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NATURE AND CHARACTERISTICS OF SHORT SEA SHIPPING

ОСОБЕННОСТИ СУДОХОДСТВА МАЛОГО ТОНАЖА

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В статті розглядаються особливості, переваги та фактори розвитку судноплавства малого тоннажу. Обґрунтовується необхідність цього виду судноплавства як особливої можливості залучення потоку товарів з усього світу. Проаналізовано його показники у найбільш розвинених портах, досліджено політику Єврокомісії щодо стимулювання активного розвитку судноплавства малого тоннажу.

Nowadays Short Sea Shipping (SSS) is strongly progressing and becoming an alternative to move cargo out of ports and closer to their final destinations in conditions of trade increases. The share of SSS in total maritime transport, however, varied widely from one country to another.

The Short Sea Shipping market is strongly diversified, due to the variety of cargoes, vessel types and capacity, and segmented due to the existence of many national and peripheral submarkets.

SSS places containers and other cargo onto barges and smaller vessels for the purpose of transporting them from larger import/export ports. It can be considered a most environmentally friendly mode of transport, in particular, because of its comparatively low external costs and high energy efficiency.

Defining SSS is not an easy task and often the definition varies from one study to another. Several differing definitions are found in the literature, which shows the complexity of the concept, thereby leading some authors to define SSS in terms of what it is not. This complexity was explained by Marlow et al.(1997) when they stated that SSS can embrace different ships, from conventional to innovative ones such as fast ships, with a variety of cargo handling techniques (horizontal, vertical or a mixture of both), ports, networks and information systems, which when studied from engineering, economics, logistics, business/marketing or regulatory viewpoints increase even further this complexity. How ever, this reflects the complex nature of the EU trade. Moreover, while many authors describe SSS as a tramp shipping activity mainly due to the role this mode has in the movement of dry and liquid bulk cargoes, even though many scheduled operations are being performed by small lift-on–lift-off (LO–LO) and roll-on–roll-off (RO–RO) ships, others go deeply into the subject and try to find more precise definitions. Consequently, four categories of ships have been identified. The description of these are found below. The traditional single-deck bulk carriers employed on a voyage basis are mainly engaged in the carriage of the neo-bulk cargoes, which embrace forest and steel/metal products, unless the vessel's construction is flexible enough to carry the traditional dry bulk cargoes. The next category is a fleet of container feeder vessels, that have been replacing the traditional general cargo vessels engaged in the movement of

break-bulk cargoes, which carry high value cargoes and provide a link for deep-sea container vessels employed in the transoceanic East– West and North–South bound voyages. These ships having a capacity of between 150 and 500 twenty-foot equivalent units (TEUs) operate under the schedule of the deep-sea vessels and are engaged in four broad regional areas, namely the Mediterranean Sea, the English Channel and Atlantic Coast, the Baltic Sea and other small feeder routes[2]. These represent a drawback in the delivery of dedicated transport services. The ferries engaged in SSS constitute the third category and are seen as an extension of road transport and even rail if they are prepared to take on board rail wagons, although this last option requires the commitment of high capital investment and can only be employed on routes whose terminals are prepared to receive such technology. These ships are capable of carrying both passengers and/or a whole range of cargoes that embraces palletised cargo, accompanied and unaccompanied trailers, semi-trailers, pallets, swapbodies, railway wagons, cassettes, project cargo and machinery. SSS operations in the Baltic Sea are a clear example of this. Finally, there is a fleet of bulk carriers and tankers, whose dimensions are less than 3000 deadweight (dwt) tonnes engaged in the pure and conventional dry and liquid bulk trades such as mineral oil products, chemicals, liquefied petroleum gas (LPG), coal, iron ore and grain.

The European Comission gave the following definition to SSS : the movement of cargo and passengers by sea between ports situated in geographical Europe or between those ports and ports situated in non-European countries having a coastline on the enclosed seas bordering Europe.

Short sea is a durable link in the transport chain. By short sea shipping the important traffic is created and if it present at the port suited for deep-sea traffic it offers a unique opportunity to attract goods flows from various locations worldwide.

