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Report on the Western Australian Marine Industry

Prepared for the Department of Commerce



Government of **Western Australia**
Department of **Commerce**

Executive Summary

The research was conducted to ascertain the size, structure and economic impact of the marine industry within Western Australia. A total of 208 firms were surveyed in the first half of 2009, during the deepest part of the global financial crisis. Despite this, the outlook for the industry was generally positive, with firms predicting that turnover and employment levels will continue to increase over the next five years.

Key statistics for the 208 firms surveyed

Marine related company turnover generated in WA 2007/08*	\$1,252,264,198
Marine related company turnover generated overseas 2007/08*	\$405,391,000
Marine related capital investment generated in WA 2007/08	\$323,774,298
Marine related investment in research and development in WA	\$37,326,655
Total employment	6,187 people

(* It should be noted that 16% of firms did not supply their turnover)

While 208 firms took part in the research, it is estimated there are currently 400 firms in the industry across the nine sectors. As the survey sample represents 60% of the estimated industry and 16% of the respondents did not provide turnover details, a conservative escalation of 20% has been applied to more accurately reflect the value of the industry to the WA economy.

Estimated industry value to the WA economy

Marine related company turnover generated in WA 2007/08	\$1,502,717,037
Marine related capital investment generated in WA 2007/08	\$388,529,157
Marine related investment in research and development in WA	\$44,791,986
Total employment	7,424

The value of the marine industry to the Western Australian economy is \$3,576,466,548. This is based on a conservative multiplier of 2.38 which is consistent with the previous Western Australian Shipbuilders' Association (WASA) report on the Economic Impact of the Shipbuilding Industry in Western Australia, prepared by Paul McLeod in 1992

Estimated total impact on the WA economy

2009	Marine industry output
Industry output	\$1,502,717,037
Indirect contribution	\$2,073,749,511
Total effect on the WA economy	\$3,576,466,548

Comparing results from this 2009 survey with those of the 2002 WASA survey shows a 61% increase in turnover in shipbuilding in the past seven years. These values are conservative as shipbuilding and boat building are considered advanced manufacturing and often larger multipliers are applied than the ones used in this report.

Growth in shipbuilding between 2002 and 2009

Shipbuilding	2002	2009
Output from respondents	\$377,000,000	\$611,400,000
Indirect contribution	\$521,000,000	\$843,732,000
Total value	\$898,000,000	\$1,455,132,000

The total capital investment in the marine industry in Western Australia increased by 83% between the 2005/06 and 2007/08 financial years.

The survey sought qualitative feedback on a variety of key issues impacting the industry. The following is a summary of key findings from the survey respondents.

Key infrastructure or facilities that would aid business growth

- The building of new marinas and boat pens was a major concern across the whole industry.

Important training and skilling issues

- As anticipated, the main issues were around training of apprentices, however the need for training courses for staff in business skills such as marketing and customer service was also identified. A shortage of high quality staff with the right skills, experience and attitude was also highlighted.

Issues concerning legislation/international codes or standards

- The major concerns centred around the conflict between different levels of legislation and standards. There was also particular reference to environmental issues/regulations and the regulation of the fishing industry.

Areas of expansion or opportunity over the next three years

- The top three areas of expansion or opportunity for the industry were; product diversification, new innovation (in-house), diversification external to marine.

Barriers or threats to growth over the next three years

- When considering the outlook for the industry over the next five years, the global economic downturn and financial crisis were the major issues. Other significant issues were environmental legislation/regulation and the development of infrastructure.

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1 Introduction

1.1 Purpose of the study

This research was commissioned by the Department of Commerce to ascertain the size, structure and economic impact of the marine industry in Western Australia (WA). The data collected will inform future government policy and industry development initiatives. Previously, the Australian Bureau of Statistics (ABS) provided state-by-state measures of the economic value of ship and boat building activities which provided some indication of the status of at least part of the marine industry. There is currently no reliable data on which to base future development strategies for the industry as the ABS no longer publishes this data at the state level and the last shipbuilding sector survey in WA was undertaken in 2002 .

Previous research has failed to account for the diversity of the marine industry that includes:

- Boatbuilding and repairing
- Marina operations/yacht clubs
- Marine equipment and components manufacturing
- Marine equipment retailing and repairing
- Marine services
- Shipbuilding and repairing
- Superyacht building, refit and services
- Tourism (Austrade, 2007)

The marine sector is made up of a number of industries including defence, commercial fishing, transport (ferries), tourism and recreation. The diversity of products is highlighted by the recreational sector, which ranges from aluminium 'tinnies' to 70-metre luxury motor yachts (superyachts) (Austrade, 2007).

In recent years the defence sector of the marine industry in WA has been well supported with investment made by the Western Australian State Government in support of a strategy to develop a "world-class defence shipbuilding hub in Western Australia" (Department of Premier and Cabinet 2004, p.1). Since early 2004 the Western Australian Government has continued to invest in the development of the region, focusing primarily on the defence industry with the "Logical Choice" campaign launched in July 2006. This was designed to promote the Australian Marine Complex (AMC) in Henderson as the premier location in Australia for modular fabrication, ship consolidation, repair and maintenance for naval and commercial vessels (AMC, 2006a).

Research by the Western Australian Shipbuilders' Association (2002) and by the South West Development Authority (Cripps, 2007) both indicated the need for the development of other sectors of the marine industry outside of defence. The research by Cripps (2007) identified that this issue needed addressing if the industry as a whole is to continue to grow and adapt to the changing economic climate.

1.2 Research methodology

Based on previous research and in consultation with the Department of Commerce and key industry representatives, a draft survey instrument was developed. To test if the survey was accurate and would gather the intended data, a series of six face to face pilot interviews were undertaken with representatives from across the industry. Based on these interviews the survey was further refined.

In order to gather data from the largest possible number of respondents it was decided to use telephone interviews, as this method generally yields a higher response rate than mail surveys. The Survey Research Centre at Edith Cowan University conducted the confidential telephone surveys between March and May 2009. The success of the phone interviews was due to the promotional work of the key industry groups of the Boating Industry Association of Western Australia, Super Yacht Base Western Australia and Western Australia Shipbuilders' Association who encouraged their members to participate in the research. This strategy resulted in 208 completed surveys collected from a sample of 274 - a 76% response rate.

The sample contacted a range of firms including:

- Boat/shipbuilding
- Upgrade/repair refit
- Component manufacture
- Service
- Supply
- Dealer/sales
- Importer
- Boat maintenance and detailing
- Berthing/marina/yacht clubs
- Tourism operators

Some sectors were better represented in the sample than others. Tourism operators and yacht clubs could have been investigated in greater depth, however there were time and funding limitations.

