

East Midlands Development Agency – Innovation iNets

TRANSPORT

“Mapping of the main elements of the marine sector in the East Midlands and identifying the main innovation drivers”

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Name:	Matt Symonds
Email:	matt.symonds@bateam.co.uk
Telephone:	01509 670 610
Address:	Lockington Hall Lockington Derby Derbyshire DE74 2RH
Website:	www.bateam.co.uk

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1.0 Executive Summary

This report documents the approach taken to (and the outputs delivered from) a mapping exercise of the key elements of the leisure marine sector in the East Midlands with particular emphasis on the identification of the main innovation drivers for the sector.

The marine industry is diverse and companies of all scales are involved from the major employers in the region to the many small scale operations supporting all aspects of the industry. Amongst these are traditional family run lifestyle businesses which rely on local business as well as international SMEs who compete in worldwide markets. Many of these latter companies invest in R&D on an ongoing basis but the scale and value of innovation within the sector is unknown. There was therefore a real need to understand the scope of the businesses involved within the marine sector, assess their innovative nature and review their contribution to the regions economy.

Successful marine networks have been developed to help focus support and encourage collaboration in the South West and the South East. However, concentrations of marine activity in other regions of the UK have not yet been specifically identified. The East Midlands is an obvious candidate for a central marine cluster given the strategic significance of marine manufacturing for this area including several key supply chain companies serving the whole UK and many overseas and superyacht customers.

The objective of this commission was to provide an understanding of the capacity and capability of the Marine sector in the East Midlands, to provide an indication of the current level of innovation within the sector, to provide an indication of the perceived drivers of innovation for the sector and to review support available within the region to this end.

288 leisure marine sector companies and sole traders were identified as a result of the mapping exercise, their contact details and an outline of core activities were then added to a database. The database was then categorised by activity – initially ‘Manufacturing’ and ‘Services’ – 61 businesses in manufacturing, 181 in services and 46 a combination of both manufacturing and services. These categories were then further subdivided in accordance with supply chain classifications already utilised in the sector - to enable cross referencing of data.

Once the database of companies had been established an assessment was made as to the level of innovation associated with each company. This was achieved by ranking the level of innovation of each of the supply chain classifications. This ranking was based on current relevant documentation and an assessment of the supply chain classifications. Each of the companies on the database was then ranked by assessing a number of key indicators such as; product or service range, number of markets served, capability, internet presence and differentiating factors of the business and the product or service. As a result of this exercise 67 companies were identified as having potentially high or medium levels of innovation. The majority of these companies were associated with manufacturing.

To complement this exercise, to verify that those companies identified were innovative and to develop an understanding of how and why they innovate, those companies identified as innovative were engaged through a telephone consultation. This was undertaken in accordance with a semi-structured questionnaire. Following this assessment the number of companies identified as having potentially high or medium levels of innovation fell to 45. Of these it was possible to complete a consultation with 23 companies.

Based on the output of this consultation and a review of the current innovation support available (knowledge, advice, funding and skills), it is recommended that the following is required to stimulate and support innovation in the leisure marine sector within the region:

- Assistance in the development of innovation strategies for companies – strategic intervention to identify future markets, services, products, how these can be targeted and a defined set of action plans to realise these targets
- Assistance in the development of an innovation culture
 - Understanding the current approach to innovation within the organisation, how this could be developed, how this can be implemented and who will be responsible for this.
 - Definition of the process of idea generation, capture and assessment within companies with a focus on collaboration
 - Collaboration with the knowledge base within the region - network the identified innovative companies with the regions’ universities.

- Networking within the marine industry
- Promotion of products and services – locally, nationally, throughout Europe
- Dissemination of information on procurement opportunities
- Market feedback – response to services and products – now and future
- Support to improve skills related to the industry – training and education needs
- Funding support – what grants, loans, finance sources are available
- Dissemination of information on latest market developments – e.g. legislation

It is further proposed that this is supported by the Midland Marine Alliance in accordance with a model that has been successfully applied to the leisure marine sector in the South East and South West of England which is similar in form, function and resource requirement to other transport sector support bodies within the region such as the Midlands Aerospace Alliance (MAA) and the Derby and Derbyshire Rail Forum (DDRF).

2.0 Background to the Project

The recently established Transport iNet is tasked with supporting innovation across the transport sector within the East Midlands. Although the industry is dominated by Aerospace, other sectors, rail, automotive and marine, also play an important role and contribute significantly to the regions economy. The marine industry has received significantly less attention than the other sectors although it contributes some £1.2bn to the East Midlands economy (all sub sectors).

The marine industry is diverse and companies of all scales are involved. From major employers in the region – such as Fairline Boats plc which characterises the top of the supply chain – to the many cottage style industries supporting all aspects of the industry. Amongst these are traditional family run lifestyle businesses which rely on local business as well as international SMEs who compete in worldwide markets. Many of these latter companies invest in R&D on an ongoing basis but the scale and value of it is unknown. Neither is it known who these companies are unless they have engaged in government funding opportunities such as grant for research and development and technology strategy board funding.

There was therefore a real need to understand the scope of the businesses involved within the marine sector, assess their innovative nature and review contribution to the regions economy. This project focuses on leisure marine industry in the East Midlands.

