Implementation of quality management systems in Romanian maritime education and training

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ABSTRACT

The paper presents the most important quality related concepts such as: quality control, quality assurance and total quality management displayed in a hierarchy and shows how they can be applied in education. For better understanding, the work answers two essential questions: which the product is and who the clients for education are. Finally, the actors of the Romanain MET community are presented, showing how they developed and implemented quality management systems in their organizations.

1. Quality as a dynamic concept

Being a highly fashionable subject **quality** has received different definitions, however all related to the client satisfaction. Since the main idea had been the same from a long period of time, the practical application of the concept was different and proved that the quality is a dynamic concept.

The oldest application of the concept is related to the detection and elimination of components or final products which are not up to standard. The expresion used is **quality control**. The process, albeit an after-the-event one, proved to be a good method of ensuring quality even if that involved a considerable amount of waste, scrap or reworking. The quality control was the task of professionals and not a common subject. Along this line, the final assessment of students« knowledge and skills is an expresion of quality control in education and training.

The next important step in quality concept application was the **quality assurance**. Even if it is a continuation of the same idea there are considerable differences. The quality assurance is no longer related to the end of the process but to the entire development of the process and however some of the actions are taken even before of the process. Its concern is to prevent faults occuring in all phases of the process. That means to ªdo things right first time, every time . The result of quality assurance is ªzero deffects . The quality assurance impose responsibilities on each and every personnel. Quality assurance systems are related not only to the technical aspects of the products or services, but also to methodologies, management etc.. Quality standards are maintained by following the procedures laid down in the QA system. The references made by STCW Convention to quality standards are related to quality assurance. Some of the phases of process are specifically expressed:

- all training;
- assessment of competence;
- certification;
- endorsment;
- revalidation activities.

All the above have to be continuously monitored through **a quality standards system** to ensure the achievement of defined objectives, including those concerning the qualifications and experience of instructors and assessors.

The other quality related items included into STCW Convention impose the application of the same concept. These are the following:

- ensure that all the related actors performing the above mentioned activities are following a quality standards system;
- the MET objectives and related standards of competence to be achieved the education and training objectives to be achieved are clearly defined and identify the levels of knowledge, understanding and skills appropriate to the examinations and assessments The objectives and related quality standards may be specified separately for different courses and training programmes and shall cover the administration of the certification system.

To be more specific the Convention includes the fields of application of the quality standards:

- administration of the certification systems;
- all training courses and programmes;

- examinations and assessments;
- qualifications and experience required of instructors and assessors.

The quality concept application continued with **total quality management**. This incorporates quality assurance, and extends and developed it. TQM means to create a quality culture where the structure of the organization *allows to do so*. Even if the present application of the quality concept impose to consider the TQM main characteristics, most of the conservative organizations avoid to use this expresion. It might be the way to avoid the structural changes of the organization needed to apply this concept.

This paper will not try to answer to the question ªhow to apply the quality concept but to remind that this is a dynamic one. We should not forget that a large number of organizations started to develop and implement a quality standards system based on the ISO 9002 standard and during this process found out that the standard disappeared.
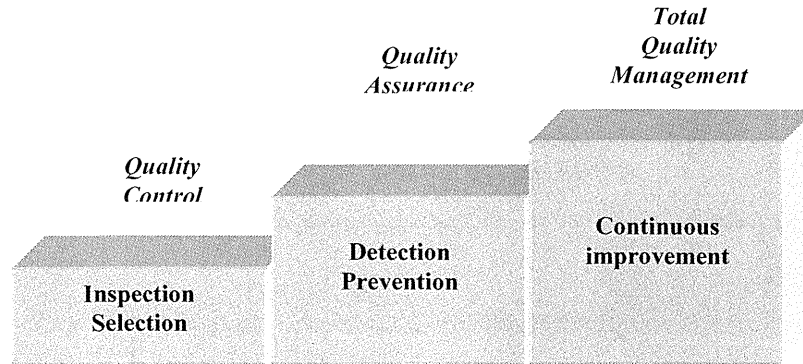

Figure 1 Evolution of Quality Concepts

2. Quality in Education

Nowadays, everyone recognizes the importance of quality for any public or private organization.So, the education and training organizations came into situation to develope and implement own quality standards system. Due to specific characteristics of the topic, first questions appeared were related to *product* and *clients* identification.

A first apparently corect answer is that the product is the student or the graduate, but that means we should consider the maritime university as *an officers factory*. Product of the universities are the competencies of their graduates, which incorporate the knowledge and skills they aquired during the time between admission and graduation.

