



Bringing You the Power of One™

MAS SE 3 Programme 2008/9 – 2011/12

Interim Evaluation



May 2011

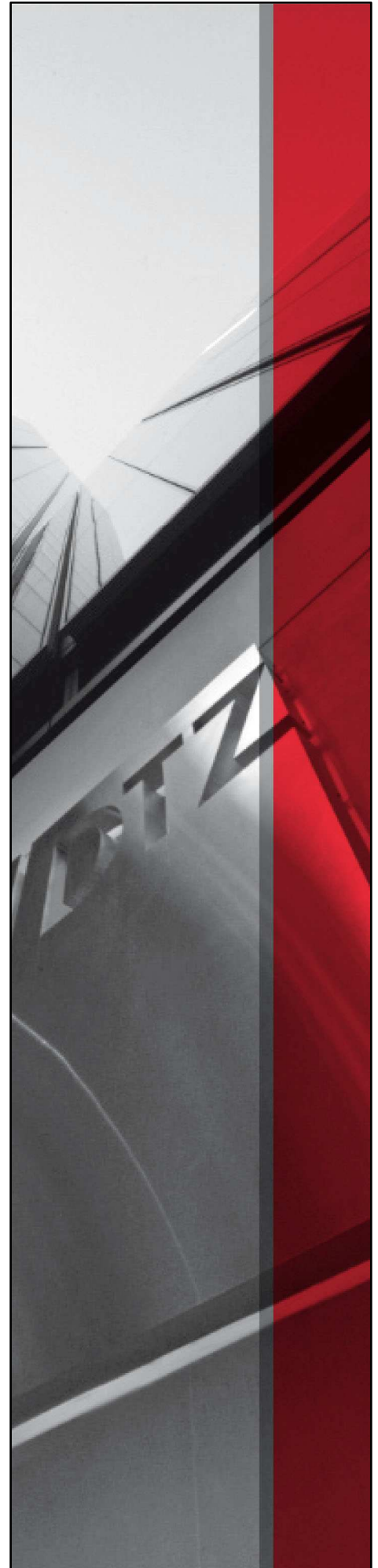


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Executive Summary

The South East is one of the largest manufacturing regions in the UK, home to various technologies ranging from aerospace to healthcare. The value of the sector in the region is reflected in manufacturing GVA being the second highest in the country.

The manufacturing sector is dominated by SMEs that face significant challenges and struggle to sustain long-term improvement achievements and get easy access to affordable advice on technological advancement issues in an increasingly globalised economy. The Manufacturing Advisory Service, MAS, has been a public sector funded flagship programme for over 8 years offering business support for manufacturing companies aiming to achieve significant improvements in their productivity and competitiveness.

In the South East, MAS has been delivered by the EEF, The Manufacturers Organisation, since 2002. The current contract is in its third iteration and was awarded to EEF following procurement through an OJEU. Advice is provided through a core team of advisors, finance, marketing and administrative support. For the provision of specialist advice e.g. low carbon and environmental technologies or targeting of specific sectors, MAS SE has its own specialists and has been supported by third parties (through sub-contracting arrangements) including Olive Consulting, the Farnborough Aerospace Consortium, Giraffe Innovation and Bang Creations.

SEEDA has invested £6m on the MAS SE III through a 3-year contract (2009 - 2012), primarily for providing support over this period to 3,600 manufacturers in order to generate £300m of value added to the manufacturing in the region. In addition to this, a Grant of £538,260 was awarded to MAS SE (through BIS via SEEDA) in order to extend the services that MAS offers to manufacturers in the region in response to the Low Carbon Industrial Strategy and Advanced Manufacturing packages. Through the delivery of a series of products including lean thinking and value stream, MAS SE has been significant in addressing a wide range of issues and focusing mainly on innovative, high growth potential companies in both traditional and advanced manufacturing technology groups in order to achieve a lasting impact and transformation.

The overall evaluation is positive. The programme has maintained its success in a number of areas and has made improvements in others despite a challenging economic environment and changing operational environment. To date approximately 68% of public funding has been used:

- To support 2,748 businesses, representing 76.4% of the original target; 720 of these have received Level 4 support, indicating that some business process and performance indicators have improved or are expected to improve in the future;
- To upskill over 2500 individuals – 100.4% over the original target;
- To leverage client income of £818,797 – 19.9% of the public investment up to this stage; and,
- To generate approximately £232million of value added to date.

In comparison with the previous contract, resources of this contract have focused on programme delivery whilst expenditure on PR and marketing has reduced significantly.

Furthermore, it is estimated that gross impact of £125,796,568 has been generated to date. Against public spend of £4,108,856 to date this represents a 31:1 return. If estimated increase in impact accounts only for Quality, Cost and Delivery (QCD) impact and no increase in turnover, impact equivalent to approximately £50m in total has been generated to date (since April 2009), representing a 12:1 return. This compares with 6:1 return reported in the previous evaluation report covering the previous 2005/2007 contract. It is understandable that the implementation of some recommendations made by MAS will be implemented by businesses in the future, in particular recommendations related to

the more complex environmental management issues. If annual savings and impacts for businesses derived from the implementation of these recommendations were recorded, the impact of MAS would be higher. Financial gains for businesses would, for example, derive in the future from:

- Carbon savings (CO₂)
- Energy efficiency (kWh)
- Waste management
- Water resource control

However, no information on these *potential* benefits is currently fully captured, since support focuses mainly on advice and provision of recommendations rather than following up with implementation and recording of impact.

Nevertheless, significant business improvement gains from MAS support and advice have been reported by businesses surveyed as part of this evaluation. These improvements include: development of staff skills, the productivity of people and adoption of learning although improved delivery and equipment efficiency were also cited as important. According to the survey, the majority of businesses expect these benefits to last for 4-5 years.

The business survey also indicated that 91.7% of respondents would recommend MAS to others (only 8.3% would not do so). The previous evaluation of MAS SE (for the 2005-07 contract) showed that 80% would recommend MAS to another business.

In addition, 82% of businesses surveyed stated that their expectations were met or exceeded by the MAS support - only 10% of all respondents believed that MAS SE assistance did not meet their expectations. The competence of advisors was highlighted as a key factor in driving up business satisfaction with MAS. The previous evaluation reported that 82% of businesses were either satisfied or very satisfied with the support received and 90% rated the effectiveness of the intervention as good or excellent in meeting company needs.

Finally, the business survey indicated that company expectations were much more likely to be met and exceeded for those that received Level 4 support. More specifically, the survey showed that Level 4 interventions delivered more pronounced benefits (compared to those that have received Level 2 support) and were more likely to report creation/safeguarding of jobs and improved turnover. Most significantly, deadweight estimate of MAS advice was found to be relatively low among Level 4 recipients i.e. 23%, compared with 60% amongst Level 2 recipients of MAS support. Furthermore, Level 4 recipients of the MAS support were more likely than Level 2 to involve their supply chain in implementation of the recommendations of the MAS advice.

The evaluation also identified a few areas that would require consideration by MAS SE in the future. For example, the survey has found that the value for money perception of businesses is not particularly high and this may drive downwards satisfaction levels with MAS SE. Within this context, there may be scope for MAS SE to explore further the causes of these perceptions.

1. Introduction

1.1 The South East of England Development Agency (hereafter SEEDA) commissioned DTZ in February 2011 to undertake the interim evaluation of the MAS South East Programme (hereafter MAS SE).

The Evaluation Brief

1.2 The interim evaluation of the third phase of the programme, MAS SE 3 programme covering the latest contract period between April 2009 and March 2012, aims to provide an independent interim assessment of the programme's achievements in the South East and its impact to date.

1.3 The key objectives of this evaluation are clearly specified as follows:

- To provide an independent view of the MAS achievements, its effectiveness and impact
- To assess the impact of MAS at individual company level by looking at value added and any other wider outcomes
- To explore whether following the MAS intervention companies are progressing further the 'lean' agenda
- To explore whether 'primary' companies are involving supply companies in the MAS programmes
- To measure the contribution the MAS programme has made/is making in terms of an economic impact on the Southeast GVA
- To assess any wider outcomes that have been achieved at this stage in the programme
- To identify any design improvements that could be incorporated in the programme
- To uncover any lessons learnt that can be fed back into the intervention
- To make key recommendations that could contribute to the development of future services within the manufacturing sector
- To gather evidence to inform the discussion for the continued development of the MAS programme

1.4 Key questions that this evaluation is addressing therefore, relate to the achievements and impact to date of MAS SE 3 to date, evidence of strategic added value and sustainability, and value for money, and can be summarised as follows:

- Who/what is MAS SE? (i.e. background and operational characteristics)
- Has it achieved against its objectives?
- What are the benefits and impact to date? Would these achievements have taken place in the absence of the MAS SE structures and funding intervention?
- Has MAS SE achieved the right things? How relevant has its provision to business in the sector (now and in the future) been? Is this model effective in relation to the needs of the sector in the South East and in the light of global trends?
- Does the assistance lead to sustainable and self-sustained solutions?
- What can we learn from the areas where things work well?
- Does it offer value for money? What has been the return on investment for SEEDA's/public funding?

- 1.5 Section 4 of the report sets out in detail the regional and sector context within which MAS III is delivered. However, it needs to be recognised that this evaluation is taking place at a critical time in the lifetime of MAS SE (and MAS in general) given a number of drivers influencing the future direction in business support processes including:
- Changing arrangements in relation to managing, providing and facilitating the provision of the manufacturing advisory service (MAS) nationally across England, with the new MAS aiming to replace the existing service currently provided through the 9 English regional development agencies for an initial term of three (3) years commencing in 2011 but with an option for BIS to extend the contract for a further 3 years by increments of 1 year.
 - The introduction of conceptual and delivery models of Technology Innovation Centres (or Maxwell Centres) – that would provide capabilities at Technology Readiness Levels 4 to 7, bridging research and technology commercialisation and de-risking the process for business.
 - The changing/evolving nature of public funding mechanisms and processes including limited funds in general, the disappearance of RDAs but also some uncertainty about the role and priorities to be dealt with by Regional Growth Fund and ERDF/European funding and the role of LEPs/Chambers of Commerce in the business support infrastructure at local and sub-regional levels.
 - The funding and operational approach to the green and low carbon agendas including the role of the Green Investment Bank.