Successful marine networks have been developed to help focus support and encourage collaboration in the South West and the South East. However, concentrations of marine activity in other regions of the UK have not yet been specifically identified. The East Midlands is an obvious candidate for a central marine cluster given the strategic significance of marine manufacturing for this area including several key supply chain companies serving the whole UK and many overseas and superyacht customers.

The British Marine Federation (BMF) estimates that the UK leisure and small commercial marine industry generated a total turnover of £3.1 billion in 2007/8 (+5% from 2006/7). The industry consists of approximately 4,300 businesses employing circa 35,200 full time equivalent (FTE) employees. The majority of companies – 73.4% - have 5 or less employees. The South East and South West regions continue to dominate the sector and together account for nearly 60% of total UK revenues and 54% of total employment. Exports for the industry for the same period totalled £1.1 billion. The industry in the East Midlands employs 2,437 FTE and has a turnover of £301.4m accounting for 9.8% of the industry total for the UK – placing the region fourth behind the South East, South West and East of England consecutively.¹

2.1 Why Innovate?

Innovation is the successful development and introduction of new ideas – including new products, new services, new ways of running business, new ways of doing business, in new markets. Innovation is an increasingly important way for businesses to maintain a competitive advantage and achieve their growth potential. In a global economy where there is less opportunity to compete on a costs alone basis, innovation becomes a key differentiator.

As an example, in 2006, the DTI carried out a sector competitiveness analysis of the UK leisure boatbuilding industry to evaluate how leading UK manufacturers compare with their leading international competitors.² although this reviews only a segment of the marine sector it provides an indication of the challenges that the UK marine industry faces in the global market place. The sector competitiveness analysis (SCA) made several conclusions:

- UK companies created significantly less Value Added per FTEE (Full Time Equivalent employees and sub-contract labour)
- There would appear to be significant opportunities for the UK sector as a whole to increase both Value Added and financial returns through:
 - Increasing revenue per unit output through pricing reviews, stronger 'customer ownership' and customer relationship management, and improved market and brand value understanding;
 - Improved direct labour efficiency through the increased use of lean processes;
 - And improved materials efficiencies through the selective adoption of technology.

¹ British Marine Federation UK Leisure and Small Commercial Marine Industry: Key Performance Indicators 2007/08

² DTI – Sector Competitiveness – Analysis of the UK Leisure Boatbuilding Industry, March 2006

Innovation can potentially address these issues thereby increasing global competitiveness, growing the industry and protecting and creating employment and raising skill levels.

2.2 Objective and Aims

The objective of this commission is to provide an understanding of the capacity and capability of the Marine sector in the East Midlands, to provide an indication of the current level of innovation within the sector, to provide an indication of the perceived drivers of innovation for the sector and to review support available within the region to this end.

The following details the specific aims of this project:

- Complete a mapping exercise within the East Midlands of the marine sector – sectors, estimating company numbers and size, sector support organisations and how the future innovation needs of the sectors are being supported
- Undertake a desk top research to identify any global, UK or regional research which highlights the main innovation drivers for the marine sector and which parts of the sector and main supply chains benefit from this knowledge and take advantage of being innovative in the future.
- Draw conclusions from both the desk top and in company research on the main opportunities and potential new markets and rank the segments of the supply chain who would gain most benefit of an innovation interaction from the iNet and how they should be approached.
- Provide a database of relevant SME's in the region within each element of the supply chain who would be viable targets for innovation interaction with the iNets thus enabling the iNet to deliver focused and real support to these SME's.

3.0 Methodology and Outcomes

The following sections detail the staged methodology adopted and the key outputs from each stage.

3.1 Project inception meeting

The inception meeting set the direction for the project and covered the following points:

- Confirmation of project requirements, priorities and objectives
- Discussion on and agreement of the direction of the project
- Review and agreement of the methodology to be applied throughout the project
- Review and agreement of the programme of work, key milestones, timescales and associated deliverables
- Confirmation of points of contact, frequency of reporting and feedback milestones
- Identification of key stakeholders – agreement on contacts and information as relevant

The output from this element of the project was an agreed project timescale, deliverables and reporting schedule which was adhered to throughout the duration of the project.

3.2 Context and stakeholders

In order to frame the context within which this piece of work was undertaken, The Business Advice Team Limited reviewed any relevant supporting documentation relating to the Marine Sector on a national, regional and local basis.

There are already in existence a number of trade support organisations within the Marine Sector that operate in the other regions (Marine South East etc) these were reviewed to assess how they have broken down their industries, the segments they have generated and how the data is presented to their members and the Regional Development Agencies.

The Business Advice Team Limited then contacted these key stakeholders to clarify what it entails and to understand what opportunities may exist for the region, in what form and how it is envisaged that these opportunities will be communicated and fulfilled.

3.3 Map the potential supply chain for the Midlands Marine Industry

In order to develop a more thorough understanding of the requirements and opportunities associated with the Marine Industry, The Business Advice Team Limited undertook a mapping exercise. This initially looked at the various key market segments within the marine industry (tourism, manufacturing, brokering, boats, accessories etc) to understand the key stakeholders involved. This information was then supplemented by the type of capabilities required to underpin the operations of these sectors.

Based on the research undertaken to date it was proposed that the supply chain can be considered in two halves – services and manufacturing. 'Services' encompass all elements of the tourism market and boat servicing whilst 'Manufacturing' relates to the boat building process and the supply of purpose manufactured accessories including capabilities such as metal fabrication, fibreglass moulders, stainless steel fabricators, interior suppliers and installers, electronics manufacturers, engine and gearbox suppliers and installers etc.