2 Summary of key statistics for the marine industry

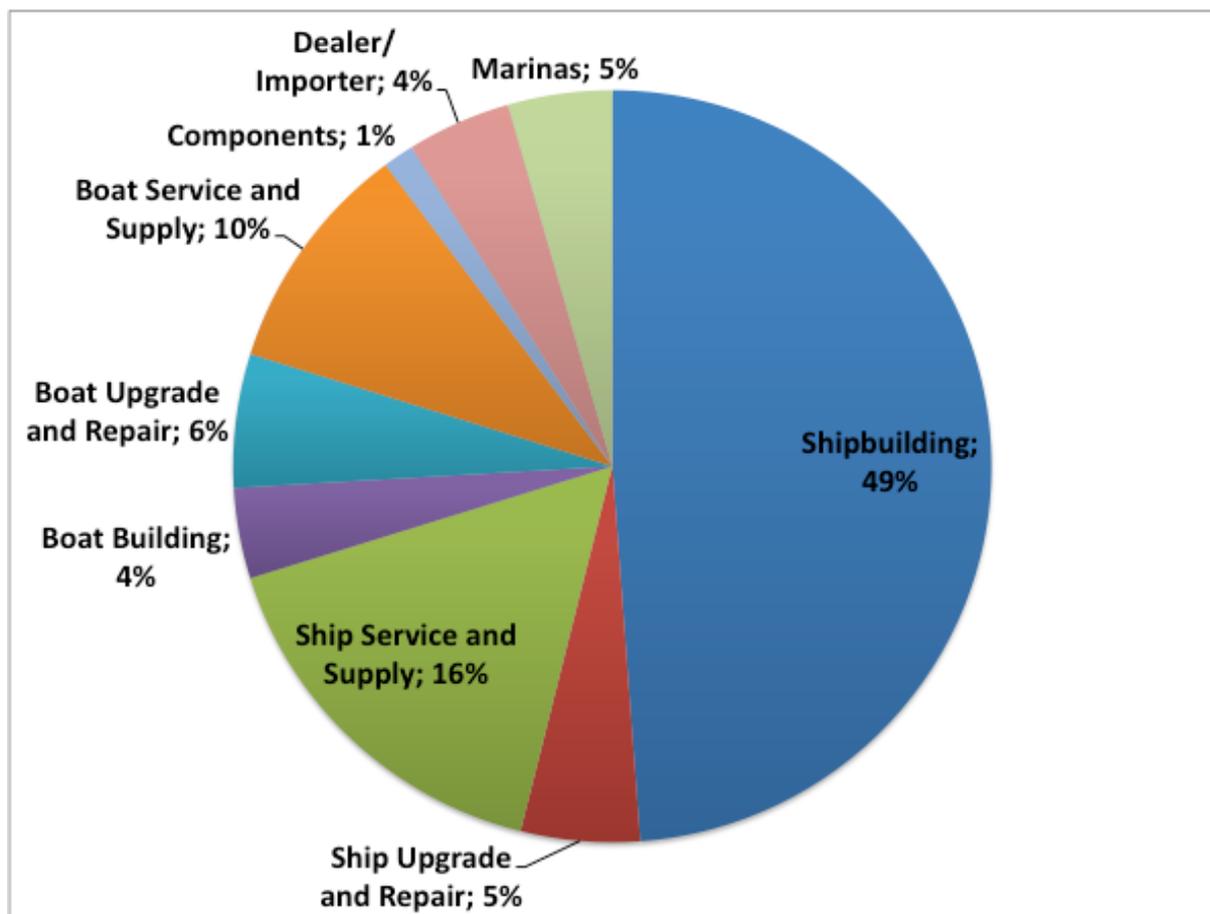
2.1 Company turnover for the 06/07 and 07/08 financial years by industry sector

The firms were asked to provide their annual turnover for the 2006/07 and 2007/08 financial years, and to identify the region in which the turnover was generated. The turnover for each region was determined based on the percentages allocated for Western Australian and overseas.

Western Australian company turnover 06/07 and 07/08 financial years

	2006-07	2007-08
Shipbuilding	\$578,910,000	\$611,400,000
Ship upgrade and repair	\$54,428,363	\$63,482,500
Ship service and supply	\$127,055,000	\$204,064,200
Boat building	\$48,437,000	\$48,695,250
Boat upgrade and repair	\$52,729,500	\$71,957,000
Boat service and supply	\$95,597,249	\$124,872,248
Components	\$18,085,000	\$16,568,000
Dealer/importer	\$52,570,000	\$55,520,000
Marinas	\$40,783,000	\$55,705,000
Total	\$1,068,595,111	\$1,252,264,198

Company turnover 07/08 by industry sectors



For 2007-08 the turnover generated overseas was \$405,391,000, comprising 20% of the total turnover for the marine industry.

A comparison of the results from the 2009 survey with those of the 2002 WASA survey show that there has been a 61% increase in turnover in shipbuilding in the past seven years.

Comparison with the WASA survey of 2002

Shipbuilding	2002	2009
Output from respondents	\$377,000,000	\$611,400,000
Indirect contribution	\$521,000,000	\$843,732,000
Total impact on the WA economy	\$898,000,000	\$1,455,132,000

2.2 Western Australian-based turnover by vessel type and industry sectors

The table below provides a breakdown of the turnover generated in Western Australia by vessel type, material and size. The highlighted cells generally indicate the largest turnover in a sector.

Turnover by vessel type and industry sectors

	Shipbuilders Supply and repair	Boat builders Supply and repair	Components	Dealer importer	Marinas
Turnover by vessel type					
Recreational vessels	\$18,189,400	\$156,760,745	\$4,601,000	\$52,369,000	\$35,538,500
Commercial vessels	\$581,894,200	\$17,145,505	\$2,636,000	\$508,500	\$854,000
Luxury/Super yacht vessels	\$28,567,000	\$2,585,147	\$14,219,000		\$87,500
Defence vessels	\$233,513,375	\$1,187,339	\$3,520,000		
Turnover by vessel materials					
Steel	\$315,039,350	\$3,152,680	\$2,600,000		
Aluminium	\$495,678,850	\$50,594,600	\$2,460,000		
Fibreglass	\$8,058,300	\$112,169,321	\$1,440,000		
Composite	\$2,760,000	\$2,897,519	\$17,820,000		
Timber	\$717,000	\$966,210			
Turnover by vessel size					
1-10 Meters	\$5,785,300	\$87,615,138	\$10,000,000	\$19,800,000	\$11,250,000
11-20	\$14,625,500	\$28,814,313	\$5,400,000	\$30,820,000	\$11,250,000
21-30	\$28,432,400	\$1,181,650	\$9,226,000	\$3,000,000	
31-40	\$19,591,000	\$122,250	\$3,874,000		
41-50	\$277,177,500	\$2,250	\$1,110,000		
51-60	\$80,677,500	\$2,250	\$900,000		
Over 60	\$430,571,800	\$332,250	\$500,000		

The table above shows a clear dichotomy between the shipbuilding, service, supply and repair and boat building, service, supply and repair sectors, with the shipbuilding focusing on commercial and defence vessels over 40 meters in size. By comparison the boat builders are focused on recreational vessels less than 20 meters in size. Shipbuilders were also more

likely to construct vessels using steel and aluminium, while boat builders favoured fibreglass and aluminium. The major area for turnover for the components sector is luxury and super yacht vessels. As expected, recreational vessels were the main focus for the dealer/importers and marinas.

2.3 Employment by industry sector

The 208 firms that participated in the survey employed a total of 6,187 employees. The shipbuilding and ship service and supply sectors were the dominant employers in the industry with 60% of all employees between them.