Methodology

- 1.6 Between March and April 2011, a combination of qualitative and quantitative research methods was deployed to meet the objectives of the evaluation. These included:
- **Desk-based review of policy documents, monitoring reports and management and financial information** provided by the SEEDA and the MAS management teams.
 - **Interviews with Key Stakeholders.** Consultations with SEEDA and MAS SE management and advisors were held. These consultations were used to assess the strengths and weaknesses of the MAS SE programme and to discuss possible areas of improvement. A list of the stakeholders who were consulted is included in **Appendix 1**.
 - **Survey of MAS users.** As part of the evaluation process, a telephone survey of 125 businesses that received Level 2 and/or Level 4 assistance from MAS SE was undertaken. All 125 businesses were contacted by telephone. Businesses were asked about issues such as:
 - The reason for first contacting MAS SE
 - Their experience from working with MAS SE and whether they would recommend the programme to others
 - The impact of support, including any quantifiable impact in employment and turnover
 - The persistence/sustainability of the benefits arising from the implementation of the advice received
 - A copy of the questionnaire used for the survey is included in **Appendix 2**.
 - As indicated in SEEDA's specification for the consultants' work programme, Level 2 and Level 4 interventions are the main focus of this evaluation. Therefore, within the resources available, the primary research undertaken for this evaluation does not cover interventions at Levels 1, 3 and 5. Nor does it explore performance issues related to assistance provided for

skills development. However, it draws upon the findings of satisfaction surveys already undertaken by MAS SE.

- The report also includes more detailed examples of work undertaken by MAS SE with companies. The case studies with companies that received assistance from the programme are an important element of the work delivered by MAS SE and provide a description of the work undertaken by the advisors and the specific issues that a company seeks to address.

Structure of the report

1.7 The remainder of this report is structured as follows:

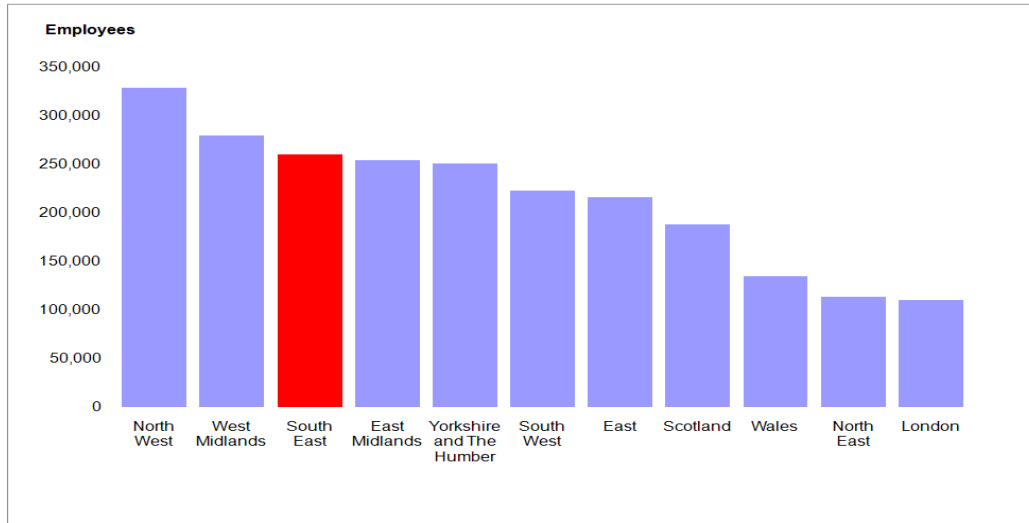
- Section 2 provides an overview of the manufacturing sector in the South East and the MAS SE approach to delivering the MAS programme. It also includes findings from the business survey relating to MAS SE delivery approach.
- Section 3 reviews the expenditure profile and outputs of MAS SE to date against original targets and objectives.
- Section 4 presents achievements of the MAS 3 programme to date and its effectiveness drawing upon the survey findings and interviews with key stakeholders.
- Section 5 provides estimates of the programme's net impact and return on public investment.
- Section 6 summarises key findings and provides an overall assessment of the programme.

2. Overview of Manufacturing and MAS Delivery in the South East

Manufacturing in the South East

2.1 The South East is one of the largest manufacturing regions in the UK, employing 260,100 manufacturing workers in 2009 according to the Business Register and Employment Survey.

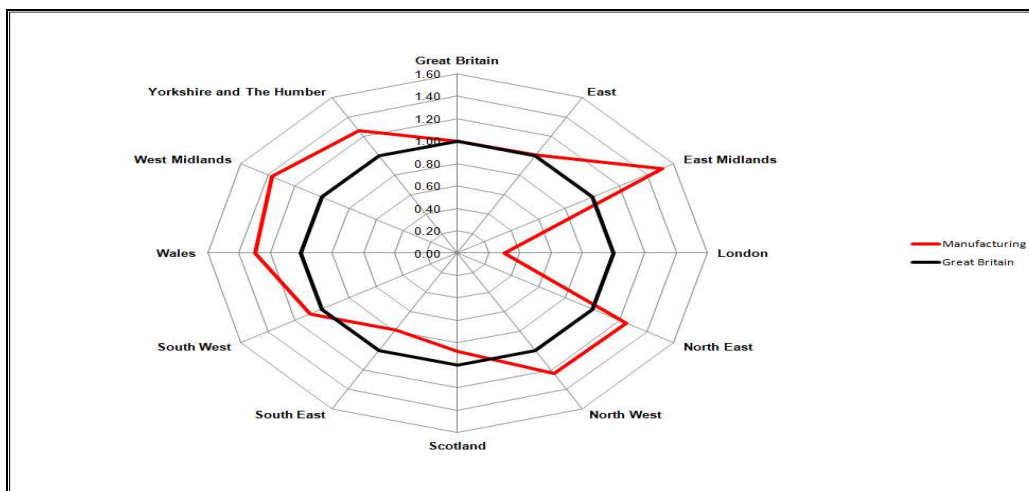
Figure 2.1: Manufacturing Employees in the South East



Source: Business Register and Employment Survey 2009

2.2 Figure 2.2 indicates that only London has a lower location quotient in manufacturing than the South East. This is more likely a reflection of the relative strengths of other sectors in the South East (as shown in Figure 2.3) but most importantly it may reflect the standard definition of manufacturing followed by the Standard Industrial Classification.¹

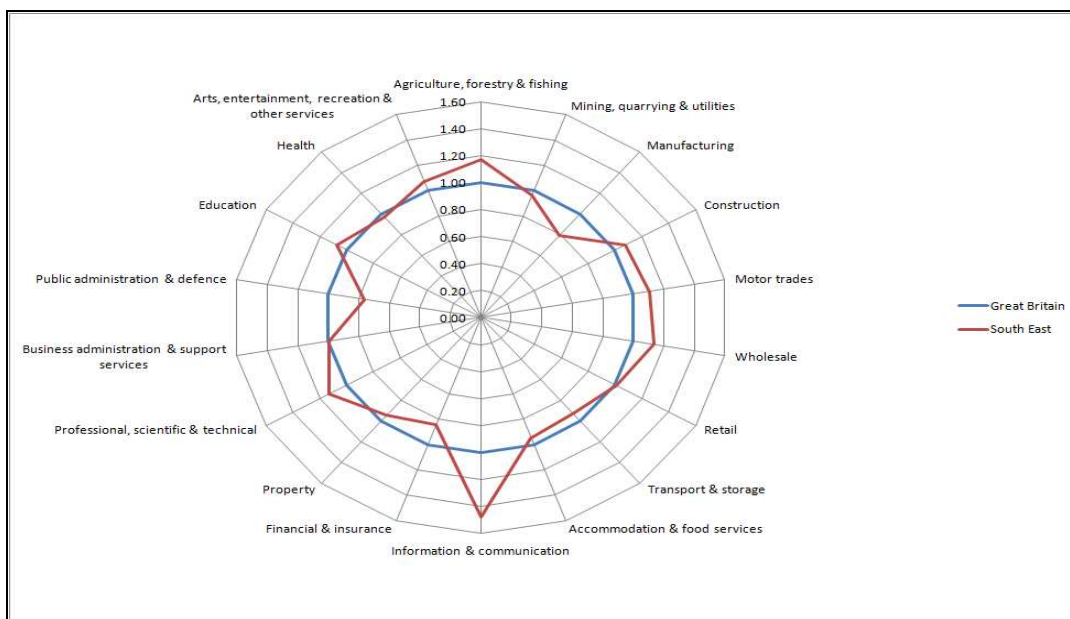
Figure 2.2: Location Quotients (Sector Specialism) in Manufacturing in All Regions



Source: Business Register and Employment Survey 2009

¹ The modern definition of manufacturing is that used by the Institute for Manufacturing, Cambridge University and it covers the full cycle of activities from research, design and development, production, logistics, and service provision to end of product life management. This definition makes a strong distinction between **production** (the physical processes of making, bending, etc.) and **manufacturing** (the overarching process of getting raw materials to goods and their associated services).

