

**OBS-Workbook 59**

**Thorsten Ludwig, Florian Smets, Jochen Tholen**

# **Shipbuilding in Europe**

**– Panel Study 2008 –**

**Study on behalf of Otto Brenner Foundation,  
Hans-Böckler-Foundation and Community of European  
Shipyards' Associations (CESA)**

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## Preface

Shipbuilding in Europe will be only appropriate classified by the given background of recent developments in the worldwide shipbuilding. The shipbuilding industry is determined by a global competition, which will be intensified by the current economic downturn. At the moment we can see two processes meeting and combining into a negative dynamic:

- Due to the launching of new yards worldwide, but especially in China, the overcapacity in the global shipbuilding market is expected by 2012 (esp. in the segment of box ships) independent of the current economic crisis, and
- this deep crisis has led to a dramatic collapse in sea borne trade. That means from the end of 2008 many new orders for shipbuilding have been cancelled or delayed. Furthermore many finalized ships have not been put to service.

The dramatic consequences of this economic crisis cannot be considered by this report. The Institute Labour and Economy (IAW) of Bremen University/Germany launched a census study of European Shipbuilding Industry in 2004. In 2007 the IAW was asked to organize a panel study to find out the changes compared with 2004. The first findings of this panel study were presented within the European Maritime Week in April 2008 in Brussels to a forum of EU Commissioners and actors of the European Shipbuilding Industry (associations and unions, yards and other experts). Now the Otto Brenner Foundation (OBS) is publishing the results of the study.

Frankfurt/Main, June 2009



Jupp Legrand



Wolf Jürgen Röder

Directors  
of the Otto Brenner Foundation



|  |           |
|--|-----------|
| <b>Preface</b> .....   | <b>1</b>  |
| <b>1. Introduction</b> .....   | <b>4</b>  |
| <b>2. Recent developments in shipbuilding</b> .....                      | <b>4</b>  |
| 2.1. The global shipbuilding market .....                                | 4         |
| 2.2. Europe: Some highlights in 2007/2008 .....                          | 7         |
| <b>3. Results of the survey in 2008 compared with 2004</b> .....         | <b>10</b> |
| 3.1. Cooperation in European shipbuilding industry .....                 | 12        |
| 3.2. Initiatives of the shipbuilding industry .....                      | 14        |
| 3.3. Recruitment and qualification of the workforce .....                | 17        |
| 3.4. Income, costs and working time .....                                | 20        |
| 3.5. Image of the shipbuilding industry .....                            | 22        |
| <b>4. Conclusions: Elements of an European shipbuilding policy</b> ..... | <b>24</b> |
| <b>5. Addition</b> .....   | <b>28</b> |
| 5.1. References .....  | 28        |
| 5.2. Index of figures .....  | 29        |
| 5.3. The Authors .....   | 30        |

## 1. Introduction

Shipbuilding and sea-borne trade are basic fields of the maritime sector and will be essential in the future. Today the European shipbuilding industry is a high-tech industry including key technologies like electronic, materials and power technologies.

But the shipbuilding industry is a global and highly competitive market. The shipbuilding sector in Europe as one key element of the maritime cluster has lost market share from 1970 to 2003, attacked by the shipbuilding industries of Japan, South Korea and China. But for the last years the demand of nearly all types of ships has increased enormously. As a consequence, the world shipbuilding market reached its record high in 2007 and the demand during the first two quarters of 2008 was still strong<sup>3</sup>. The reason for this development is the growing world economy in general and the huge increase in global sea-borne trade in particular. The process of globalisation fosters a proceeding international division of labour. More than 90 per cent of the foreign trade and about 40 per cent of the domestic trade within the EU are carried by seagoing vessels. As cargo turnover is rising from year to year, the merchant shipping and for this reason the shipbuilding market is permanently increasing.

This report is a quantitative evaluation of the European shipbuilding industry just before the beginning of the current global recession with its consequences for the shipbuilding industry as well. Insofar the dramatic consequences of this economic crisis cannot be considered by this report.

In our empirical survey (end of 2007/beginning of 2008) we have asked the European shipyards for the types of ships in production, the share of production, order books, number of employees, working time, gross income and labour costs, recruiting and qualification, the image of shipbuilding industry, the European Initiative LeaderSHIP 2015 and cooperation. It is a panel study and based on the comprehensive questioning of all European shipyards (census) in 2004 (Tholen, Ludwig 2006).

Thank you to all those who have contributed to the success of this study: The three sponsors – Otto Brenner Foundation, Hans-Böckler-Foundation and CESA (Community of European Shipyard's Associations –, the EMF, the EU Commission (GD Employment and Social Affairs), the EU Social Dialogue Shipbuilding Committee, the national Shipbuilder Associations and the trade unions in the 14 European countries, and – last but not least – the yards and the yards' union representatives/works councils.

## 2. Recent developments in shipbuilding

The last five years (2003–2008) were a remarkable time for the world shipbuilding market. But anticipating the future is complicated because nobody knows precisely how long the current economic recession will last. This chapter gives an overview of the recent developments in the world shipbuilding sector and discusses influences which affect European shipbuilding industry.

### 2.1. The global shipbuilding market

In the first months of 2007 the majority of analysts was of the opinion, that the demand for new ships of the record year 2006 could not be exceeded. But the results shown in figure 2.1 point out that the world shipbuilding market has been increasing for the last five years. Especially the demand for new ships in 2007 was enormous. Basing on new compensated gross tonnes (cgt), 97 mill. cgt were ordered in 2007. This is 57.5 per cent more than in the pre-

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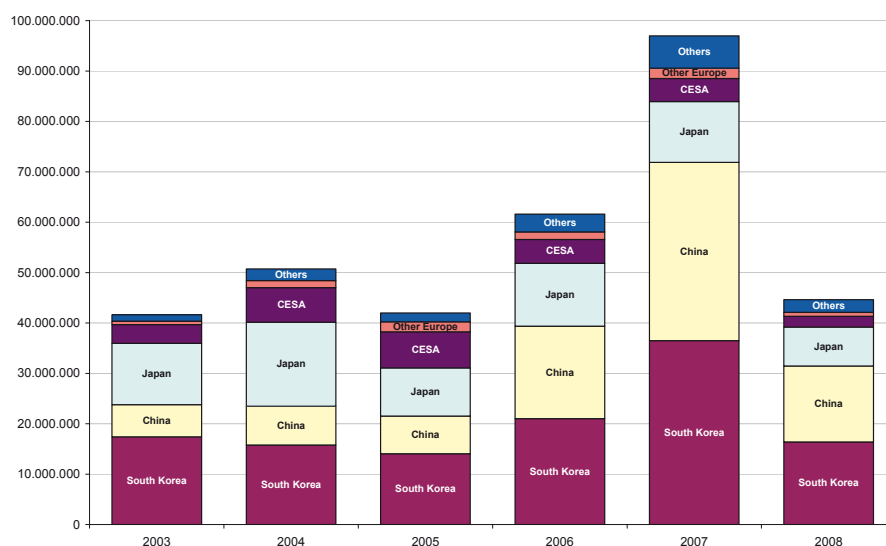
<sup>3</sup> We cannot consider the market developments in 2009, as the empirical work has been done between December 2007 and February 2008 on the basis of the then existing order books.

vious record year 2006 (61.6 mill. cgt), more than four times of the new orders of the year 2002 (22.3 mill. cgt) as the then absolute low of new orders, and roughly 2.5 half times more than in 2003 (the first year of the shipbuilding boom). But in 2008 the new orders nearly halved compared with 2007.

The shipbuilding market is a global market dominated by a few countries: South Korea, China and Japan are still the most important players. But the European shipbuilding industry is competitive especially in high-quality market segments. The importance of the Chinese shipbuilding industry dominates the international discussions. But there are other countries, like Vietnam, Brazil, the Philippines, Turkey and Russia which made huge investments in their shipbuilding facilities too (Tholen, Ludwig, Smets 2008, 212; Ludwig, Bade 2007). In result, the share of the “Others” has been continuously increasing from 2003 to 2007.

The winner of the global competition till 2008 is the shipbuilding industry of South Korea and especially of China. It seems that China will soon implement the aim to become the world’s biggest shipbuilding nation.

Figure 2.1: New orders in world shipbuilding market from 2003 to 2008 by regions in cgt (new compensated gross ton system);

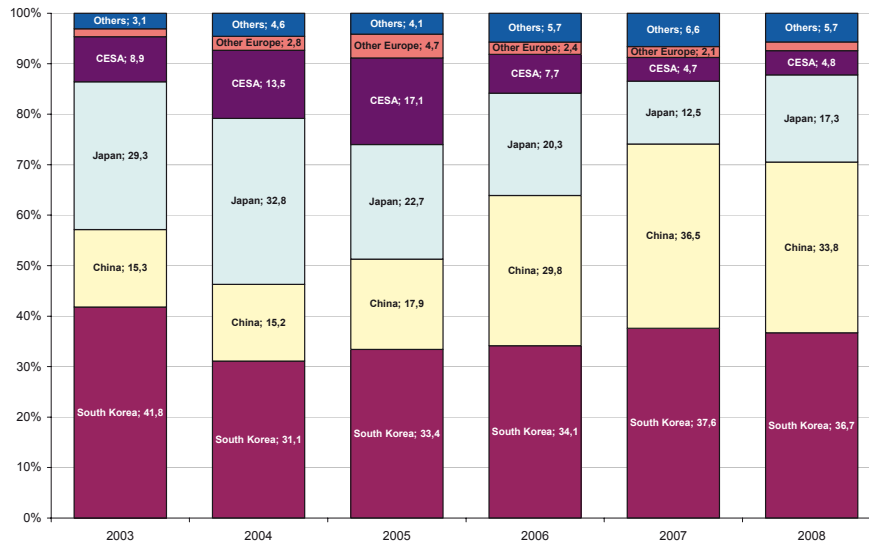


Source: ISL based on LR-Fairplay

In 2003 Chinese shipyards made acquisitions within the size of 6.38 mill. cgt. In the year 2007 the new orders covered 35.4 mill. cgt. This huge boost makes China the second biggest shipbuilding nation. In 2007 the Chinese shipbuilding industry held a market share of 36.5 per cent of new orders, as shown in figure 2.2. However, the most important shipbuilding nation still is South Korea. The size of new orders in the year 2007 covered 36.5 mill. cgt and a market share of 37.6 per cent. The detailed analysis shows that new orders of the South Korean shipbuilding industry increased from 2006 to 2007 by 73.4 per cent. Even in 2008 with its sharp drop of new orders world wide the ranking kept the same (with 36,7 per cent for South Korea and 33,8 per cent for China).