In order to define the initial categories under these two generic headings, The Business Advice Team reviewed a number of industry sources for classifications used previously – this involved a review of the Marine South East and Marine South West websites, a review of boat and trade show literature and a general review of the marine industry – for example the 'Boating Business' website. The following were selected as a result of this activity:

'Manufacturing' Supply Chain Categories:

- Deck Hardware
- Stainless/Steel/Metal - fabrication/manufacture
- Equipment and Ancillaries - windows, wipers Composites and Resins and Coatings
- Heaters and Boilers
- Rigging and Ropes
- Interior / Exterior Covers
- Engines, Motors, Drives
- Electrical
- Electronics

- Hydraulics
- Support systems - filters / ventilation
- Safety Equipment
- Inspection and Test equipment
- Composite Boat Building & Design
- Steel Boat Building & Design
- Aluminium Boat Building & design
- Wooden Boat building & design
- Clothing and apparel
- Underwater and Amphibian Technology
- Lifting, Anchoring, Docking, Handling
- Sail & Boat Cover manufacture
- Lighting Systems
- Renewable Energy

'Services' Supply Chain Categories:

- Boat Hire / Hotel Boats / Passenger Boats
- Marina and Moorings
- Surveyors, testing, inspection
- Servicing / Repairs / Engines
- Brokerage
- Training
- Shared Ownership
- Chandlery
- RCD Boat Manual Production
- Insurance
- Breakdowns
- Electric/electrical services
- Charity or Intermediary
- BSS Examiners
- Marine engineers and consultants
- Marine Safety & Security (inc Fire)
- Equipment Hire
- Fit out

To further support this exercise relevant documentation relating to the Marine Industry has been reviewed. Further, any previous work on the Marine Industry and related mapping / preparation exercises were reviewed and analysed. The main input to this element was the partial data that had been collated by the British Marine Federation (BMF).

A desk based website exercise was then undertaken to identify and capture further details of relevant Marine sector companies in the East Midlands region. To facilitate this, key national Marine sector membership organisations were identified and their membership lists analysed in order to extract East Midlands based companies and their associated details. A list of the membership organisations consulted has been added in appendix 1 of this document. To supplement this and to act as a cross-reference, local on-line business directories for the East Midlands were consulted.

The Business Advice Team Limited had previously undertaken a number of regional mapping exercises and has developed a proven reputation for knowledge of the businesses, business networks and support organisations that operate within the East Midlands. It is this knowledge that ensured this mapping exercise identified the most relevant companies and organisations to be included in this project.

3.4 Map the innovation capability of the industry

This element of the project aimed to; assess the innovation capability of Marine sector organisations based in the East Midlands region, provide a view on how this could be improved and the possible value that innovation could generate for the sector in the region.

3.4.1 Assessing levels of innovation

Once the database of companies had been established an assessment was made as to the level of innovation associated with each company. This was achieved by ranking the level of innovation of each of the supply chain classifications and by ranking the level of perceived innovation of each of the companies.

This ranking was therefore based on current relevant documentation and an assessment of a number of key indicators of innovation such as; product or service range, number of markets served, capability, internet presence and differentiating factors of the business, product or service.

As an example of the documentation reviewed to inform the ranking of the supply chain classifications, the Marine Sector Technology Plan³ relates to all aspects of the marine sector and details the perceived key areas of technology for the sector. These include; efficient propulsion systems, advanced materials, hydrodynamics and hull optimisation, navigation and traffic management, manufacturing technology, autonomous vehicles, sensors and control systems and renewable marine energy. These areas were then cross referenced with the categories defined above.

If the revenue by sector is reviewed for the marine industry, it can be seen that approximately 43% of the total is attributable to manufacture, 23% to distribution and 34% to consumer services (servicing, hire, marinas etc.). Manufacturing therefore provides a significant contribution to the industry and has a number of potential areas for innovation. Consumer services also make a significant contribution to the industry, but due to the nature of its offering generally has limited potential for innovation. Hence the focus on more manufacturing based companies within the region.

The table in appendix 4 further outlines the rationale for the innovation rating applied to each of the sub-categories. This rating is based on the level of novelty of the particular sub-category – i.e. whether there is a potential and drive for the development of new services and products, whether this could be developed, whether the processes and systems used (or potentially used) incorporate latest technology or best practice, whether the offering is unique within a given market place, whether the market for the product or service exists, is growing, could develop etc.

Further, all of the organisations on the database were ranked as to whether they have (or potentially could have) a high, medium or low level of innovation. This ranking was based on an assessment five key indicators of innovation such as; product or service range, number of markets served, capability, internet presence and differentiating factors of the business, product or service. Each of these indicators was scored 1 to 5 (5 being high or strong and 1 being low or weak). Organisations with scores over 20 were ranked as having high innovation, between 15 and 20 as having medium innovation and below 15 as having low innovation.

The output from this element of the project then is an enhanced database detailing companies that could be involved in an innovation programme categorised into sub-categories so that the potential value of innovation available to these sector specific organisations can be realised. On the database (a screen shot of which is shown in section 3.3 above), those companies considered to demonstrate or potentially demonstrate a high level of innovation are indicated by a green marker and those demonstrating a medium level are indicated by an orange marker. The high and medium level innovation companies have been listed in two separate tabs in the database for ease of reference.

