



Ajuntament de
Barcelona



Barcelona
Activa

Maritime sector

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u-trans

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Presentation of the sector

The maritime sector brings together a range of little-known economic activities and sub-sectors, but has great potential for growth and job creation. Ports are the meeting point of cities with the global flows of passengers, goods and recreational activities that move within the maritime environment and attract a wide variety of job opportunities.

Traditionally, the maritime sector was considered to be only the transport and logistics part of the industry, which in itself made it difficult for it to be understood in all its potential and complexity. The maritime sector is visible in the ports of cities and metropolitan areas, where recreational boats and those transporting people or goods find the services they require. In recent years, however, the perception of the importance of the maritime sector has increased due to the increase in world trade by sea. Due to the fact that the city of Barcelona is a major international destination for tourist cruises and goods and also due to the fact that the port of Barcelona has managed to position itself as a global reference point in the provision of services to recreational boats in the nautical sports sector.

The maritime sector is large and with diffuse borders, which do not detract from its consistency, although it is often not seen as a powerful sector of economic activity for the whole population in general and for people seeking employment opportunities in particular. A wide range of activities are carried out, which can be grouped into the following main areas of activity:

- Trade of all kind of products in containers and liquid or bulk raw materials (soybean, salt, chemicals, gas, etc.).
- Fisheries, aquaculture and seafood processing industries.
- Nautical activity of leisure and recreation consisting of all types of boats and recreational craft, as well as the services they require.
- Tourist activity on cruise ships.
- Construction of ships and marine structures to obtain energy, such as oil or gas platforms.
- Maritime knowledge and research, including the study of the coastal impact of port infrastructures, applied technology at sea, the impact of human activity at sea and coastal dynamics, oceanography and marine sciences, the use of data to improve the productivity of companies in the sector, among others.
- Energy production by means of extraction (gas, oil) or the production of energy by wind power, in offshore installations (*offshore*)

The maritime sector also has an associated public sector, which includes the activity carried out by port regulatory authorities and customs, which are directly involved in the provision of port services and the execution of investments in infrastructure for the creation and improvement of port facilities. In addition, there are also certification companies for procedures in the provision of goods and services, as well as quality standards.

All these sub-sectors present great job opportunities, but not in a homogeneous manner. Thus, for example, the construction of large ships is irrelevant in Europe, as it is concentrated in South East Asia. In Barcelona and Catalonia, fishing and aquaculture do not form a maritime subsector that generates a large number of job opportunities. Likewise, the construction and operation of offshore platforms to obtain energy is not very relevant. On the other hand, freight transport the nautical subsector and tourist cruises offer significant employment opportunities in the Port of Barcelona and the rest of Catalonia.

It must be understood that it is in ports where marine traffic flows converge and that they are the point of demand and delivery of services that ships - with their cargo and passengers - require. It should also be noted that the principle that governs port activity is efficiency: ships arriving with goods want to unload as quickly as possible, load to the maximum of their capacity and start a new journey as soon as possible; the same applies to yachts, tourist cruises and all types of ships. This means that the majority of professional profiles in the marine sector work under pressure of excellence in service quality and cost minimisation, which defines highly demanding jobs that are often in unpredictable contexts that put even more pressure on professionals in the sector. The impact of digitisation and new technologies in favour of greater efficiency and process optimisation are short-term challenges that must also be highlighted.

Likewise, the tendency to make the ports of the metropolitan areas a citizen leisure environment continues, as in the case of the Port Vell in the city of Barcelona, which is consolidated as a shopping centre. It is also important to mention the importance of positioning oneself internationally in the market for the provision of quality services in the market for super long yachts and luxury yachts, as they have an impact on the local economy in terms of added value.

The sector in figures

In order to capture the importance of the maritime sector, it is necessary to resort to several sources that partially report on the importance and impact of its economic activity. Thus, the European Union which uses the term *blue economy*, estimates that the maritime sector in Europe represents 5.4 million jobs and generates a gross turnover of almost 500 billion Euros per year. In 2016, half of the goods transported within the European Union were transported by sea, while 53% of imports entered by sea and 48% of exports to third countries were by ship.

The country with the most developed maritime sector is China, since it concentrates 25% of the world's freight traffic and has 8 ports in the ranking of the 20 main ports in the world.

