafarers remain employable lifelong? How do maritime universities prepare our graduates in this regard and what skill sets do they acquire from their alma mater? What higher education opportunities are available to our students to upgrade their skills? The paper investigates these important questions. If maritime universities are meeting their mission in these regards, they are indeed enriching the lives of seafarers in the 3rd millennium besides being a step above their more traditional peers.

The next sub-section, as part of literature survey, discusses the skills required for 21st century jobs and also a recent model of the bases of competence that enable lifelong learning and employability. This is followed by application of the model to maritime education and training. As a real world application, the Maine Maritime model is provided as a case study to illustrate the actions of one particular academic division on campus in this regard. A compilation of

enrichment options available at all IAMU member institutions based on primary research could be the next step in this project as explained in the concluding session.

2. Literature Survey

A thought-provoking joint report by various U.S. government agencies states that "lifelong skills development must become one of the central pillars of the new economy" (1999). Not only do employees themselves benefit from better education, but also do the employers and the society at large. As a public policy, there is almost global acceptance of the positive externality in education and hence, the traditional economic argument for subsidization of education in general. Simultaneously, the changing dynamics in the workplace has exacerbated the need for skilled workers. Given the global nature of businesses today, displacement of workers from one firm or one sector of the economy is hardly unusual (as illustrated by the case of many former employees of paper mills in the state of Maine, USA). An inclination toward life-long learning and skill enhancement will be a valuable asset in such an environment as it contributes toward professional vitality and employability for the individuals concerned and in turn, the economic well being of the society at large.

Table 2: The Changing Workplace Dynamics

Category	Old System	New system
Workplace Organization	Hierarchical Rigid Functionally oriented	Flat Flexible Network of multi-functional teams
Job Design	Narrow Do one job Repetitive/standardized	Broad Do many jobs Multiple responsibilities
Employee Skills	Specialized	Multi/cross-skilled
Workforce Management	Command/control systems	Self-management
Communications	Top down Need to know	Widely diffused Big picture
Decision-making responsibility	Chain of command	Decentralized
Direction	Standard/fixed operating procedures	Procedure under constant change
Worker autonomy	Low	High
Employee knowledge of organization	Narrow	Broad

Source: 21st Century Skills for 21st Century Jobs (1999), p.3

Table 2 shows a summary of the changes taking place in the workplace as a result of the ongoing shifts in organizational structure and management. Contemporary business organizations find themselves in a highly competitive world driven by time and knowledge based competitions. The availability of competent employees with the right skills is essential for sustainable competitive advantage in today's global economy. Unlike the earlier years, employees today

must be multi-skilled and able to contribute effectively as team players besides being current in their field. Simultaneously, they should be able to accomplish their tasks based on broad organizational guidelines and under very little supervision. They should be proficient in managing people and resources efficiently and have a broad picture of the entire operation at all times. Accordingly, employees must build a portfolio of basic, technical, organizational and company-specific skills (US 1999, 2).

According to Useem, a distinguished professor of management (1998), college graduates undergo a humbling effect upon taking up their first job after graduation when they realize that their technical knowledge gained at the university is insufficient in dealing with the realities of the workplace. This is hardly surprising as there is a dominant school of thought in many North American universities and among several employers that recent college graduates are ill-prepared to handle the complexities of the real-world. Evers, Rush and Berdrow (1998) argue that to be successful in the workplace, college graduates today must possess not only specific skills and knowledge in their areas of expertise but also certain core foundational skills and proficiency in general knowledge and cultural diversity. Thus, the learning outcomes of today's college curricula must include the creation of generalists with specialized knowledge and skills who are also blessed concurrently with a repertoire of foundational skills that serve as the basis for lifelong learning and employability. The foundational competencies they identify and their descriptions are shown in Table 3.

Table 3: The Four Bases of Competence

Category	Description	Skill Sets
Managing self	Maximizing ones' ability to deal with uncertainties	Learning Personal organization and time management Personal strengths Problem-solving and analytic
Communicating	Facilitating the gathering, integrating, and conveying of information in many forms	Interpersonal Listening Oral communication Written communication
Managing people and tasks	Accomplishing tasks by planning, organizing, coordinating, and controlling resources and people	Coordinating Decision making Leadership and influence Managing conflict Planning and organizing
Mobilizing innovation and change	Conceptualizing, initiating, and managing change	Ability to conceptualize Creativity, innovation, change Risk taking Visioning

Source: Evers, Rush and Berdrow (1998).