Figure 2.3: Location Quotients (Sector Specialism) in the South East



Source: Business Register and Employment Survey 2009

- 2.3 This does not detract from the importance of the sector in the South East evidenced by the GVA contribution of the sector, R&D expenditure and the absolute employment numbers. For example, according to the latest ONS data, in 2008, manufacturing was the third largest contributing sector to workplace based GVA in the South East with £18,422m, behind real estate/renting/business activities (£51,915m) and wholesale/retail/motor repair (£24,293m). According to the same data, manufacturing GVA is higher in the SE than in all other regions except the North West
- 2.4 According to the Office for National Statistics, in 2009, £15.6 billion was spent on R&D performed within UK businesses, a decrease of 2.5 per cent at cash (current) price compared with the 2008 total. Total R&D expenditure in 2009 represented 1.1 per cent of GDP, in line with recent years.² in the same year, 91.9% of UK business R&D expenditure was carried out in England, down from 93.5% in 2008. Business enterprises alone spent almost £10.1 billion in 2009, 64.5 per cent of the total. **The UK regions with the largest R&D expenditure were: the East of England (24.9% of the total); the South East (23.%) and the North West (13.1%).**
- 2.5 In terms of sectors, there was more R&D reported within manufacturing (73.9% of all R&D expenditure in the UK; 73.6% in the South East) than any other sector businesses. Within manufacturing in the South East, chemicals represent 52.9% of R&D expenditure in manufacturing in the region³ (higher than the UK equivalent figure of 43.7%), followed by electrical machinery, representing 16.3% of R&D reported by manufacturing companies (the equivalent national figure is 11.5% for this sector).
- 2.6 As shown by Figure 2.4, review of gross domestic expenditure on R&D as percentage of total workplace based GVA also indicates that the South East retains a position in the top, second only to the East of England. Furthermore, Figure 2.5 presents business enterprise as % of the regional GVA and can be used as an additional indicator to demonstrate the importance attached on R&D by businesses in the South East.

Figure 2.4: Gross Domestic expenditure on R&D as % of total workplace based GVA

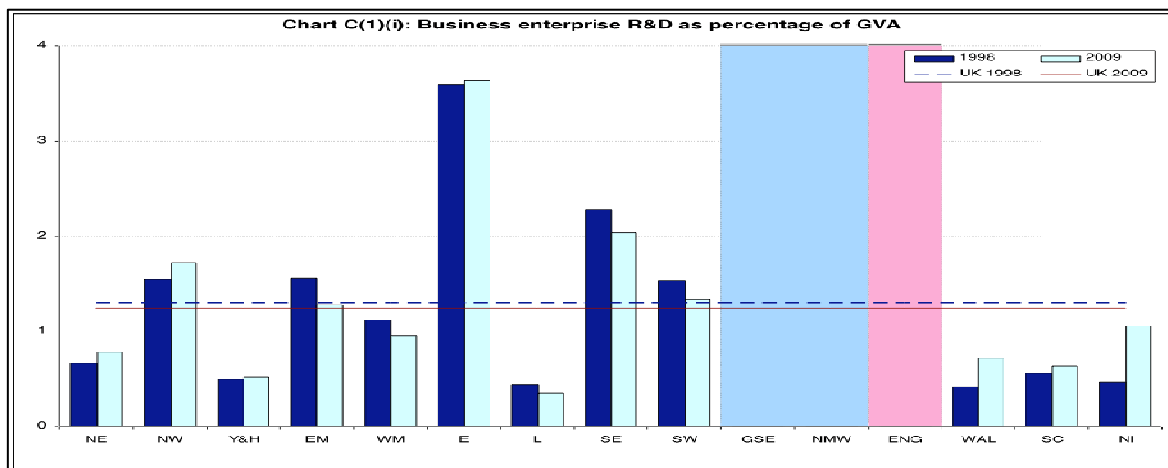
² ONS Statistical Bulletin, UK Business Enterprise Research and Development 2009 (Issued in December 2010).

³ Government Office Region

%	UK	Region/Country								
		North East	North West	Yorkshire & Humber	East Midlands	West Midlands	East of England	London	South East	South West
2001	2.0	0.9	2.2	1.1	2.1	1.5	4.5	1.1	3.3	2.1
2002	2.0	0.9	2.2	1.1	2.1	1.4	4.2	1.2	3.1	2.2
2003	1.9	1.0	2.0	1.0	1.8	1.4	4.3	1.1	3.0	2.2
2004	1.9	1.3	2.2	1.0	1.9	1.3	3.8	1.1	2.8	2.3
2005	2.0	1.3	2.3	1.0	2.0	1.3	4.8	1.0	2.8	2.1
2006	1.9	1.3	2.0	1.1	1.8	1.4	4.4	1.1	2.9	2.1
2007	2.0	1.4	2.3	1.1	1.9	1.5	4.6	1.1	2.9	1.9
2008	2.0	1.3	2.2	1.1	1.7	1.3	4.4	1.1	2.9	2.0
2009	2.1	1.4	2.3	1.2	1.9	1.4	4.6	1.1	3.0	2.1

Survey, DETINI employment

Figure 2.5: Business Enterprise R&D as % of GVA



2.7 In terms of employment numbers, as indicated in Figure 2.1, the South East is one of the largest manufacturing regions in the UK, employing 260,100 workers. The region’s dominant sub-sectors in manufacturing in 2009 include:

- Manufacture of fabricated metal products, except machinery and equipment – employing 32,800 people
- Manufacture of computer, electronic and optical products – employing 26,500 people
- Manufacture of machinery and equipment – employing 26,000
- Printing and reproduction of recorded media – employing 18,200
- Other manufacturing – employing 16,900

2.8 The region is in fact home to important manufacturing technologies such as aerospace, motor sport, marine, and healthcare as well as an extensive regional supplier infrastructure and is renowned for being a major contributor to productivity growth and a lead driver of innovation, developing and manufacturing many and varied products.⁴

⁴ MAS SE 2010 Business Plan

2.9 Figure 2.6 indicates there were approximately 22,500 businesses in the manufacturing sector in the South East in 2008⁵. As the numbers indicate, there has been a reduction of 5% in the number of businesses since 2006. This followed an earlier decline between 1998 and 2005 of 8% in the number of manufacturing businesses in the region.

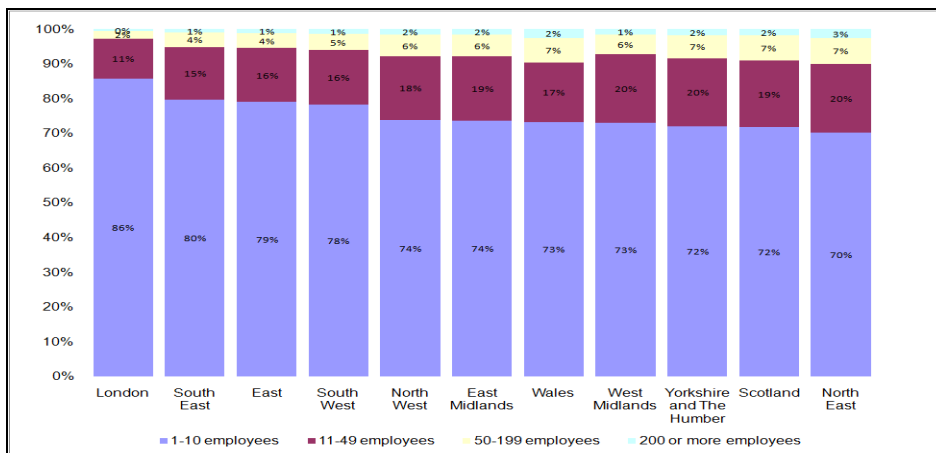
Figure 2.6: Number of Manufacturing Businesses in the South East by Number of Employee

Date	1-10	11-49	50-199	200 or more	No. of Businesses
1998	79%	15%	5%	1%	26,040
2005	81%	14%	4%	1%	23,990
2006	82%	13%	4%	1%	23,619
2008	81%	14%	4%	1%	22,482
% Change in businesses 1998 – 2005	-5%	-17%	-24%	-29%	-8%
% Change in businesses 2006 - 2008	-6%	2%	-6%	-13%	-5%

Source: ABI Workplace Analysis 2008

2.10 The majority of manufacturing businesses in the South East (81%) employ less than 10 employees. As demonstrated by Figure 2.7, out of all the regions, only London has a greater proportion of its manufacturing base that employs less than 10 people.

Figure 2.7: Size of Manufacturing Business by Region



Source: ABI Workplace Analysis 2008

MAS South East

2.11 MAS has been a public sector funded flagship programme for over 8 years offering business support for manufacturing companies aiming to achieve significant improvements in their productivity and competitiveness. MAS has been retained as one of this government’s key vehicles for promoting

⁵ The latest comparable ABI estimate for number of businesses is for 2008. The 2010 estimate from UK Business, Size and Activity database (ONS) - based on the Inter Departmental Business Register (IDBR) that contains information on VAT traders and PAYE employers in a statistical register indicates that in 2010 there were some 18,805 enterprises in production sector in the South East (99% of this sector are manufacturers).

business improvement alongside Growth Hubs and Technology and Innovation Centres (Local Growth White Paper 2010) following planned consolidation of the 29 Solutions for Business (SfB) offerings.

- 2.12 Over the years, the core role of MAS has extended from a focus on business transformation and innovation through adoption of lean principles to lean enterprise, strategy, supply chain, low carbon, advanced manufacturing, and supplier sourcing. In recent years, MAS has helped manufacturers survive the recession and emerge stronger by helping them to enter low carbon supply chains, e.g. nuclear, renewable energy, low carbon vehicles; to develop new low carbon products e.g. low carbon vehicle components, or the low carbon calculator developed by MAS SE with Carbon Footprint (see below); and also focus more on Advanced Manufacturing.

Service Offer

- 2.13 The 2010 MAS SE Business Plan sets out the following Vision:

MAS South East will continue to make a significant impact on the efficiency and productivity of manufacturing in the South East, through a deep understanding of the changing and future needs of the sector and by integrating our services with our Business Support Partners to raise the region's manufacturers to the best in class.