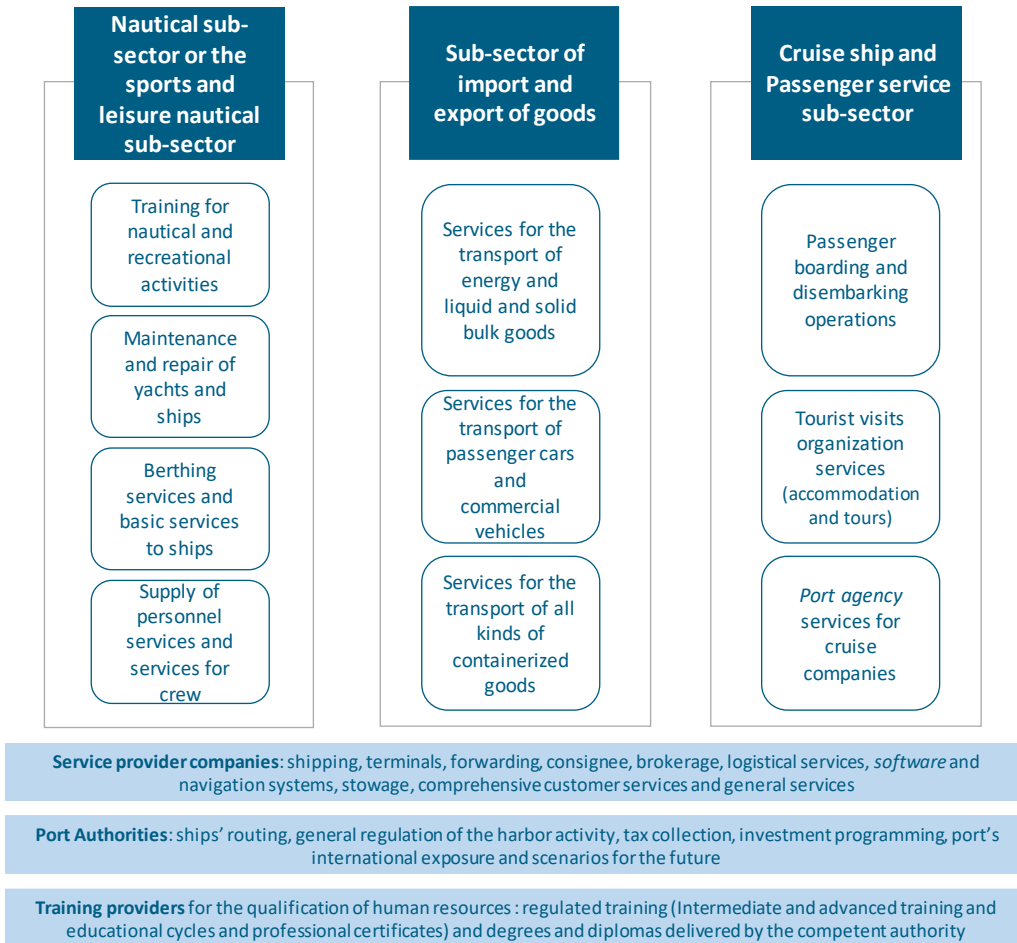
Ports are centres where flows of people and goods are concentrated (*hubs*, as in airport traffic) and therefore service delivery centres. The Port of Barcelona is one of the main engines of economic development in Catalonia and Spain. In 2016, it channelled 74% of Catalonia's maritime foreign trade and 26% of Spain's total. Specifically, the approximate value of foreign trade goods (not including cabotage) that transited through the Port in 2016 amounted to 54,781 million Euros. With regard to passenger traffic, in 2016 almost 4 million people passed through the Port of Barcelona (+6.7% compared to 2015), of which 1.2 million (+9% compared to 2015) made use of the regular *ferries* connecting to the Balearic Islands, Italy or North Africa, and more than 2.68 million cruise passengers (+5.8% compared to 2015). Barcelona is the leading cruise ship port in Europe and the Mediterranean and is the fourth largest cruise ship port in the world. Studies carried out by the Port of Barcelona show that there are approximately 32,544 workers involved in activities carried out in the Port.

According to the Presidency of the Port Authority in February 2018, the Port of Barcelona has an induced economic impact of 9,260 million Euros, the equivalent of 6% of the Catalan Gross Domestic Product.