Some short sea ship vessels are small enough to travel inland on inland waterways. Short sea shipping includes the movements of wet and dry bulk cargoes, containers and passengers around the coast. Typical ship sizes range from 1000dwt (tones deadweight – i.e. the amount of cargo they carry) to 15000dwt with drafts ranging from around 3m to 6m. Typical cargoes include grain, fertilizers, steel, coal, salt, stone, scrap and minerals (all in bulk), oil products (such as diesel oil, kerosene, aviation spirit - all in bulk), containers and passengers. Short sea shipping should not be mistaken with inland navigation.

Short Sea Shipping, generally, deals with the transport of goods between ports in the EU-27, Croatia and Norway on one hand, and ports situated in geographical Europe, on the Mediterranean and the Black Sea on the other, i.e. ports in EU-27 countries (Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden and the United Kingdom), candidate countries for membership in European Union (Montenegro, Croatia, Iceland and Turkey), European Economic Area countries (Iceland and Norway), Baltic (Russia), Mediterranean (Albania, Algeria, Bosnia–Herzegovina, Egypt, Israel, Lebanon, Libya, Morocco, Occupied Palestinian territory, Syria, and Tunisia) and Black Sea (Georgia, Moldova, Russia and Ukraine). The “other seaborne transport” includes “deep sea shipping” and transport with unidentified partner ports (“unknown ports”). According to the definition, SSS includes “feeder services”: a short sea network between ports in order for the freight to be

consolidated or redistributed to or from a deep sea service in one of these ports ("hub ports").

The shift of freight from road to sea and especially to SSS, a 'special mode of sea transport', is considered one of the major objectives of the common transport policy as witnessed by the many documents and press releases from the various European Union (EU) authorities. Despite these efforts, such a shift is far from being a reality. The pressure of multinationals in defining their logistics strategies to comply with their objectives of pull supply chains, which support economic growth and fierce competition, has demanded the use of efficient and effective transport modes/transport systems, often chosen at the expense of the quality of life and without regard for the social costs involved. Road transport is regarded as the mode that fulfils to a higher degree customers' requirements in terms of transit times, flexibility, reliability, frequency and cargo safety and is often the chosen mode. The latest statistical data released by EUROSTAT show that road transport still accounts for the biggest market share, both in terms of performance by mode and modal split; it is followed by intra-EU sea transport [5]. Give n this fact and taking into consideration the future growth of EU freight transport, which is expected to grow about 2% annually between 1997 and 2017 a careful analysis must be made of SSS as an alternative to road, with the aim of it becoming integrated in the multimodal/intermodal transport chains. An evaluation of SSS advantages and disadvantages in terms of delivering a market offering to its existing and potential users and viewed from the users' perspective must be made so that at a later stage of its strategic planning SSS operators can better identify their opportunities and threats and define their respective strategies/best practices accordingly. This will lead, firstly, to an effective and sustainable shift of freight from road to sea and, secondly, to a consolidation of this mode in the future transport systems that support the future supply chains. However, before this evaluation takes place a definition of SSS is presented so as to avoid misunderstandings on the subject.

The main advantages of SSS are:

1. Low infrastructure costs;
2. Alternative varieties of service (route);
3. Environmentally friendly low energy consumption;
4. Unlimited capacity usage;
5. Being much more secure in comparison to the other modes of transportation;
6. Fair pricing;
7. Lower jam rate;
8. Optimum duration in navigation, convenient transit duration.

The geographical advantage can have tremendous economic impacts as SSS can contribute to the integration, cohesion and economic development of the peripheral areas (and even beyond) of the EU. These economic impacts can also be extended to SSS companies. By offering services at lower freight rates due to inherent economies of scale and distance, these companies can employ and exploit an underused available capacity without immediately incurring high investment in additional vessels. Although shipping in general, and SSS in particular, are capital-intensive industries, which could to a certain extent be considered a weakness due to the volatile nature of the market and sometimes the difficulty of getting finance from financial institutions for new entrants into this

business, the fact is that this can be seen as a strength since it gives the shipping players already in the market a tremendous competitive advantage [1]. SSS players already possess the most expensive assets involved in intermodal freight transport and so have a good position to develop transport systems.