The authors argue that the bases of competence they identified would create a model of general skills essential to "thrive in the workplace and serve as the foundation for lifelong learning"

(1998, 5). Their primary research (through surveys) revealed that the first two competencies are usually well developed in the case of college graduates but not the latter two. There is usually no provision within a university environment for graduates to build their abstract skills related to managing people and tasks, or mobilizing innovation and change. The following sub-section discusses the application of this model to maritime universities and their educational outcomes.

3. Relevance of the Model to Maritime Education and Training

Maritime institutions of early years were essentially trade schools that catered solely to specific seafaring-oriented knowledge and skills with the expectation that their graduates will rise to the occasion at their jobsite. The general foundational skills that constitute the bases of competence and lifelong employability discussed above were never a cause for concern, leaving them at the disposal of the students themselves to be acquired through their own initiative and motivation. Furthermore, as changes in the technical aspects of running ships were relatively sparse prior to the 1970s, continuing education to enhance one's technical proficiency was not necessary through any coordinated means other than real-world experience. Also, given the lifelong nature of employment in many sectors of the economy during those years, there was no particular motivation for refinement of skills or even remaining current in one's field.

The trade school environment that persisted in maritime institutions changed drastically beginning in the 1970s with the introduction of undergraduate degree programs first in North American maritime universities and then elsewhere. All advanced maritime institutions today grant a baccalaureate degree to their graduates. In addition, many of them have advanced on to providing post-graduate education inclusive of masters degrees and doctorates. The Evers, Rush and Berdrow model of the bases of competency is particularly relevant for maritime universities for a number of reasons. Firstly, maritime universities are highly niche oriented and mission driven, focusing their attention on MET. Secondly, the transition from a trade school mentality to a university environment has resulted in altering their curriculum so as to encompass a generous mix of general education topics aimed towards proficiency in general knowledge and cultural diversity albeit driven by regional and national accreditation bodies of higher education.

While extensive studies by Evers, Rush and Berdrow (1998) have shown that college graduates typically gain only the first two foundational skills out of the four that they deem essential for the new era, (viz., the managing self and communicating skill sets) it can be argued that maritime universities are an exception to this. Given the very mission of these institutions, maritime university graduates typically go a step beyond the traditional norm and gain reasonable proficiency in the managing people and tasks skill set. The regimental life style and leadership training available in these institutions give copious opportunities for their graduates to fine-tune their skills in coordinating, decision making, leadership and influence, managing conflict, and planning and organizing. However, in the fourth basic competency, the mobilizing innovation and change skill set, maritime universities have no particular advantage over their traditional peers unless a dedicated effort has been made to consciously make that happen. The typical curricular and co-curricular learning experiences in maritime universities today are not structured to foster the ability to conceptualize, or creativity, innovation, and change, or risk taking, or visioning. This is an area where maritime institutions could pave the way for ongoing

enrichment of their graduates and their life-long employability. The following section discusses how Maine Maritime attempts to overcome this gap through a three tier model of outcomes oriented curricular and co-curricular experiences that contribute effectively toward the enrichment of its graduates.

4. The Maine Maritime Enrichment Model

Maine Maritime Academy, a founding member of IAMU, has made significant strides toward enriching its graduates in all four bases of competence. This section will show how Maine Maritime Academy's business school fosters the foundational skills deemed essential by Evers, Rush and Berdrow for succeeding in today's workplace.

The process itself began with the establishment and the subsequent adoption of institution-wide learning objectives listed in Table 4 which were driven by the institutional mission and vision. These objectives were developed by the Arts and Sciences Department, a department that provides a variety of liberal arts--general education in the arts, sciences and mathematics--courses to all Maine Maritime students regardless of their academic major. Every academic major offered at Maine Maritime Academy complies with these basic guidelines. While there is no expectation that every course taught on campus will cover each of the eleven items below, a matrix of all courses taken by a student, regardless of his/her major, will illustrate that there is sufficient coverage in all the eleven areas during that student's four-year stay on campus. The various service departments and divisions on campus, such as Student Services and the Regiment of Midshipmen also play a vital role in accomplishing the objectives of a Maine Maritime education through the various learning experiences they provide.