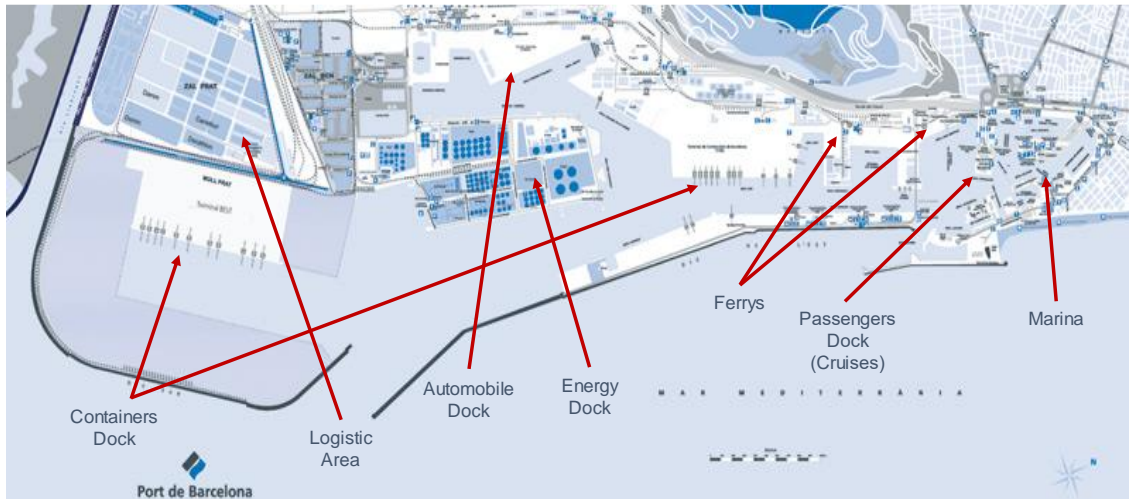
According to [the Lloyd's List ranking](#), in 2017 the Port of Barcelona ranked 74th among the top 100 world ports. In order of reference, Port Said (Egypt, at the entrance to the Suez Canal) is ranked 49th and London 66th.

Scope of activities

Graphically, the structure of the sub-sectors that make up the maritime sector and its functional support for the case of the city of Barcelona and the Catalan maritime sector has the following approach:



Graphically, the spatial location of the different sub-sectors of economic activity in the port of Barcelona is as follows:



The **nautical sub-sector** or the **sports and leisure nautical sub-sector** is present along the entire Catalan coast and in the Port of Barcelona it has a vital strategic importance. The **nautical sporting activities** include activities that are intended for learning and enjoyment of navigation by itself. There are many different types of boats and dinghies. They need services, such as parking for non-navigating periods and **mooring** when they arrive in port, from where they also need basic services such as food, fuel and electricity if they are en route.

The marinas are home to nautical clubs. In practice, a marina is similar to the international concept of a *marina*, understood as a place where all kinds of services are provided to ships including **maintenance and repair**. Marinas are places of employment opportunities and especially ship repair, maintenance and conversion activities require many different professional profiles. The importance of yachts, especially luxury and long yachts, should be mentioned here. The maintenance and repair of these ships requires personnel with highly specialised and qualified technical profiles, generating employment opportunities that are often difficult to fill. Additionally, the crews of these ships demand a wide **range of services during their stay**, when their yachts are in the marinas for maintenance operations or because they make a tourist stopover.

Nautical sub-sector or the sports and leisure nautical sub-sector

Training for nautical and recreational activities

Maintenance and repair of yachts and ships

Berthing services and basic services to ships

Supply of personnel services and services for crew

Sports and tourist activities aimed at citizens are also concentrated in marinas and harbours, which require qualified personnel to offer these recreational services. For these activities, the regulations require the professionalism of people, who must be in possession of the corresponding permits and certificates in order to be able to carry out their activity legally and safely, either in the professional sphere - working on behalf of another - or as a private user. It must also be said that in the marinas, equipment related to activities such as catering, shopping centres, office rentals, *coworkings*, etc. has been developed beyond the facilities for the repair and maintenance of ships, which can provide services both to the users of the marinas and to the general public.

The Port of Barcelona has made a commitment to positioning itself internationally as a destination for luxury yachts, offering itself as a centre for ship repair, maintenance and refurbishment (*shipyard*), as well as in the articulation of customer service with a range of general - and especially tourist - quality services.

