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Impacts of the Fourth Industrial Revolution on Port-City Integration

"World Port Sustainability Program Aspects"

Improving the Human Resource in Maritime Industry

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INTRODUCTION

The 4.0 revolution industry represents a fusion of technologies that reduces the lines between the physical spheres, the digital and the biological ones.

Its purpose is to transform industrial production through the digitization and exploitation of new technologies.

The human resource gains a new dimension during industry 4.0, and the requirements for employees' competencies are higher and better delimited.

An industry capacity of development refers not only to laws, norms, but also to strategies and projects for employee's development of the institutions and / or organizations that are part of the industry.

The role of human resources is fundamental both for the efficient functioning of any public institution or authority, and for the development of an industry.

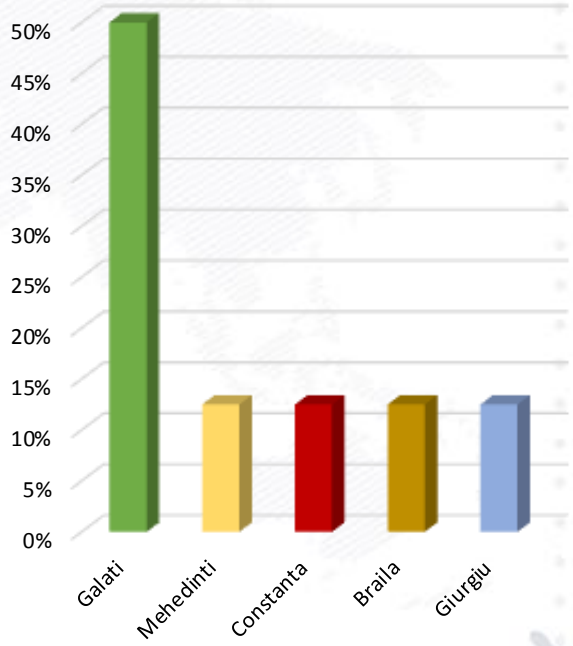
METHODOLOGY

- This study consists in a market research which was carried out in order to identify the purpose of inventory and analysis of the current situation regarding the categories of the trades in the port sector and of the demands of the labor market regarding the professional competences.

- The market research was conducted between 10.10.2019 - 29.01.2020 and included both secondary and primary research.

- It was attended by Syndicate Port Docuri and Port New Galați basin, CNFR Navrom S.A Galați, TransEuropa Port, Romanian Naval Authority, ANOFM Galați, Unitrans Federation, CN APDM Galați.

- The response rate to the questionnaire was 50% given the fact that only 8/16 stakeholders have given answers.



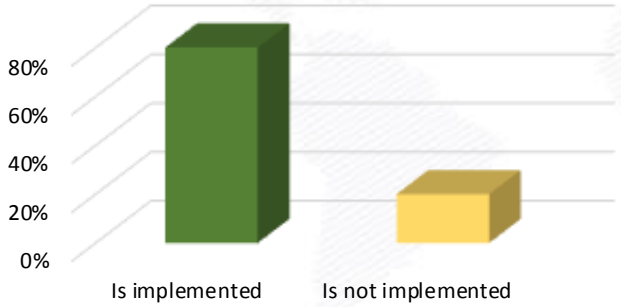
RESEARCH COMPOSITION

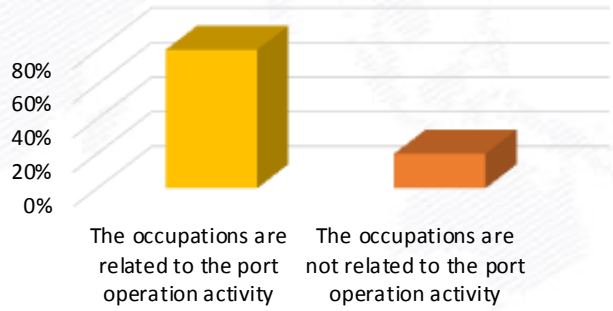
The questionnaire addressed to port organizations sector comprises four sections:

1. The first section requires general information about the employer;
2. The second section is intended for the categories of trades required for the port sector;
3. The third section refers to the competences needed for the operative personnel in the port sector;
4. The last section contains data and information regarding the strategic dimension of vocational training / career development in the port sector.