Table 4: MMA Institutional Learning Objectives

No.	Description of Objective
1.	Demonstrate competency in written and spoken English
2.	Apply scientific methodology, basic concepts of math and science, and be computer proficient
3.	Gain a perspective of the social sciences, including knowledge about the interaction of human groups, of world and U.S. history, institutions, and economic systems
4.	Demonstrate an ability to reflect on the impact of technology on society
5.	Acquire a basic knowledge of the humanities, such as literature, art, and music, and appreciate their impact to the individual and to society
6.	Gather, analyze, and interpret information
7.	Demonstrate competency in a major field and understand its relevancy
8.	Deal creatively and realistically with personal, community, national, and international concerns
9.	Think logically, act rationally, and make appropriate decisions about the future based on past and present conditions and circumstances
10.	Understand ethics and aesthetics that provide a foundation for the development of a value system that can be translated into effective social action
11.	Cultivate a sense of curiosity, and a sense of beauty and practical wisdom in life

The institution-wide objectives are supported by each academic department through its own programmatic outcomes. Each program offered by each department is driven by the mission of that department which in turn is driven by the institutional mission. A sample of programmatic learning outcomes adopted by the undergraduate business department is shown in Table 5. It consists of ten measurable outcomes of which one is general and the remaining, department-specific outcomes. Thus, all courses offered by the International Business and Logistics.

Table 5: MMA Undergraduate Business Program Learning Outcomes

No.	Outcome Description
1.	Develop critical thinking, communication, and analytical skills and an understanding of ethics and aesthetics through the building blocks of a strong liberal arts and humanities curriculum
2.	Build a strong foundation in core business functional areas such as accounting, marketing, finance, human resource management, operations management, legal knowledge, technology and information systems, and organizational behavior
3.	Gather complex information and synthesize into coherent written and oral presentations
4.	Demonstrate understanding of the financial position of organizations through examination of balance sheets, cash-flow statements, budgets, and key financial ratios
5.	Value diversity in the workplace and contribute effectively as a productive member of a team
6.	Analyze business ethics and aesthetics that provide a foundation for the development of a value system that can be translated into effective social action in the workplace and the community at large
7.	Demonstrate the ability to integrate technology and information systems in managing their strategic as well as tactical responsibilities at work
8.	Apply, analyze, synthesize, and evaluate the challenges of doing business internationally
9.	Apply, analyze, synthesize, and evaluate the challenges of domestic and global logistics management
10.	Exhibit competence, professionalism, and confidence in the workplace

Table 6: MMA Graduate Business Program Learning Outcomes

No.	Outcome Description
1.	Exhibit proficiency in quantitative and qualitative techniques appropriate for business decision making as a pre-requisite for entry into the program
2.	Conceptualize a complex issue, analyze it, and build on the existing body of knowledge and disseminate the information coherently in writing as well as orally
3.	Demonstrate proficiency in functional areas of business such as accounting, finance, strategic marketing, organizational theory and structure, and international operations management
4.	Integrate and apply functional areas in problem solving and critical thinking activities
5.	Evaluate the financial position of organizations through an examination of balance sheets, cash-flow statements, budgets, and key financial ratios and make strategic business decisions/recommendations

6.	Value ethical leadership, technology integration, research, and comparative and competitive analysis in a dynamic business environment with local, regional, and global interdependencies
7.	Employ and evaluate qualitative and quantitative methodologies as appropriate in independent research and contribute to the body of knowledge
8.	Identify, analyze, evaluate, and apply major conceptual, legal, and regulatory developments in their field and their impact on contemporary businesses
9.	Analyze current theories and concepts in their chosen field of specialization, and apply the new knowledge in untested scenarios

Source: Loeb-Sullivan School Graduate Catalog (2003)

Department at Maine Maritime Academy will foster not only the institutional objectives but also the programmatic outcomes. Furthermore, as the business school also offers postgraduate programs, higher order programmatic outcomes exist for the four M.S. degree programs offered by the graduate department. Accordingly, students pursuing an M.S. degree at Maine Maritime (in Global Supply Chain Management, Maritime Management, International Business, or Defense Logistics) will develop the skill sets listed in Table 6 of which the first two are general in scope, the next five are management-specific, and the last two are driven by the students' area of specialization.