- 2.14 In order to deliver this vision, MAS SE set the following strategic objectives:

- To continue to embed lean manufacturing to all parts of the modern manufacturing value chain. This remains the 'Core Service'.
- To deliver, with key strategic partners in business support, an integrated and holistic development package for South East manufacturers. Additional services will:
 - Ensure that clients have strategic intent and that the MAS and partners' interventions enable this to be realised. (Strategic Support).
 - Ensure that clients have the skills throughout the workforce to enable them to prosper, and that they have long term skills deployment and development plans in place. (Skills Support).
 - Improve the awareness and adoption of innovative and technology based solutions for all aspects of manufacturing operations. (Technology and New Product Development Support).
 - Make sure clients have the most appropriate tools, techniques and skills available to them that take advantage of the low carbon economy. (Sustainability Support).

- 2.15 More specifically, MAS SE currently offers the following core services in line with MAS guidelines:

- Lean thinking
- Value stream and process mapping
- 5 S and 6 Sigma
- Team building
- Improving layouts and space utilisation
- Reducing Waste (Waste Improvement Plans – WIP)
- Improving quality and delivery
- Materials and production innovation
- A programme of visits to best practice exemplars
- Assistance in finding supplies, services or equipment
- Assistance to companies who want to improve their resource efficiency
- Assistance to companies developing and/or introducing new products
- Assistance to companies for working within a supply base or with supply chains

- Assistance in developing a medium to long term manufacturing strategy
- Assistance in applying lean techniques across their whole enterprise

2.16 MAS SE has also been offering the following products:

- **SC21 – 21st Century Supply Chains.** This is delivered by Farnborough Aerospace Consortium on behalf of MAS SE. This is an improvement/modernisation programme (supported by accreditation) targeting the supply chain in aerospace, defence and security industries. This key programme is overseen by A|D|S⁶.
- **Observatory Function.** This product would involve provision of sector related intelligence and information to SEEDA but also companies seeking supply partnerships or even new sales opportunities, capitalising on MAS established regional company knowledge and data and CRM activities. However, this function was put on hold and has not been delivered due to a Marketing Edict from BIS/*emda* (*emda* assumed responsibility for managing the National MAS Network in April 2008 with the role of coordinating, promoting, reporting and developing MAS across the regions on behalf of BIS).
- **Low Carbon & Advanced Manufacturing.** Support provided under this banner of activities stems from the Low Carbon Industrial Strategy announced on the 15th July 2009 and the Advanced Manufacturing announced on the 28th July 2009, (but it is also in line with the coalition Government's commitment to support measures to reduce climate change including £10m funding for three low carbon vehicle R&D projects developed through the Low Carbon Vehicle Innovation Platform Integrated Delivery Programme, and the Growth Review Framework for Advanced Manufacturing published by BIS December 2010). Within the MAS guidelines, low carbon support by MAS SE has included amongst other activities, in partnership with FAC and Olive Consulting, delivery of a pilot for the aerospace and defence sector supply chain to encourage innovation in low carbon and other sustainable technologies in manufacturing, including signposting to appropriate exemplars and improvement in resource efficiency, remanufacture and reuse, including the uptake of sustainable sourcing and renewable energy; uptake of Environmental Management Systems, either to ISO14001 or BS 8555; and eco-design workshops. In its latest 2010 workplan, MAS SE has also committed to identify cost savings and increased sales for the following energy waste and efficiency measures as defined by DEFRA i.e. reduction in greenhouse gas equivalents; water conservation; virgin raw materials saved and materials diverted from landfill.
- MAS SE also equipped its specialists with a comprehensive basic knowledge of environmental management issues in the manufacturing sector based on taking up training provided by the Institute of Environmental Management and Assessment (IEMA). The course covers environmental policy, legislation, environmental aspects of operations and includes key environmental issues such as sustainability, the greenhouse effect, ozone depletion, air pollution, water, waste and contaminated land and carbon management.
- Advanced engineering support includes export readiness for advanced manufacturers including working closely with UKTI to help manufacturers to exploit and leverage opportunities in China and a Technology Programme in partnership with PERA.
- **Ambassadors.** This activity involves using sector-based advocates to promote world-class techniques within the manufacturing community including the supply chain. Ambassadors' sites are used for Best Practice Visits, and particularly those that have experience of MAS

⁶ A|D|S is the trade organisation advancing the UK Aerospace, Defence, Security and Space industries.

SE key new services (e.g. holistic strategic review and planning, resource efficiency, skills deployment) as well as the more traditional ones.

- **Lean Benchmarking Online.** This enables MAS SE to provide light touch support to manufacturers online and direct more resource at deeper interventions, especially with growth companies.

2.17 Within the national MAS guidelines, support is delivered through five levels as follows:

- **Level 1:** Initial contact, information, advice and help. Activities include all the initial contacts and enquiries received by MAS SE. Light touch advice on technical and business matters are also provided by phone, email and internet based information and resources.
- **Level 2:** Diagnostic analysis and review. Level 2 activity is free of charge to all SME manufacturers as part of the service provided by MAS. The core guaranteed Level 2 MAS service is up to four days, though it is expected that the majority (around 80%) of reviews will be completed within one day and this is what all Regional MAS Centres tend to do. **MAS SE also limits this provision to free of charge support to 1 day although they can extend it to 2 days.**
- **Level 3:** This level includes provision of general awareness training and networking events, including best practice factory visits.
- **Level 4:** This level covers consultancy support with access to longer-term (consultancy/research) assistance. **Under the terms of the SME block exemption (under which MAS is registered), the service can be subsidised at a rate of 50% for SMEs - which means that manufacturers are covering the remaining 50%.** Non-SMEs pay a full commercial rate for services (except as allowed by *de minimis* subject to the discretion and approval of the contracting RDA). Regional MAS Centres vary in the way they apply this guideline. MAS SE charges SMEs anything from £300 per day up to £500 and non-SMEs £500-£1,000 per day based on the specialists/advisors assessment of the company's ability to afford a certain charge. A strict 50% reduction is, however, applied to provision of services by a third party/broker organisation i.e. organisations that are sub-contracted to deliver specific support services.
- **Level 5:** This level of support includes signposting and referrals to other services.

Targeting of Companies

2.18 MAS SE Business support targets two main groups as follows:

- **Group 1:** (Core Market) – i.e. a 'service for all' but focused on the process improvement and development needs of SME manufacturers in the South East.
- **Group 2:** Those companies that:
 - Produce innovative, yet responsibly produced goods
 - Are part of, or moving into, the high value parts of the modern manufacturing value chain
 - Move into new global markets, especially those associated with the low carbon economy
 - Can influence others to engage with MAS and business support (through their supply chains, brand, location etc.)
 - Apply for Supply Chain 21 support
 - Are growth or growth-potential companies

2.19 One key area that MAS SE has aimed to strengthen its offering is around technology and has sought to target manufacturers who are in the high value /advanced manufacturing technology

groups such as aerospace, motor sport, marine, bio-tech and healthcare, to develop and exploit world class R&D capability focused on creating globally competitive innovative, high value products. Targeting also focuses on traditional sectors but the ones that can improve through the use of technology. The industries covered include:

Aircraft and spacecraft (Aerospace)
Pharmaceuticals
Office, accounting & computing equipment
Radio, TV & communications equipment
Medical, precision and optical
High-tech total
Medium-high technology
Electrical machinery and apparatus
Motor vehicles
Chemicals
Rail/transport equipment
(not boats)
Other machinery and equipment nec
Medium-high tech total

2.20 This approach also matches SEEDA's (South East England Development Agency) manufacturing strategy of 2008 which highlighted a range of new industrial technologies in manufacturing in which strong UK capabilities should be a priority for support.⁷ For example, priority areas for SEEDA were identified as:

- Low carbon developments in aerospace, engine and wing design, and manufacture.
- The shift from metal to composite materials and applications in the automotive, marine, aerospace, wind and wave, construction, oil and gas, and medical equipment sectors.
- In the industrial biotechnology sector the shift from a chemical industry based on oil to one based on renewable and biological substances.
- Developing plastic electronics technology will enable electronic circuits to be printed cheaply onto flexible surfaces, something impossible with conventional silicon semiconductors.

2.21 Feedback from EEF surveys of manufacturing businesses in the South East has also been incorporated into the 2010 MAS SE Business Plan for support to be delivered by MAS SE:

- Competition from overseas (including lower costs and less regulation) remains but is changing as the conditions facing foreign producers (such as in China) evolve and their economies mature.
- Lack of confidence in the education system to produce suitably skilled workers, and employers have to provide re-training as soon as people enter the business.
- Raw materials prices (including energy) continue to rise.
- Ageing workforce and chronic skills shortages.
- Public procurement failing to support innovation.
- An excess of regulation and taxation that affects competitiveness in comparison to less developed countries.
- Poor infrastructure – some companies complain of a lack of or inefficient public transport or too much congestion.
- Sustaining improvements in the long-term achieved through business improvement techniques such as Lean.

⁷ <http://www.mas-se.org.uk/news/advanced-manufacturing-advance-and-be-recognised>

- Taking advantage of opportunities such as the lower carbon economy.

Delivery Model and Resources

2.22 MAS has been delivered by the EEF, The Manufacturers Organisation, in the South East since 2002. The current contract is in its third iteration and was awarded to EEF following procurement through an OJEU process. The contract runs from April 2009 – March 2012 and is delivered by EEF through a core team of advisors. For the provision of specialist advice e.g. low carbon and environmental technologies or targeting of specific sectors, MAS SE has its own specialists and has also been supported (through sub-contracting arrangements) by third parties including Olive Consulting, the Farnborough Aerospace Consortium, Giraffe Innovation and Bang Creations.

2.23 Figure 2.8 presents allocation of resources since the previous contract. Resource and expenditure issues are discussed in more detail in the next section.