For clients identification the situation is more complicate, because we can not delimitate a clear target, but a number of different categories being in the same time clients for the same product. These can be considered: students, parents, Government, employers, society, and as internal customers teachers and support staff. One of the important quality related chalanges of a higher education institution is to reconciliate the different clients needs and to avoid conflicts of intertests among the different categories of clients.
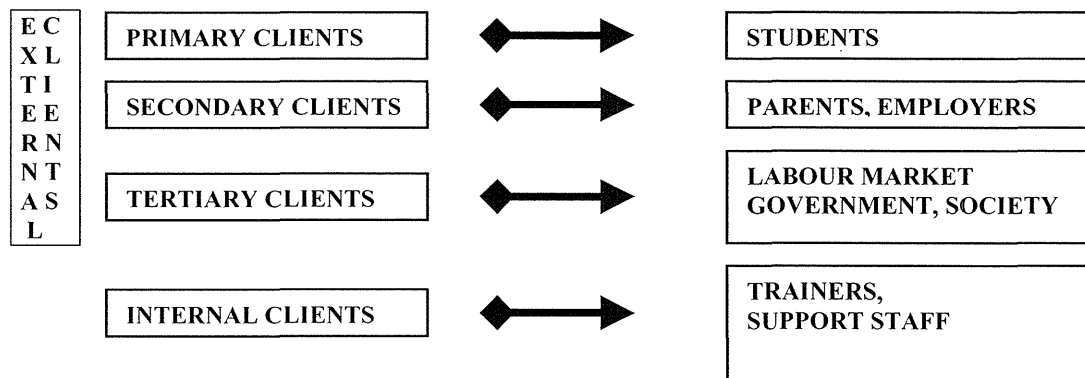

Figure 2 Categories of clients for education

The difficulties generated to answer the above questions conducted to another one, now regarding which quality system to be applied in education, or how should be such a system. More than that, due to the very specific characteristics, the question is quite important for the maritime education and training organizations.

3. Quality standards in maritime education and training organizations

The decision of the quality standards system applied by MET organizations is based on comparative analisys made on ISO 9000 standards, ISM, STCW «95, but also having in view the national regulations.

In observance of the above mentioned issues and the need to have common standards, Professor Sag prepared a proposal for MET accreditation called METAS. The standard model contains as main ingredients:
-   IMO Conventions, Port State Control, Statutory certification of ships and insurance requirements
-   ISO 9001-2000 Quality Management System Standards, ISO 14001 environmental Management System Standards
-   National accreditation standards like those developed by Canadian Engineering Accreditation Board, Accreditation Board for Engineering and Technology, Council for Higher Education Accreditation.

METAS includes items such as: mission and purposes, planning and evaluation, organization and governance, programs and instruction, student services, physical and financial resouces.

Since there is no a specific quality standards system for MET organizations, they have developed and applied different systems. There are organizations using a national quality management system specific to education organizations, but also ISO 9000 certified universities, that also meet the relevant national requirements.

An example of specific academic system is the one used in UK. The approach to managing and enhancing academic quality and safeguarding academic standards is based on four working priciples:
1. *academic quality control involves processes by which quality is secured at the point of delivery by those directly involved in teaching and learning*
2. *academic quality assurance involves processes intended to enduse the existence, and monitor the operation, of procedures used to secure quality at the point of delivery*
3. *academic quality audits monitors the effectiveness of the arrangements at faculty and couse level for maintaining and enhancing the quality of the students learning experience, and their contribution to safeguarding academic standards*
4. *academic quality enhancement is an integral part of the management of quality responsibility for which is shared by staff and students at course, faculty and institution level.*

The specific of the MET organizations led, in some countries, to the need to comply with regulations of different Governmental bodies, having as a result the implementation of a broader quality standard, such as ISO 9000. Under these circumstances the specific procedures are kept as operational procedures, being completed by system procedures.

4. Quality management systems in Romanian maritime education and training

The Romanian maritime education and training organizations started to develop and implement quality management systems as a strategic policy, in order to meet to market requirements. Nowadays this is no longer a mater of organization policy, but also a requirement of the existing regulations. The academic institutions (Constanta Maritime Univesity and Naval Academy) had to comply with the regulations imposed both by Ministry of Education and Research and by Maritime Authority. Each of the above authorities required the academic instittutions to be accredited and certified by an independent organization in relation with quality and academic standards.

The Romanian maritime education, training and certification regulations have been continuously improved. The last changes introduced by the Maritime Authority requires:
-   quality management system certification for the institutions delivering IMO model courses
-   training and certification of the assessors angaged in maritime examinations for certification
-   training and certification of the trainers delivering IMO model courses

The teaching staff of the academic institutions have to comply, at the same, time with the regulations established for the national education. The new education law which will come in full force in the next year introduced higher standards for the entire academic process. For example, as from the next year the PhD degree will become compulsory as from the lecturer level and not just for assistant professors and professors as it is now. Periodical assessment of all academic institutions, performed by an independent organization, became also compulsory.