The tertiary tier in the three-tier hierarchy consists of the various courses, each of which has its own measurable goals. Thus, through a measurable three tier system, Maine Maritime has designed an educational model that fosters not only professional competency but also provides enrichment for our students to facilitate their lifelong learning and employability. Table 7 shows how a student in the business school will gain the foundational skills deemed crucial by Evers, Rush and Berdrow.

Table 7: Foundational Skills Gained by MMA Business School Graduates

The Four Bases of Competence (Evers, Rush & Berdrow Model)	**MMA Business School Graduates**		
	Table 3	**Table 4**	**Table 5**
Managing Self	2, 3, 4, 5, 6, 7	1, 2, 4, 7, 10	1, 3, 4, 7
Communicating	1	1, 3,	2, 7
Managing People and tasks	10	5, 6, 8, 9	5, 6
Managing Innovation and Change	8, 9, 11	10	2, 8, 9

Figures 1 and 2 are drawn with the data from Table 7. Figure 1 shows that 45% of the skill sets fostered by Maine Maritime business school among its undergraduates is in the "managing self" category. While this is typical of most undergraduate programs in most universities, the rest of the distribution of skill areas show a significant departure from the typical model—14% for communicating, 23% for managing people and tasks, and 18% for mobilizing innovation and change. Figure 2 shows corresponding distributions for the postgraduate programs in Global Supply Chain Management, Maritime Management, International Business, and Defense Logistics. The apparent superiority of these offerings in comparison with those of traditional business schools is validated through frequent positive feedback received from employers of the business school graduates, co-op students and interns. It is argued that one reason for this

outcome is the emphasis on experiential learning, the fundamental ethos of a Maine Maritime education. Furthermore, the business school's vision to instill confidence, competence and professionalism among its graduates also serves as a key factor in designing an educational experience that not only enriches its alumni and makes them employable forever through lifelong learning but also meets the needs of contemporary employers seeking college graduates with a vision and the motivation to succeed.