In relation to the **subsector of import and export of goods**, its general operation is as follows. Goods of all kinds travel by sea: from powdered food products to liquefied gas to a wide range of products manufactured in containers. These products come in large ships adapted to the type of cargo they transport and when they arrive at their destination port they must unload or load with the maximum speed and safety in the corresponding terminal, given that the loading and unloading terminals are technically adapted to one or the other type of merchandise.

In a simplified way, a freight forwarder is hired to send goods and is contacted by a shipping company that actually transports the goods. Support in the management of the ship's cargo is provided by the consignee company, especially to the port authorities and to the managing companies of the loading and unloading terminal, which use the stevedoring companies to provide themselves with the specific personnel who handle part of the loading or unloading process of the goods. Finally, distribution companies are hired to deliver the goods to their destination. It can be said that the current trend, due in large part to the process of business integration, is for the same company to offer the maximum number of services that make up the value chain of this maritime subsector. Therefore, the



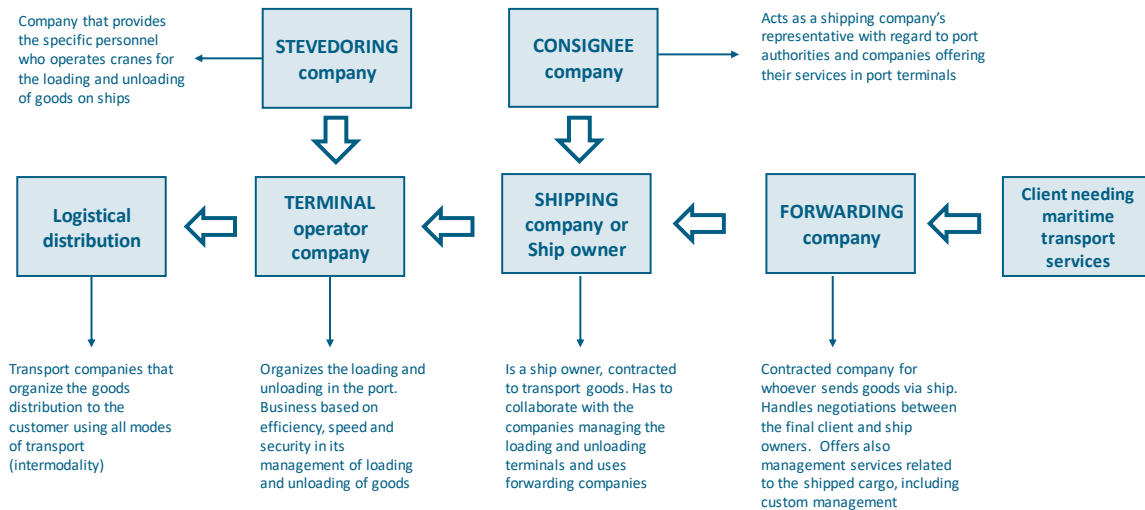
Sub-sector of
import and
export of goods

Services for the
transport of
energy and
liquid and solid
bulk goods

Services for the
transport of
passenger cars
and
commercial
vehicles

Services for the
transport of all
kinds of
containerized
goods

reality is more complex than the one expressed in the graph, since the same company can perform more than one function.



Under the name of **services for the transport of energy and liquid as well as solid bulk goods**, goods that can be considered as raw materials (especially chemical products and hydrocarbons) are collected. In the case of the Port of Barcelona, they concentrate on the so-called Energy Quay, where the terminal is equipped with specific loading and unloading systems adapted to achieve maximum efficiency and safety.