Employment by type in Western Australia (number)

Industry sector	Full time	Part time	Contractors	Apprentices	Migrant	Total
Shipbuilding	2,088	44	49	199	262	2,642
Ship service and supply	788	66	155	66	17	1,092
Boat building	460	16	41	37	25	579
Boat upgrade and repair	266	73	206	23	2	570
Ship upgrade and repair	353	24	34	8	20	439
Boat service and supply	316	36	21	11	7	391
Marinas	180	19	45	1	1	246
Components	140	12	1	11	7	171
Dealer/importer	30	22	3	1	1	57
Total employees	4,621	312	555	357	342	6,187

Type of Employment by Percentage

Industry sector	Full time	Part time	Contractors	Apprentices	Migrant
Shipbuilding	79.0%	1.7%	1.9%	7.5%	9.9%
Ship service and supply	72.2%	6.0%	14.2%	6.0%	1.6%
Boat building	79.4%	2.8%	7.1%	6.4%	4.3%
Boat upgrade and repair	46.7%	12.8%	36.1%	4.0%	0.4%
Ship upgrade and repair	80.4%	5.5%	7.7%	1.8%	4.6%
Boat service and supply	80.8%	9.2%	5.4%	2.8%	1.8%
Marinas	73.2%	7.7%	18.3%	0.4%	0.4%
Components	81.9%	7.0%	0.6%	6.4%	4.1%
Dealer/importer	52.6%	38.6%	5.3%	1.8%	1.8%

Shipbuilding had the largest percentage of full-time employees and the highest proportion of migrant workers. Apprentices were most prevalent in the boat building and components sectors. Apprentices made up only 6% of the total workforce in the industry, with migrant

workers constituting 5.5% of the surveyed workforce, predominately in the shipbuilding sector. The boat upgrade and repair sector is heavily reliant on contractors (36%). The importer/dealer sector has a high proportion of part time staff, which may reflect the long hours associated with the retail nature of the business.

Shipbuilding employment - 2002 and 2009 comparison

	Full time	Contractors	Apprentices	Total
2002 (WASA)	1,294	195	197	1751
2009	2,088	49	199	2,642
Percentage change	61%	-75%	1%	51%

From the comparison of the figures from the 2002 WASA report and the current survey, shown in the table above, it is evident that there has been a 51% increase in the total number of employees in the shipbuilding sector. While the number of contractors has decreased significantly, there has been no real change in the number of apprentices, which means between 2002 and 2009 apprentices in the shipbuilding sector have dropped from 11% of the total employees to 7.5%.

2.4 Total capital investment in Western Australia by sector

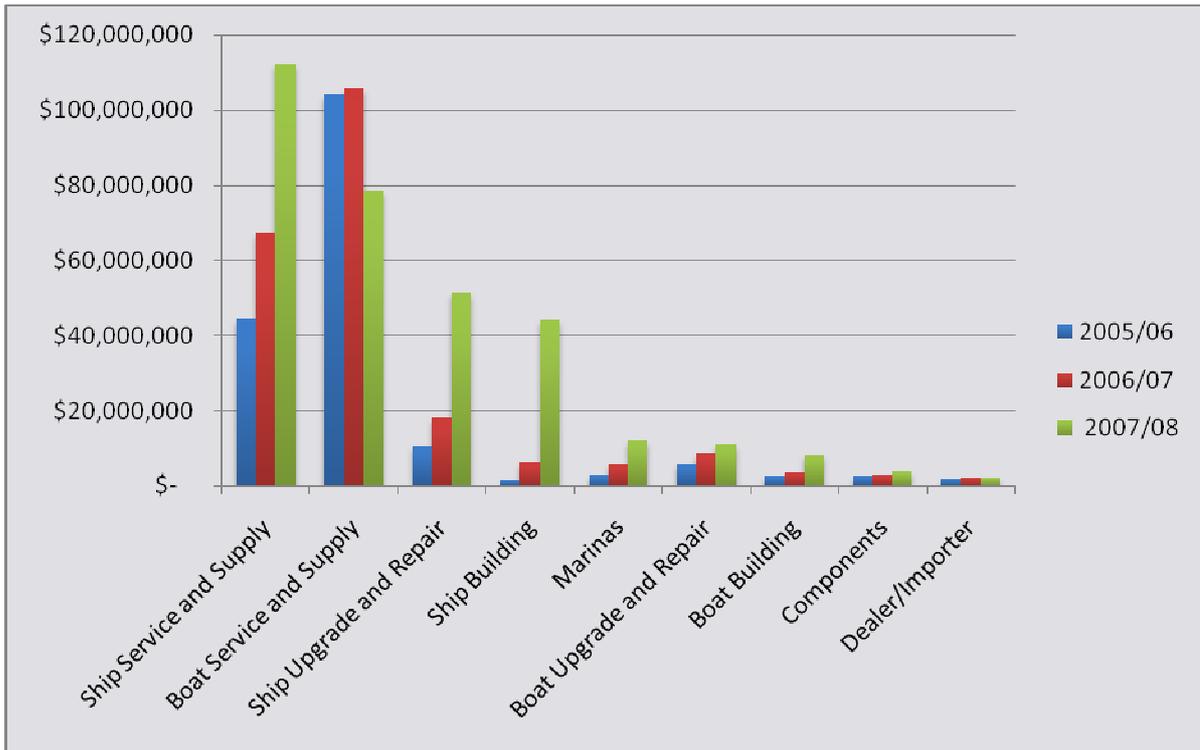
Capital investment has increased over the past three years in all industry sectors except boat service and supply. The 2005/06 and 2006/07 capital investment figures for the boat service and supply sector was due to significant investment in both years by a single respondent. The total capital investment grew by 25% in 2006/07 and 47% in 2007/08, which represents an 83% increase in two years. This significant level of investment highlighted the confidence of the industry at the time.

Capital investment in Western Australia

Industry sector	2005/06	2006/07	2007/08
Ship service and supply	\$44,692,000	\$67,539,000	\$112,396,200
Boat service and supply	\$104,165,000	\$105,700,000	\$78,504,000
Ship upgrade and repair	\$10,795,000	\$18,155,000	\$51,350,000
Shipbuilding	\$1,360,000	\$6,110,000	\$44,430,000
Marinas	\$2,800,000	\$5,805,000	\$12,069,000
Boat upgrade and repair	\$5,960,000	\$8,510,000	\$10,865,900
Boat building	\$2,590,000	\$3,570,200	\$8,093,200
Components	\$2,505,000	\$2,655,000	\$3,955,000
Dealer/importer	\$1,800,000	\$2,000,000	\$2,110,000
Total	\$176,667,000	\$220,044,200	\$323,773,300

The graph below highlights the significant investment that has been made in the shipbuilding and boat building service and supply sectors and the demand for the facilities to maintain vessels in WA.

Total capital investment in Western Australia by sector



2.5 Investment in research and development

The shipbuilding industry is the major investor in R&D for the marine industry, making up 65% of total Western Australian R&D investment. The total R&D investment for 07/08 of \$37 million is 3% of the total turnover for all survey respondents.

Investment in research and development based on 2007/08 WA turnover

Industry sector	2007/08
Shipbuilding	\$24,487,000
Boat building	\$5,863,550
Dealer/importer	\$2,333,500
Ship upgrade and repair	\$1,702,400
Components	\$1,050,800
Boat upgrade and repair	\$778,500
Boat service and supply	\$480,320
Ship service and supply	\$472,335
Marinas	\$158,250
Total	\$37,326,655

3 State of the industry

3.1 Commercial and recreational boat registrations in Western Australia

One indicator of the size of the marine industry in Western Australia is the number of vessels both commercial and recreational registered in the State. The following was obtained from the Department of Planning. Data on commercial boat licenses by type of vessel, size and by location as at October 2008 are summarized below.