As a result of the ranking exercise the following were identified:

- 27 companies on the database that had a high level of innovation
- 40 companies on the database that had a medium level of innovation

³ DTI Aerospace, Marine & Defence Unit - Marine Sector Technology Plan – An overview of key technologies and R&D requirements for the UK marine engineering sector - July 2008

3.4.2 Understanding innovation

To complement this exercise, to verify that they were innovative and to develop an understanding of how and why they innovate, those companies identified as innovative were to be engaged through a telephone consultation. This was undertaken in accordance with a semi-structured questionnaire – a copy of which has been added to appendix 3. Every effort was made to contact all 67 companies identified, however, due to the availability of some of the contact people within the project timescale this was not possible. Where it was not possible to contact the company by phone an e-mail was sent to the relevant contact and then followed up by phone. Further desk based research was undertaken on those companies that did not provide feedback in order to verify the innovation ranking made.





Following this activity the number of companies that would still be classified as innovative fell to 45 in total (16 in high innovation and 29 in medium innovation). Of these companies 23 were successfully contacted in order to complete the questionnaire.

This aimed to assess; where ideas are generated, how they capture and assess these, what market/customer input is used in idea generation and what the culture for innovation is in collaboration with harder facts such as percentage of turnover spent on research and development (R&D), percentage of the workforce involved in R&D etc.

Based on this exercise a number of companies that were initially ranked as having a high or medium level of innovation were re-evaluated and reclassified as having low levels of innovation. A number of factors supported these decisions;

- The description on the website as to the activity of the business was inaccurate – for example rather than designing and manufacturing propeller systems the company only repaired propeller shafts
- Although initially perceived as innovative due to the product classification, the company does not (and does not intend to); develop the product or service offered or attempt to enter new market segments
- A number of the companies identified do not design, manufacture or deliver their own products or services, rather they are traders and distributors
- A number of companies have ceased trading despite still being listed on business directories and membership lists
- A number of companies did not want to be involved in the Midlands Marine Alliance and were not interested in innovation and the potential support related to this – the main reason cited being that they operate in niche markets with a clearly defined target audience so much so that the benefit of being in the alliance or reviewing innovation was perceived as not of value
- One company had relocated activity out of the East Midlands and was therefore excluded from this activity

The following key applies to the database created based on the above points:

	High Level of Innovation
	Medium Level of Innovation
	Reassessed to Low Level of Innovation / No Interest
	Reassessed to Low Level of Innovation / No Interest

As a result of this exercise the following were confirmed:

- 16 companies on the database that had a high level of innovation
- 29 companies on the database that had a medium level of innovation

Outputs from Innovation Interviews

The outputs from the questionnaires – a copy of which is shown in appendix 3 - have been included in the main database (the Excel sheet that accompanies this report). The key outcomes from the subjective questions posed are summarised below for reference.

Do you consider your business to be innovative?

The overall majority of the companies contacted from the tables on the previous page believed their business to be innovative – in terms of taking on new ideas, processes, technology etc.

Do you have a strategy for innovation?

Approximately 40% of the companies surveyed do have a defined strategy for innovation – a documented approach to how innovation will be incorporated and realised within the business.

Does someone drive innovation in your business?

Approximately 40% of businesses stated that they have a nominated individual responsible for driving innovation. It should be noted that this was not limited purely to larger companies or SMEs with a high number of employees.

If not what are the perceived barriers to innovation?

As the majority of companies believed their businesses to be innovative, barriers were not identified in the main. One reason cited was due to limitations on resource. The majority of companies however did express how they could be assisted to become more innovative (see response to the question below).

Where are ideas generated?

There were two key routes to idea generation – internally (by staff) and externally (by customers). These were not always mutually exclusive with a number of companies reporting that having developed a concept internally it would be verified with the customer base before being investigated further. Conversely, it was reported that customers would bring a concept to a company to assess how and whether it could feasibly be achieved. 60% of companies reported that ideas were generated mainly in-house. 35% stated that a collaborative approach was utilised (with customers). The remainder relied purely on external influence to drive new ideas.

A point to note is that only one of the companies surveyed reported the generation of ideas in collaboration with a University.

How are ideas generated?

The majority of companies generate ideas on an ad-hoc basis either through ‘eureka’ moments (when an idea arises) or in response to customer requirements – i.e. in the main there is no defined process for generating ideas.

How are these ideas captured?

In the main ideas are captured through documentation – whether it is a written summary of the idea or a concept diagram/schematic.

How are they assessed?

Ideas are assessed either through internal review, or in collaboration with the potential customer base. 70% of companies reported that ideas were assessed internally.

What market input is used?

Market input was seen as limited, mainly being associated with historic performance figures within given market segments. Customer input was seen as a greater driving factor.

What customer input is used?

Both the input and feedback on ideas from customers was utilised by approximately 50% of the companies surveyed. The majority of the remaining companies reported utilising customers for feedback on ideas.

What would assist your company to be more innovative?

The Following is a summary of the number of responses received per category (23 companies were surveyed in total, but in a number of cases more than one category was voted for):

- | | |
|--|----|
| - Networking within the marine industry | 10 |
| - Promotion of products and services – locally, nationally, throughout Europe | 12 |
| - Dissemination of information on procurement opportunities | 2 |
| - Lobbying on behalf of the industry – i.e. representation of views | 1 |
| - Market feedback – response to services and products – now and future | 2 |
| - Support to improve skills related to the industry – training and education needs | 6 |

- Funding support – what grants, loans, finance sources are available 6
- Dissemination of information on latest market developments – e.g. legislation 4

What would you like to see business support agencies do to help grow your business?