Although the new building orders for Japanese and European shipyards increased between 2003 and 2007, their respective market shares declined. Japanese shipyards acquired new orders of 12.2 mill. cgt (market share 29.3 per cent) in 2003. In 2007 they were able to acquire similar orders for new ships (12.1 mill. cgt) but the market share went down to 12.5 per cent, in 2008 it increased to 17.3 per cent.

Figure 2.2: Market shares (New orders) in world shipbuilding from 2003 to 2008 by regions in per cent, based on cgt (new compensated gross ton system);



Source: ISL based on LR-Fairplay

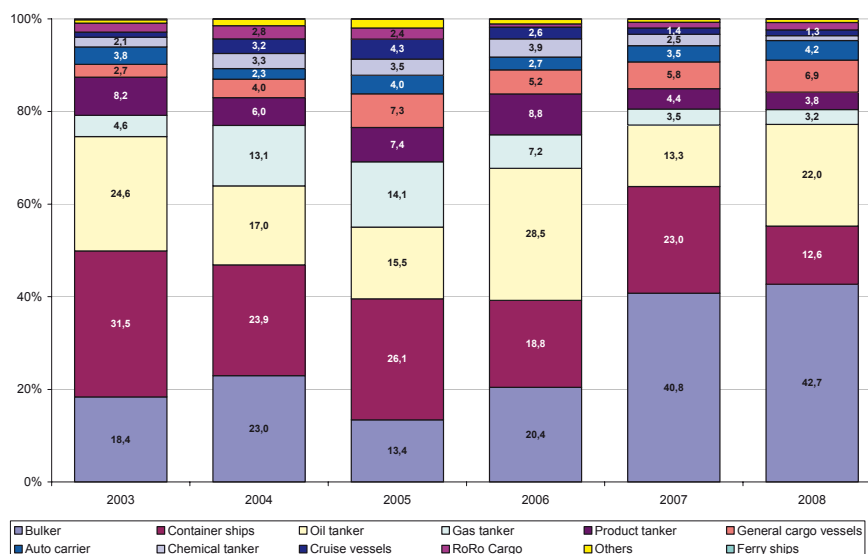
The similar trend could be seen in Europe: In 2003 CESA-shipyards got new orders of 3.7 mill. cgt and in 2007 4.6 mill. cgt, but CESA's market share dropped from 8.9 per cent to 4.7 per cent and remained in 2008 with 4.8 per cent on the same level. But in contrast to the Japanese shipbuilding industry due to a record high of new orders in 2005 (7.2 mill. cgt) CESA's market share increased up to 17.1 per cent in 2005.

The decreasing shares of the shipbuilding industry in Japan and Europe and the faltering development in South Korea were not caused by declining orders (with the exception of 2008) but due to the vibrant development of the Chinese shipbuilding industry. The decreasing shares of European shipyards (CESA) from 2005 till 2007 were not an expression for an upcoming crisis of the European shipbuilding industry yet. Furthermore, the majority of European shipyards are specialised in upscaled market sectors, like mega yachts, ro-ro-cargo ships, cruisers and other specialised vessels.

Concerning the demand for different types of ships it becomes clear that the shipping market is a volatile market (see figure 2.3). The demand for oil tankers was huge in 2006 (28.5 per cent of all orders, 17.6 mill. cgt of 61.6 mill. cgt), whereas the year 2007 was "the year of the bulker": About 40.8 per cent of all ordered ships (39.5 mill. cgt of 97.0 mill. cgt) were bulk carriers. In 2007 almost 23.0 per cent of the new orders were containerships and 13.3 per cent were oil tankers. Most of these „ordinary“ ships were produced in Asia because the price is the crucial factor for that market segment. The skills of the majority of the European shipyards are mostly concentrated on the production of high-tech ships with a high added value. The new compensated gross ton system tries to represent the share of these types of ships the usage of the value.



Figure 2.3: New orders by types of ships 2003–2008 in per cent, based on cgt (new compensated gross ton system);



Source: ISL based on LR-Fairplay

As already mentioned, in 2008 the number of new orders halved. But not all types of ships were concerned in the same way: Especially the market shares for container vessels dropped from 23.0 per cent in 2007 to 12.6 per cent in 2008.

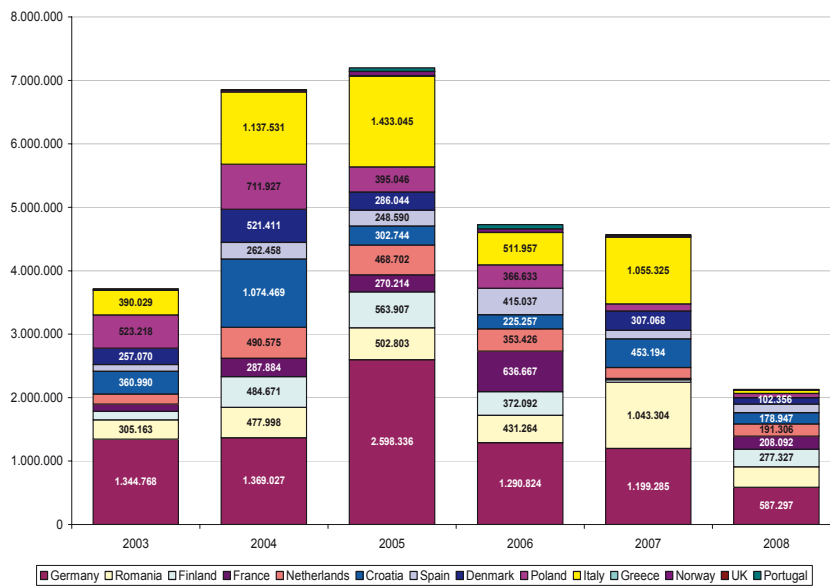
## 2.2. Europe: Some highlights in 2007/2008

### New orders from 2003 to 2008

In 2007 European shipyards (CESA) acquired new building contracts of 4.6 mill. cgt. more compared with 3.7 mill. cgt in 2003, but not as much as in the previous years 2006 with 4.7 mill. cgt and the record year 2005 with 7.2 mill. cgt.

The volume of new orders for European shipyards (CESA) differs from year to year. But taking into consideration the years 2003 to 2007, Romania seems to become a more and more important player in the European shipbuilding industry. In 2007 Romanian shipyards acquired new orders with a volume of 1.0 mill. cgt. Just the shipyards of Germany and Italy acquired more new orders. The volume of the new orders of Italian shipyards covered about 1.1 mill. cgt and the German shipbuilding industry was able to acquire 1.2 mill. cgt (all in 2007).

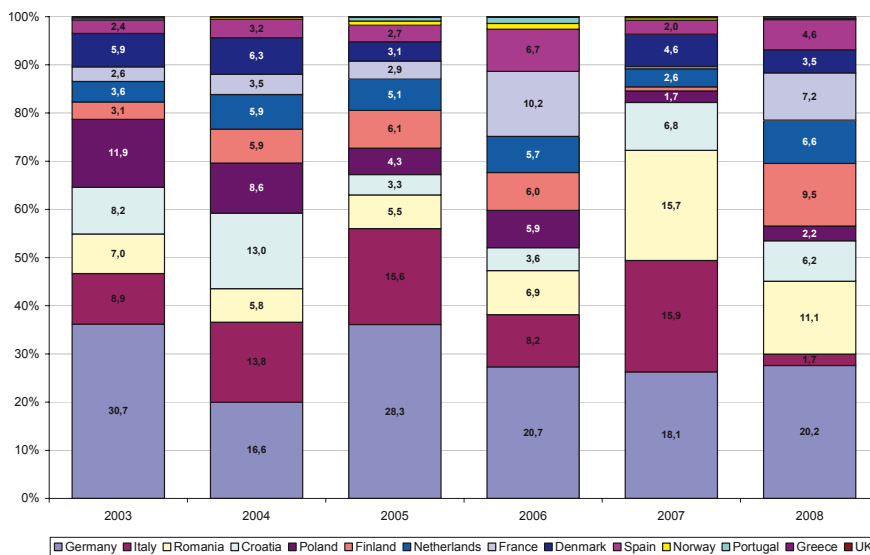
Figure 2.4: New orders CESA-Members from 2003 to 2008 in cgt (new compensated gross ton system);



Source: ISL based on LR-Fairplay

These results are underlined by the market shares (new orders) in the year 2007. The shipyards of the four countries Germany market share 18.1 per cent), Italy (15.9), Romania (15.7), and Croatia (6.8) made 56.5 per cent of the acquisitions of the entire European shipbuilding industry. In 2007 Poland, as well an important European shipbuilding nation, only acquired new orders of 0.1 mill. cgt (market share 1.7 per cent), probably due to the reconstruction of the Polish shipbuilding sector (see figure 2.5).