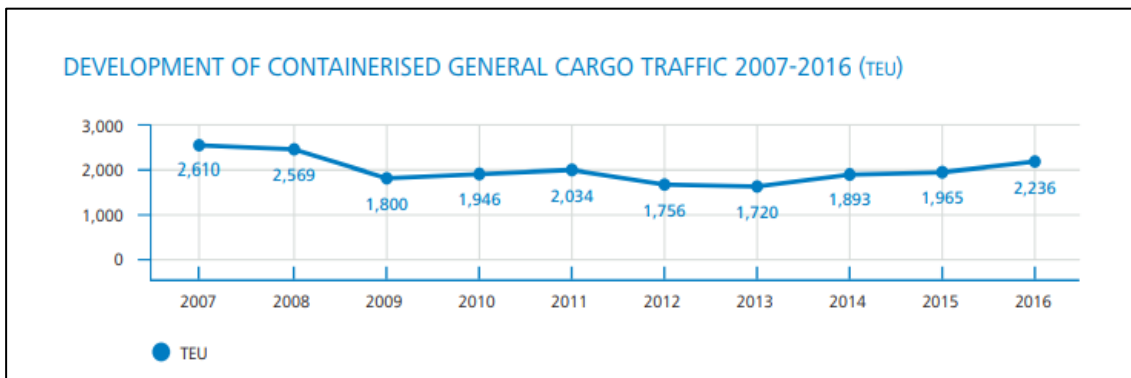
A distinction must be made between solid and liquid bulks. The former include cement, clinker (the main component of Portland cement or concrete), cereals, flour, feed and fodder for animal feed, as well as soya beans for the food industry and potatoes. In 2016, 4.4 million tonnes of bulk solids were channelled through the port. Liquid bulks include mainly hydrocarbons (diesel, biofuels) and in 2016, 11.4 million tonnes were moved in the specialised terminals of the Port of Barcelona.

The **import and export of vehicles** is another of the fundamental activities of the maritime sector and has a more than notable representation in the Port of Barcelona. In recent years, new record figures have been recorded in the movement of vehicles, which reached 916,834 units in 2016, an increase of 4% with respect to the previous year. Thus, exports represent the main volume of total units transported with a total of 641,215 cars loaded. Imports of vehicles have a lower share of total traffic, with 275,661 units in 2016.

With these figures, the Port of Barcelona has consolidated its position as the main vehicle distribution *hub* in the Mediterranean and southern Europe. Vehicle export destinations are increasingly diversified and include distant markets such as South Korea and Mexico (the most dynamic), as well as Turkey and Israel. Within Europe, the main destinations for car exports are Italy, the United Kingdom, Germany, the Netherlands and Norway.

Containerised cargo traffic is growing strongly globally and the Catalan maritime sector is not left out. For example, the movement of containers in the Port of Barcelona increased by 14.5 per cent in 2016 compared to the previous year, reaching 2.2 million TEUs¹.

The import and export of containerized goods is a good indicator of the dynamism of the local business fabric and its degree of openness at the international level. The



trends observed in recent years show a change in the composition of foreign trade that channels the Catalan infrastructure. In 2008, imports accounted for 54% of foreign trade and exports for 46%, whereas today this ratio has been reversed: 44% of containers are imported and 56% are exported. By market, trade with China grew by 23.2% and there was also a positive evolution in both imports and exports with Brazil, Morocco, Mexico, Japan and India.

Source: *The Port of Barcelona, 2016 Annual Report*

¹ Twenty-foot Equivalent Unit: Unit of measure for freight capacity. It is equivalent to a standard container 6,096 meters long by 2,438 meters wide by 2,591 meters high with an internal volume of 32.8 m³ and a maximum load weight of 30,480 kg (of which 27,780 kg are payloads).

In relation to the **cruise ship and passenger services sub-sector**, the direct and visible impact it generates on the city and the territory that hosts it should be highlighted. Basically, it is a tourist phenomenon that has multiple repercussions on the city and the territory, but with an undeniable economic impact.