Of the commercial boats registered, the three most significant classes are fishing vessels (44%), passenger boats (18%) and non-fishing non passenger boats (33%). In relation to size, 60% of the boats are between 11 and 20 meters in length.

Commercial boat licenses by type of vessel

Class (length meters)	<=5	<=7	<=10	<=15	<=20	<=25	<=50	Over 50	Total
Sailing training vessel			3	12					15
Passenger boats	1	5	26	147	158	55	17		409
Non-fishing non-passenger boats	45	86	195	143	118	60	65	14	726
Fishing vessels	0	9	117	291	415	113	26	1	972
Hire and drive	8	26	9	32					75
Total vessels	54	126	350	625	691	228	108	15	2197

Registrations of new recreational boats in Western Australia at the end of January 2009 are summarized in the table below. Aluminium (44%) and fibre and reinforced plastic (46%), were the two dominant materials, and 94% of the boats were less than 10 meters in length.

New recreational boating registrations

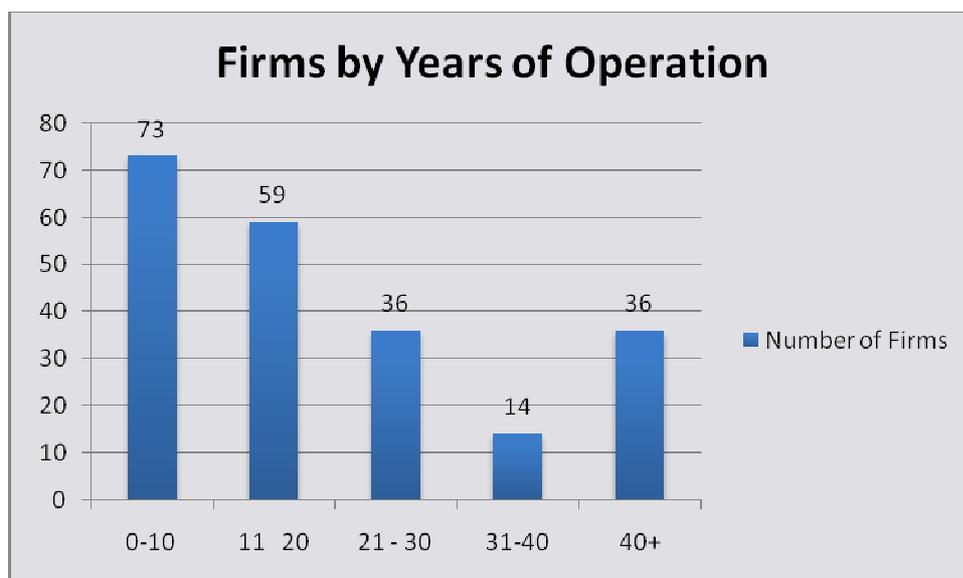
Material	<5m	5 to 9.99	10 to 19.99	20 to 999	Total
Aluminium	1352	871	11	3	2238
Carbon fibre			1		1
Composite	17	11	11		39
Ferro-cement		1			1
Fibre reinforced plastic	945	1118	234	9	2306
Plastic	73	14			87
Plywood	12	5	2	1	20
Steel	5	9	7		21
Synthetic inflatable	184	41	2		227
Timber	6	8	5		19
Unknown	11	6			17
Vinyl	57	10			67
Total	2,662	2,094	273	13	5,043

For the 12 months to January 2009 there were 5,034 new boats registered, bringing the total of recreational vessels registered throughout the state to 85,806.

There are also a number of recreational craft that are not registered. According to Yachting WA, as at 30 June 2008, there were 1,191 dinghies and small catamarans that were not registered and 76 large keel boats under 10 meters (Yachting WA, 2008).

3.1.1 Years the business has been operating

Years of operation range from 1 to 148, with 65% of firms operating 15 years or less with the average length of operation being 20 years. The figure below shows the spread of data.



3.2 Innovation research and development in the industry

Respondents were asked if they had made any improvements or innovations that had increased their turnover over the past 12 months.

Areas in which innovations were implemented

Type of improvement	Number of citations
Investment in infrastructure/technology	25
Increased efficiency	17
Advertising and marketing strategies	16
Business expansion	11
Staff and migrants	8
Product improvement	5
Other	5
Customer service	4
Training	2

Of the 93 respondents that had made improvements or innovation, 73% were involved in the boat building sector of the industry. Areas of investment included equipment, new

premises and information technology. A number of firms have invested in marketing on the web to improve the profile of their business.

3.2.1 Investment in R&D

Of the respondents 37.5% indicated that they invested a percentage of their turnover in R&D. This low level of investment may be due to the number of service, supply and maintenance firms interviewed as part of the study. Of the firms that did invest in R&D, 68% invested between 1 and 10% of their turnover. The survey participants were asked if they conducted their R&D alone or in conjunction with another organisation. Of the respondents who conducted R&D, 47% did so in conjunction with other firms, as illustrated below.

Types of R&D collaborators

R&D collaborators	%
Suppliers & manufactures	29.3
Parent company	19.5
Technical i.e. navel architect; engineer	14.6
Others in the industry	12.2
Universities	9.8
Defence organisation	4.9
Marina or yachting associations	4.9
With an external consultant	4.9

The reasons given by the 51% of the respondents for conducting R&D alone, rather than in collaboration with another firm centred around perceived difficulties and negative experiences, such as loss of control, high expense and added complications.

Another significant barrier to collaboration was the need to maintain competitive advantage by the protection of intellectual property; this was cited by 31% of respondents.

Finally, firms considered that due to the uniqueness of their technology or field of research there was either no incentive to collaborate, or no potential partners with whom to collaborate. This may be explained by the small size and isolation of the industry in Western Australia, which has lead to the creation of niche or boutique firms as illustrated in the comments below.

3.3 Infrastructure or facilities that would aid business growth

As part of the research the participants were asked to identify the three most important pieces of infrastructure or facilities that, if available, would aid the growth of their businesses. The building of new marinas and boat pens was a major concern across the whole industry.

Feedback been grouped by common themes and divided into shipbuilders, (including upgrade and repair; service and supply sectors) and boat builders (including upgrade and repair; service and supply sectors). The other three sectors (components, dealer/importers and marinas) are the same as in the rest of the report.

3.3.1 Shipbuilders

The three main areas of concern for shipbuilders are the provision of infrastructure, new marinas, and larger premises. These issues are illustrated in the comments below.

Shipbuilders	Number of citations
Government funding of infrastructure	24
New mariners	12
Larger premises for the company	12
Boat ramps and launching facilities	9
Internet technology improvement	8
Marinas and boat pens	7
Staff	6
Impact of economic conditions	5
Other	5
Government policy/regulation	3
Population growth	2

3.3.2 Boat builders

The most pressing issues for boat builders were infrastructure relating to boat users as the expansion of these facilities would increase growth of their businesses. Some of the relevant comments from the boat builders are included below.

Boat builders	Number of Citations
Boat ramps and launching facilities	38
New expanded marinas	37
Boat Pens	22
Government funding of infrastructure	18
Other	13
Impact of economic conditions	11
Location	11
Government policy/regulation	10
Larger premises for the company	7
Internet technology improvement	2

3.3.3 Components; dealers / importers; marinas

For the other three sectors the focus centred around the upgrade of facilities and the provision of regional and recreational facilities.