Figure 2.5: New orders CESA-Members market shares 2003-2008 in per cent, based on cgt (new compensated gross ton system);



Source: ISL based on LR-Fairplay

In the year 2008, the first year with the impact of the global financial and economic crisis, the ranking within the CESA region changed: Germany with a market share of 20.2 per cent and Romania with 11.1 still were ahead, but now followed by Finland with 9.5, then France with 7.2, the Netherlands with 6.6., Croatia with 6.2, Spain with 4.6 and Denmark with 3.5 – Italy as the former No. 2 fall back to a market share of 1.7 per cent.

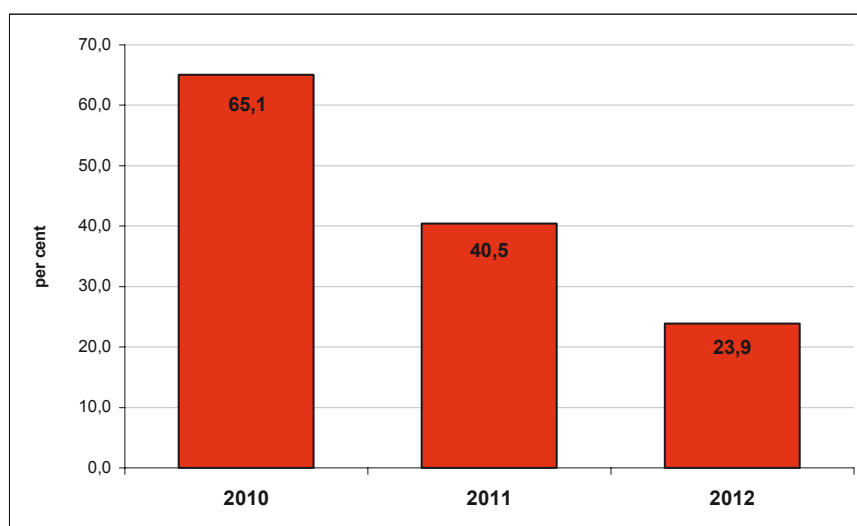
Doing a realistic forecast for the future of the shipbuilding industry is nearly impossible and especially the competitiveness of the European shipbuilding industry is significantly influenced by the global financial and economic crisis.

Due to these uncertainties, the European shipbuilding industry is forced to raise quality standards by investing in research and development and by qualifying their staff to withstand against the increasing number of competitors in Asia.

### The Future of the European shipbuilding industry: Capacity utilisation

The increase of the global trade especially of the global sea-borne trade between 2002 till the end of 2007 caused enormous impacts for the world shipbuilding market. The demand for merchant ships during the last years increased, which is an advantage for shipyards all over the world. In this context the European shipyards too were able to fill up their order books and the forecasts were positive at the time of this survey: The results of this survey point out that the capacity utilisation of the European shipyards was in the beginning of 2008 high and secured employment. According to figure 2.6, European shipyards were booked in 2010 up to 65.1 per cent and in 2011 up to 40.5 per cent (Status: January 2008). Beyond that period capacities of European shipyards for 2012 were already booked up to 23.9 per cent (data from January 2008). These results show that the European shipbuilding industry prospered from the continuously strong demand of the world shipbuilding market. Now, in March 2009, the situation is looking a little bit different: On 16 February 2009, 392 container vessels with a capacity of 1,100,000 TEUs (1 TEU means a 20 foot standard container and indicates the loading/handling capacities of a container vessel/container terminal) one have been mothballed (with an uprising trend). In 2009 it is expected that the capacity of the global container fleet will increase by 14 per cent due to the existing orders with a then capacity of 13.9 Mill TEU. Many orders had been cancelled or delayed<sup>4</sup>.

Figure 2.6: European shipyards: Capacity utilisation for the coming years in per cent (Status: January 2008);



Source: IAW Survey 2008

Experts view, that the over capacities only in the segment of boxships will meet its peak in 2011 because of the completion of the current orders. At that time one quarter of the global box ships (in terms of capacity) will be mothballed then. This will have impacts on the shipyards, which are in the moment not foreseeable.

<sup>4</sup> For details see CESA 2009.

### 3. Results of the survey in 2008 compared with 2004

The questionnaire of the survey was prepared in late autumn 2007 (and distributed in January 2008) and bases on the questionnaire of the previous report „Shipbuilding in Germany and Europe“ in 2004. Drawing from those results (see Tholen, Ludwig 2006) the current questionnaire contains some questions from the survey of 2004 which are adapted to the current requirements.

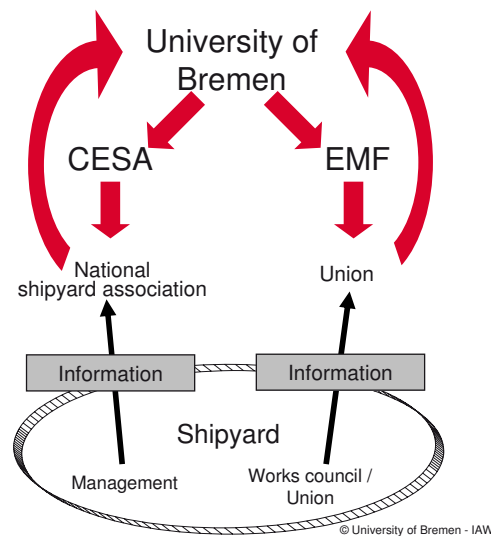
The topics of the questionnaire are:

- General questions, types of ships, share of production, order books, number of employees
- Working time, gross income and labour costs
- Recruiting and qualification
- Image of shipbuilding industry
- Important topics of the European Initiative LeaderSHIP 2015
- Cooperation.

In contrast to the survey of the year 2004 for the updated inquiry we decided in favour of an associations-focussed-approach instead of a shipyards-focussed-approach. In January 2008 the questionnaire was sent to the Community of European Shipyard Associations (CESA) and to the European Metallworkers´ Federation (EMF) in Brussels. They distributed the questionnaire to their national member associations and respectively to their national unions in 14 European countries.

The management and the works councils/union representatives of the single shipyard gave the relevant information to their national association or respectively to their national union. The fourteen national associations and national unions collected the information from the shipyards and aggregated the data on a national level. Finally, the national associations and national unions sent the aggregated datasets directly back to the University of Bremen. The whole dispatch of the questionnaires is illustrated in figure 3.1.

Figure 3.1: Dispatch and Return of the questionnaires



By using this method it was possible to allocate the required information in a very short period of time. The advantage of this procedure is that it is possible to get valid results for the European shipbuilding sector with remote operating expense. This choice of procedure was constituted by the relatively small resources and the extremely tight time table.

The results are convincing: The current survey covers the shipbuilding industry of 14 European countries. We got information from 12 countries which are members of the European Union and additionally we have data of the shipbuilding industry of Norway and Croatia. This survey represents all CESA-members and covers in total 139.158 direct employees. For comparison only: In the framework of the survey in 2004 the shipyards-focussed-approach was chosen. The number of responses was 109 questionnaires which covered about 154,000 employees from 20 European countries. The effort of the shipyards-focussed-approach was huge and impossible to realise in the framework of the panel survey in 2008, due to the tough timetable. For detailed information about the responses of the shipbuilding survey in 2004 and in 2008 (see figure 3.2):

Figure 3.2: Responses overview 2004 and 2008 surveys

|                    | Shipbuilding survey 2004 | Shipbuilding survey 2008 |
|--------------------|--------------------------|--------------------------|
| <b>Bulgaria</b>    | Yes                      | No                       |
| <b>Croatia</b>     | Yes                      | Yes                      |
| <b>Denmark</b>     | Yes                      | Yes                      |
| <b>Estonia</b>     | Yes                      | No                       |
| <b>Finland</b>     | Yes                      | Yes                      |
| <b>France</b>      | Yes                      | Yes                      |
| <b>Germany</b>     | Yes                      | Yes                      |
| <b>Greece</b>      | Yes                      | Yes                      |
| <b>Italy</b>       | Yes                      | Yes                      |
| <b>Latvia</b>      | Yes                      | No                       |
| <b>Lithuania</b>   | Yes                      | No                       |
| <b>Montenegro</b>  | Yes                      | No                       |
| <b>Netherlands</b> | Yes                      | Yes                      |
| <b>Norway</b>      | Yes                      | Yes                      |
| <b>Poland</b>      | Yes                      | Yes                      |
| <b>Portugal</b>    | Yes                      | Yes                      |
| <b>Romania</b>     | Yes                      | Yes                      |
| <b>Spain</b>       | Yes                      | Yes                      |
| <b>Sweden</b>      | Yes                      | No                       |
| <b>UK</b>          | Yes                      | Yes                      |
| <b>Total</b>       | <b>20</b>                | <b>14</b>                |

### Number of employees

During the years from 2003 to 2008 the number of direct employees of the European shipbuilding industry has increased. But the developments in the single countries are very different. Referring to figure 3.3 this conclusion seems to be curious because the number of direct employees in 2004 was 157.472 and in 2008 150.355.

Considering the employees of the missing yards and the reconstruction in Poland and Spain, the employment in European Shipbuilding Industry has increased in the last four years.