SURVEY RESULTS

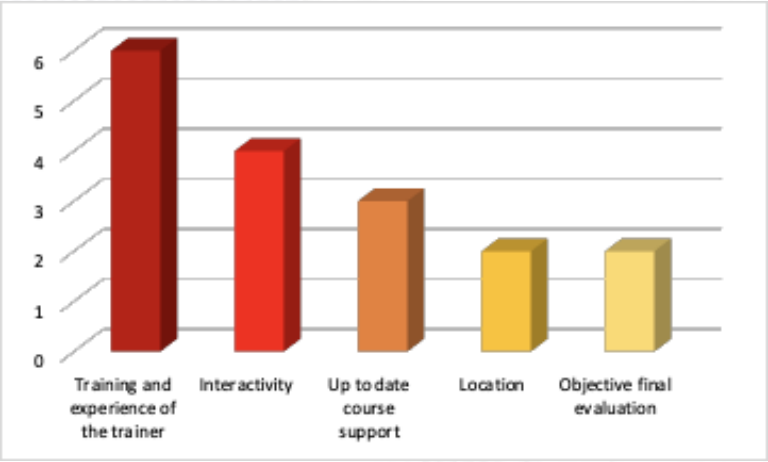
In the primary research it was found that 80% of the respondents from Romania implemented a system of periodic evaluation for organization employees. Only one respondent (20%) does not have such a system.





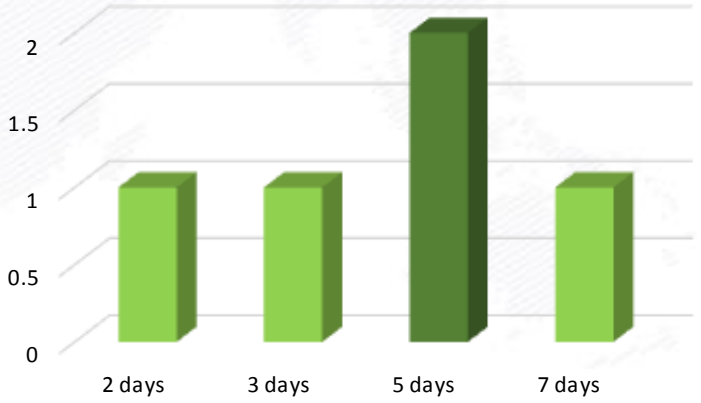
SURVEY RESULTS

Factors that contribute to the success of a professional training / development program / course in Romania are considered to be:
1. The trainer's training and experience (6 mentions - 100%);
2. Interactivity (4 mentions - 70%);
3. Course support with useful and up-to-date information (3 mentions - 60%);
4. Location (2 mentions - 70%);
5. Objective final evaluation (2 mentions - 30%).



SURVEY RESULTS

The optimal method of delivering training / development courses in Romania is:
1. Face-to-face (4 mentions - 80%);
2. Combination of e-learning (distance) course extended over a longer period with monthly face-to-face meetings (1 mention - 20%).



THE CURRENT SITUATION REGARDING THE NEED FOR TRAINING IN THE PORT SECTOR

The main factors interested in developing a training system for the labor force in the port sector are:

- Port administrations on the Danube
- Service providers in the port sector (port operators)
- Providers of training services for personnel in the port sector
- Port workers' unions
- Central public authorities with impact in the specialized training for the personnel from the port sector (line ministries: MEN. MMFPS. ME, Ministry of Transport, Ministry of Finance, ANC authorities etc.)
- Local public authorities (mayors, county councils, county employment agencies, etc.).

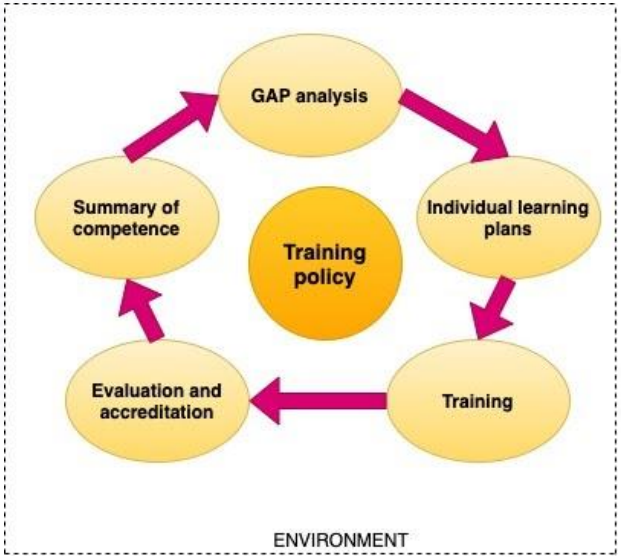
CHANGES IN THE PORT SECTOR

In ports there is a significant demand for development of competences.