Figure 2.8: MAS SE Resources

Job Position	2008/9 Positions	2009/10 Position
Lead of MAS	0.5	0.5
Programme Manager	1.0	1.0
Partner Manager	0.5	0
Marketing Manager	0.5	0
Network Manager	0.5	0
Principal Specialist	1	1
Senior Specialist	2	2
Manufacturing Specialists	10	10
Marketing Executive	1	1
Manufacturing Advisor	1	1
Team Co-ordinator	1	1
Project Co-ordinator	0.5	0
Finance Co-ordinator	0.5	0
Total	19.5	17.0

Feedback on MAS SE Delivery and Processes by Business and Stakeholders

2.24 The survey of businesses shows that only 10% of all respondents believe that the outcomes from MAS SE assistance did not meet their expectations. 82% of respondents believe that their expectations have been met or exceeded (28% believe that the outcomes exceeded their expectations and 54% that say their expectations have been met). The remaining 7.5% feel it is still too early to say. The breakdown of satisfaction by level of business support is provided below:

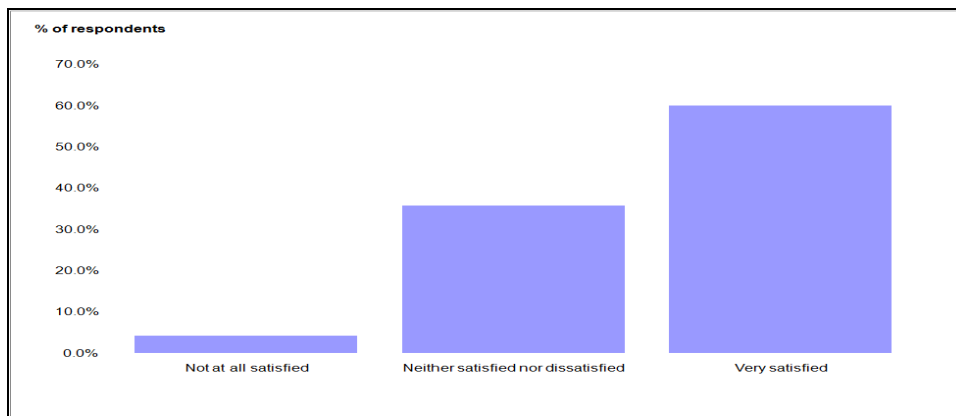
- **Level 2** - 50% of Level 2 respondents say their expectations have been met; while 40% say outcomes from MAS fell short of their expectations. The remaining 10% believe it is too early to say.
- **Level 4 2007/08** – Satisfaction amongst Level 4 participants in 2007/08 was much higher with 60% of respondents finding MAS outcomes met their expectations, while 30% found the outcomes exceeded their expectations. Only 10% claim that outcomes fell short of their expectations.

- Level 4 2008/09 and 2011** – Similarly 54% of Level 4 participants in 2008/09 and 2011 found that MAS outcomes met their expectations, with 31% finding their expectations had been exceeded – an overall positive response therefore by 85% of respondents. Only 7% found that outcomes had fallen short of their expectations, while 8% believe it is too early to say.

2.25 The survey results indicate that **company expectations are much more likely to be met and exceeded for those that have received Level 4 support.**

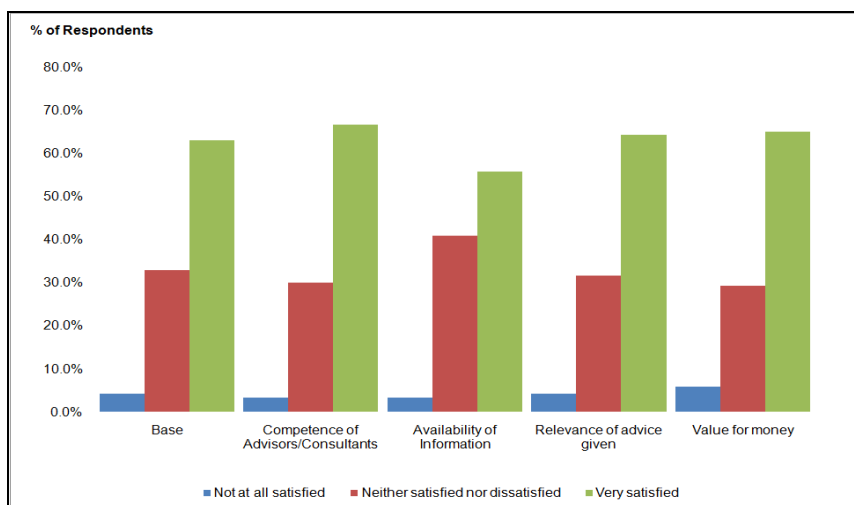
2.26 The survey also found that overall, considering all of the support received from MAS SE, 60% of businesses were very satisfied. This compares with a national average of approximately 85% (based on review of business feedback presented in the regional evaluation reports reviewed as part of the 2010 National Review of the Manufacturing Advisory Service and Research to Support the Business Case for Continuing and Developing the Manufacturing Advisory Service, for BIS/*emda*).

Figure 2.9: Overall Levels of Satisfaction with MAS Support Received



2.27 As figure 2.10 indicates, competence of advisors and consultants is more likely to produce satisfied businesses than any other category of support. It needs to be noted that the quality and competence of MAS SE advisors was also highly commended by all stakeholders. On the other hand, value for money is the area that is more likely to have a ‘not at all satisfied’ business. This is in contrast with the national figure that indicates that 90.5% of respondents believe that MAS offers good value for money (MAS Customer Satisfaction Survey, *emda*/BIS, September 2010).

Figure 2.10: Levels of Satisfaction by Category of Support/Assistance



The first stack of columns, ‘Base’, refers to the overall satisfaction levels.

2.28 The table below shows the uplift in satisfaction levels for Level 4 recipients compared to Level 2 recipients. For the most recent Level 4 recipients, the greatest levels of satisfaction relate to competence of advisors, with 72% of businesses very satisfied. In fact, ‘availability of information’ is the only area where significantly less than 70% of respondents report they are very satisfied. On the other hand, it needs to be noted that overall there has been a decline in satisfaction with Level 4 between 2007/08 and the current contract. The reasons for this decline have not been explored with businesses and they should be further investigated and monitored in the future as they could relate to changes in MAS delivery mechanisms/approaches/tools including changes in personnel and third parties involved in delivery but also the changing nature of expectations of businesses in the current economic environment e.g. unrealistic expectations in the first place that MAS could be the panacea to all business and operational matters in a tough economic environment.

Figure 2.11: Satisfaction by Level of Support Received

	Level 2	Level 4	
		2007/08	2008/09 and 2011
Competence of advisors/Consultants	<ul style="list-style-type: none"> 80% neither satisfied nor dissatisfied 20% not at all satisfied 	<ul style="list-style-type: none"> 80% Very Satisfied 20% neither satisfied nor dissatisfied 	<ul style="list-style-type: none"> 72% Very Satisfied 26% neither satisfied nor dissatisfied 2% not at all satisfied
Availability of information	<ul style="list-style-type: none"> 80% neither satisfied nor dissatisfied 20% not at all satisfied 	<ul style="list-style-type: none"> 80% Very Satisfied 20% neither satisfied nor dissatisfied 	<ul style="list-style-type: none"> 59% Very Satisfied 39% neither satisfied nor dissatisfied 2% not at all satisfied
Relevance of advice given	<ul style="list-style-type: none"> 80% neither satisfied nor dissatisfied 20% not at all satisfied 	<ul style="list-style-type: none"> 80% Very Satisfied 20% neither satisfied nor dissatisfied 	<ul style="list-style-type: none"> 69% Very Satisfied 28% neither satisfied nor dissatisfied 3% not at all satisfied
Value for Money	<ul style="list-style-type: none"> 80% neither satisfied nor dissatisfied 20% not at all satisfied 	<ul style="list-style-type: none"> 80% Very Satisfied 20% neither satisfied nor dissatisfied 	<ul style="list-style-type: none"> 70% Very Satisfied 26% neither satisfied nor dissatisfied 4% not at all satisfied

2.29 The survey has also shown that the price businesses would be willing to pay for the support received per day ranged from £0 - £2,000. Level 2 respondents would be unwilling to pay for the service, while Level 4 recipients would be willing to pay a range of £0-250 per day (for those that received support in 2007/08); and £0 - 2,000 for those that received Level 4 support in 2008/09 and 2011.

2.30 In the business survey undertaken as part of the 2010 National Review of the Manufacturing Advisory Service respondents stated that they were not generally willing to pay more than £500 a day or £1500 in total for MAS advice. It needs to be noted that this evidence is not supported by the review of the FIS information held by the regional MAS centres, which indicates that companies are prepared to pay more than this, and they do so.

2.31 Amongst respondents 91.7% would recommend MAS to others - the equivalent national figure was 91.8% in the second quarter of 2010⁸, while 8.3% would not. This varies by Level, with 60% of Level 2 recipients saying they would recommend MAS; compared to 100% of those that received Level 4 support in 2007/8; and 94% of those that received Level 4 support in 2008/09 and 2011.

⁸ MAS Customer Satisfaction Survey (CSS, National Totals), emda/BIS, September 2010.