At present, the main actors of the Romanian maritime education and training community are: the Maritime Authority, two academic institutions and training centers. The main tasks and relationships between the above actors are shown in the figure 3.
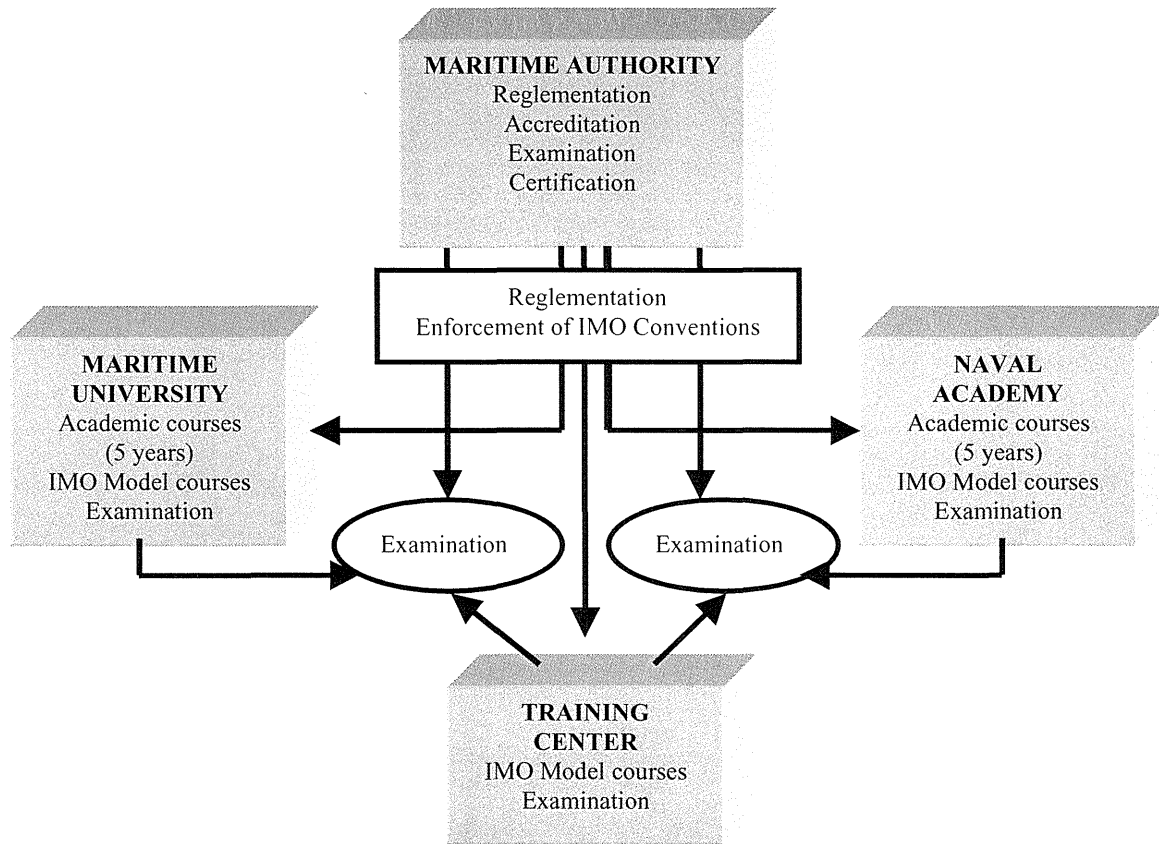
Figure 3 Relationship between Romanian maritime education, training and certification organizations

The high importance given by the Maritime Authority to the implementation of a quality management system was shown by decision to certificate this public organization in accordance with ISO 9001 standard. This step was succesfully passed this year, Maritime Authority being certified by a worldwide recognized certification society.

The Romanian Maritime Training Center was the first MET institution certified in accordance with the above mentioned standard (by another worldwide certification society), and this year RoMTC was recertified.

The two academic institutions both passed periodical audit performed by an independent organization. Maritime University passed the last one this year.

Having in view the importance to apply common standards not only in training but in quality management systems as well, Constanta Maritime University decided to implement and certify an ISO 9000 based management quality system. The certification is planned to be taken at the end of this year.

5. Conclusions

There are many reasons which are leading Romanian MET institutions to develop, implement and certificate quality management systems based on ISO 9000 standards. Among these resons could be:
- achieve a higher and recognized level of the quality of their products
- better cooperation among institutions involved in MET activities
- assure a high common standard to be met by the MET institutions which could be developed in the future
- better perception by the international market which is addressed
- avoid non-conformities related to national or international regulations
- possibility to be certified by a worldwide certification society
- better position on the national education market.

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