Figure 3.3: Number of direct employees in European shipbuilding industry 2004 and 2008

|                | Number of direct employees 2004 | Number of direct employees 2008 | Explanatory notes                    |
|----------------|---------------------------------|---------------------------------|--------------------------------------|
| Bulgaria       | 4.034                           | 3.520                           | 1 yard missing                       |
| Croatia        | 9.529                           | 9.698                           |                                      |
| Denmark        | 2.902                           | 4.000                           |                                      |
| Estonia        | 1.200                           | 2.500                           |                                      |
| Finland        | 5.565                           | 4.500                           |                                      |
| France         | 15.230                          | 17.000                          |                                      |
| Germany        | 18.489                          | 20.178                          |                                      |
| Greece         | 3.111                           | 2.473                           |                                      |
| Italy          | 12.033 (Fincantieri: 9.041)     | Fincantieri: 9.055              | Other yards than Fincantieri missing |
| Latvia         | 1.620                           | 1900                            |                                      |
| Lithuania      | 3.755                           | 2.125                           |                                      |
| Montenegro     | 747                             | -                               | 1 yard missing                       |
| Netherlands    | 10.000                          | 11.500                          |                                      |
| Norway         | 2.272                           | 3.913                           | 4 small yards missing                |
| Poland         | 23.106                          | 17.000                          |                                      |
| Portugal       | 1.937                           | 1.242                           |                                      |
| Romania        | 13.401                          | 12.600                          |                                      |
| Spain          | 10.850                          | 7.818                           |                                      |
| Sweden         | 1.467                           | 1.152                           |                                      |
| United Kingdom | 16.224                          | 18.181                          | 2 small yards missing                |
| <b>Total</b>   | <b>157.472</b>                  | <b>150.355</b>                  |                                      |

**Remark:**

Bulgaria, Estonia, Latvia, Lithuania, Montenegro, Norway, Sweden and the UK: Number of employees investigated by phone calls to the single yards.

Source: IAW Survey 2008

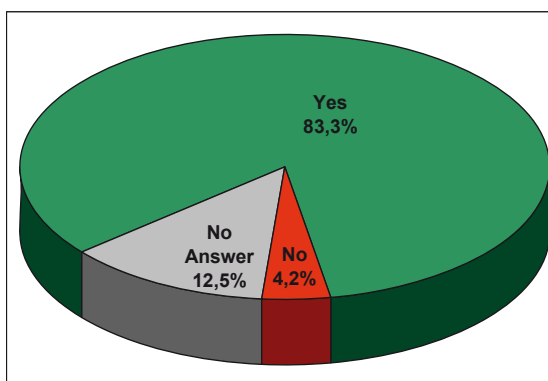
### 3.1. Cooperation in European shipbuilding industry

Cooperation between shipyards, subcontractors and research facilities are one of the key elements for a competitive and sustainable European shipbuilding industry. In general there are three different types of cooperation:

- Cooperation between shipyards and research facilities are especially necessary in the naval and merchant shipbuilding sector because they secure the access to the latest technical knowledge;
- Cooperation between shipyards and subcontractors are named vertical cooperation;
- Cooperation between single shipyards are called horizontal cooperations.

By the results of the survey in 2008 it is possible to draw conclusions on the horizontal cooperation between shipyards. The majority of 83.3 per cent of the European shipyards cooperate with other yards in or outside European countries. Just 4.2 per cent declared not to cooperate with any yards neither in nor outside Europe:

Figure 3.4: Cooperation between shipyards within or outside Europe in 2008



Source: IAW Survey 2008

The cooperation partners are predominately located in Europe (83.9 per cent), just a few of the partner shipyards are situated outside Europe (16.1 per cent). The locations of the yards within Europe, with which other yards cooperate, are mainly in Germany, Finland, France, Netherlands, Italy, Poland and Ukraine. But there are also cooperation partners of European shipyards outside Europe. These cooperation partners are mainly located in South Korea, Australia, Russia and in the US.

Concerning these horizontal linkages there are two subtypes of cooperation.

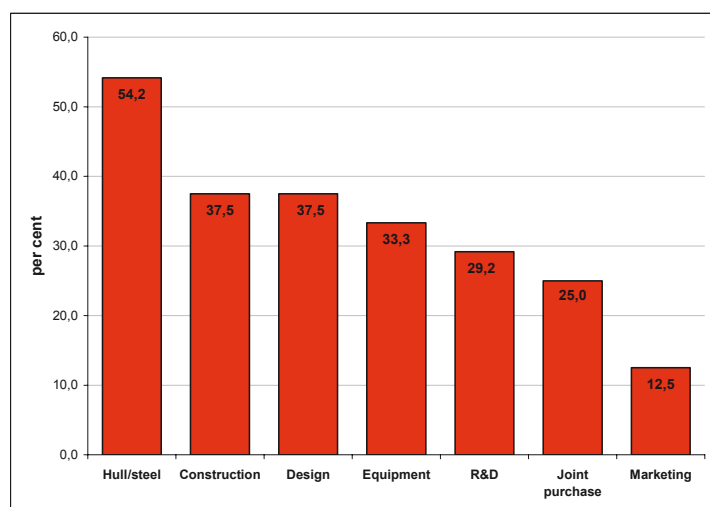
First of all there are horizontal cooperations between partners who are on a par. Cooperation between equal partners are dominated by using synergetic effects. This is the case if two shipyards or more collaborate in fields like research and development and joint purchase. By concentrating their activities all participants benefit in the same way. The interests of the partners are even the same.

Secondly, horizontal cooperation could be dominated by comparative advantages. In this context shipyards subcontract a process to another shipyard (outsourcing). The decision to outsource is often made in the interest of lowering firm costs, e.g. by using wage differentials.

The results of the survey in 2008 indicate, that this practice dominates the cooperation between European shipyards. The activities being involved in cooperation of European shipyards in 2008 are dominated by the field of steel work like building hulls and sections. There are significant less cooperations between shipyards in the fields of construction, design and equipment. Just very few shipyards cooperate with other shipyards in the fields of research and development, joint purchase, marketing, or others.

After the end of the of the cold war and the collapse of the COMECON (Council for Mutual Economic Assistance) in 1989/90, the shipbuilding market in Central and Eastern Europe was faced with the competition of the global market. The shipyards of Poland, Romania, Croatia and in the Baltic states had to close or at least narrow the technological gap. But in contrast to the shipyards in Eastern Germany they did not benefit from an impulse of modernisation by huge investments.

Figure 3.5: Activities being involved in cooperations in 2008



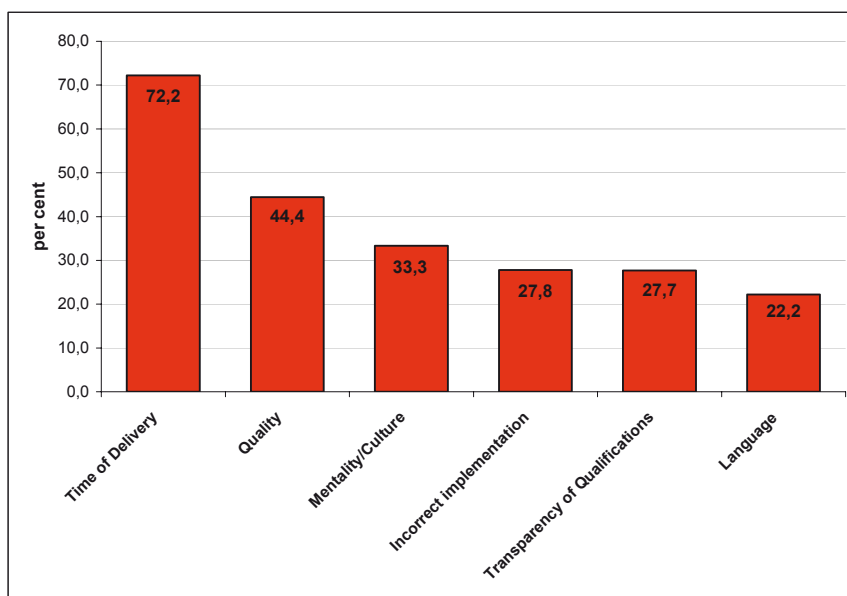
Source: IAW Survey 2008

It seems that some of the Central and Eastern European shipyards play the role of a manufacturing base due to the relative low labour costs. Apparently Western shipyards outsource basic productive operations to shipyards in Central and Eastern Europe. By subcontracting processes of the production, the Western shipyards try to use comparative advantages. Especially steel work like building hulls and sections requires man power, which is more costly in the West than in the Central and Eastern European states. A “mixture of costs” makes their products more competitive on the global shipbuilding market.

Despite the advantages, there are difficulties concerning international cooperation as well. With regard to these cooperations the main problems concern predominantly the time of delivery (72.2 per cent). This still seems to be a serious problem. Furthermore, fairly half of the answers (44.4 per cent) mentioned the quality of the delivered products as a main problem. Due to the necessary remediations of defects further delays of deliveries are to be expected.

Neither the incorrect implementation of constructions plans, the lacking transparency of qualifications nor the use of different languages within Europe is a serious problem.

Figure 3.6: Main problems as regards cooperations in 2008



Source: IAW Survey 2008

Another type of investments are foreign direct investments (FDI). These are investments generally made for cost and market reasons. The Norwegian shipbuilder Aker Yards (now: the Korean group STX Europe) and the Damen Group from the Netherlands bought shipyards in Romania and Poland. In these cases cooperation takes place within one company.