- 2.32 In terms of the delivery model adopted, previous work undertaken⁹ indicates that the approaches adopted by the MAS Regional Centres vary and any comparisons between approaches could be misleading in the absence of comprehensive and compatible management and financial information for each Centre. Therefore, no comparisons of the MAS SE delivery model with other Centres can be made at this stage.
- 2.33 On the other hand, feedback from third party delivery organisations provides useful information on the delivery approach of MAS SE and is summarised below:
- There is a well-established and good working relationship between third parties and MAS SE teams (management, administration, marketing and delivery i.e. MAS SE own advisors).
 - Third parties reported that improved management and administration processes have been put in place by MAS SE since the last contract e.g. third parties have reported more transparency and clarity in relation to contractual arrangements and expected outputs.
 - All stakeholders and third party organisations also reported that information and networking events by MAS SE are well organised, relevant and provide very ground for networking.
 - On the other hand, third party deliverers reported that timing for delivery of contract targets has been relatively short. This refers to both: volume i.e. number of companies to be assisted within the contract timescale, and the impact to be achieved. The latter in fact seems to be out of the control of the MAS delivery organisations as support is limited to advice and recommendations; businesses may choose not to implement these.
 - Third parties also believe that they offer extremely good value for money and think that they should probably negotiate higher value contracts.
 - There seems to be complementarity of skills between the MAS SE own advisors and third party specialists but also some overlaps (that could potentially lead to chasing the same markets when for example, businesses would require further support with implementation of the advice and recommendations made through MAS support). This is inevitable in competitive markets; however, early discussions between MAS SE and third parties and agreement in relation to responsibilities for ongoing support for businesses and ownership of tools to be used post-MAS intervention would help regular collaboration.
- 2.34 The wide range of specialisms covered by the MAS offer has enabled and required MAS to engage with and sub-contract delivery of services to a wide range of organisations in order to bring the best of skills and excellence within a closer reach to manufacturers. It needs, however, to be recognised that a delivery model involving sub-contracting may offer flexibility and efficiency but inevitably, it involves reliance of delivery on another business's operations and resources and it means that delivery of outputs is outside the immediate control of the lead organisation. To mitigate this, the MAS Centre may introduce a number of measures to ensure effective programme delivery and client responsiveness whilst being careful to maintain a close and trusted working relationship with the sub-contracted third parties.
- 2.35 Finally in terms of delivery and processes, feedback is also provided by a Financial, Appraisal and Monitoring Audit of MAS SE was undertaken with the agreement of MAS SE and SEEDA by Effective Contracting in March 2010. The Audit had concluded that at the centre of MAS SE is a robust and high value intervention delivered by experts, but the organisational infrastructure within which the delivery of MAS SE sits was in need of some revision to ensure that all policies and

⁹ The National MAS Evaluation for DTI (Jan 2006) and the Review of the Manufacturing Advisory Service and Research to Support the Business Case for Continuing and Developing the Manufacturing Advisory Service, for emda/BIS (December 2010), both authored by G.Siora for DTZ Consulting.

procedures have been recently checked and updated to reflect the various changes in structure at EEF, changes in the demands of MAS and changes within the third Grant Framework Agreement from SEEDA. Discussions with the MAS SE and SEEDA teams indicate that some changes have taken place to reflect recommendations made.

CONCLUSIONS

The South East is one of the largest manufacturing regions in the UK – employing 260,000 workers. The region is home to important manufacturing technologies such as aerospace, motor sport, marine, and healthcare as well as an extensive regional supplier infrastructure.

According to the latest ONS data, in 2008, manufacturing was the third largest contributing sector to workplace based GVA in the South East with £18,422m, behind real estate/renting/business activities (£51,915m) and wholesale/retail/motor repair (£24,293m). According to the same data, manufacturing GVA is higher in the SE than in all other regions except the North West.

The region's manufacturing sector is dominated by SMEs - the majority of manufacturing businesses in the South East (81%) employ less than 10 employees. Out of all the regions only London has a greater proportion of its manufacturing base employing less than 10 people. SMEs face specific issues and challenges in the global markets including access to knowledge and resources to help them develop new products, access new markets and adopt new technologies including low carbon technologies. Research undertaken by EEF in the South East has also shown that companies are also finding it challenging to sustain in the long-term improvement achievements through business techniques such as Lean.

MAS SE has been delivering a series of products such as lean thinking, value stream and process mapping, 6 Sigma, improving layouts and space utilisation, reducing Waste (Waste Improvement Plans – WIP) in line with the national MAS guidelines to address some of these issues but also SEEDA's priorities and the Government's agendas for Low Carbon and Advanced Manufacturing. Additional activities include SC21 – 21st Century Supply Chains – specifically targeting the aerospace and defence industries, export readiness for advanced manufacturers including working closely with UKTI to help manufacturers to exploit and leverage opportunities in China, the Ambassadors programme and training for own staff on environmental management issues.

MAS SE would offer support to all but it has been focusing on innovative, with high growth potential companies and companies keen to learn from and adopt new technologies including companies in traditional sectors but also high value /advanced manufacturing technology groups such as aerospace, motor sport, marine, bio-tech and healthcare. The purpose of this is to achieve lasting impact and transformational change.

MAS SE is delivered by EEF though a core team of advisors, finance, marketing and administrative support. For the provision of specialist advice e.g. low carbon and environmental technologies or targeting of specific sectors, MAS SE has its own specialists has also been supported (through sub-contracting arrangements) by third parties including Olive Consulting, the Farnborough Aerospace Consortium, Giraffe Innovation and Bang Creations.

It is worth noting that MAS SE programme management costs have been reduced by 3% since 2008 (from 19.5 posts down to 17) in order to ensure that more resources are dedicated to projects and therefore reach the end beneficiaries i.e. businesses.

The delivery approach seems to be delivering in general with some areas improving since the last contract. For example:

- 82% of businesses surveyed believe that their expectations have been met or exceeded - only 10% of all respondents believe that MAS SE assistance did not meet their expectations. The previous

evaluation of MAS SE (for 2005-07 contract showed that 82% said they were either satisfied or very satisfied with support received and 90% rated as good or excellent the effectiveness of the intervention in meeting company needs.

- The current evaluation has also shown that company expectations are much more likely to be met and exceeded for those that have received Level 4 support.

- The competence of advisors is a key factor in driving up levels of business satisfaction from MAS SE.

- Amongst respondents 91.7% would recommend MAS to others, only 8.3% would not. The last evaluation showed that 80% would recommend MAS to another business.

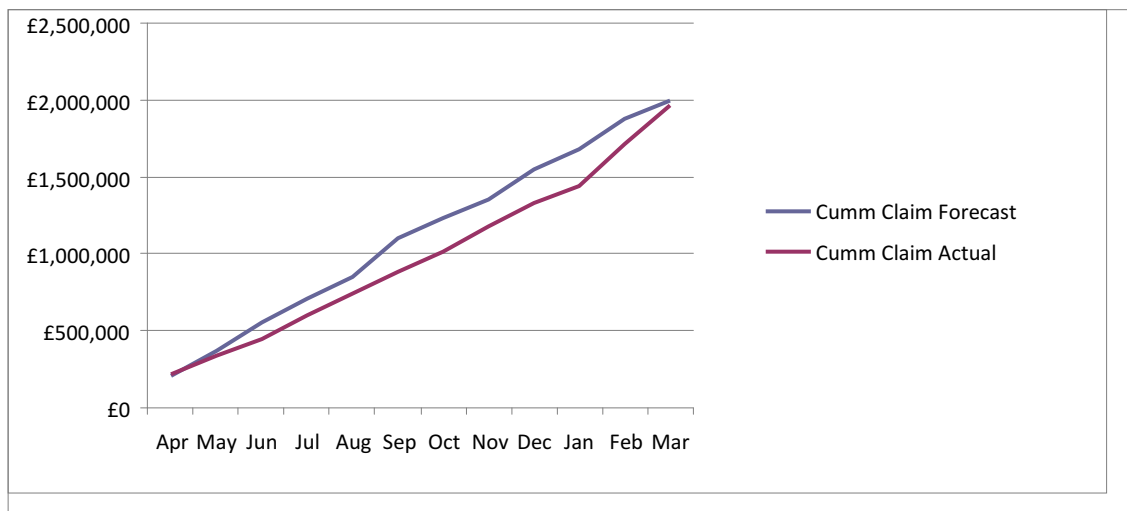
3. MAS III Profile – Expenditure and Outputs

- 3.1 SEEDA has invested £6m on the MAS SE III through a 3-year contract (2009 - 2012), primarily for providing support over this period to 3,600 manufacturers in order to generate £300m of value added to the manufacturing region. In addition to this, a Grant of £538,260 was awarded to MAS SE (through BIS via SEEDA) in order to extend the services it offers to manufacturers in the region in response to the Low Carbon Industrial Strategy and Advanced Manufacturing packages.
- 3.2 This section provides an overview of MAS SE III performance covering:
- Financial Performance;
 - Reported achievement of outputs/outcomes - actual versus target; and,
 - Observations and analysis of financial information.

Financial Performance

- 3.3 At the time of the evaluation, SEEDA and MAS SE were discussing figures for year 3 of the contract. No major financial issue/concern was reported by SEEDA or MAS SE or any of the stakeholders and sub-contracted specialists.
- 3.4 Financial reports are provided regularly to SEEDA summarising progress of spend against forecast figures. The latest available summary report reviewed for the purposes of the evaluation (March 2011) states that owing to shortage in third party delivery still not closing gap, an accrual (of approximately £56K) was expected into Year 3.

Figure 3.1: Actual vs Forecast Expenditure Year 2 (2010/11)



- 3.5 Figure 3.2 indicates that the emphasis of this contract is on more on programme delivery. Since the last contract programme delivery costs have increased despite the reduction in the number of resources (see Figure 2.8 in the previous section). This could be explained by efforts and expenditure to meet intervention targets in a challenging environment. On the other hand, any costs associated with management and administration activities have been reduced significantly.

Figure 3.2: Allocation of Expenditure

ACTIVITY	Total MAS II July 2005–March 2008	Total MAS III April 2009–March 2011
	%	%
Programme delivery costs		
Staff salaries plus running costs	42.6%	50.7%
Supporting costs associated with programme delivery	21.5%	24.0%
Sub total	64.1%	74.7%
Other programme costs		
Programme management (incl. management fee)	14.5%	15.3%
Other supporting costs primarily for marketing, PR etc.	9.8%	6.0%
Programme development	6.0%	0.0%
Recruitment/set-up replacement	5.6%	4.0%
Sub total	35.9%	25.3%

Outputs

- 3.6 A series of key deliverables/targets against the SEEDA investment were set out for the MAS III contract – the 36-month period from April 2009 to March 2012. These include:
- Numbers of businesses assisted to improve their performance: The 3-year target is to support 3600 unique companies. For Year 1 (April 2009-March 2010), the bar is set to supporting 1500 business and a target of supporting 1050 business in each year for years 2 and 3.
 - Numbers of people assisted with their skills development: 600 individuals to receive more than 6 hours of training in Year 1. 800 individuals to receive training in Year 2.
 - Client businesses' improvement in value added (including turnover): £100 million in Year 1.
- 3.7 It is important to note that the definition of outputs has changed since MAS II. Business support was previously counted at each level of intervention. For example, if a business had gone through from Level 1-4, it would have counted as 4 separate points of intervention. The change in the definition means that a single company can only be counted once, even if they use the service for a number of interventions. This explains the reduction in the number of businesses targeted to 3,600 (from 7,000 in the previous contract). It is also important to note that due to the evolving policy environment and the economic conditions, targets and finance are reviewed and negotiated on an annual basis.
- 3.8 An outputs/outcomes performance summary to date at Level 2, 4 and all key interventions is shown in Figure 3.3. It shows the actual performance for MAS III from April 2009 to January 2011, the

targets for the same period and performance variance. As shown in the figure, of the five key performance indicators, MAS III is only behind in relation to Level 4 assists¹⁰.