The majority of companies simply re-iterated the responses given to the question above.

Are you interested in being listed in a regional marine company directory?

All those companies surveyed said yes.

Would you pay for this?

All those companies surveyed stated that they would be interested in a free basic listing, but the majority intimated that they would be willing to pay for a detailed listing. The majority of companies indicated that £50 per annum would be a reasonable fee.

3.4.3 Valuing innovation

A key point of interest is the possible value that innovation could generate for the sector in the region.

45 companies were considered to be innovative within the marine sector in the East Midlands. Out of these it has been possible to contact 23 companies to develop a greater understanding of how the business works, what makes it innovative etc. To try to draw conclusions as to the potential revenue that innovation could generate for the sector in the region based on this limited sample set would be naïve.

It can be hypothesised however that the revenue currently generated by the sector in the East Midlands as a result of a potential 45 innovative companies could be greatly increased through the promotion and delivery of innovation in a greater number of companies. This is however hard to quantify and substantiate.

4.0 Review measures in place to support the marine sector in the East Midlands

This element of the project reviewed the measures in place (and those that are planned to be put in place) to support the identified weaknesses in promoting innovation within the Marine sector. It was felt essential that the innovation support packages within the East Midlands and nationally were researched and their applicability to the marine sector judged.

This involved the mapping of existing and planned support programmes available both on a regional and national level that will help realise the opportunity associated with the programme. As anticipated the types of support programme available focus on the signposting of opportunities, the promotion of specific sector opportunities (for example composites) and the offer of training to up-skill people to be able to work to the standards required within innovative areas.

The Business Advice Team Limited reviewed the availability, accessibility and practicality of the support packages offered and reviewed these against the supply chain mapping exercise undertaken in section 3 to identify any gaps in the provision of support that could be addressed.

4.1 Support for innovation – advice and funding

It should be noted that there are no sources of funding or advice within the East Midlands targeted specifically at the Marine sector.

Generally, support for innovation nationally is provided by DBERRs (the Department for Business, Enterprise and Regulatory Reform) Technology Programme and includes the Knowledge Transfer Networks (KTNs). The National Composites Network (NCN) – as an example KTN – has marine industry and BMF participation to encourage the marine industry to exploit the latest development in advanced composite materials and processes, including free advice and extensive NCN technical facilities.

Regional support for innovation in the industry exists in a number of forms (it should be noted that the schemes outlined below do not cover all the support packages available across the region, rather the intention is to give the reader an appreciation of the range of support available):

- Innovation Networks (iNets) – sponsored by the East Midlands Development Agency (*emda*) - in particular the Transport iNet (headed by Loughborough University) will be available to provide support to the region's marine organisations. This support is in the form of funding and advice (detailed information can be found at; www.eminnovation.org.uk)

Innovation advisers are available to discuss support packages and support needs with companies.

There are two key technology grant funding packages currently available:

Pathfinder grants offer between £5,000 and £20,000 for projects up to six months in length. These will be projects focused on activities that gather evidence of market validation, establish the commercial opportunity and demonstrate the regional benefit of supporting the technology – it should be noted that the current call for proposals for this grant ends on 20 March 2009. It is anticipated that this fund will still exist after this date but in another form – the Proof of Concept fund.

Demonstration grants range between £100,000 and £500,000 (£750,000 in exceptional circumstances) to support collaborative projects in technology transfer and new technologies enabling them to be advanced, improved and adapted for commercial use. These grants are at a 50% financial match. Eligible lead applicants include Higher Education Institutes (HEIs), Research and Technology Organisations (RTOs) and other public sector bodies. Small or Medium Sized Enterprises (SMEs) and large enterprises are eligible to join the consortium. There is a spring call for proposals open until 3 April 2009

- Grants and Funding packages managed by *emda*:

Grants for Business Investment - is the Department for Business, Enterprise and Regulatory Reform's capital investment grant scheme aimed at encouraging businesses to invest in land and buildings, plant and machinery to support expansion and modernisation. Most manufacturing businesses are eligible to apply, as are businesses in service sectors that supply a national rather than local market. Applicants can be companies, partnerships or sole traders. Grants are not available simply to transfer jobs from one part of the country to another. Financial help can be used to:

- Expand, modernise or reorganise an existing business
- Upgrade your business, introducing technological or other innovatory improvements into your production or service processes

- Take a new product, service or process from the development stage to production
- Launch a new business

Grant for Research and Development (R&D) - helps businesses carry out research and development work that will lead to technologically innovative products or processes. The Grant for R&D scheme is aimed at individuals planning to start up businesses in any part of the East Midlands and at SMEs already operating within the region. The idea is to help businesses carry out projects they normally would not undertake, and to encourage further private investment into them.

Business Transformation Grant (BTG) – provided by *emda* and managed by Business Link – is designed to support the development and future sustainable success of the business and is available to companies across the region. The grant will be used to pay for projects which are identified as the result of an in depth review with a Business Link adviser.