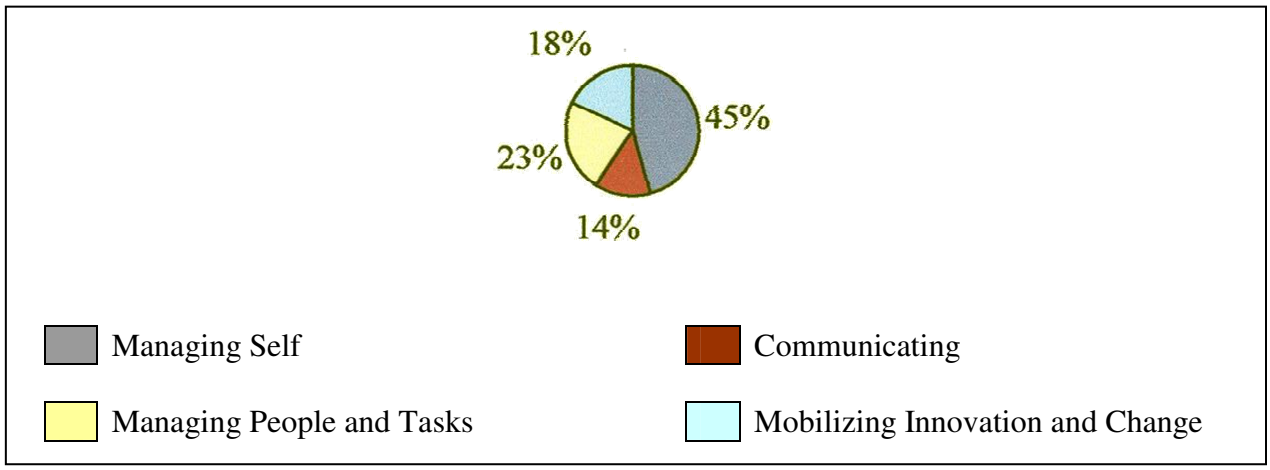

Figure 1: Undergraduate Skills Distribution

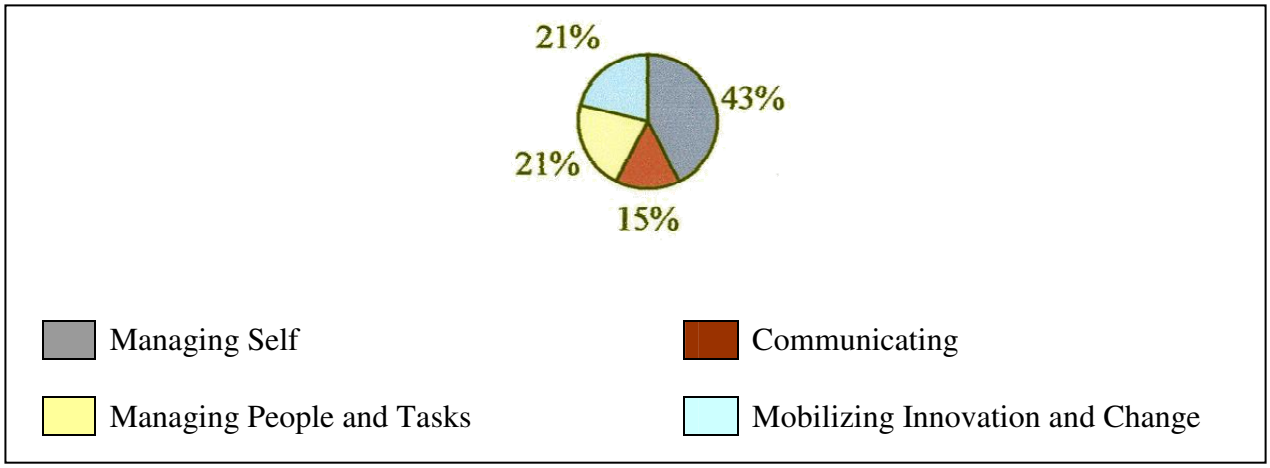

Figure 2: Postgraduate Skills Distribution

4.1 Future Research

An attempt was made to gather similar data (as discussed above) from other IAMU member institutions to show that such high level of skill building is prevalent in advanced maritime universities worldwide. However, the attempt was aborted as sufficient information was not readily available from published sources or official web sites of most IAMU institutions. While this does not mean that those institutions are not enriching their graduates, what this

mandates is the need for detailed collaborative primary research and analysis involving some or all IAMU institutions. It is hypothesized that maritime universities in general do a far superior job in enriching their graduates for the new millennium compared to the traditional universities; this is done through a better fostering of the key core foundational skills essential for lifelong employability today. Maritime universities that do not do this presently need to restructure their offerings. An added reasoning for this is the forecasted further decline in the average length of seafarer's career during the next 5-10 years (BIMCO/ISF 2000, 28) over and above the already high level of wastage among seafarers shown in Table 1. It is to be expected that many of these individuals would return back to their universities for pursuing higher education to enhance their skill sets and remain employable life-long, and maintain their professional vitality.

5. Conclusions and Outlook

The complexities that challenge a seafarer's life have not eased in the 21st century despite various technological advances, and the profession remains paradoxical. While it provides a good source of income and a better living standard especially for those from poorer countries, the agonies of being far from one's near and dear ones and the rigors of working in a hostile environment take a significant toll on the seafarer's mental and physical well-being. As a result, many seafarers seek opportunities to escape from this paradoxical existence. It is forecasted that there will be even higher wastages than the already high levels that exist today. Whether graduates of maritime universities remain at sea or seek alternate career tracks, it is essential that maritime universities bestow upon them the requisite skill sets to remain employable in today's global market driven primarily by time and knowledge based competition. It is argued that to remain employable today, one must possess not only professional knowledge and skills but a wide array of skill sets that Evers, Rush and Berdrow classify as managing self, communicating, managing people and tasks, and mobilizing innovation and change. Given the transitory nature of professional knowledge imparted in a university today, college graduates must develop a culture of lifelong learning and stay abreast of new developments in one's field.

Extensive research has shown that graduates of traditional universities undergo a humbling effect at their worksite as their university learning experiences have typically prepared them for only managing self and communicating. A preliminary study of one department at Maine Maritime Academy, a founding IAMU member, has shown that careful structuring of educational experiences can result in building all four core foundational skills among its graduates. Anecdotal evidence from employers have validated these findings as well. It is hypothesized that advanced maritime universities, in general, do a better job of enriching their graduates, maintaining their professional vitality, and helping them remain employable lifelong. Further study that entails primary research involving all IAMU member institutions is recommended to prove the hypothesis and show that the Maine Maritime model of enrichment is no exception among its global peers.

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