3.4 Important training and skilling issues

As anticipated, the main issues relating to training and skilling involved apprentices, however the need for training courses for staff in business skills such as marketing and customer service was also identified. A shortage of high quality staff with the right skills, experience and attitude was also highlighted.

3.4.1 Shipbuilders

Shipbuilders raised concerns about the content of the present apprenticeship system and also suggested the introduction of a course to cover shortfalls in skills.

Shipbuilders	Number of citations
Improved training TAFE	16
Supply of employees	14
Other courses	12
Issues around apprentices	11
Other	8
Business training	7
More experienced employees	3
No issues	2
Migrant workforce	2

3.4.2 Boat builders

As can be seen in the table below, apprentices and TAFE training were the main issues. The length, diversity and quality of apprenticeships and the subsequent cost of employing the graduates were all commented on in detail.

Boat builders	Number of citations
Issues around apprentices	37
Improved training TAFE	27
Supply and quality of employees	12
More experienced employees	10
Courses and training	9
Government policy	7
Business training	5
Other	1

3.5 Issues concerning legislation/International Codes or Standards

The major concerns were around the conflict between different levels of legislation and standards. There was also particular reference to environmental issues/regulations and the regulation of the fishing industry.

3.5.1 Shipbuilders

The focus of the shipbuilders was mainly around conflicting legislation and environmental issues.

Shipbuilders	Number of citations
Unified international leg.	24
Environmental	11
Other	11
Labour	6
OHS	3
Tariffs	2
Import/export	2
Fishing	1

3.5.2 Boat builders

Beyond inconsistency in the various levels of legislation and environmental issues, for the boat builders there are additional issues around the fishing industry which affect their customers.

Boat builders	Number of citations
Unified international leg.	40
Fishing	19
Government regulations	14
Government policy	9
Environmental	5
Import export	4
Economic factors exchange rate	3
Labour & staffing	2

3.6 Issues to be addressed for business growth

The issues cited by the respondents concerning business growth were varied, however the two main themes were the current economy and the role of government assistance.

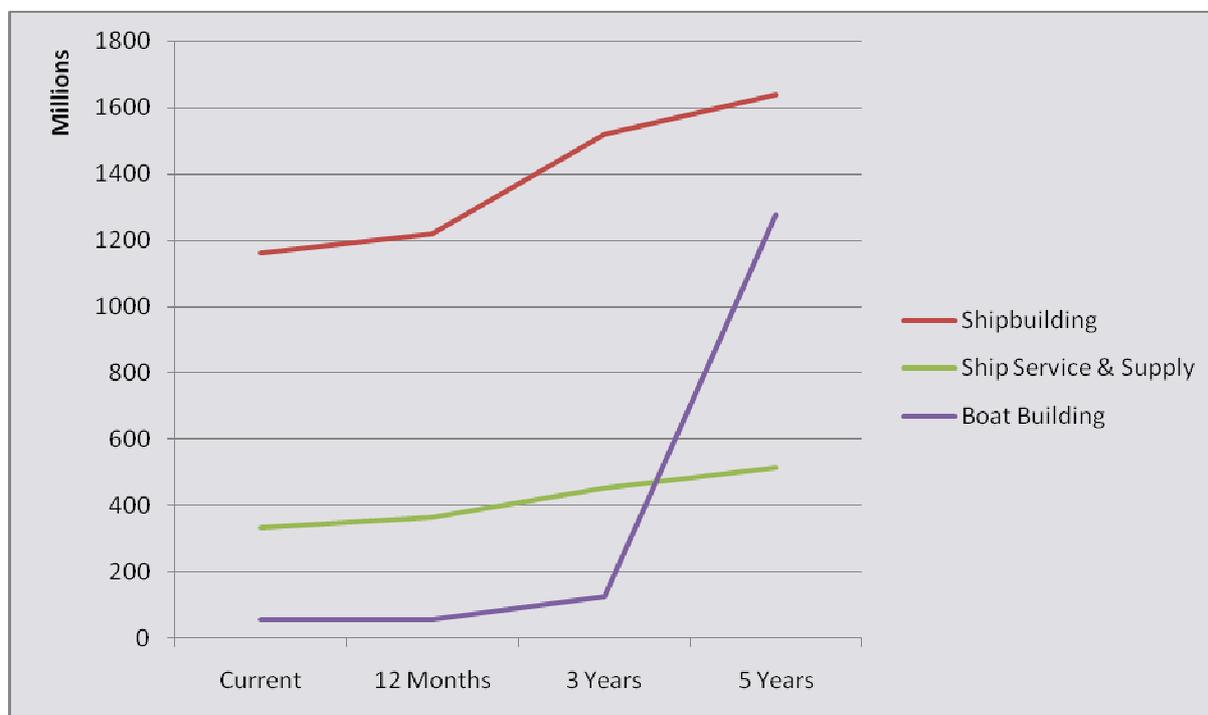
Shipbuilders	Number of citations	Boat builders	Number of citations
Government assistance	8	Investment	13
Economy	7	Economy	10
Business expansion	2	Government assistance	8
Other issues	2	Regulation	6
Investment	1	Business expansion	4
Migration	1	Fishing	4
Exchange rate	1	Employment issues	2
Fishing	1	Marketing	2
Tax	1	Exchange rate	1
		Tax	1

4 Forecast industry growth

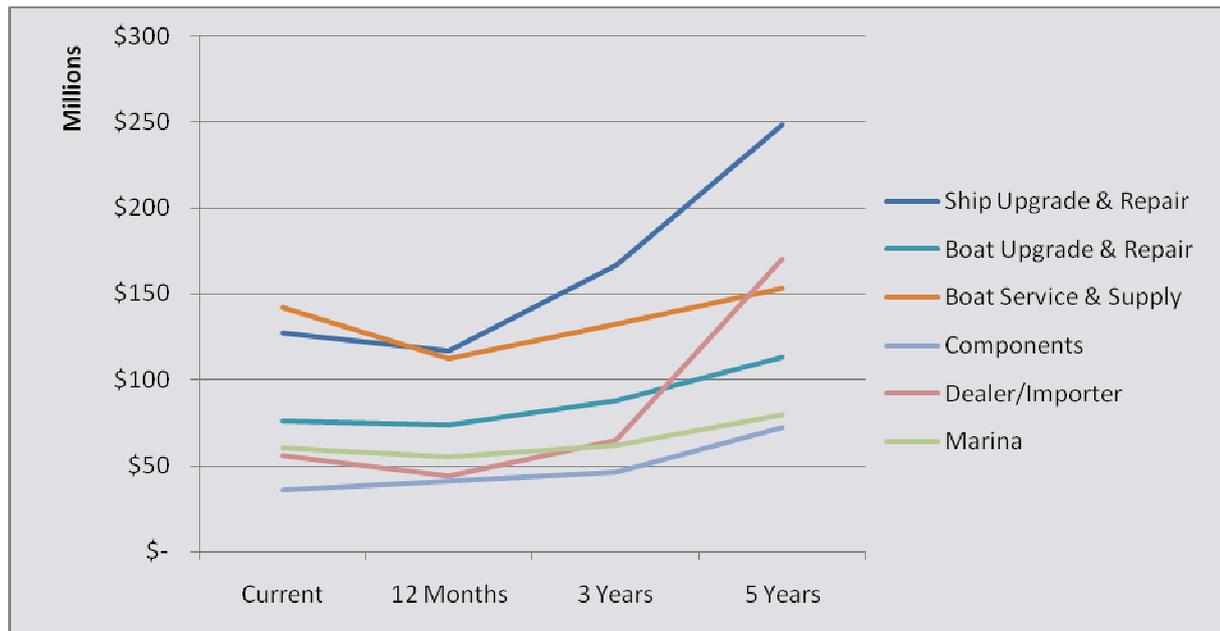
4.1 Projected turnover for the next five years

Despite the data being collected in early 2009 during the depths of the Global Financial Crisis generally all sectors predicted an increase in the next three to five years as depicted in the graphs below.