### 3.2. Initiatives of the shipbuilding industry

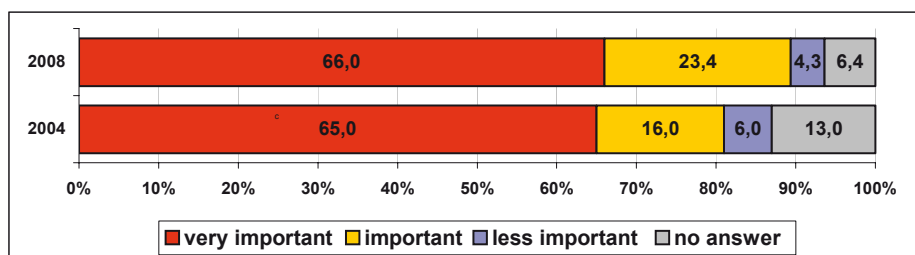
On the European level the shipbuilding industry, trade unions and policymakers have launched the European Initiative LeaderSHIP 2015 in 2003. The initiative addresses all issues that are important for the future competitiveness of the European shipbuilding sector. This contains the establishment of a level playing field and the compliance of the regulations of the WTO. Furthermore, a consequent intensification of the research and development activities to maintain and develop the advantage of technology and human resource development are subjects of that programme. The implementation of LeaderSHIP 2015 should not only occur on the European level but also in



the European countries. The aim of that initiative is overcoming for the first time the shipbuilding policy of a nation-state and develop a whole-European strategy. Faced with the increasing strategical relevance of the shipbuilding industry for Europe this is a forward-looking challenge.

Both, the panel study in 2008 and the previous survey in 2004 asked for the importance of the topics of the European Initiative LeaderSHIP 2015 to find out the expectations of the shipyards toward shipbuilding policy of the EU. The most important topic in 2004 was establishing a level playing field.

Figure 3.7: Important topics of the European Initiative LeaderSHIP 2015: Establishing a level playing field in 2004 and 2008



Source: IAW Survey 2008

At that time there was a legal complaint at the WTO against South Korea which was supposed to support its national shipbuilding industry with subsidies. But on the other hand some European shipyards (like f.e. in Italy, Spain, Poland and France) were state-controlled which generally prevent a level playing field, too. These circumstances fostered the importance of establishing a level playing field. In 2004 about more than 80 per cent of the respondents were of the opinion, that this is an important topic. This share increased in 2008 up to almost 90 per cent. According to the results of the survey in 2004, establishing a level playing field keeps one of the most important topics.

But another topic is even more eminent: securing access to qualified workforces became the most important topic in 2008.

Figure 3.8: The most important subject all across Europe in 2008: Securing the access to qualified workforce



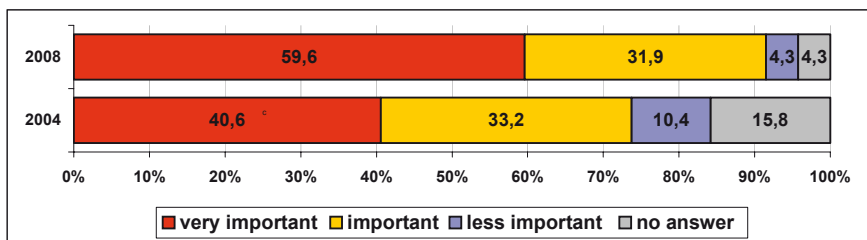
Source: IAW Survey 2008

Almost 94 per cent think that this topic is evident for the future. Out of these 94 per cent, 79 per cent are of the opinion that this is a very important topic for the coming years. This result can be explained with the enormous difficulties of the European Shipyards in recruiting qualified workforce (for detailed information please see chapter 3.3).

Figure 3.8 illustrates that this is an eminent subject all across Europe. 12 of 14 European shipyards' associations agree with the opinion that securing the access to qualified workforce is a very important topic. The other two shipyards' associations namely the French and the Italian think that this is an important topic.

Faced with the booming shipbuilding industries of (South) East Asia, initiatives to improving research, development and innovation became an eminent topic. It is more decisive in 2008 than it was in 2004. Nearly 60 per cent of the European shipyards are of the opinion that the global competitiveness can be maintained only by the continuous improvement of the products. In the survey in 2004 just 40.6 per cent declared that improving research and development is eminent for the future of the European shipbuilding. Apparently most European shipyards have now realised that the competitive environment becomes increasingly more difficult. The correct answer to resist the new market participants from Asia and elsewhere are new and innovative products as well as a qualified workforce.

Figure 3.9: Important topics of the European Initiative LeaderSHIP 2015: Research & Development and Innovation in 2004 and 2008

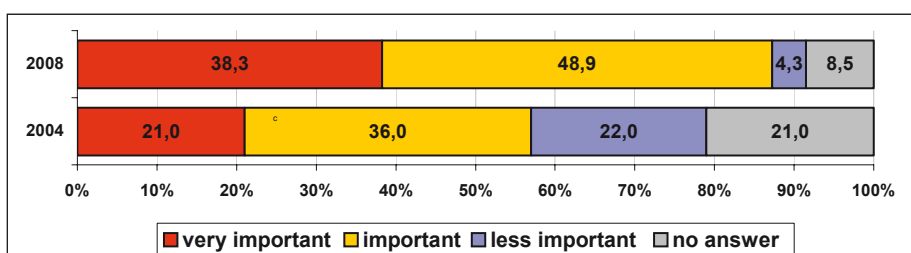


Source: IAW Survey 2008

Another topic of increasing importance is building a sustainable industry structure. This seems to become a topic of particular importance in 2008. The panel study in 2008 found out that in total 87.2 per cent are of the opinion that this issue is (very) important. 38.3 per cent think that this is a very important topic. This is significantly more than it was in 2004. In 2004 just 57.0 per cent thought that this is a subject of significant importance and only 21.0 per cent thought that this topic was very important.

Beyond securing the access to qualified work force, establishing a level playing field, improving research & development and building a sustainable industry structure there are some other significant subjects of the European Initiative LeaderSHIP 2015.

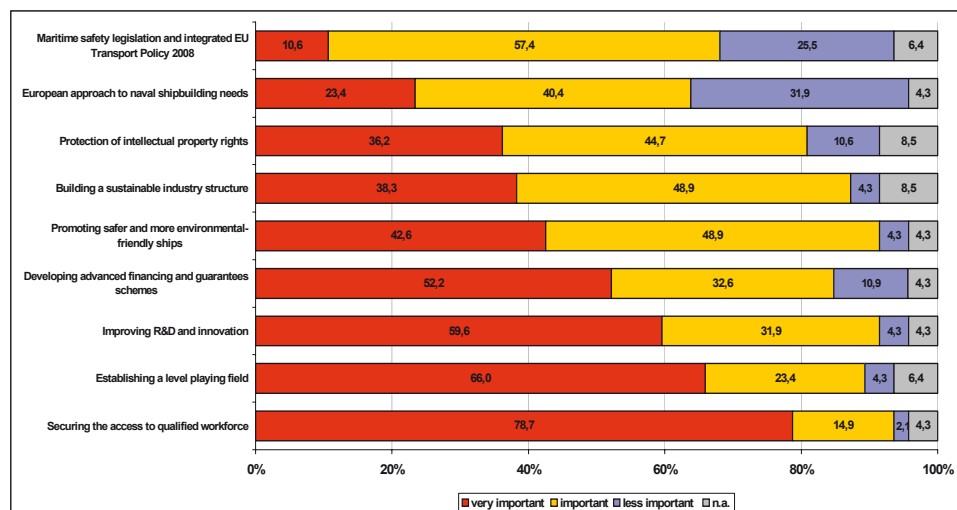
Figure 3.10: Important topics of the European Initiative LeaderSHIP 2015: Sustainable industry structure in 2004 and 2008



Source: IAW Survey 2008

These subjects are for example developing advanced financing and guarantee schemes and promoting safer and more environmentally friendly ships. The protection of the property rights is a little bit less important compared with 2004. For detailed information see figure 3.11.

Figure 3.11: Important topics of the European Initiative Leadership 2015 in 2008



Source: IAW Survey 2008

To sum up, it can be said that the most important subject is securing the access to skilled work forces. But also establishing a level playing field, promoting R&D, and the permanent improvement of the products and the production processes are of particular importance.

Another initiative is the Social Dialogue supported by the EU, which was initiated in the year 2003 and went alongside with “Leadership 2015”. This dialogue-based-approach enables shipyards’ associations and unions to create a common approach of the challenges of the European shipbuilding, despite their “natural” differences of interest<sup>5</sup>. Improving the image (see chapter 3.5.) and the reduction of the problems in recruiting qualified employees are subjects of mutual interests.

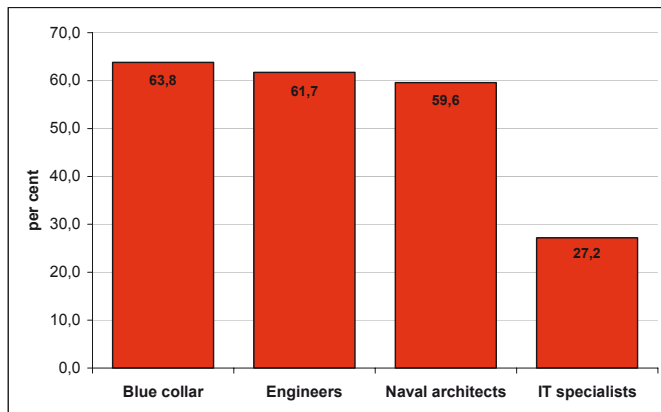
### 3.3. Recruitment and qualification of the workforce

The global competitiveness of the European shipbuilding industry bases on the development of innovative products and on the optimisation of the production processes. This is an ongoing process, a steady challenge and the key to resist against the upcoming competitors from Asia. Enhancing the staff’s professional skills and an intelligent personell policy are of utmost importance to secure the competitive advantage. According to figure 3.11 securing the access to qualified workforce is the most important topic. But there are reasonable doubts that all European shipbuilders try to prevent that problem. During the time of this panel study, the order situation of most of the shipyards was positive for the years until 2012 but there was a general lack of qualified workforce. The vast majority of the European shipyards suffered from difficulties in recruiting qualified workforce like engineers, naval architects, IT-specialists or skilled blue collar worker.