Figure 3.3: Contracted Outputs and Outcome Performance April 2009 to March 2011

Indicator	April 2009-March 2011			April 2011 to Dec 2011		
	Actual	Target	Variance	Forecast	Target	Variance
Level 2: nos. of business reviews	1415	1246	13.6%	365	365	0%
Level 4: nos. of intensive assists	720	769	-6.4%	164	164	0%
Total businesses supported (Levels 1-4)	2748	2400	14.5%	750	1200	-3.75%
>6 hours skills	2505	1205	100.4%	750	750	0%
Improvement in value added (£m)	£232	£203	14.3%	81.3	100	-18.7%

3.9 One of the issues that may need addressing in discussion with BIS in the future is, in reporting of outputs whereby outputs reflect number of companies rather than interventions. Therefore a company is claimed once in the contract period irrespective of the levels of support received.

3.10 Examples of activities undertaken by MAS SE to support delivery of outputs are recorded in the annual reports produced by MAS SE and include:

- A series of workshops such as a ‘website optimisation’ workshop held at ABB Robotics in Milton Keynes and ‘Profit from Waste – Green Waste Stream Management’ (ran in Buckinghamshire with four companies immediately requesting ongoing support from MAS South East)
- Six Sigma Green Belt courses
- Lean Facilitator open courses
- The launch of the Carbon Footprint Calculator

MAS Key Performance Indicators

3.11 In addition, to SEEDA outputs MAS SE reports against Key Performance Indicators (KPIs) in line with MAS guidelines for regional MAS Centres. Figure 3.4 summarises performance in relation to these indicators for years 1 and 2 of this contract (2009/10 and 2010/11) and also 2008/09. Areas highlighted in green indicate 10% or more outputs above the highest national average.

3.12 Some observations from reading of these KPIs are listed below:

- The number of new enquiries has increased by 2.5 times from year to year. Unless the definition of ‘enquiries’ has changed over time, this trend could indicate the increasing need of business for some advice and/or support in challenging economic times.
- Unsurprisingly, due to the re-organisation of the business support infrastructure that has impacted upon Business Links, referrals to and from the Business Link has declined dramatically over the last two years.
- In the last year, MAS SE has undertaken 255 seminars/events/workshops/best practice visits (attended on average by 14 participants). This represents 62 more similar events in the year

¹⁰ These figures include Low Carbon and Advanced Manufacturing Strategic Investment Fund (LCAM SiF) outputs as well as core.

than the average of the two highest MAS Centres. This performance could be partly attributed to the Best Practice Network programme.

- The number of Manufacturing Reviews has increased overtime, albeit by a modest 13.8% in the last year (in comparison with the 46.7% in the year before). The number of new scope interventions also appears to have increased – albeit less so in the last year. On the other hand, the number of completed interventions has declined from 387 in 2009/10 to 333 in 2010/11. This could be explained by a number of reasons including less companies taking up the programme, less companies completing the programme or more complex and/or lengthier interventions. Nevertheless, the overall client income increased by £26,937 from 2009/10 to 2010/11.
- Impact (gross impact) equivalent to £60,616,134 has also been reported for 2010/11 and £68,180,434 in 2009/10 i.e. a total of £125,796,568 to date. Against the public spend of £2,179,349 for 2010/11 and £1,926,507 in 2009/10 i.e. a total of £4,108,856; this represents a 31:1 return. Estimated impact includes estimated increases in turnover and Quality, Cost and Delivery (QCD). If estimated increase accounts only for QCD impact and no increase in turnover, impact equivalent to approximately £50m in total has been generated to date (since April 2009), representing a 12:1 return. This compares with 6:1 return reported in the previous evaluation report covering the 2005/2007 contract.

Figure 3.4: MAS KPIs

Key Performance Indicators		Financial Year			Advanced Manufacturing and Low Carbon as % of total (2009-2011)	
		2010/11	2009/10	2008/09	Advanced Manufacturing	Low Carbon
1.0	Number of Enquiries	9,307	2,501	653	1%	1%
1.1	Number of New Enquiries	3,723	1,475	567		
1.2	Number of Repeat Enquiries	5,584	1,026	86		
1.3	Number of Inquiries from Business Link	56	104	78		
2.0	Number of Manufacturing Reviews	774	680	463	16%	12%
3.0	Number of Seminars/Workshops/Event/Best Practice Visits	255	202	195	10%	3%
3.3	Number of attendees at seminars/workshops.best practice	3,783	2,136	2,320		
4.0	Number of Completed Interventions	333	387	216	8%	17%
4.3	Number of Completed 'New Scope' Interventions	219	165	45	7%	17%
5.0	Number of Referrals	123	209	150	0%	0%
5.1	Number of Referrals to Business Link	32	63	31	0%	0%
6.0	Total penetration	1,303	1,152	1,137	0%	0%
7.0	Customer Satisfaction - measure of quality of delivery	8.1	-	-		
8.0	£ Impact	60,616,134	65,180,434	46,221,289	8%	4%
10.0	£ Impact - GVA	0	103,000	292,093		
11.0	Total Public Funding	2,179,349	1,929,507	1,971,000		
11.4	Client Income	422,867	395,930	241,721	4%	9%
	MAS Centre funding (inc client income)	2,602,216	2,325,437	2,212,721		
	Leverage - client income to public investment	16.25%	17.03%	10.92%	0%	0%

3.13 Figure 3.4 presents additional financial indicators relating to gross unit costs and benefits. A few observations are listed below.

- Looking at the number of completed interventions and value of impact, it could be argued that estimated impact/turnover per completed intervention was higher in 2008/9 than in 2010/11 (£213,987 in 2008/9 compared with £168,425 in 2009/10 and £182,030 in 2010/11). The reasons for this were not explored during the evaluation and it is recognised that this would be the result of a combination of reasons. Realistically there may be a time lag between completed intervention and actual impact on business turnover. Furthermore, an improvement in business process brought about by MAS interventions (or other business improvement techniques) may first result to deteriorating financial indicators before the

positive impact starts manifesting itself. Companies targeted in the recent years may also be smaller than in the earlier years of the intervention.

- As shown in the figure below, the public cost per assistance declined significantly in 2009/10 (in comparison with 2008/09), and it has gone up only slightly in 2010/11.
- The overall client income increased in 2010/11 – and income generated per intervention (completed interventions only) is estimated to be £1,270. This represents 64.5% of the cost per assistance. Estimated income generated per assistance in 2009/10 seemed to cover 56.6% of the estimated cost per assistance.

Figure 3.4: Estimates of various financial performance indicators

	2011/10	2009/10	2008/09
Manufacturing Reviews	774	680	463
Completed Interventions	333	387	216
Total (reviews and interventions)	1107	1067	679
Public Funding	£2,179,349	£1,929,507	£1,971,000
Average cost per assistance (reviews and interventions)	£1,969	£1,808	£2,902
Client income	£422,868	£395,930	£241,721
Estimated income generated per completed intervention (client income/divided by no of completed interventions)	£1,270	£1,023	£1,119

CONCLUSIONS

SEEDA has invested £6m on the MAS SE III through a 3 year contract (2009 - 2012), primarily for providing support to 3,600 manufacturers over this period in order to generate £300m of value add to the manufacturing region. A Grant of £538,260 has also been added to this investment to offer businesses in the region support in response to the Low Carbon Industrial Strategy and Advanced Manufacturing packages. To date approximately 68% of this public funding has been used:

- To support 2,748 businesses, representing 76.4% of the original target; 720 of these have received Level 4 support, indicating that some business process and performance indicators have improved or are expected to improve in the future;
- To upskill over 2500 individuals – 100.4% over the original target;
- To leverage client income of £818,797 – 19.9% of the public investment up to this stage; and,

- To generate approximately £232million of value added to date.

In comparison with the previous contract, resources of this contract have been focused on programme delivery – expenditure on PR and marketing have been reduced significantly.

Gross impact of £125,796,568 has been reported to date. Against public spend of £4,108,856 to date this represents a 31:1 return. If estimated increase in impact accounts only for QCD impact and no increase in turnover, impact equivalent to approximately £50m in total has been generated to date (since April 2009), representing a 12:1 return. This compares with 6:1 return reported in the previous evaluation report covering the 2005/2007 contract.

