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Impacts of the Fourth Industrial Revolution on Port-City Integration
"World Port Sustainability Program Aspects"

AN OVERVIEW OF THE PORT COMMUNITY SYSTEM FROM ROMANIA

Andreea BARBU, Gheorghe MILITARU and Dana Corina DESELNICU
Polytechnic University of Bucharest, Romania
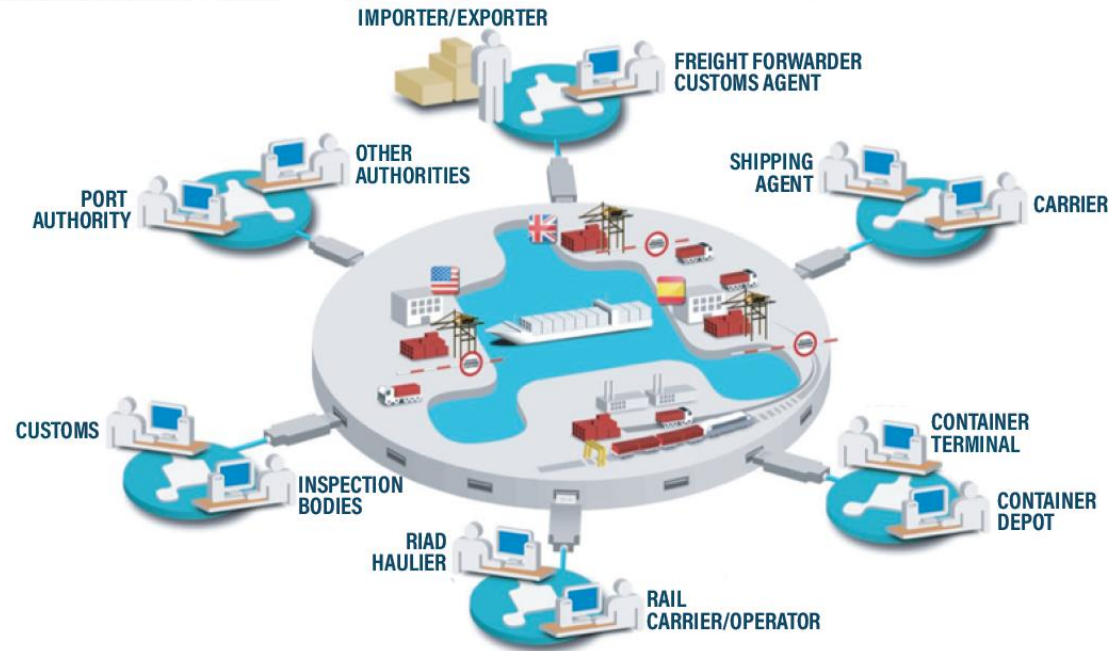
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Introduction