The survey in 2008 points out that most shipbuilders (63.8 per cent) experienced difficulties in recruiting skilled blue collar workers, 61.7 per cent estimate a lack of engineers and 59.6 per cent think that it will be complicated to employ qualified naval architects. Furthermore, the results point out that there is not such a lack of IT-specialists, probably due to the less specific vocational education.

<sup>5</sup> For more details see chapter 4.

Figure 3.12: Difficulties in recruiting qualified workforce in 2008

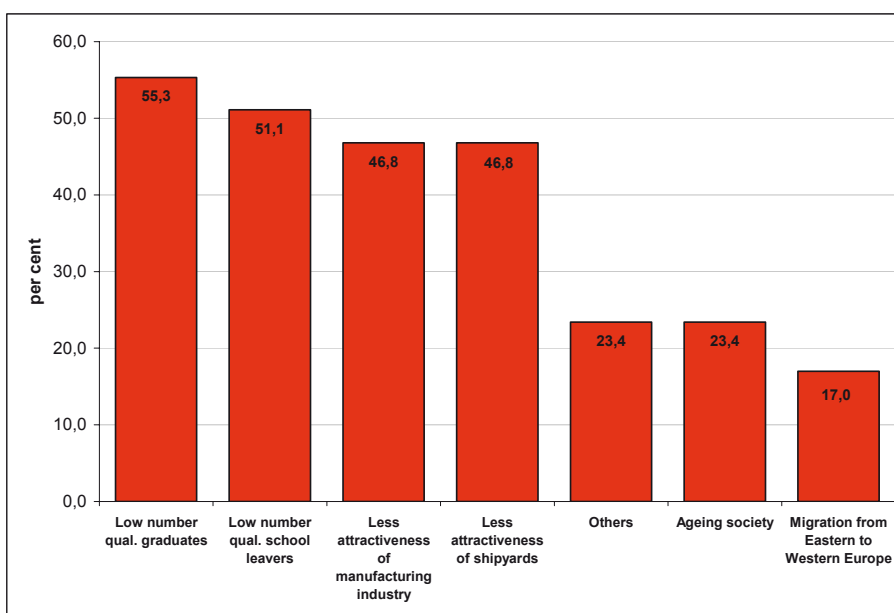


Source: IAW Survey 2008

Concerning the reasons which cause the problems of recruiting qualified workforce, the European shipyards complained predominantly about two circumstances: First of all they asserted that there is generally a low number of qualified universities' graduates (55.3 per cent) as well as qualified school leavers (51.1 per cent) who might be suitable for the shipbuilding industry. Secondly they complained the missing attractiveness of both, manufacturing industry in general (46.8 per cent) and shipbuilding in particular (46.8 per cent). For detailed information see figure 3.13.

The cyclical fluctuation of the recent decades has strengthened the negative image of the shipbuilding industry, causing problems in recruiting qualified work forces. But in the meantime the shipbuilding sectors has developed to be a high-tech industry competing with the aviation and the automotive industry. Beyond external reasons, there are internal reasons of the lack of qualified workforces. The percentage of the permanent (core) staff has been reduced and the temporary employment becomes more popular. The qualification of the workforce has been partly externalised. As a result it became more difficult for the shipyards to recruit qualified workforce.

Figure 3.13: Reasons for the difficulties in recruiting qualified workforce in 2008



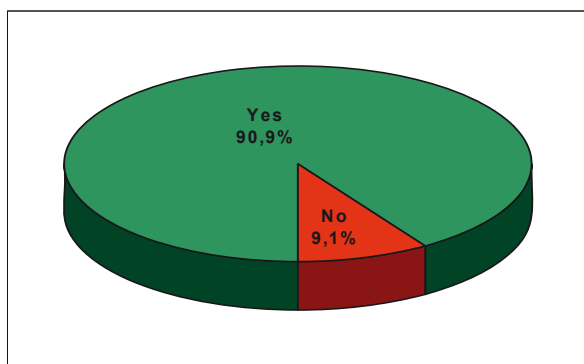
Source: IAW Survey 2008

In Eastern European countries there is a trend of migration of shipbuilding workers to the Western European countries, due to higher wages. This migration causes a lack of qualified workforce in the Central and Eastern European countries and the Western shipyards have to invest in integration measures. In the European context this seems not to be beneficial for everybody. A coordinated European programme would be advantageous for all involved parties and interests.

Sometimes the differences in the respective national systems for qualifying shipbuilders in Europe are seen as a disadvantage for the European shipyards to compete globally.

This assumption is confirmed by the vast majority of the European shipyards: 90.9 per cent consider improved transparency and better recognition of the national qualifications as essential for the future. Just 9.1 per cent of the European shipyards (all located in Poland) answered in the negative (see figure 3.15):

Figure 3.14: Recognition of national qualifications in 2008



Source: IAW Survey 2008

Figure 3.15: Recognition of national qualifications by countries



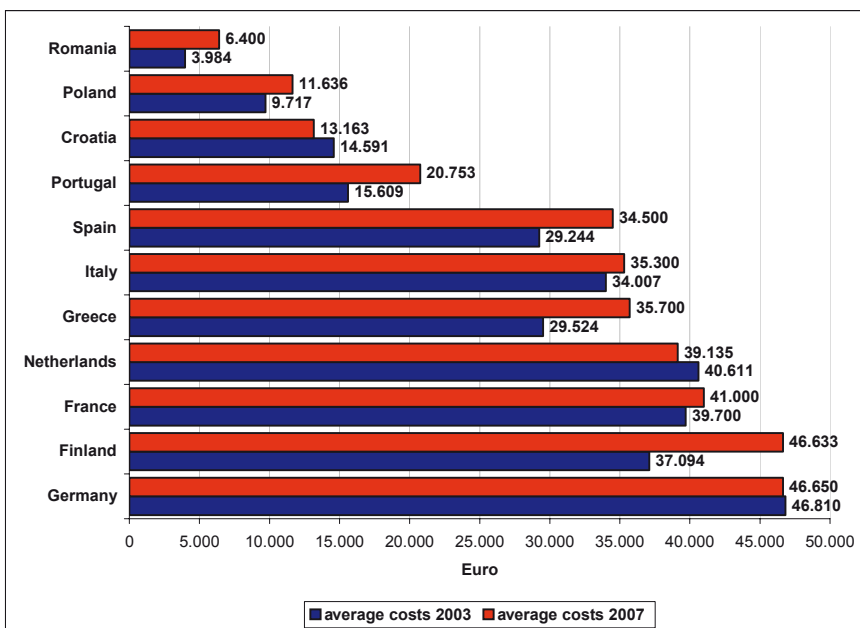
Source: IAW Survey 2008

### 3.4. Income, costs and working time

#### Income and costs

The gross income and the total costs are essential for both, the employees and the companies. But concerning the comparison of income and costs in different European countries is sophisticated. In the following we ask for the gross income and the total costs of a blue collar worker. It has to be mentioned that whole range of factors is influencing the levels and structures of labour costs and (gross) wages. Among others those factors are the different systems of financing the health system, the unemployment insurance etc. The systems differ from tax-financed systems to non-wage-labour-costs systems. Furthermore there is no information on productivity of the single yards. In result the comparison of income and costs stays incomplete.

Figure 3.16: Average total costs for a blue collar worker in 2003 and 2007 (Euro)

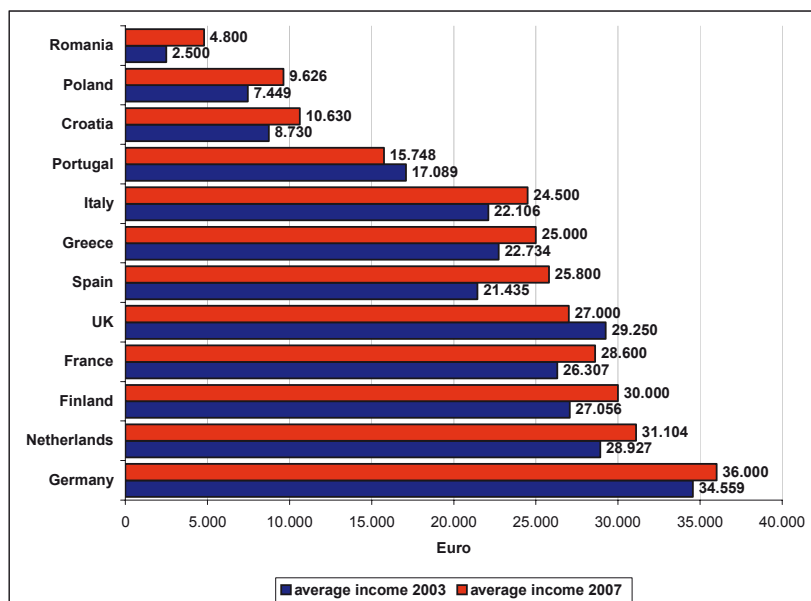


Source: IAW Survey 2008

Considering these pre-remarks the average costs for a blue collar worker of a European shipyard differ extremely from country to country. In 2007 a German shipyard had to pay about 46.650 Euro per year for an employee. This is about seven times more the total costs for a blue collar worker in Romania. But in accordance with the average costs in 2003, there is in 2007/2008 apparently a harmonisation: On the one hand the total costs in countries like Romania (+60.6 per cent), Poland (+19.7 per cent), Portugal (+33.0 per cent), Spain (+18.0 per cent) and Greece (+20.9 per cent) increased between 2003 and 2007. On the other hand the average costs for a blue collar worker in Italy (+3.8 per cent), the Netherlands (-3.6 per cent), France (+3.3 per cent) and Germany (-0.3 per cent) remained nearly the same.