To this should be added the virtually unlimited capacity of the sea. This does not require costs to be incurred in the building of sea-lanes, although exception is made for any additional superstructure along the coast that may contribute to the safety of navigation and which may help the commercial exploitation of these broken transport chains, such as in the case of the vessel traffic management information systems. Consequently, and unless new ship technologies are introduced, port investments and port maintenance costs are low when compared with the ones required by road and rail infrastructure whose external costs are increasing considerably. The development of road and rail mode networks requires huge investments not only to build both the road surfaces and the railway lines but also additional tunnels and bridges whereas ports are the only land area or physical space required by SSS. Since SSS does not require a huge land take to function we can conclude that, in this regard, SSS is environmentally friendly although improvements will need to be made at ships' engine level and at the entry and exit of goods through ports to avoid bottlenecks and therefore friction costs. Using SSS as an alternative means of freight movement reduces not only the number of trucks also associated social costs, which cannot be removed/reduced unless huge investments in infrastructure are made at the expense of more social cost. The advantages of SSS can also be seen from an industry perspective.SSS can contribute towards the further development of the shipbuilding industry [3]. Additional advantages of using this mode are higher safety levels in the transport of dangerous cargoes which in itself is a good enough reason for removing the transport of dangerous goods from road, the possibility to carry large indivisible heavy unit loads, additional storage capacity, and it is one of the modes with underused capacity (the other one is the railway). Given the nature of maritime transport, the advantages of SSS can be said to fall into seven main groups: geographical advantages, financial advantages, knowledge/ skills-based/ human resources advantages, energy advantages, environmental advantages, underused capacity for expansion, and positive effects in ancillary activities thereby creating employment which supports the Communication of the European Commission on growth, competitiveness and employment.

Short sea is a growing branch of industry. Based on the information available, it has increased considerably from 1990 to 1997 (by 17% in tones and 23% in tone-kilometres), but the performance of road has increased even more (by around 26% in tone-kilometres). At the same time the tone-kilometre performance of inland waterway transport grew by 10% between 1990 and 1997, and rail had a negative growth of 7%. Since 1999 the volume of cargo has increased by more than 52% from 88.5 million tones to almost 135 million tones [4].

In 2009, short sea shipping of containers recorded an even stronger decrease (-15 %) in volume (TEUs) terms. This was accompanied by some rationalisation of the transport activity as the shipping of empty containers decreased by 17 %.

It was observed that:

- the port of Antwerp handled 84.1 million tones of short sea cargo in 2010 on a total volume of more than 178 million tones. Compared to 2009 that represented a growth of 12%. The port of Antwerp only just failed to reach the 2008 figures (-1,2%);

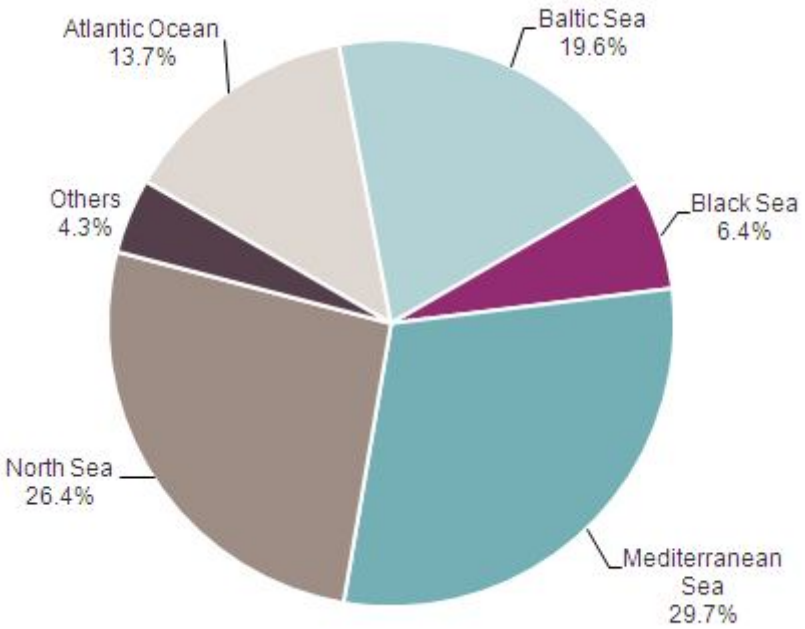
- the port of Ghent handled 15.7 million tones of short sea cargo in 2010 on a total volume of 27 million tones. In terms of percentage this amounted to the largest increase: 26.4% compared to 2009 and 12.9% vis-à-vis 2008;