Seaports play an essential role in ensuring the access of the clients to the local and global markets through efficient transport, ensuring also a varied range of value-added services. Thus, it is hoped that seaports will become complex service platforms used to increase customer satisfaction. This can be achieved by digitizing the activities of the port administration and by creating a management information system
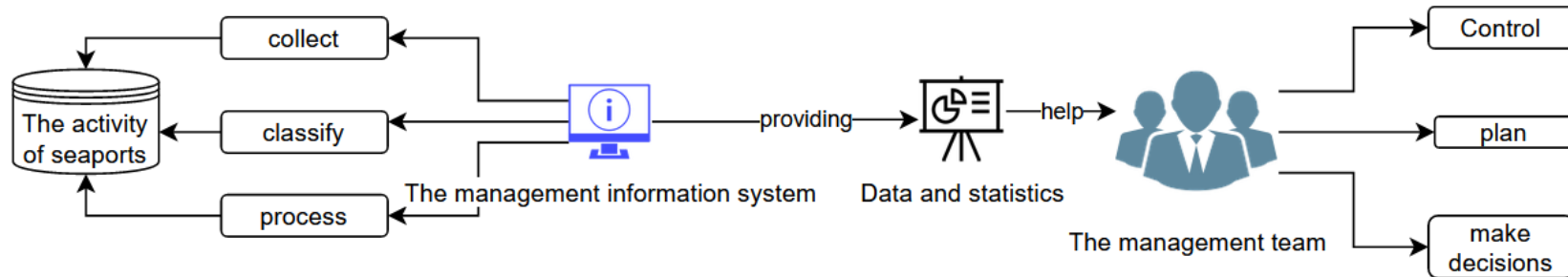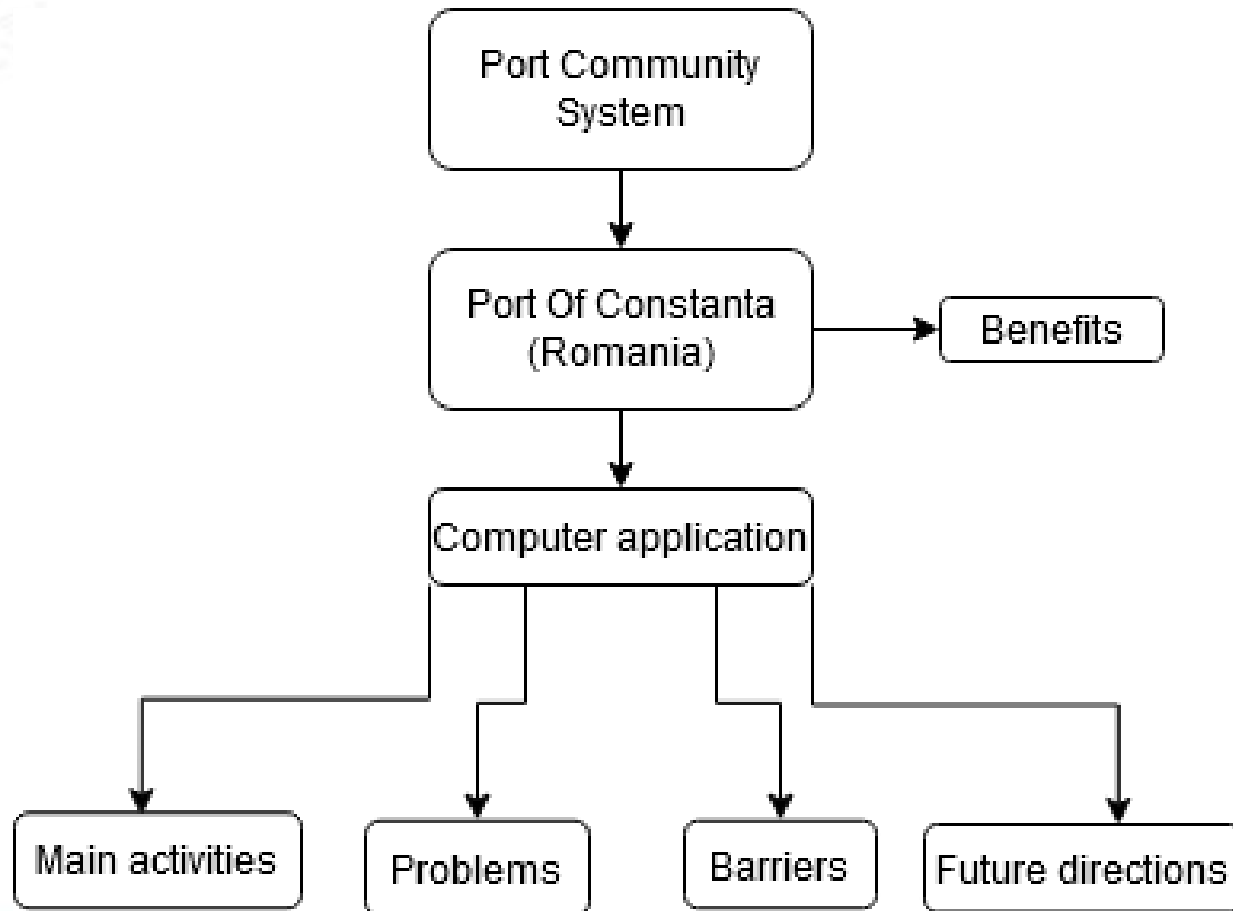
Port Community System (PCS)

A PCS can be viewed as a "virtual table" formed by the port community

Source: ValenciaportPCS.net

The purpose of the paper

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              ┌─────────────────┐
              │  Port Community │
              │     System      │
              └────────┬────────┘
                       │
                       ▼
              ┌─────────────────┐        ┌──────────┐
              │ Port Of Constanta├──────▶│ Benefits │
              │    (Romania)    │        └──────────┘
              └────────┬────────┘
                       │
                       ▼
              ┌─────────────────────┐
              │ Computer application│
              └──────────┬──────────┘
          ┌───────┬──────┴──────┬───────────┐
          ▼       ▼             ▼           ▼
   ┌────────────┐ ┌──────────┐ ┌──────────┐ ┌──────────────────┐
   │Main activities│ │ Problems │ │ Barriers │ │ Future directions│
   └────────────┘ └──────────┘ └──────────┘ └──────────────────┘
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Methodology

The authors conducted a qualitative research, which analyses the situation of the Port Community System (PCS) in Romania.