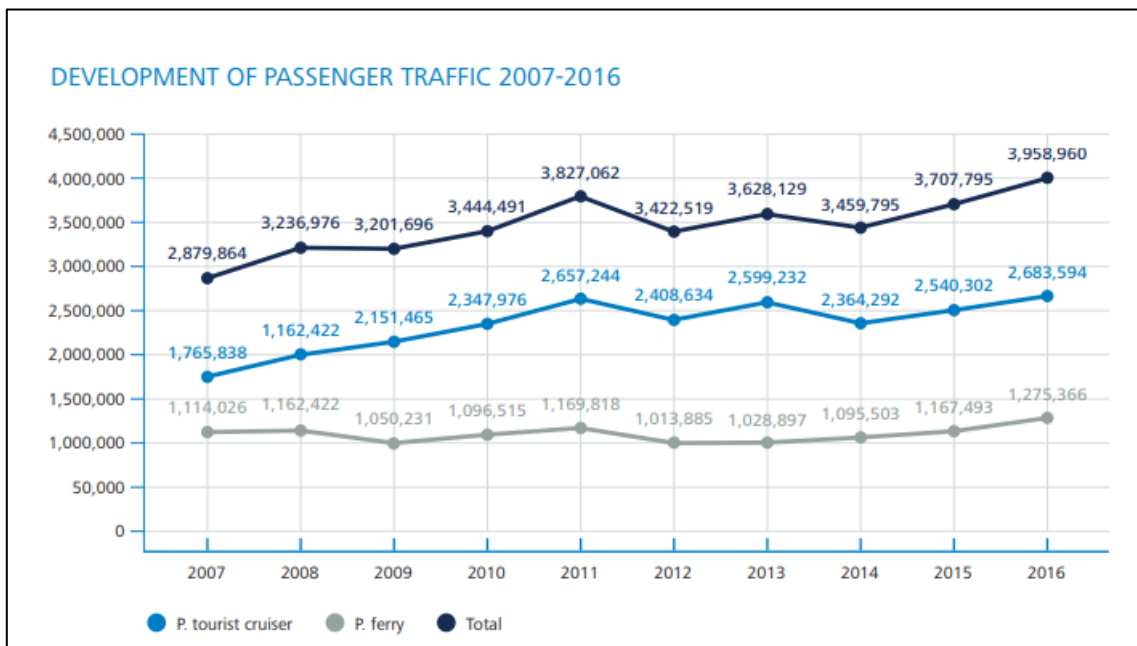
Along the Catalan coast, in recent years, the **movement of passengers** travelling for tourism and recreation has experienced strong increases. Thus, during 2016, almost 4 million people passed through the Port of Barcelona, of which 1.27 million were regular *line ferry* users connecting to the Balearic Islands, Italy or North Africa (short sea *shipping*), and more than 2.68 million did so on cruise ships.

According to the Port of Barcelona², the increase in cruise ships has been driven by the confidence of the sector in the port of Barcelona and by the commitment of the main shipping companies to position themselves with more ships and the largest operators in the Mediterranean. The number of cruise passengers who start and/or end their cruise in the Catalan capital and, therefore, make a greater contribution to the economy of the area, has increased the most: 12% compared to the previous year. Between January and December 2016, the Port of Barcelona received a total of 758 cruise calls.

The cruise ship sub-sector operates with a structure similar to the one shown on [page 7](#). Shipping companies that welcome tourists to their ships to start a cruise must hire other companies to organize the itineraries, the reception of tourists to the ports of the cities visited where some of the passengers embark and disembark. The organization of tourist visits, the provisioning of ships en route, the care of crews when they go ashore and the administrative management of all legal issues affecting this activity, among others. As a result, within the cruise ship subsector, a network of specialised companies has been developed to generate both higher and lower-skilled employment opportunities.



² [Port of Barcelona Annual Report, 2016](#)



Source: The Port of Barcelona, 2016 Annual Report

Professional Profiles

The growth of the maritime sector makes it a clear sector of economic activity generating employment. It can be said that the maritime sector has always been a visible sector, but for various reasons it has not been a visible sector. In this sense, the fact that cities are largely unaware of their port areas and the professional activities they carry out has contributed to this, and there is a certain distance between them that no longer makes sense. In addition, traditional maritime activities had been linked to certain professional profiles considered to be of low professional qualification (fishing, stevedoring, sailors, etc.) that did not help to visualize the full potential of the maritime sector for the whole of the population.

Today, the maritime sector is a leader in innovation and generates jobs of any professional qualification and quality. It is true that work in the maritime sector is demanding and has a clear vocational component, because there are conditioning factors such as the pressure and urgency with which one works in the loading and unloading terminals of goods or when embarking on a ship that will remain weeks or months at sea that define this requirement. Among the positive factors, on the other

hand, it is worth mentioning that the diversity of jobs where job opportunities are found is more than considerable and that the economic rewards are higher than the wages paid for similar jobs on land.