Beside the average total costs the average gross income of a blue collar worker also varies from country to country.

Figure 3.17: Average gross income of a blue collar worker in 2003 and 2007 (Euro)



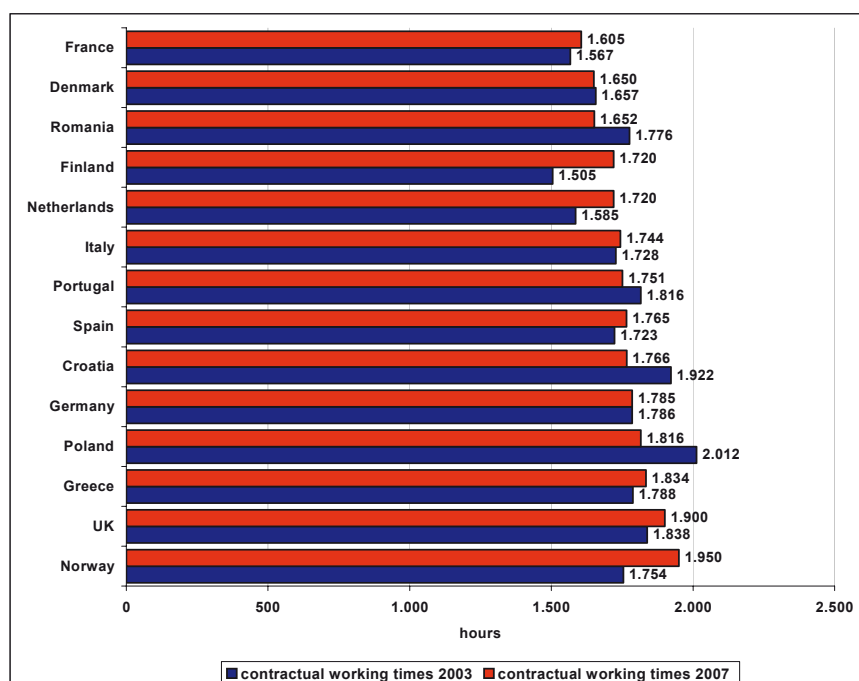
Source: IAW Survey 2008

In 2007, a blue collar worker in Germany earned about 36.000 Euro a year. The average gross income of a blue collar worker being employed at a shipyard in Romania, is in average 4.800 Euro. It should be noted, that there are partly huge differences from shipyard to shipyard within a country. For example the gross income of a blue collar worker of German shipyards varies from 27.000 Euro up to 42.000 Euro.

### Working time

The annual working time differs from 1.605 hours in France to 1.950 hours in Norway. But these are the contractual working times. The actual working time differs partly from the contractual working time (see figures 3.18 and 3.19):

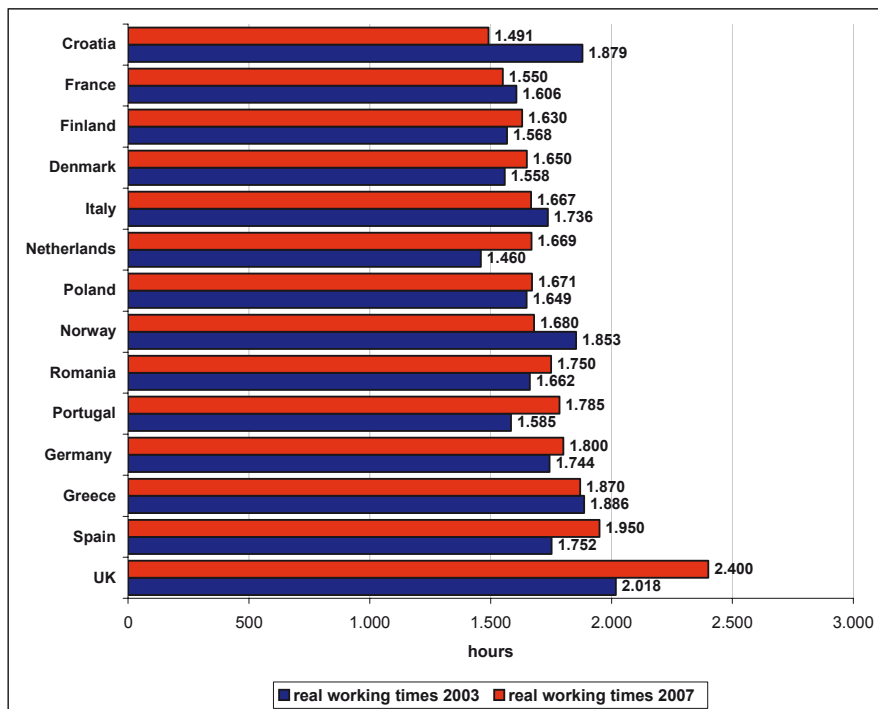
Figure 3.18: Contractual working time of a blue collar worker in 2003 and 2007 (hours per year)



Source: IAW Survey 2008

According to contracts in the United Kingdom a blue collar worker had to work 1.900 hours in 2007. But the actual working time for a blue collar worker was 2.400 hours. This extra work is probably due to the increasing demand in the British naval shipbuilding sector.

Figure 3.19: Real working time of a blue collar worker in 2003 and 2007 (hours per year)



Source: IAW Survey 2008

The situation of the Croatian shipbuilding sector differs as well. The contractual working time for a blue collar worker covered 1.766 hours in 2007. These are about 150 hours a year less than in the year 2003. But the real working time in 2007 was only 1.491 hours. This is caused by the declining demand for ships in Croatia. The contractual and real working time could be seen as an indicator for the order books. If the contractual working time is rising or the actual working time is higher than the contractual working time, the shipyard is booked up to a high level. If the contractual working time is decreasing or the actual working time is lower than the working times according to the contract, the shipyard is not able to use its capacities.

### 3.5. Image of the shipbuilding industry

One of the reasons why the European shipbuilding industry has difficulties in recruiting qualified workforce is the missing attractiveness of the manufacturing industry in general and the low popularity of the shipyards in particular. This problem is caused partly by the bad image and partly by the situation of the European shipbuilding industry before 2003 with the interdependencies with the image: The cyclical processes of the recent decades have contributed to this bad image and are responsible for the bad reputation. Young people have become less and less interested in this industry. Beyond, the shipbuilding industry is called a so-called 3D-Industry. 3-D stands for “dirty, difficult and dangerous”. Actual the shipbuilding industry has become a high-tech industry and is comparable with other industries like the aircraft or automotive. To create a bad image is quickly done, but to turn it to a good image, it is a century task.

It can be noticed, that the overwhelming majority of the yards is of the opinion that in comparison to 2004 the image of the European shipbuilding industry has been improved. In the total 14 national associations answered to this



question and a majority of nine countries think that the image of the shipbuilding industry in their country has been improved since 2004 (Norway, Finland, Denmark, Germany, Netherlands, Sweden, Romania, Italy and Spain). In the UK, France, Portugal and Greece the image of the shipbuilding industry has remained the same. Only the shipbuilders' association of Croatia thinks that the image has been worsened in the years between 2004 and 2008 due to the before mentioned reconstruction process of the Croatian shipbuilding industry.

Figure 3.20: Image of shipbuilding industry in 2008 compared to 2004



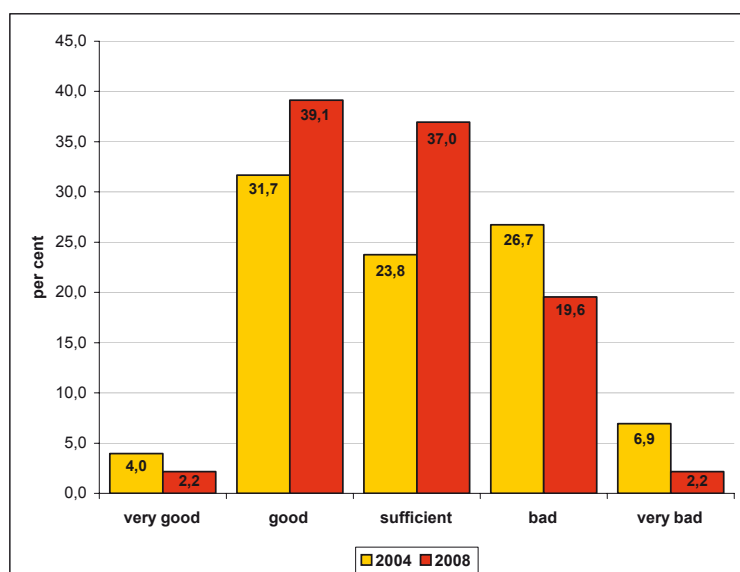
Source: IAW Survey 2008

In 2008 the vast majority is convinced that the image of the shipbuilding industry in their country is good (39.1 per cent) or at least sufficient (37.0 per cent). In 2008 less than 20 per cent (19.6 per cent) are of the opinion that the image of shipbuilding industry is bad. As a general result, the image has improved.