SOCEP documents

Official site of the Port of Constanta

Danube Port Development Strategy & Network Formation (2019).
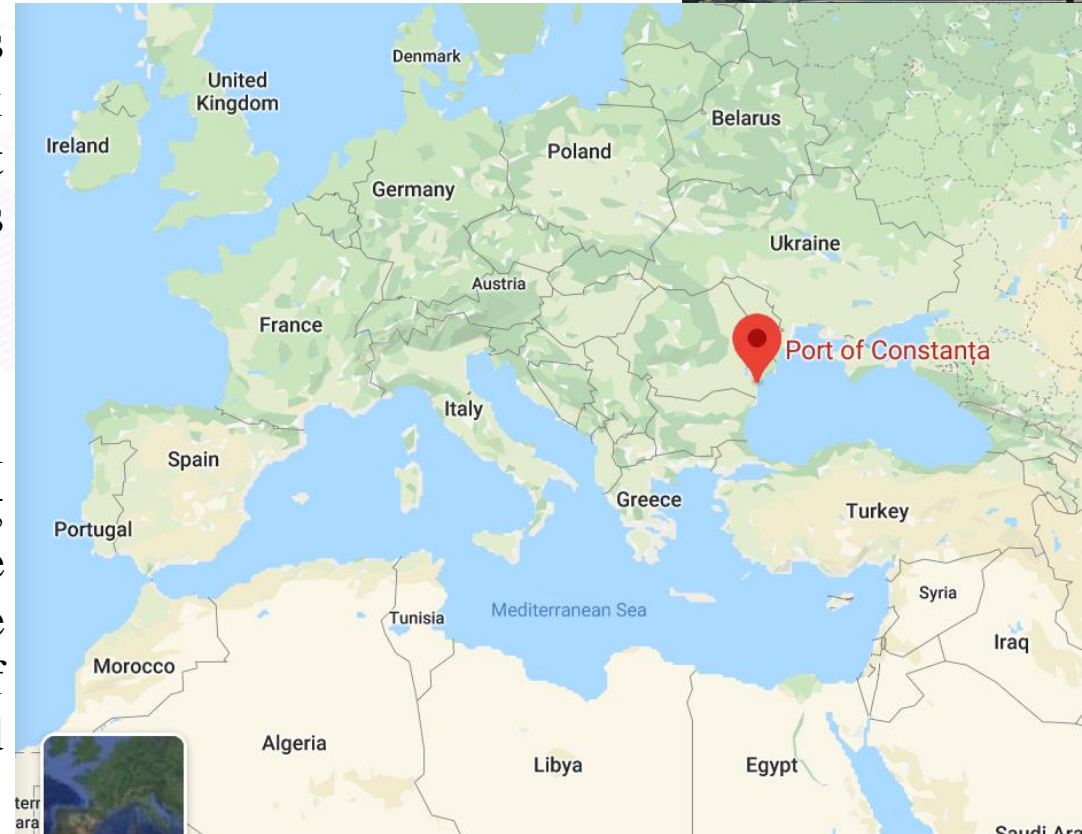
Danube Ports Network (2018)

Danube Transnational Program

European directions regarding the need to introduce a PCS

The case of Constanta port

Constanta Port is both a maritime and a river port. The Port of Constanta is located on the Western coast of the Black Sea, covering almost 4 ha of which almost 1.5 ha is land and the rest of the surface is water.
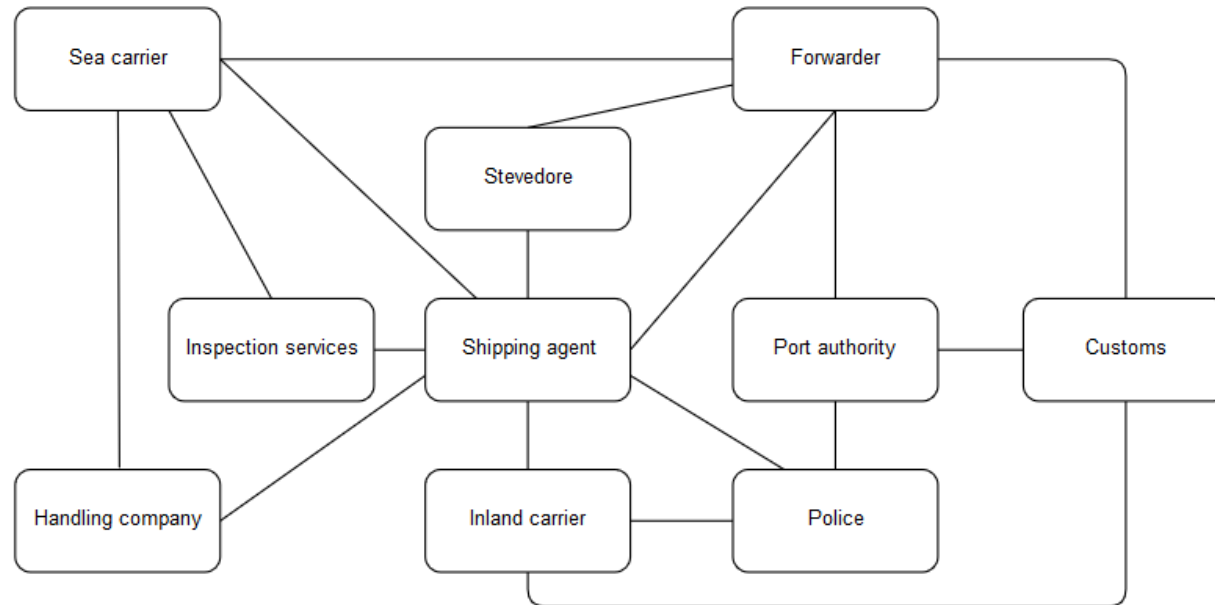
The Romanian port of Constanta has very good connections with the Central and Eastern European countries, providing quality services to the customers of the ports. The connections with the rest of the world can be made will all modes of transport: railway, road, river, airway, and pipelines.