Projected turnover for the next five years



Projected turnover for the next five years



Shipbuilding- The smaller companies expect to maintain or increase their turnover in next five years and the larger companies generally expect increases to their turnover. It should be noted that some of the larger companies did not supply this data.

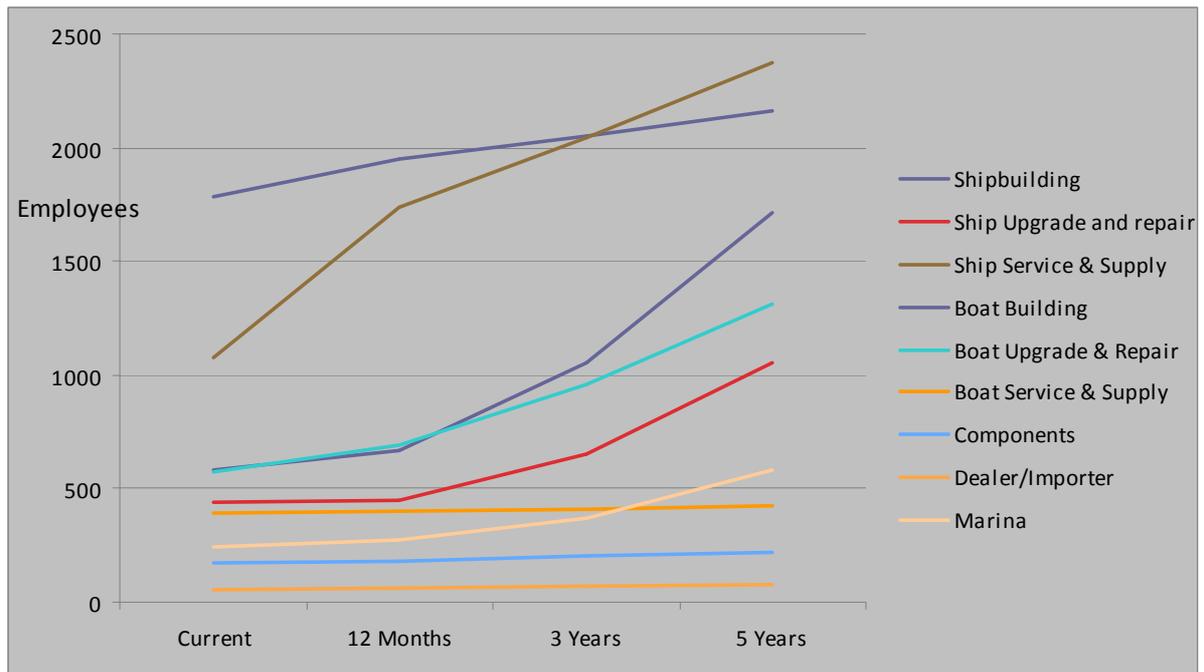
Ship upgrade and repair—The data has been significantly impacted by a major increase in oil and gas related activities.

Boat service and supply - From the graph above it can be seen that respondents expect a significant downturn over the next year but have a far more optimistic outlook over the next three to five years.

4.2 Projected employment for the next five years

The general trend indicates that respondents predict positive growth in employment in all sectors, as can be seen from the graphs below.

Projected employment for the next five years



Shipbuilding - The general trend shows that shipbuilders believe employment will progressively increase over the next five years in the industry sector.

Ship upgrade and repair - The general trend shows a similar progressive increase in employment over the next five years.

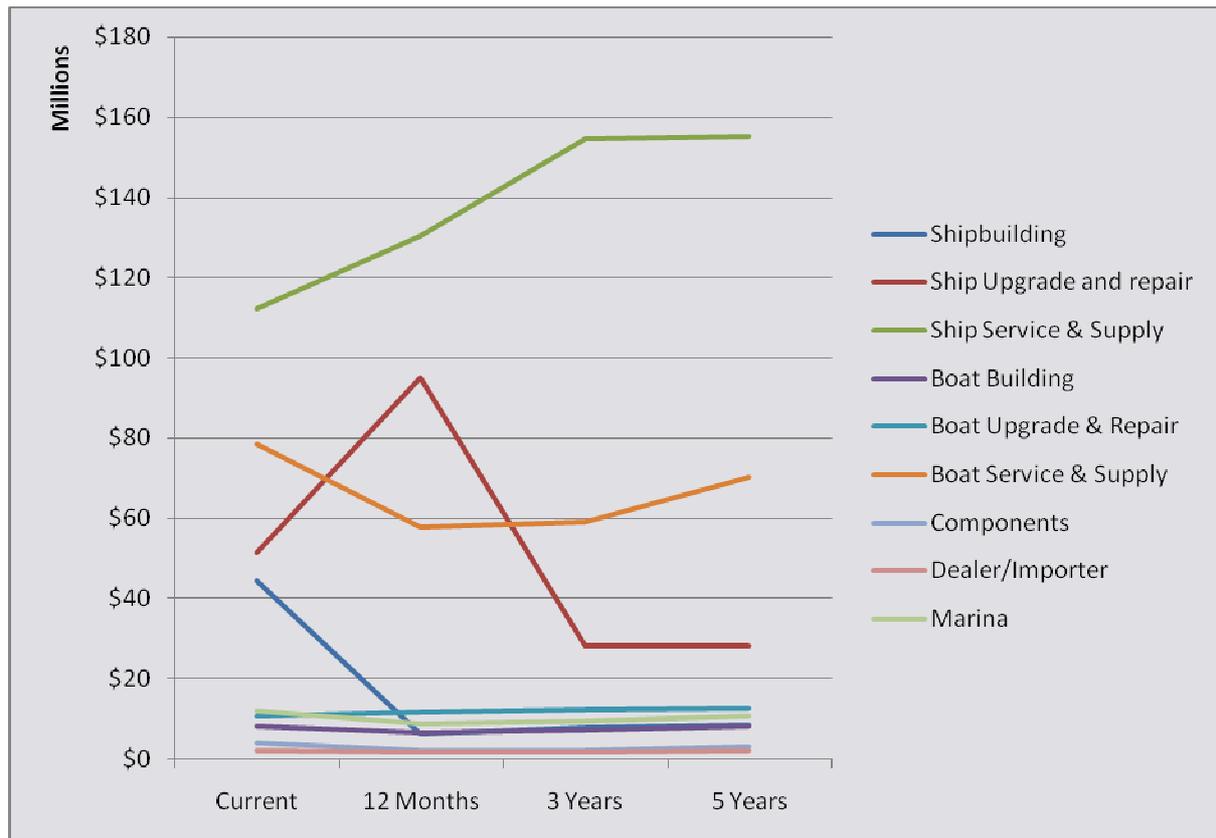
Boat building - The trend shows significant increase in employment in the next five years particularly after the impacts of the economic downturn have washed through.