Examples of professional profiles currently in demand:

<p>Maintenance of recreational boats</p>	<p>There is a great need to find personnel for the maintenance, refurbishment and repair of recreational boats and especially yachts and mega yachts that arrive at the Port of Barcelona and also the marinas along the Catalan coast and that also offer maintenance and repair services. Professions such as those related to the painting of boats, carpentry specialists, technical personnel for general maintenance of boats, specialists in welding and electrical systems, among others. In these trades it is necessary to know in depth the techniques and the standards of quality and safety, which can vary in relation to the exercise of these trades on ground.</p>
<p>Nautical sub-sector</p>	<p>It is creating clear opportunities for all levels of professional qualification, ranging from the provision of basic services to marine client vessels (mooring, management of basic supplies) to more specialised services such as the maintenance and repair (repair & refit) of yachts and recreational boats. Therefore, they require on-the-job personnel, professionals with engineering qualifications who can manage repair and maintenance operations, as well as personnel trained in the tourism and trade sector to meet the legal and leisure service demands of ship crews. The nautical sub-sector also requires qualified professionals to provide training in sailing for recreational/sports purposes.</p>
<p>Crew of recreational boats</p>	<p>The professional profiles demanded are those who are linked to those responsible for the navigation of the boats, sailors on deck, the kitchen on the yacht and also yacht waiters. The conditions in which these vessels are used are usually very demanding, but, consequently, the wages are high.</p>
<p>Marinas and yacht harbours</p>	

	<p>They are located along the coast and there are job opportunities at almost every professional level, from the management of the marina to the technical service personnel offered to the ships and maintenance. The marinas are service companies that offer professional services to ships stationed or in transit and where the nautical clubs are based, which act as facilitators of the sporting activity and citizens of the maritime facilities.</p>
Crew of merchant and passenger ships	<p>The professional profiles in demand are more traditional and range from the ship's captain to the deckhand to the engineer and telecommunications officer.</p>
Cruise ship crew	<p>The range of job opportunities is truly considerable, given that the large ships dedicated to international tourist maritime routes are real floating cities with all the services to make your stay pleasant. Thus, the main job opportunities are focused on the professional profiles of waiters, chefs, tourist entertainment services, cleaning staff and health services.</p>
Facilitators of maritime traffic	<p>They help to overcome the transaction costs as well as the legal and bureaucratic issues involved in the international traffic of people and goods, highlighting the professional profiles of freight forwarders and consignees.</p>
Cargo Terminals	<p>It is one of the areas of the maritime sector where innovation is most present, precisely because of the pressure generated by maritime traffic to work with maximum safety and at the same time with maximum efficiency while reducing loading and unloading time. Of particular note are the professional profiles of automation and process robotics technicians as well as the logistics technician of the terminal, among other more traditional ones such as longshoremen.</p>
Passenger Terminals	<p>Most of them channel the traffic of tourists arriving in the cities, offering opportunities in professional profiles such</p>

	as passenger embarkation and disembarkation services, the organization and management of tourist services and customer service.
Professional Profiles cross-cutting	For example, the scientist and technologist as well as the sailor, who can provide more strategic solutions to environmental, technological and logistical challenges of any kind faced by the actors in the maritime sector.

In all these occupations, a high level of proficiency in English and vocation is required to respond to the often-demanding working conditions.

Scenarios for the future

Maritime activity does not seem to have been affected by the global economic crisis, even the cruise industry has increased its economic impact in Europe. The future projection of the sector in the transport of both passengers and goods depends on the extraordinary increase in the size of ships. In Spain, in the area of port services, the beginning of the process of liberalisation of the services offered by the ports and the consolidation of the fourth generation ports is noteworthy. With regard to the latter, they are true logistical platforms with security and communications at the highest technological level, the one in Singapore is - according to experts - the model to be followed.

The main trend in the maritime sector is the emphasis on excellence in the freight and passenger transport chain, i.e. on reducing transport times and overall costs by optimising the space available within ships: a ship must choose the shortest route according to the destinations where it must deliver the goods and when it reaches port it must unload with the minimum possible time and maximum safety, reloading new goods to optimise the space available inside the ship. The pressure towards this efficiency will in the coming years mark the way of working and the professional qualifications of the workers in the sector and the professional profiles that the sector demands.

The innovation derived from information technologies (IT) is very present in the maritime sector and especially in the ports. Digital information management is key to reducing costs and positioning itself as a competitive port in the global market,

the so-called smart ports. On the other hand, ports often confined within the built space of the city and the sea, suffer great limitations to grow in size and, therefore, can only grow using the available space with maximum efficiency, which is only possible through the intensive use of IT. This trend will create new job opportunities in the future, both for the management of goods and for the management of moorings in the marinas of recreational boats, as well as in the management of the logistical processes that are developed in a port.