Problems existing in the Port of Constanta

Even though there are a lot of actors in the seaport area, interested parties in the maritime field communicate with each other through different means (paper documents, fax, telephone, e-mail, radio communications).

Current situation of exchanging information and documents between stakeholders in the port area of Romania
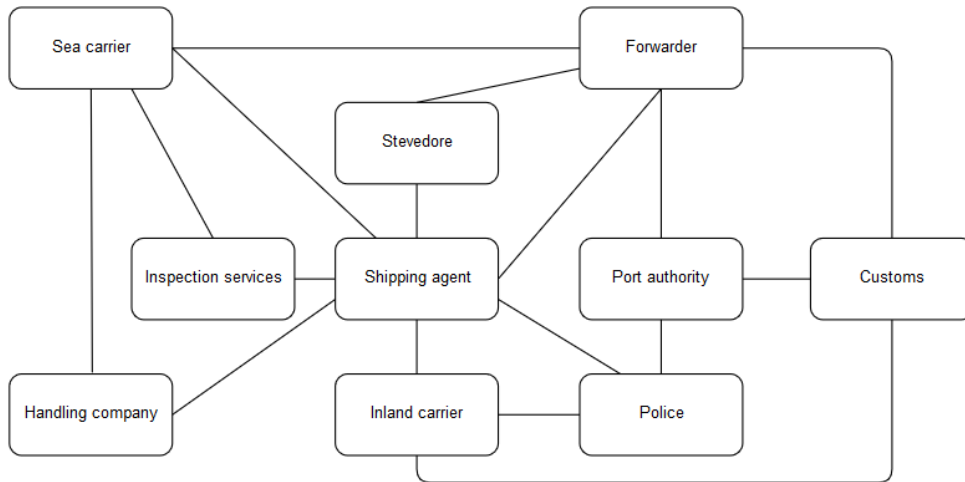

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Interaction flows between stakeholders in the port area of Romania before and after implementation of a PCS
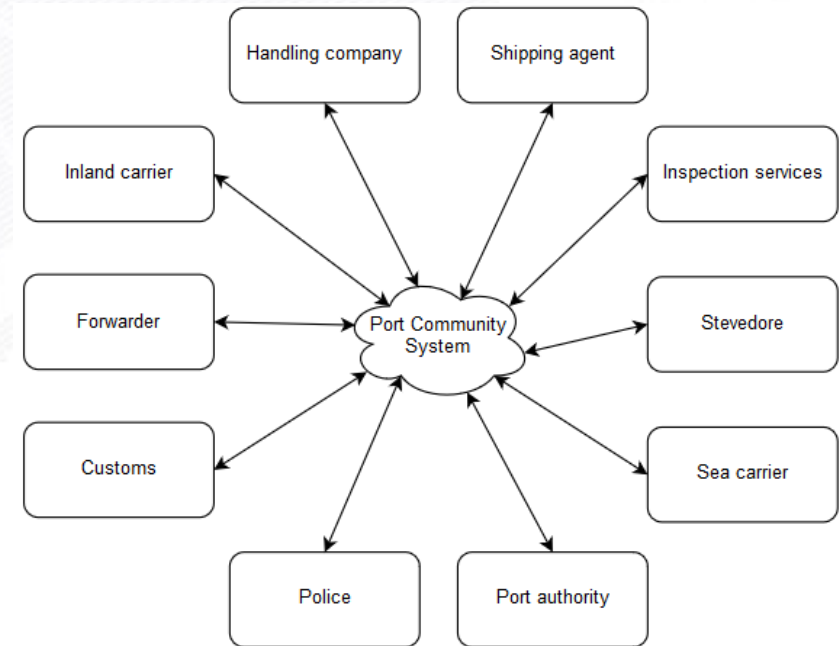
From