- the port of Zeebrugge was also a big riser in 2010. The port realised a volume of 30.1 million tones of shortsea load on a total of 49.6 million tones, which amounts to a growth of 17.4% compared to 2009 and of 15.3% in relation to 2008;

- with 99,4% of the almost 5 million tones handled, the port of Ostend reached the highest percentage of shortsea traffic. However, due to a shift of the goods flow from Ostend to Zeebrugge, the former port has been unable to reach the 2009 figures. In 2009, EU-27 SSS totalled around 1.7 billion tones of freight. United Kingdom SSS came to 313 million tones of cargo, accounting for 15 % of total EU-27 SSS. It was followed by Italy (15 %) and the Netherlands (12 %).

The following sea regions have been taken into account to group the SSS partner ports: Baltic Sea; North Sea; Atlantic Ocean (including the English Channel and the Irish Sea); Mediterranean Sea; Black Sea.

The percentages shown in Figure 1 are calculated using as denominator the sum of the figures for sea regions at EU-27 level.



1. EU-27 SSS of goods by sea region of partner ports in 2009 (% based on gross weight of goods)

The European Commission has a strong promotion policy, supporting coordination centers for SSS. The Commission's programme describes legislative, technical and operational initiatives which are aimed at developing Short Sea Shipping at EU, national, regional and industry levels.

In addition, the establishment of a "European maritime transport space without barriers" should help to boost short sea services in all maritime regions. This concept would ensure a reduction of the administrative formalities, in particular customs formalities that apply today to the intra-EU seaborne trades and that do not apply to similar road transport services [6].

The main key factors for SSS development are: correlation and cooperation between ports; further development of inland waterways; improvements made in port services-port efficiency and costs. Opportunities in the development of the Short Sea Shipping are: global warming and the reinforcement of the environmentalist sensitivity; increase in the highway jams and casualties; reduction of costs in the global economies; international support to the Short Sea Shipping. But we have to mention also the threats in the development of the Short Sea Shipping, which are:

- Unknown by the vast majority of the market;
- Insufficient infrastructures at ports;
- Insufficient co-ordination with the other modes of transports;
- Bottlenecks experienced in the Customs procedures;
- Insufficient market infrastructure.

The main advantages promoted for this type of shipping are alleviation of congestion, decrease of air pollution, and overall cost savings to the shipper and a government. It is often cheaper than road and rail transport; reliable with guaranteed transit times; environmentally friendly and flexible in being able to move all types of cargo, e.g. containers, break bulk and rolling stock.

Shipping goods by ship (one 4000dwt vessel is equivalent to between 100-200 trucks) is far more efficient and cost-effective than road transport (though the goods, if bound inland, then have to delivered by truck) and is much less prone to theft and damage.

The latest statistical data released by EUROSTAT show that road transport still accounts for the biggest market share, both in terms of performance by mode and modal split; it is followed by intra-EU sea transport. Give n this fact and taking into consideration the future growth of EU freight transport, which is expected to grow about 2% annually between 1997 and 2017 a careful analysis must be made of SSS as an alternative to road, with the aim of it becoming integrated in the multimodal/intermodal transport chains.