Weakness



Two aspects define and characterise the maritime sector or blue economy, and may jeopardise its development in the short term, because they are real shortcomings that lead to difficulties in the day-to-day life of companies:

Working in the maritime sector requires commitment and dedication, so it is essential to have a vocational component, which is difficult to achieve if the sector and its jobs are little known to the public. In general, in any of the sub-sectors that make up the marine sector, there are difficulties in filling the available jobs due to both the lack of professional qualifications specialized in the sector and the demanding working conditions in which they normally work.

Proficiency in English, with an advanced level of fluency, is a prerequisite for access to any job. The maritime sector is completely internationalised and the working language is English, whether it is to work on a cruise ship serving the public, repairing the electrical system of a yacht or interpreting the loading and unloading plan in a terminal for a merchant ship.

On the other hand, the maritime sector faces significant environmental challenges that may jeopardise its future development. These include the use of clean fuels and the emission of greenhouse gases; the existence of heavy metals and other pollutants in ports; the impact of port infrastructure on the dynamics of coastal areas; and the cleaning of the tanks of large transport vessels at sea and the unconscious transfer of marine species from filling and emptying unladen containers with sea water to ensure the stability of the vessels transporting them.

Opportunities



In the maritime sector, job opportunities are real both for people with a basic level of training and professional qualifications and for jobs that require years of training and high qualifications, such as being a ship's captain.

On the other hand, in the maritime sector, there are quite a few possibilities for "marinating" trades that traditionally come from the field of industrial maintenance. Thus, people with specialties such as boilermaking, welding, painting, polishing, electricity or carpentry, among others, may have an opportunity in the maritime sector if they meet the relevant professional retraining to adapt to the specific needs of the sector. In addition, the wages paid in this sector are higher than their counterparts paid in other sectors (the emblematic example is that a cook on a ship earns two or three times the wages of a cook on land).

Threats



The maritime sector is not free from the threats arising from technological change and the development of artificial intelligence, which are reflected in the automation of ship navigation processes and the loading and unloading of goods. Today, as foreseen in the so-called 4.0 industry or in the automatic driving of private vehicles, many jobs can be affected by automation and digitisation. Therefore, companies, organisations and people working at sea must know how to combine increases in the efficiency of production and service delivery processes with the generation of new job opportunities through professional qualifications.

Strengths



World trade takes place at sea at a very high percentage and the increases in its flows will also occur largely by sea since it is a more efficient distribution system than land transportation of goods. The passenger transport sub-sector, both for cruise ship tourism and regular passenger lines, has also been expanding and consolidating in recent decades and will continue to be a source of employment opportunities.

In relation to the nautical sub-sector, the growth has also been spectacular in recent years, both in the field of leisure and in the (*repair & refit*) of all types of boats. The general population is having greater access to the world of sailing, which has an impact on the services to be provided (training, leisure activities, moorings, boat rental, maintenance and repair, supplies, among others) to marinas and yacht clubs. Special mention should be made of the so-called mega yachts, large luxury recreational boats that require demanding services when they arrive at the port, with the Port of Barcelona being a world reference.

Sources consulted

The main sources consulted were the documents of the Annual Report of the Port of Barcelona and those of professional associations and international regulatory bodies in the maritime sector:

- ✓ [Port of Barcelona](#)
- ✓ [International Chamber of Shipping. Annual Review. 2017](#)
- ✓ [International Maritime Organization](#)
- ✓ [Traffic statistics of the Port of Barcelona - October 2017](#)
- ✓ [The Government Ports](#)
- ✓ [Public State Employment Service](#)
- ✓ [Short sea Congress](#)
- ✓ [International Association of Maritime Safety](#)
- ✓ [World Association of Port Cities](#)
- ✓ [CEOE Memorandum Business sectors related to the sea in Spain](#)

Complementary Web Design Sector

In the maritime sector, there are knowledge generating centres and other types of associations that provide access to complementary information but allow us to deepen our knowledge of the sector:

- ✓ [Port Economics](#)
- ✓ [Maritime affairs: Blue Growth \(UE\)](#)
- ✓ [Association of International Forwarding Agents of Barcelona \(ATEIA\)](#)
- ✓ [Barcelona International Boat Show](#)
- ✓ [Spanish Association of Maritime Law](#)
- ✓ [Naval Engineering and Maritime Industry Congress](#)
- ✓ [World Society of Ships](#)
- ✓ [Mediterranean Cruise Ports Association](#)
- ✓ [Green Port](#)
- ✓ [The Transport and Logistics portal](#)