Marinas - The upswing in employment is due to two firms predicting a significant increase in their employee levels after three and five years.

4.3 Projected capital investment for the next five years

Unlike turnover and employment, capital investment is predicted to decrease over the next five years. The only two sectors that predict an increase are ship service and supply and boat upgrade and repair.

Projected capital investment for the next five years



Shipbuilding - The sharp decrease in capital investment can be explained in part by the completion of the current wave of facility upgrades.

Ship upgrade and repair - Although capital investment in the ship upgrade and repair sector has increased over the past three years, the long-term outlook is for a decreased level of investment over the next five years. The spike in capital investment is due to one respondent predicting that it will significantly increase its capital investment in the next 12 months.

Ship service and supply - Although capital investment in this sector is predicted to increase in the short term, there is little increase expected after three years.

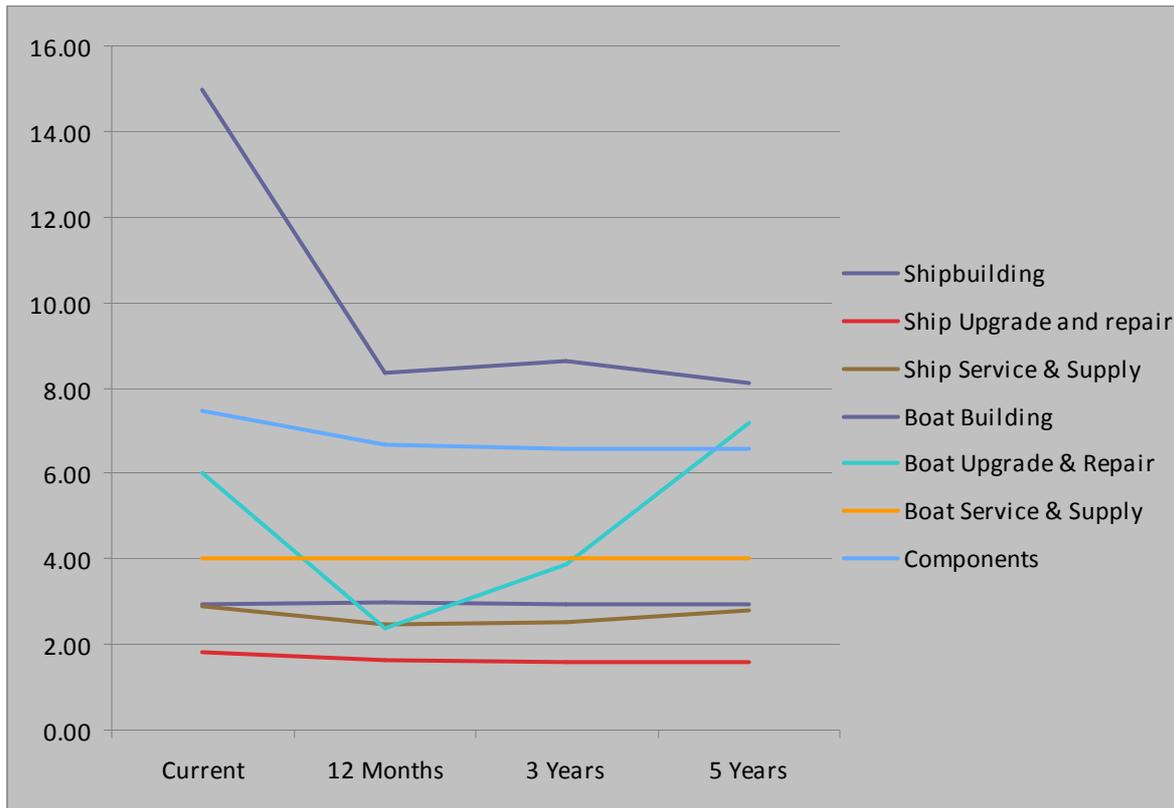
Components sector - Capital investment over the next five years in the component sector is expected to decrease in the short term and increase in the long term.

Dealer/importer - In comparison to an expected increase in turnover, the level of capital investment in this sector is likely to drop significantly due to several respondents predicting a decline of 80% to 100% in investment in the next 12 months.

4.4 Projected investment in research and development for the next five years

The outlook for the percentage of turnover invested in R&D over the next five years was mixed between the sectors. Ship service and supply, boat upgrade and repair and shipbuilding are all expecting to increase R&D investment whereas boat building, ship upgrade and repair and components are all anticipating a decrease in R&D investment.

Change in the percentage of turnover invested in R&D



Boat upgrade & repair- Though the respondents have predicted a decrease in capital investment over the next five years they continue to see growth in R&D investment.

Marinas - The increase in R&D investment is due to one respondent predicting a large increase in investment in research.

4.5 Areas of expansion or opportunity over the next three years

For all respondents none of the opportunities rated very highly, with 2.62 being the highest average rating out of 5. All the individual sectors are displayed below. It has been highlighted where their ranking of the opportunities varied from the ranking of all respondents. The top three areas of expansion or opportunity for the industry were;

- Product diversification,
- New innovation (in-house),
- Diversification external to marine.

Expansion opportunities – marine industry average	Ranking
Product diversification	1
New innovation (in-house)	2
Diversification external to marine	3
Infrastructure development	4
Collaborative marketing strategy	5
Increasing exports	6
Collaborative R&D	7
Manufacturing offshore	8

Shipbuilders	
Area of future expansion	Ranking
Product diversification	1
New innovation (in-house)	2
Diversification external to marine	3
Manufacturing offshore	4
Infrastructure development	5
Increasing exports	6
Collaborative marketing strategy	7
Collaborative R & D	8

- Manufacturing offshore was rated significantly higher by shipbuilders.

Ship service & supply	
Area of future expansion	Ranking
New innovation (in-house)	1
Product diversification	2
Diversification external to marine	3
Manufacturing offshore	4
Infrastructure development	5
Increasing exports	6
Collaborative marketing strategy	7
Collaborative R & D	8

- Ship service and supply ranked manufacturing offshore higher than all respondents. They ranked new innovation (in-house) as the top area for expansion.

Ship upgrade & repair	
Area of future expansion	Ranking
Product diversification	1
Diversification external to marine	2
Infrastructure development	3
New innovation (in-house)	4
Collaborative marketing strategy	5
Increasing exports	6
Collaborative R & D	7
Manufacturing offshore	8

- Diversification external to marine was the second highest ranked area for expansion by ship upgrade & repair

Boat building	
Area of future expansion	Ranking
Product diversification	1
New innovation (in-house)	2
Diversification external to marine	3
Collaborative marketing strategy	4
Infrastructure development	5
Collaborative R & D	6
Manufacturing offshore	7
Increasing exports	8

- A collaborative marketing strategy was ranked significantly higher by boat builders.

Boat service & supply	
Area of future expansion	Ranking
Product diversification	1
Infrastructure development	2
Diversification external to marine	3
Collaborative marketing strategy	4
New innovation (in-house)	5
Increasing exports	6
Collaborative R & D	7
Manufacturing Offshore	8

- Both infrastructure development and a collaborative marketing strategy were ranked higher by boat service & supply.