- Further Grants and Funding packages:

Connect Midlands InvoRed - delivered by Connect Midlands, is a regional programme for companies in the East Midlands providing investment readiness support to businesses seeking £15,000 to £5 million of debt, grant and equity funding. The programme provides emerging technology and high growth companies with the skills, information and contacts they need to grow their business and gain investment. Workshops, coaching and support are available to assist companies seeking to raise finance or investment.

FP7 – The Seventh Framework Programme (FP7) provides access to the European Union funding supporting research and development (R&D) activities encompassing almost all scientific disciplines. The FP7 Service offered by *emda* aims to encourage increased regional participation in the programme and help leverage European Funding into the East Midlands to support the commercial application of research and stimulate high technology innovation through the exploitation of research and development (R&D). FP7 has practical and industry focused call topics, their development having been influenced by the European Technology Platforms (ETP's). The programme has thematic priorities which seek to transform scientific research results into new products, processes and services and associated commercial realisation. The FP7 programme requires collaboration between industry (both large company and SMEs) and the knowledge base with stakeholders based in a number of European countries.

TSB – Technology Strategy Board collaborative research and development. Collaborative R&D is a primary delivery mechanism of the Technology Strategy. It is designed to assist the industrial and research communities to work together on R&D projects in strategically important areas of science, engineering and technology - from which successful new products, processes and services can emerge. Regular competitions for funding of Collaborative R&D projects have been held since 2004. In the past year the scope of the Collaborative R&D competitions has been expanded to support large projects as well as smaller projects approved within faster timescales. The Technology Strategy Board has identified six Key Technology Areas, priorities identified through consultation with business, which help set the priorities for Collaborative R&D and develop a longer lead-time for future competitions. The Key Technology Areas are: Advanced Manufacturing, Advanced Materials, Bioscience, Electronics, Photonics & Electrical Technologies, and Information and Communication Technologies. The TSB programme requires collaboration between industry (both large company and SMEs) and the knowledge base with stakeholders based in the UK.

- Support packages:

The Manufacturing Advisory Service (MAS) - Applicable to any SME organisation that manufactures this programme can be utilised to provide business and marketing strategy support as well as the more traditional process improvement and lean manufacturing support. Previous exponents of the scheme include Cooney Marine which received lean manufacturing support with the aim of increasing productivity.

It can be concluded from the above that although a number of potential sources of support for innovation exist; none of these are specifically tailored to the Marine sector and unless organisations within the sector are aware of these sources and their associated criteria they will not be leveraged in to support the development and growth of the industry.

4.2 Support for innovation – skills and training

A number of key strategic skill issues have been identified for the UK Marine sector as a whole⁴, these can be summarised as:

- **Management and Leadership:** Leadership is required to drive change including, for example, responding to fast moving developments around New Product and Process Development and Implementation (NPPDI). Such skills would include, for example, Supply chain management, Lean manufacturing, driving down costs and enabling supervisors and team leaders to develop management skills, following de-layering and a reduction in the number of middle managers.
- **Productivity and Competitiveness:** To compete globally there is a need for training in 'Lean', 'Six Sigma' and other types of business improvement techniques, new product and process development and implementation, supply chain management and project management. These in turn will demand multi-skilling and cross-skilling in the workforce.
- **Technical Workforce Development:** The sector needs specific technical skills at level 3 and above. As with other sectors, the Marine industry needs multi-disciplined craftspeople who are able to absorb training for new technology and business processes. The sector also need more graduates with relevant degrees, and ready for productive employment. This includes naval architects and marine electrical engineering graduates capable of using the latest technology and materials in design.
- **Manpower Planning and Recruitment:** The sector wants support for employers' training initiatives in order to help influence schools to improve maths, engineering and science education and recruitment campaigns.

In terms of support for skills development, the government sponsored 'Train to Gain' scheme is the main source of funding support. Train to Gain is the national skills service – managed by the Learning and Skills Council (LSC) – that supports employers of all sizes and in all sectors to improve the skills of their employees as a route to improving their business performance. Funding for training packages is dependent on the requirement of the business and availability of funding.

Support may also be leveraged from the National Skills Academy for Manufacturing for training in disciplines that are relevant to and will support the development of the business – courses are tailored in collaboration with the Sector Skills Council to directly benefit the business. As an example, Cooney Marine has participated in this scheme in the past resulting in increased productivity for the organisation.

Having undertaken a review of University activity within the region – by visiting the key University websites and that of EMUA (East Midlands Universities Association), it becomes apparent that there is minimal activity – courses, research or otherwise – relating specifically to the leisure marine industry. One course that was identified, as an example, was 'Power Systems for Aerospace, Marine and Automotive Applications H64AN1' an Electrical and Electronic Engineering with Management Studies module at the University of Nottingham. There are a number of courses and research exercises being undertaken across the region that relate to marine infrastructure rather than manufacture and services, the main theme of this project.

Consultation with EMFEC (East Midlands Further Education Colleges) also indicates that there are no further education courses in subjects that relate specifically to the leisure marine sector within the region other than a few that focus on boat handling.

In summary there is limited support for skills development within the marine sector in the region in order to meet the key strategic skill issues that have been identified.

⁴ The Sector Skills Agreement for the UK Marine Sector, July 2006, SEMTA

4.3 What are other regions doing?

Organisations to support the marine sector have been established in other regions – notably Marine South East and Marine South West. Both networks have been successful in focusing support and encouraging collaboration within their respective regions. Each network is supported by its Regional Development Agency (RDA) – i.e. South East England Development Agency (SEEDA) and South West Regional Development Agency (SWERDA) respectively.