To

Current situation of exchanging information and documents between stakeholders in the port area of Romania
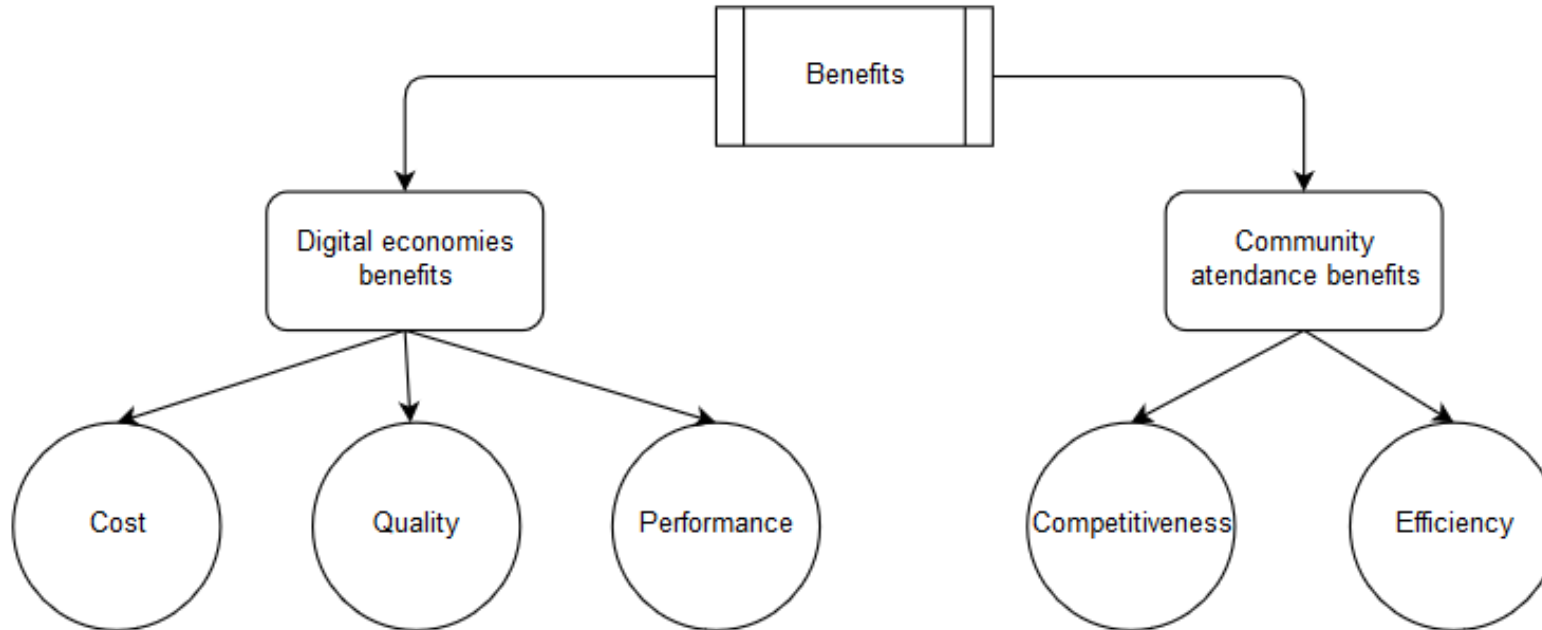
A "Single Window" environment

Benefits of the adoption of the Port Community System

The Naval Catalog

One of the most used Port Community Systems for the port activities in Romania is the Naval Catalog. This is an application specially developed to improve the performance of the services regarding the activity of port communications.

The Naval catalog is used by different companies in the port community, such as the Maritime Port Administration of Constanta, Romanian Naval Authority, Administration of Navigable Canals, ship agents, ship owners, port operators, pilot companies and other representatives of the port community.

Through the Naval Catalog, the following activities are managed:

Movement of the ships

Entraces, exists, maneuvres in the port

Different operations

Operations of unloading or loading of good

The Naval Catalog

Other services

Services provided for ships stationed in the port

Events

Different events/ accidents where ships may be involved
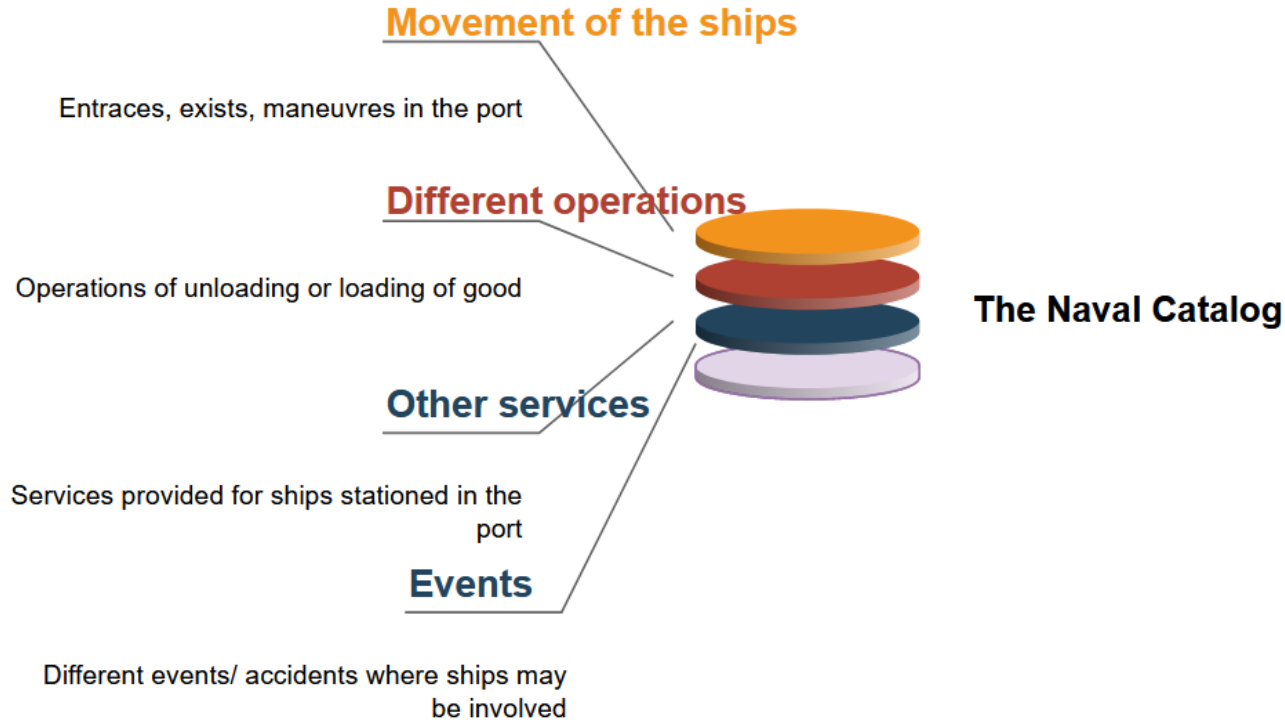
The Naval Catalog module has the following main menus:

Documents

Maritime endorsement, River approval, Port endorsement, Pilotage bulletin, Maneuver acceptance

Ship management

ships, convoys, movements, freight traffic, ship services or shipping lines

Naval Catalog companies

Different companies

Reports

different newsletters or operating situations
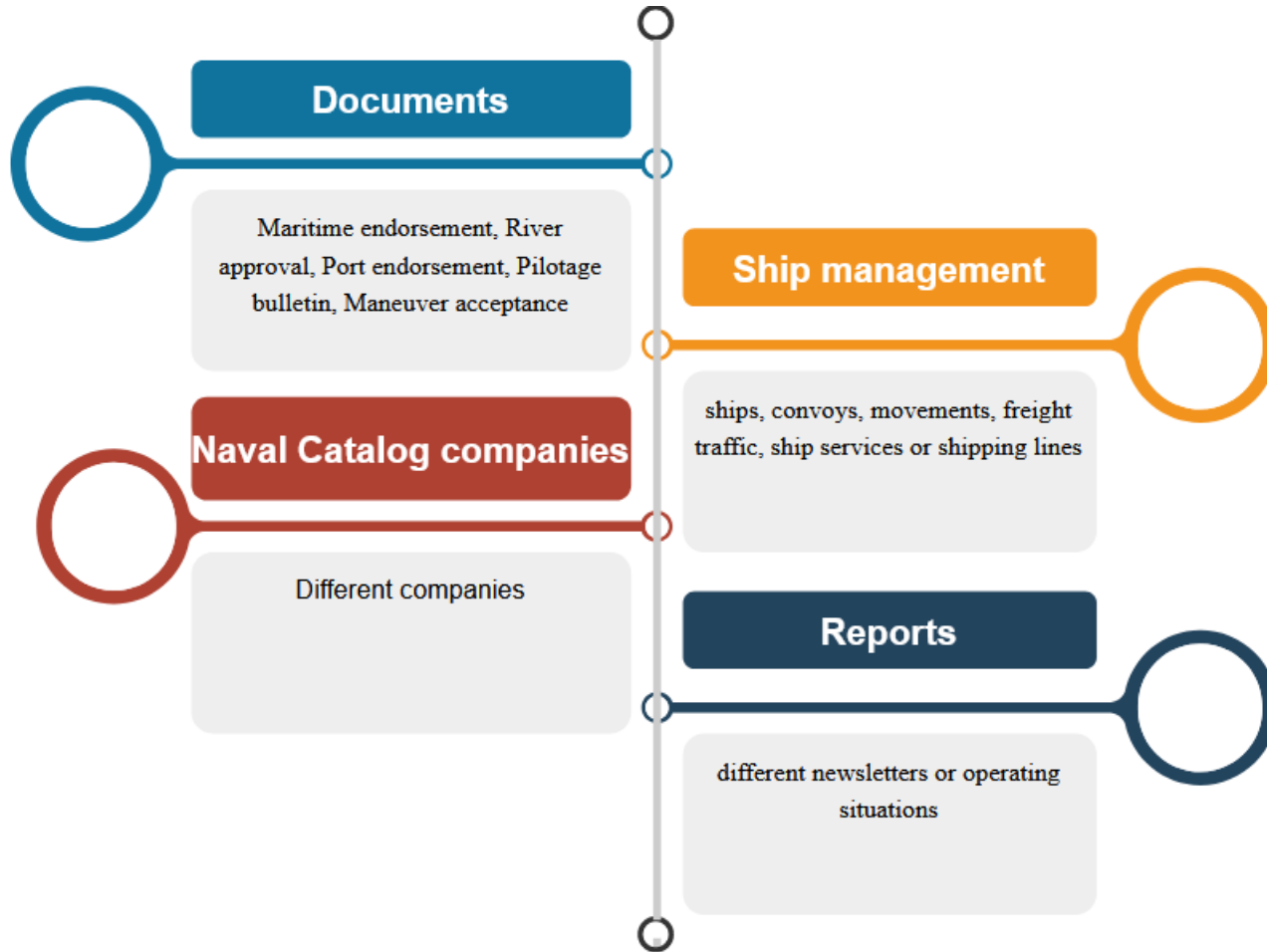
The operations available in The Naval Catalog