Boat upgrade & repair	
Area of future expansion	Ranking
Product diversification	1
New innovation (in-house)	2
Collaborative marketing strategy	3
Infrastructure development	4
Diversification external to marine	5
Manufacturing offshore	6
Collaborative R & D	7
Increasing exports	8

- Boat upgrade & repair considered a collaborative marketing strategy and manufacturing offshore as more highly ranked opportunities for expansion.

Components	
Area of future expansion	Ranking
Product diversification	1
Diversification external to marine	2
New innovation (in-house)	3
Increasing exports	4
Collaborative marketing strategy	5
Infrastructure development	6
Manufacturing offshore	7
Collaborative R & D	8

- For the components sector, increasing exports was ranked higher than in comparison with all respondents.

Dealer/importer	
Area of future expansion	Ranking
Collaborative marketing strategy	1
New innovation (in-house)	2
Collaborative R & D	3
Product diversification	4
Infrastructure development	5
Diversification external to marine	6
Manufacturing offshore	7
Increasing exports	8

- A collaborative marketing strategy and collaborative R&D were considered more important areas of expansion by dealer/importers.

Marina	
Area of future expansion	Ranking
Infrastructure development	1
Collaborative marketing strategy	2
Product diversification	3
New innovation (in-house)	4
Diversification external to marine	5
Collaborative R & D	6
Increasing exports	7
Manufacturing offshore	8

- Infrastructure development and a collaborative marketing strategy were considered top priorities to aid expansion by marinas.

4.6 Barriers or threats to growth over the next three years

As indicated in the previous data concerning the outlook for the industry over the next five years, the global economic downturn and financial crisis were the major issues. Other significant issues were environmental legislation/regulation and the development of infrastructure.

Barriers or threats to growth - marine industry average	Ranking
Global economic downturn/financial crisis	1
Value of the dollar	2
Environmental issues/legislation	3
Insufficient infrastructure development	4
Competition from larger companies	5
Insufficient venture capital/finance	6
Cheaper production in Asia	7
Location of WA compared with competitors (isolated location)	8
Insufficient R&D	9

Shipbuilders	
Barriers	Ranking
Global economic downturn/financial	1
Value of the dollar	2
Competition from larger companies	3
Cheaper production in Asia	4
Environmental issues legislation	5
Insufficient infrastructure development	6
1. Insufficient venture capital/finance	7
Location of WA compared with competition	8
Insufficient R & D	9

- For shipbuilders competition from larger companies and cheaper production in Asia were ranked higher as threats.

Boat builders	
Barriers	Ranking
Global economic downturn/financial	1
Value of the dollar	2
Cheaper production in Asia	3
Insufficient venture capital/finance	4
Insufficient infrastructure development	5
Competition from larger companies	6
Environmental issues legislation	7
Location of WA compared with competition	8
Insufficient R & D	9

- For boat builders, cheaper production in Asia and insufficient venture capital/finance were seen as significant threats to their business.

Components	
Barriers	Ranking
Value of the dollar	1
Global economic downturn/financial	2
Cheaper production in Asia	3
Environmental issues legislation	4
Competition from larger companies	5
Insufficient infrastructure development	6
Insufficient R & D	7
Location of WA compared with competition	8
Insufficient venture capital/finance	9

- For the components sector cheaper production in Asia was ranked higher.

Marinas	
Barriers	Ranking
Global economic downturn/financial	1
Insufficient infrastructure development	2
Environmental issues legislation	3
Value of the dollar	4
Insufficient venture capital/finance	5
Competition from larger companies	6
Cheaper production in Asia	7
Insufficient R & D	8
Location of WA compared with competition	9

- For marinas a significant barrier was insufficient infrastructure development.

Ship upgrade & repair	
Barriers	Ranking
Global economic downturn/financial	1
Value of the dollar	2
Insufficient infrastructure development	3
Environmental issues legislation	4
Competition from larger companies	5
Cheaper production in Asia	6
Location of WA compared with competition	7
Insufficient R & D	8
Insufficient venture capital/finance	9

- In line with the industry average

Boat upgrade & repair	
Barriers	Ranking
Global economic downturn/financial	1
Value of the dollar	2
Environmental issues legislation	3
Insufficient infrastructure development	4
Competition from larger companies	5
Insufficient venture capital/finance	6
Location of WA compared with competition	7
Cheaper production in Asia	8
Insufficient R & D	9

- In line with the industry average

Boat service & supply	
Barriers	Ranking
Global economic downturn/financial	1
Value of the dollar	2
Environmental issues legislation	3
Insufficient infrastructure development	4
Insufficient venture capital/finance	5
Competition from larger companies	6
Location of WA compared with competition	7
Cheaper production in Asia	8
Insufficient R & D	9

- In line with the industry average

Dealer/importer	
Barriers	Ranking
Global economic downturn/financial	1
Value of the dollar	2
Environmental issues legislation	3
Competition from larger companies	4
Insufficient infrastructure development	5
Insufficient venture capital/finance	6
Cheaper production in Asia	7
Insufficient R & D	8
Location of WA compared with competition	9

- In line with the industry average

5 Industry competitiveness

5.1 Areas industry competitiveness

The majority of industry sectors considered that they were most competitive in the local market and had a similar ranking to all respondents ranked below.

Where they varied from the ranking of all respondents is highlighted.

All respondents	
Area of competition	Ranking
Local product	1
Local price	2
Local market share	3
National product	4
National price	5
National market share	6
International product	7
International price	8
International market share	9

Ship Builders	
Area of competition	Ranking
Local product	1
National product	2
Local price	3
National price	4
Local market share	5
International Product	6
National market share	7
International market share	8
International price	9

- Shipbuilders consider themselves to be more competitive nationally and internationally by product, and nationally by price.

Boat upgrade & repair	
Area of competition	Ranking
Local product	1
Local price	2
Local market share	3
National product	4
International product	5
National price	6
National market share	7
International price	8
International market share	9

- The boat upgrade and repair, marina and the components sectors consider themselves to be more competitive internationally by product than the respondents overall.

Components	
Area of competition	Ranking
Local product	1
Local market share	2
Local price	3
National product	4
International product	5
National price	6
National market share	7
International market share	8
International price	9

- The boat upgrade and repair, marina and the components sectors consider themselves to be more competitive internationally by product than the respondents overall.

Marina	
Area of competition	Ranking
Local market share	1
Local product	2
Local price	3
International product	4
National product	5
National market share	6
National price	7
International price	8
International market share	9

- The boat upgrade and repair, marina and the components sectors consider themselves to be more competitive internationally by product than the respondents overall.

Boat builders	
Area of competition	Ranking
Local product	1
Local price	2
Local market share	3
National product	4
National price	5
National market share	6
International product	7
International price	8
International market share	9

- In line with the industry average

Boat service & supply	
Area of competition	Ranking
Local product	1
Local price	2
Local market share	3
National product	4
National market share	5
International product	6
National price	7
International price	8
International market share	9

- In line with the industry average

Ship service & supply	
Area of competition	Ranking
Local product	1
Local price	2
Local market share	3
National product	4
National price	5
National market share	6
International product	7
International price	8
International market share	9

- In line with the industry average

Dealer/importer	
Area of competition	Ranking
Local product	1
Local market share	2
Local price	3
National product	4
National price	5
National market share	6
International product	7
International price	8
International market share	9

- In line with the industry average