The following bullet points provide an overview of the current offering of these organisations:

Marine South East:

- Business Improvement Workshops in collaboration with MAS
- Information dissemination events pertinent to the marine industry – for example development strategies for key industry sectors
- Signposting to potential market opportunities for marine sector organisations
- Support for staff training – the Technical Skills Project (TSP) – through the clarification of the public sector funding sources available in support of such an activity
- Identification and promotion of potential sources of funding for business development and collaboration
- ‘Designing Demand’ workshops enlightening marine organisations as to the potential associated with design for business improvement
- Communications as to the latest developments within the industry and related industries
- Assistance on legislative change – signposting and clarification in support of the marine industry

Marine South West:

- Networking on a sub-regional level (Cornwall Marine Network, Maritime Plymouth etc.)
- News updates
- Marine Skills Centres – developing centres of vocational excellence providing a range of demand-led courses to help bridge the skills gaps in the marine industry
- Schools Marine Challenge provides the hardware and an exciting competition to deliver marine engineering in schools, via a model boat building competition, in order to raise the profile of the industry with potential future employees
- Downloads – newsletters, reports, conferences

Screen shots of the websites for both of these organisations have been included in appendix 5 for reference.

It should also be noted that there is an organisation called The Marine Design Centre which is supported by One North East which is linked to the marine industry but focuses on Commercial shipping, Defence, Oil and Gas and Renewables and has therefore been discounted from this project.

5.0 Recommendations and Conclusions

As was outlined in the original proposal; based on the outcomes of the project activities undertaken a set of actions will be outlined which it is advised *emda*, the Midland Marine Alliance and the Transport iNet should consider to ensure the east midlands economy is well placed to benefit from innovation within the Marine sector.

It was envisaged that this would include; actions to support specific capabilities within the region, actions to promote training (and associated potential funding) in specific skills within the region, actions to promote the opportunity to businesses across the region etc. These are further expanded below.

5.1 Opportunities to Support the Marine Sector

The value of the marine industry to the East Midlands is considerable (£1.2bn for all sub sectors), there are businesses within the region that currently benefit from this, but potentially could reap further rewards were better support in place.

The sections below outline what support should be leveraged and suggests a model for the delivery of this support.

It should be noted that all support offered should complement:

- The Business Support Simplification Programme (BSSP)
- The Transport iNet and the support offered through advisers and funding packages
- Current Transport iNet initiatives – for example the current tender for events hosting

5.1.1 Innovation Support Required

Based on the responses gained as a result of the project, the following innovation support is required:

- Networking within the marine industry
- Promotion of products and services – locally, nationally, throughout Europe
- Dissemination of information on procurement opportunities
- Market feedback – response to services and products – now and future
- Support to improve skills related to the industry – training and education needs
- Funding support – what grants, loans, finance sources are available
- Dissemination of information on latest market developments – e.g. legislation

In addition to this further support is required to address the issues associated with innovation culture within the sectors' companies.

- *Assistance in the development of innovation strategies for companies* – strategic intervention to identify future markets, services, products, how these can be targeted and a defined set of action plans to realise these targets. Only 40% of the companies surveyed stated that they had an innovation strategy
- *Assistance in the development of an innovation culture* – adviser intervention to understand the current approach to innovation within the organisation, how this could be developed, how this can be implemented and who will be responsible for this. Only 40% of companies surveyed had a nominated individual who was responsible for driving innovation.

The process of idea generation, capture and assessment could be more clearly defined within companies with a focus on collaboration. Only 35% of the companies surveyed stated that a collaborative approach was used.

Collaboration with the knowledge base within the region should be encouraged – only one of the companies surveyed stated that they had consulted with a university during idea generation. Efforts should be made to network the identified innovative companies with the regions' universities. Currently, as stated earlier in the report, there are very few research activities being undertaken or courses offered by the regions' universities relating to the leisure marine sector. As this sector is predominantly technology and market development driven it can be summarised that this capability exists within the region, but it has not yet been steered towards this particular sector.

The following section suggests how this support could be implemented specifically for the marine sector.

5.1.2 Delivering Innovation Support

It is proposed that the Midlands Marine Alliance, supported by emda can provide the required support to these organisations through a similar model to that adopted by Marine South East. The overall aim would be to facilitate significant growth in the East Midlands marine market share by identifying projects of strategic importance to the sector's growth and supporting innovation in the existing supply chain in order to realise the associated benefits.

Specific aims should include:

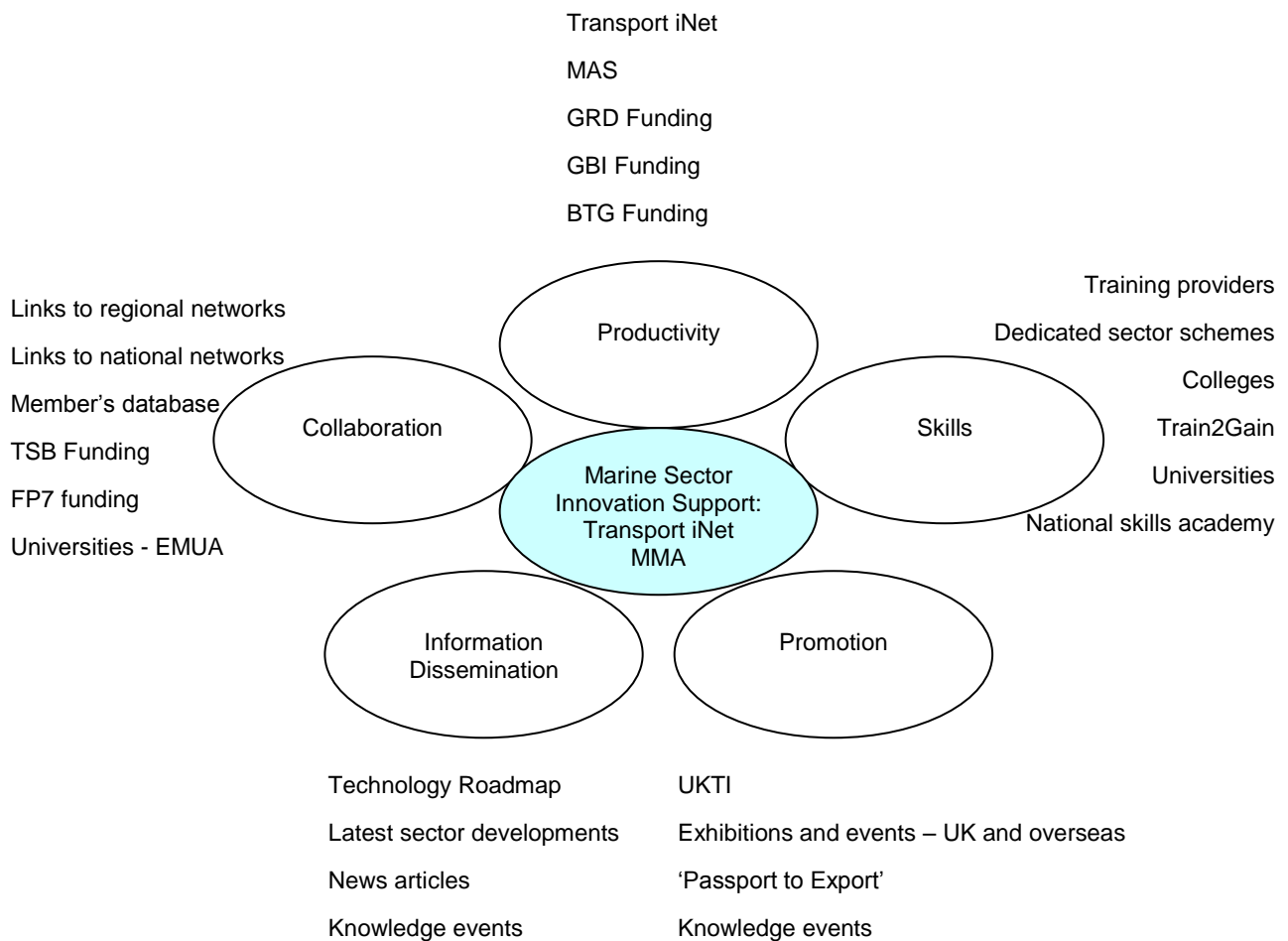
- Increasing productivity through innovation.
- Increasing market share by promoting business support services, clusters, networks and joint venturing.
- Developing skills for the marine sector and workforce development initiatives.
- Cross sectoral collaboration to improve innovation, research and development – including large organisations, SMEs, universities, intermediary bodies etc.
- Development of international trade opportunities.
- Liaison with Government to raise the profile of the industry and to provide a lobbying body.

A number of support packages, funds and bodies already exist within the region that should be coordinated with a view to promoting innovation in the Marine Sector within the East Midlands. The diagram overleaf aims to demonstrate these elements.

There are a range of mechanisms that could be used to promote innovation in the Marine sector supply chain. These fall into a number of themes:

- Provide essential information on upcoming opportunities and how to take advantage
 - Should include identification of specific potential suppliers from the marine industry in the region – these can be identified through the use of the database
- Coordinate events for organisations within the sector within the East Midlands to enable networking and knowledge sharing, these should include:
 - SMEs
 - Large Organisations
 - Universities
 - Intermediaries (support bodies, training providers etc.)
- Coordinate events for potential suppliers and purchasers
 - Information events
 - Training in procurement and tendering
 - Creating networks of compatible suppliers
 - Maintaining information on funding and support available
- Provide a services and supplies tender matching service to make doing business easier
- Provide an information dissemination/communication service for businesses in the sector to provide updates, access to and clarification on issues:
 - Industry legislation and what this means – for example interpretation of the Recreational Craft Directive
 - Relevant industry news and developments
- Business support
 - Complementary support alongside the Sustainable Transport iNet
 - Links into and promotion of the Business Link offering
 - Current grants and funding schemes
 - New grants and funding schemes

The following diagram aims to illustrate the innovation needs of the marine sector and the mix of support bodies and potential grant schemes that are available to assist in the meeting of these needs.



It is proposed that this would be best facilitated through a website portal similar to that utilised by Marine South East and Marine South West. Screen shots of these websites have been included in appendix 5 for reference.

In terms of the Midland Marine Alliance it is proposed that two full time personnel would be required in order to coordinate the activities outlined above in support of marine based companies in the East Midlands. This is based on the Business Advice Teams' understanding of the operations of other similar transport sector support organisations within the region – namely the Midlands Aerospace Alliance (MAA) and the Derby and Derbyshire Rail Forum (DDRF).