Agent
- Add Pilotage bulletin
- Look for the Pilotage bulletin
- Reload the list of Pilotage bulletins
- View the Pilotage bulletin
- Modification of the Pilotage bulletin
- Delete Pilotage bulletin
- Duplication of Pilotage bulletin
- Cancellation of Pilotage bulletin

Operator
- Add Pilotage bulletin
- Look for the Pilotage bulletin
- Reload the list of Pilotage bulletins
- View the Pilotage bulletin
- Approval of Pilotage bulletin added

Pilotage company
- Look for the Pilotage bulletin
- Reload the list of Pilotage bulletins
- View the Pilotage bulletin
- Pilotage order confirmation

Authority
- Look for the Pilotage bulletin
- Reload the list of Pilotage bulletin
- View the Pilotage bulletin
- Pilotage bulletin endorsement

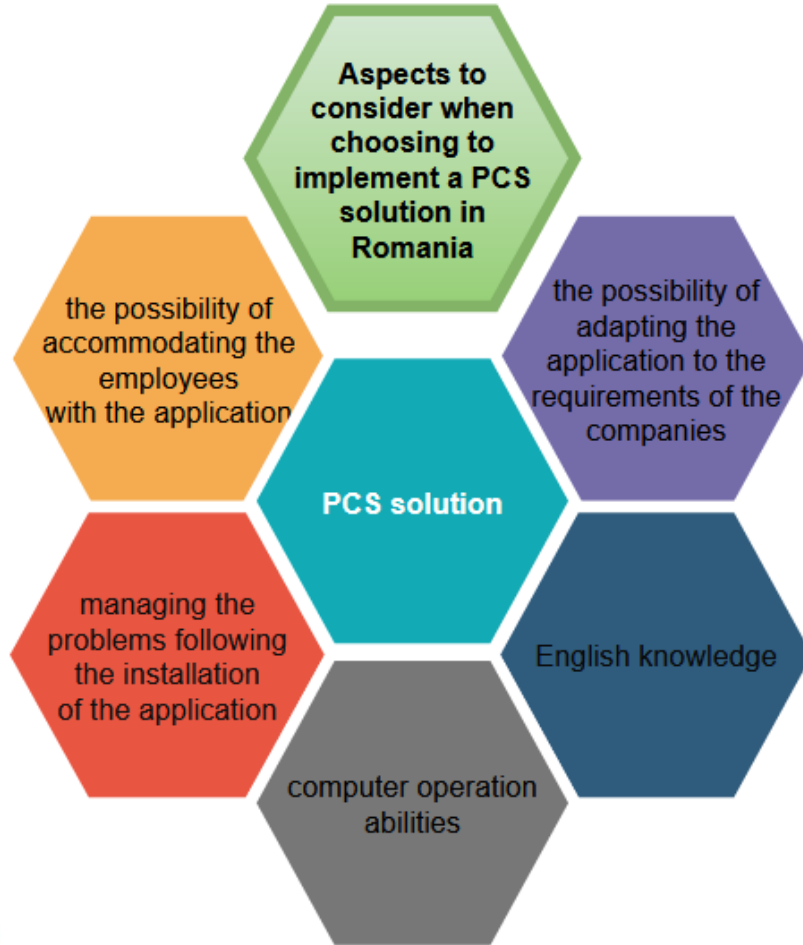Source: adapted from UTI SYSTEMS, SIP APMC – Naval Catalog - Information services on activities of the port community