An evaluation of SSS advantages and disadvantages in terms of delivering a market offering to its existing and potential users and viewed from the users' perspective must be made so that at a later stage of its strategic planning SSS operators can better identify their opportunities and threats and define their respective strategies/best practices accordingly. This will lead, firstly, to an effective and sustainable shift of freight from road to sea and, secondly, to a consolidation of this mode in the future transport systems that support the future supply chains.

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Аннотация

Судоходство малого тоннажа является прочным звеном в транспортной цепи. По средствам судоходства малого тоннажа созданы достаточно значимые объемы грузоперевозок и, следует отметить, что он предлагает уникальную возможность для привлечения грузопотоков из различных точек мира. Переход потока грузоперевозок с дорожного вида транспорта на морской, в особенности при использовании судоходства малого тоннажа считается одной из главных целей единой транспортной политики, что подтверждает многие документы и пресс-релизы различных органов власти Евросоюза.

Европейская комиссия предпринимает активные действия по поддержке судоходства малого тоннажа. Процент перевозок по средствам судоходства малого тоннажа в общем объеме морского транспорта варьируется в разных странах Евросоюза весьма значительно. Однако следует отметить значительный рост грузооборота в большинстве стран, достигнутый именно при условии использования данного вида транспорта.

Европейская Комиссия имеет сильную политику продвижения, поддержки координационных центров судоходства малого тоннажа. В программу Комиссии включены законодательные, технические и оперативные инициативы, которые направлены на развитие этого вида судоходства на уровне ЕС, национальном, региональном и отраслевом уровнях. Кроме того, создание "европейского пространства для морского транспорта без барьеров" должно способствовать расширению предоставления его услуг во всех морских регионах. Эта концепция обеспечит сокращение административных формальностей, в частности, таможенных формальностей.

Следует отметить, что роль судоходства малого тоннажа в достижении целей, поставленных Евросоюзом в транспортной политике, неимоверно важна. Данный вид судоходства в состоянии разрешить проблемы, связанные со сдерживанием прогнозируемого роста перевозок грузов автотранспортом, с

постоянными, характерными для Западной Европы заторами на дорогах. Главное преимущество этих перевозок по сравнению с автомобильным или железнодорожным транспортом - возможность транспортировать большие объемы грузов в щадящем окружающую среду режиме.

Основными преимуществами судоходства малого тоннажа являются: низкие затраты на инфраструктуру, альтернативные виды сервиса, экологически безвредный низкий уровень потребления энергии, неограниченное использование потенциала, безопасность в сравнении с другими видами транспорта, умеренная цена, низкий уровень перебоев в работе, оптимальная продолжительность в навигации, подходящая продолжительность транзита.

Судоходство малого тоннажа, как правило, используется в перевозках грузов между портами в странах ЕС-27, Хорватии и Норвегии, с одной стороны, и портами, расположенными в географической Европе, Средиземноморье и Черном море.

Ключевыми факторами развития данного вида транспорта являются: сотрудничество между портами; дальнейшее развитие внутренних водных путей; улучшение портовых услуг- эффективности и стоимости.

Учитывая специфику морского транспорта, преимущества судоходства малого тоннажа можно условно разделить на семь основных групп:

географические преимущества,
финансовые преимущества,
знания / умения / преимущества человеческих ресурсов,
энергетические преимущества,
экологические преимущества,
использование недогруженных производственных мощностей,
положительный эффект от вспомогательных видов деятельности.

Последние статистические данные, опубликованные Евростатом показывают, что на автомобильный вид транспорта по-прежнему приходится самый большой рынок акций, за ним следуют морской транспорт в пределах Евросоюза. Учитывая этот факт, и с учетом будущего роста грузовых перевозок ЕС, которые как ожидается, будут расти ежегодно примерно на 2% в период между 1997 и 2017 годами должен быть проведен тщательный анализ судоходства малого тоннажа как альтернативы дорожному, с целью интегрирования в мультимодальные / интермодальные транспортные цепочки.