To sum up, it could be said that the image of the shipbuilding industry has clearly improved since 2004. But the image of other industry sectors like aircraft or automotive industry are still better. This survey found out that there are still huge problems in recruiting skilled workforce, caused by the little attractiveness of the shipbuilding sector. So the image of the shipbuilding industry should be improved furthermore by campaigns like European Shipbuilding Weeks and others, especially in the current times of an economic downturn since the end of 2008. To protect the future competitiveness of the European shipbuilding high skilled staff is essential.

Figure 3.21: Image of shipbuilding industry in 2004 and 2008

2004 and 2008)



Source: IAW Surveys in 2004 and 2008

#### 4. Conclusions: Elements of an European shipbuilding policy

Key elements of a European shipbuilding industry are the European Initiative LeaderSHIP 2015 and the Sectoral Social Dialogue Shipbuilding.

The shipbuilding industry, supported by EU policymakers and the trade unions, had crafted in 2002-2003 the *European Initiative LeaderSHIP 2015* (CESA 2003), to overcome the purely national approaches of a maritime policy. It defined shipbuilding policy as a European task as well. At that time the outlook for Europe's shipbuilding industry seemed rather bleak, facing the Asian competition. Against this backdrop, LeaderSHIP 2015 was conceived as a vision based on a belief in the capacity and innovative potential of Europe's maritime industry.

The initiative identified eight themes:

- Establishing a Level Playing Field in global shipbuilding
- Improving Research, Development and Innovation Investment
- Developing Advanced Financing and Guarantee Schemes
- Promoting Safer and More Environment-Friendly Ships
- European Approach to Naval Shipbuilding Needs
- Protection of Intellectual Property Rights (IPR)
- Securing the Access to a Skilled Workforce
- Building a Sustainable Industry Structure.

LeaderSHIP 2015 inspired similar approaches in other industrial sectors EU, according to the LeaderSHIP 2015 Progress Report from April 2007 (EU Commission 2007).

This approach dovetails with the EU Commission's efforts to put in place a holistic maritime policy framework with the publication of a Maritime Policy Green Paper in June 2006 which presented LeaderSHIP 2015 as a vital pillar of

the competitiveness of Europe's maritime industries and an example to be replicated more broadly. The Green Paper also positioned shipbuilding as an essential part of a vibrant and interconnected European maritime space.

In June 2009 the High Level Group of LeaderSHIP 2015 will come together for a mid-term evaluation.

LeaderSHIP 2015 should not only remain on the European level, but applied to the national levels of the respective countries as well. In some European countries there is already a national LeaderSHIP 2015 established. F.e. in Germany the federal government had appointed a maritime coordinator, who coordinates all tasks related to the German maritime industries on the governmental level. Additionally approximately every year a national Maritime conference is organised (in March 2009 the Sixth took place) to bring together all actors (industries, unions, policy-makers, scientists) of the maritime sectors (shipbuilding, maritime supply industry, shipping lines etc. etc.)

A second pillar of a European Industrial Policy on Shipbuilding is the EU Sectoral *Social Dialogue Shipbuilding*, launched in 2003. This committee is strongly supported by the EU Commission and brings together the national associations of shipbuilders and unions, together with CESA (Community of European Shipyards' Associations) and the EMF (European Metalworkers' Federation).

This committee defines its own agenda, reaching from organizing and supporting surveys (like these surveys from 2004 and 2008) to develop a "tool box" to establish a common understanding of European shipbuilding.

Saying this there is a solid basis for a joint European Shipbuilding Policy, strongly supported by the European Commission. In April 2008, the Commissioner for Enterprise and Industry, Günther Verheugen, gave in the framework of the European Shipyard Week 2008 in Brussels a clear commitment towards a European industry in general and a European shipbuilding industry in particular.

However this survey has found out, that there are some crucial tasks still to be tackled in the near future. By comparing the results of the surveys in 2004 and 2008, "Establishing a Level Playing Field" is still a very important topic for the European shipbuilding industry. This is caused by the booming shipbuilding industries of (South) East Asia like South Korea and China and the upcoming shipbuilding nations like Vietnam, India and the Philippines which benefit from governmental subsidies. Faced with the tougher conditions of the global market, "Research and Development" are more decisive in 2008 than it was in 2004. This development is a step in the right direction by the European Shipbuilding Industry to compete successfully in the global market. The requirements to build ships have undergone an appreciable modification during the last decades. Processes are getting more and more complex and new technologies are in use. The global competitiveness of the European shipbuilding industry bases dramatically on the development of innovative products, on optimising the production processes, and the increase of vocational qualifications of the workforce. This is an ongoing process, and therefore a steady challenge for every European shipyard.

According to our panel study it becomes more difficult for the shipyards to recruit qualified employees. The results of the 2008 survey make clear that securing the access to qualified workforce is one of the most essential problem. The vast majority of European shipbuilders have got difficulties in recruiting qualified workforce like blue collar workers, engineers or naval architects. But this occurs in all sectors of the European economy and is not unique only for the shipbuilding industry. Apparently enhancing the staff's professional skills and an intelligent human resources management are of utmost importance to foster a sustainable personnel and employment policy for securing the development of innovative products and to keep up the technological gap to the Asian shipbuilding industry. In this field there is a tough competition with other sectors of the industry in Europe, like automotive and aircraft industry.

Concerning the reasons which cause the problems of recruiting qualified workforce, the European shipyards complained predominantly about two circumstances:

- first the lack of qualified university graduates and school leavers and
- secondly the missing attractiveness of both, manufacturing industry in general and shipbuilding industry in particular.

The cyclical processes of the recent decades have contributed to the bad image of the shipbuilding industry in Europe and are partly responsible for the bad reputation. Young people have become less and less interested in this industry. Creating a bad image takes no time, changing it to a good image is a century task. But the results make also clear, that the image of the shipbuilding industry has improved during the recent years. The high capacity utilization (before the outbreak of the crisis in 2009) and events like the European Shipyard Week obviously contribute to a better image and underline accurately that this is a high-tech-industry like the aircraft or automotive industry.

Furthermore the survey points out that the majority of the European shipyards cooperate with other shipyards. But the quality of the cooperations is still low. The activities being involved in cooperation of European shipyards in 2008 are dominated by the field of steel work. There are significant less co-operations between shipyards in the fields of construction, design and equipment or research and development, joint purchase and marketing.

To sum up this survey finds out that establishing a level playing field, fostering research&development and cooperations are essential. Securing the access to qualified workforce is of particular importance.

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## 5.2. Index of figures

**Chapter 2:**

|             |   |   |
|-------------|---|---|
| Figure 2.1: | New orders in world shipbuilding market from 2003 to 2008 by regions in cgt .....                                       | 3 |
| Figure 2.2: | Market shares (New orders) in world shipbuilding from 2003 to 2008 by regions<br>in per cent, on the basis of cgt ..... | 4 |
| Figure 2.3: | New orders by types of ships 2003–2008 in per cent, on the basis of cgt .....   | 5 |
| Figure 2.4: | New orders CESA-Members from 2003 to 2008 in cgt .....  | 6 |
| Figure 2.5: | New orders CESA-Members market shares from 2003 to 2008 in per cent, on the basis of cgt .....                          | 6 |
| Figure 2.6: | European shipyards: Capacity utilisation for the coming years in per cent .....   | 7 |

**Chapter 3:**

|              |  |    |
|--------------|--|----|
| Figure 3.1:  | Dispatch and Return of the questionnaires .....  | 8  |
| Figure 3.2:  | Responses overview 2004 and 2008 surveys .....   | 9  |
| Figure 3.3:  | Number of direct employees in European shipbuilding industry in 2004 and 2008 surveys .....                                  | 10 |
| Figure 3.4:  | Cooperation between shipyards within or outside Europe in 2008 .....   | 10 |
| Figure 3.5:  | Activities being involved in cooperations in 2008 .....  | 11 |
| Figure 3.6:  | Main problems as regards cooperations in 2008 .....  | 12 |
| Figure 3.7:  | Important topics of the European Initiative LeaderSHIP 2015: Establishing a level<br>playing field in 2004 and 2008 .....    | 13 |
| Figure 3.8:  | The most important subject all across Europe in 2008: Securing the access<br>to qualified workforce .....                    | 13 |
| Figure 3.9:  | Important topics of the European Initiative Leadership 2015: Research & Development<br>and Innovation in 2004 and 2008 ..... | 14 |
| Figure 3.10: | Important topics of the European Initiative LeaderSHIP 2015: Sustainable industry<br>structure in 2004 and 2008 .....        | 14 |
| Figure 3.11: | Important topics of the European Initiative LeaderSHIP 2015 in 2008 .....  | 15 |
| Figure 3.12: | Difficulties in recruiting qualified workforce in 2008 .....   | 16 |
| Figure 3.13: | Reasons for the difficulties in recruiting qualified workforce in 2008 .....   | 16 |
| Figure 3.14: | Recognition of national qualifications in 2008 .....   | 17 |
| Figure 3.15: | Recognition of national qualifications by countries in 2008 .....  | 17 |
| Figure 3.16: | Average total costs for a blue collar worker in 2003 and 2007 (Euro) .....   | 18 |
| Figure 3.17: | Average gross income of a blue collar worker in 2003 and 2007 (Euro) .....   | 19 |
| Figure 3.18: | Contractual working time of a blue collar worker in 2003 and 2007 (hours per year) .....                                     | 19 |
| Figure 3.19: | Real working times of a blue collar worker in 2003 and 2007 (hours per year) .....   | 20 |
| Figure 3.20: | Image of shipbuilding industry in 2008 compared to 2004 .....  | 21 |
| Figure 3.21: | Image of shipbuilding industry in 2004 and 2008 .....  | 22 |

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