Example of Pilotage bulletins list

No.	TYPE	Ship	Berth	Agent	Operator	Pilotage company	Planned date	Planned time	Confirmation date	Confirmation time	Document status	
1	I	ERMAK	Berth 102	United Shipping Agency	United Shipping Agency	Canal Sea Services	30.01.2020	9:01	-		Notifying the authorities	
2	P	ZAMM	Berth 80	Tomini Trading	Tomini Trading	Agigea Pilot	30.01.2020	10:15	30.01.2020	9:30	Confirmed by the pilot company	
3	I	BARON	Berth 31	United Shipping Agency	United Shipping Agency	Agigea Pilot	31.01.2020	11:30	30.01.2020	18:10	Confirmed by the pilot company	
4	I	ZAHYAK	Berth 46	Ademar Transport Line	North Star SH.	Agigea Pilot	31.01.2020	14:55	31.01.2020	10:50	Confirmed by the pilot company	
5	I	AYRA	Berth 41	United Shipping Agency	SOCEP	Agigea Pilot	31.01.2020	16:10			Accepted by authorities	

Source: adapted from UTI SYSTEMS, SIP APMC– Naval Catalog - Information services on activities of the port community

Aspects to consider when choosing to implement a PCS solution in Romania

When deciding to use a particular program of the port community system type, the following 5 important problems should be taken into account:

The application of the port community system that is desired to be implemented should be adapted to the requirements of each terminal. The following aspects should be considered in this process

Configuration	Ship operations	Operation on the ground	Gate operations	Reporting	IT infrastructure
The configuration of the terminal and the working mode must be known/completed before starting the configuration	Ship operations- have a high degree of standardization, so the adaptation effort will be minimal	The adaptation should not raise particular problems, but first requires establishing the way of organizing the terrain, which depends on the type of equipment used	Difficult adaptation because the application has no facilities to change the procedures according to the local conditions	The application offers a standard set of reports, configurable within certain limits; managing extracted data requires Excel operating knowledge	A whole new infrastructure must be created: servers, network, wireless network throughout the terminal, mobile terminals for people and machines

Conclusions

Although we are in an era of digitalization, and this digitalization is easily beginning to emerge in the maritime field, unfortunately, a large part of the port services is still made through paper-based solutions, bureaucracy being one of the major problems encountered in the area of Romania.

Although the introduction of a port community system is supported by many European directives, there are still problems regarding the technological development of this solution and its implementation at the national or international level.

Conclusions

In the case of the Port of Constanta, there are already several applications that can be used for the adoption of a Port Community System, among which the Naval Catalog or the solutions offered by the ones from Navis, the situation in Romania being slightly directed towards what is desired at European level: communication, unity, and performance in the seaport area.

However, the Naval Catalog does not seem to be the best solution that the Romanian ports can use in the future. Considering that the system was created more than 10 years ago, it does not fully respond to the requirements of a Port Community System, Romania not being able to enjoy all the benefits of implementing such a system.

Conclusions

Thus, to align with the existing European directives, at the end of 2019, the "Maritime Ports Administration" S.A. Constanta has launched a call for the realization of an integrated computer system dedicated to the management of activities and information flows on the Port Community System platform of Constanta.

It is intended that the integrated computer system to be a Single Window type system that does not require data entry in several places, to allow the traceability of the data entered, their uniqueness and security. The new electronic platform should include several functions like reporting of exports, imports, transshipments, consolidations and dangerous loads.

Conclusions

Thereby, to improve their activity, ports from other countries should learn from the problems arising in the case of Romania. When they decide they want to implement PCS solutions, they should define their objectives, the desired functionalities, and the procedures through which they can perform their activity using PCS.

Companies in the maritime area should not forget about the advantages conferred by the existence of a community that includes all stakeholders in the port area. Moreover, the existence of a simulator module in this community could give stakeholders a clear picture of the benefits of working together.

It is also very important to keep in mind that although PCS solutions make port activities more efficient, those who use them need to be trained on their functionality. Besides, it is necessary to consider the existence of periods of accommodation with the new PCS systems, the possibility of their adoption on other platforms or computer applications, as well as maintaining continuous communication between the parties involved in the maritime activity.

Thank you for your attention!
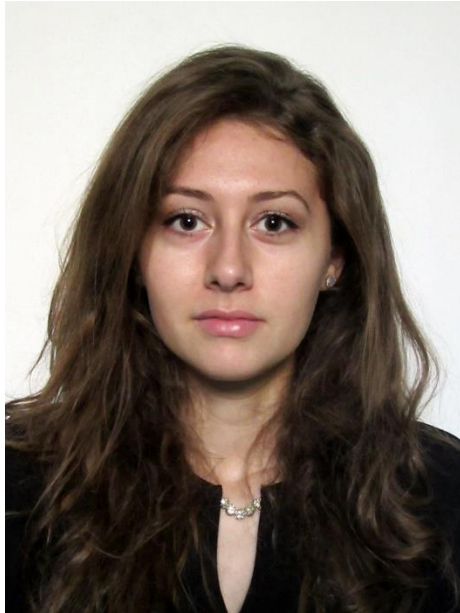
Andreea BARBU

- Assistant professor

- PhD student

Email: barbu.andreeab@yahoo.com

FACULTATEA DE ANTREPRENORIAT,
INGINERIA MANAGEMENTULUI ŞI AFACERILOR