From	To
Worker with general skills	Specialized workers with multiple skills
Operations that require manual labor	Technological operations
Individual handling of goods that are not in containers	Specialized operations
Occasional employees	Permanent employees
Informal training in the workplace	Formalized training
Male labor force	Diversified workforce

TRAINING POLICY

A personnel policy can be considered as a declaration of intent or commitment in the light of which a company can be held liable.
With a high-level plan embracing the organization's objectives, the policy of professional training of the personnel in the port sector offers a guide with answers to the questions "what" and "why" that can appear during the training process in a given context.



COMPETENCY PROFILING

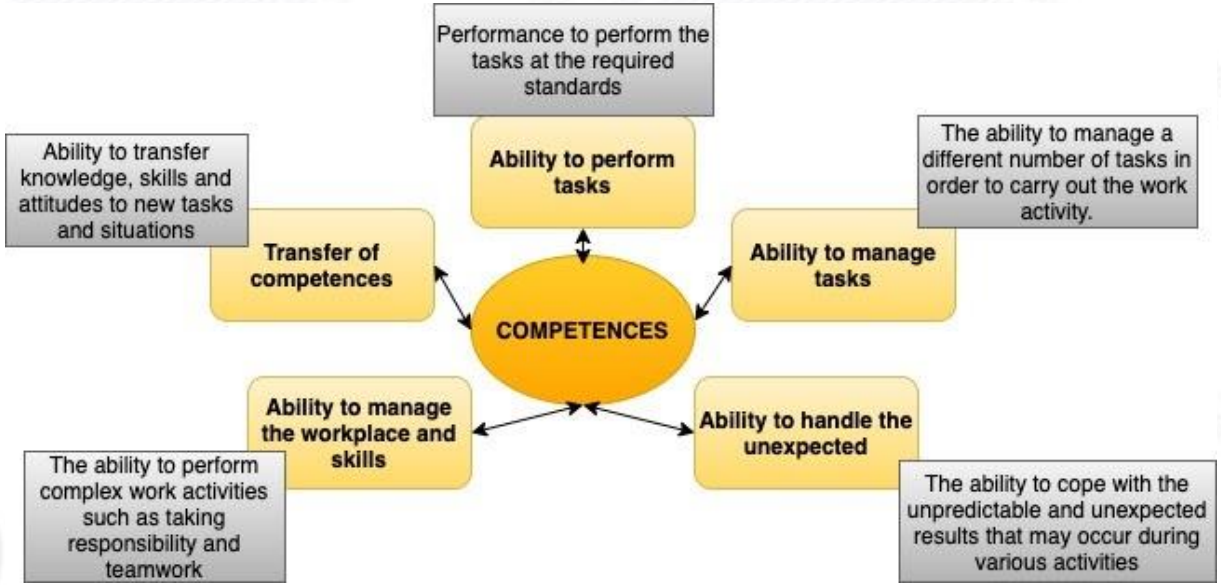
Gap analysis consists in enumerating the characteristic factors of the current, future goals, then highlighting the shortcomings and eliminating them

It is common for Gap (deficiencies) analysis to find deficiencies regarding the training policy of the employed personnel

The competencies required to perform a single task are usually presented as a "unit of competence".

The unit of competence describes the scope, tasks to be performed, the performance standard and KSA (knowledge, abilities, skills) required.

5 DIMENSIONS OF COMPETENCES



CONCLUSIONS

Industry 4.0 allows the combination of technologies through artificial intelligence, data analysis or "the internet of things" to create new innovative products and services, with major implications for the society as a whole.

Changes certainly influence the labor market, and the identification of the requirements regarding the employees is adapted to the environmental changes.

The learning and training component will be one of the most important in the context of this new industrial revolution.

Employees will need new skills, especially in the digital area.

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