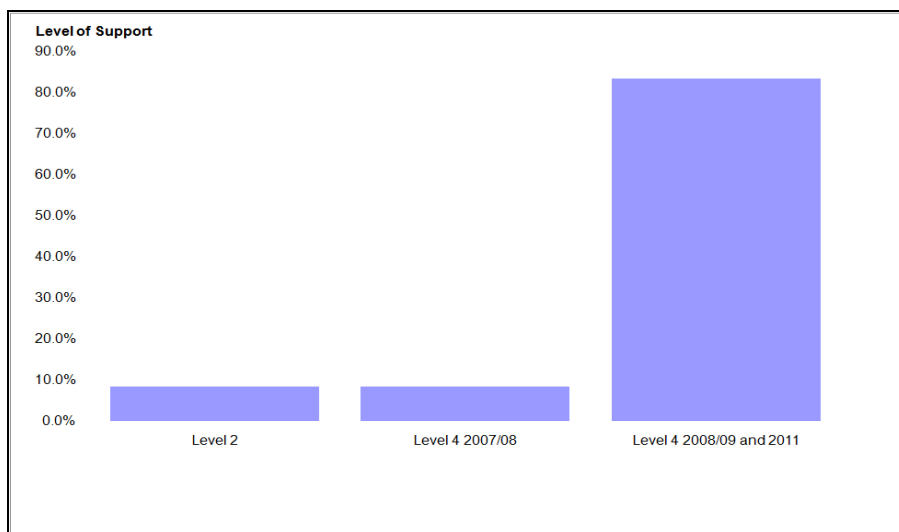
4. Business Benefits and Impact

4.1 This section presents benefits generated for businesses by MAS and draws entirely upon the business survey findings and case study material.

Profile of Survey Respondents

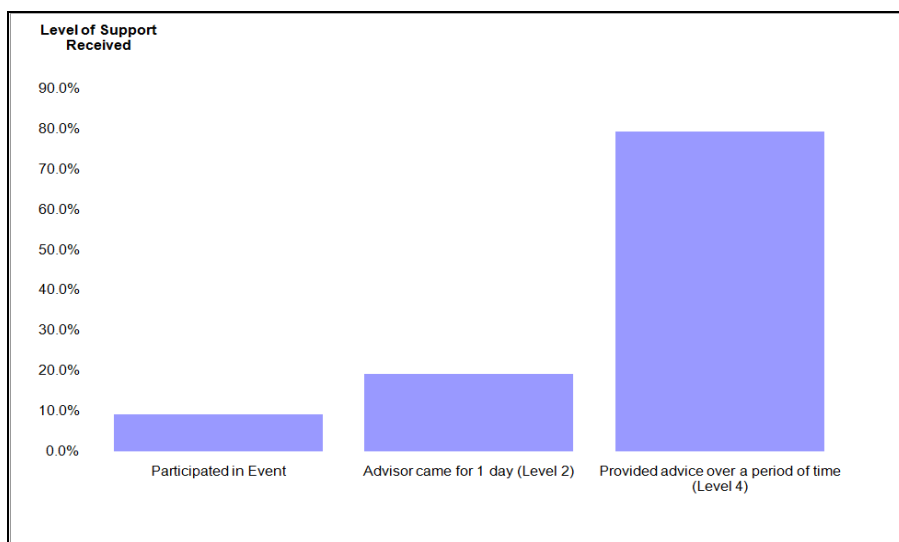
4.2 The survey was completed by 120 businesses that participated in telephone interviews, with 90% being businesses controlled from within the UK. As agreed with the project steering group, the majority (83.3%) of businesses consulted had received Level 4 support in 2008/09 and 2011. The remainder consisted of those that had received Level 2 support (8.3%) and those that had received Level 4 support in 2007/08 (8.3%).

Figure 4.1: Level of Support received by businesses (All Businesses)



4.3 The majority of respondents (79%) had received advice from MAS South East over a period of time (Level 4), compared to 19% who had received a 1 day visit from a MAS South East advisor and 9% of businesses that had participated in an event – reflecting the focus of the survey on Level 4 businesses.

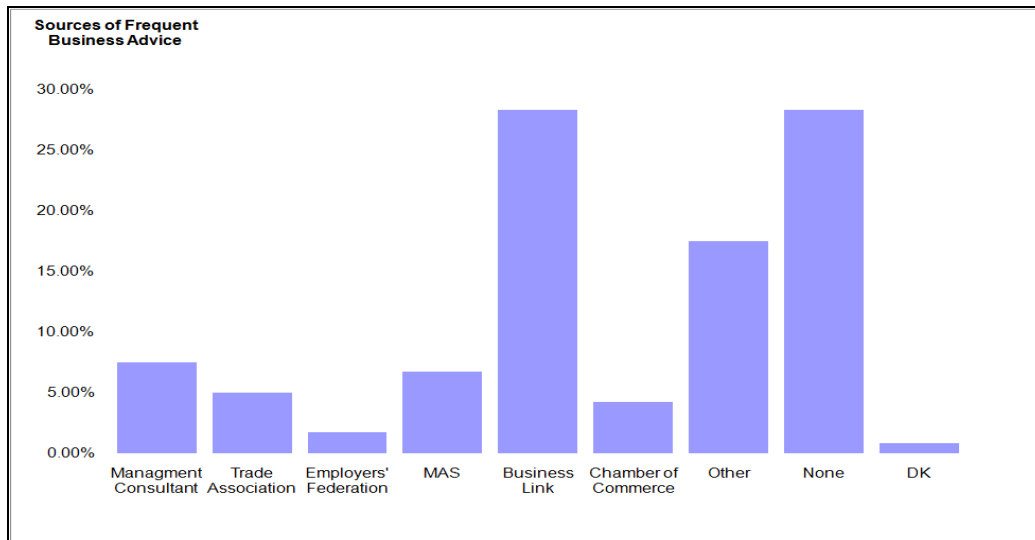
Figure 4.2: Level of Support Received from MAS South East



Engagement with Business Support and MAS SE

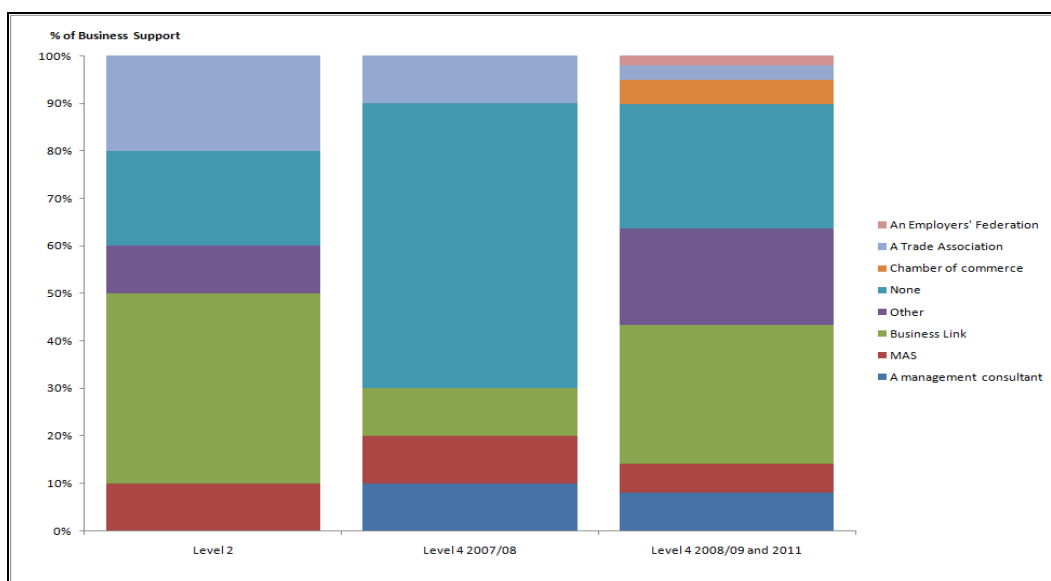
4.4 In addition to MAS, the source of business advice used most frequently by respondents was Business Link (28.3%). Other sources include Management Consultants (7.5%), Trade Associations (5%) and Chamber of Commerce (4.2%). 6.7% responded that they use MAS, which indicates MAS is the only source of business advice they frequently use. Over a quarter (28.3%) of respondents do not use business support, while 17.5% of respondents claim that they use other sources of business advice, including: the Federation of Small Businesses, Sussex Enterprise, Brighton University and Oxford Innovation and Growth.

Figure 4.3: In Addition to MAS - Sources of Frequent Business Advice



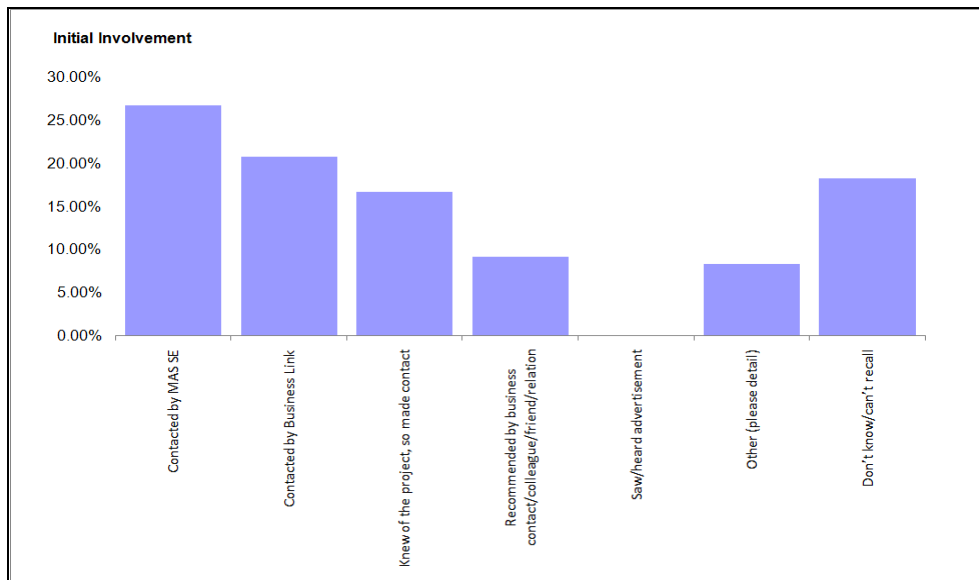
4.5 The chart below shows that Business Link was used across all levels of MAS support as were Trade Associations, but a significant proportion at each level had not accessed any other sources of support. The use of Management Consultants appears reserved for Level 4 interventions with 8%-10% of businesses that received Level 4 support accessing support from Management Consultants.

Figure 4.4: Sources of Frequent Business Advice (by level of MAS support)



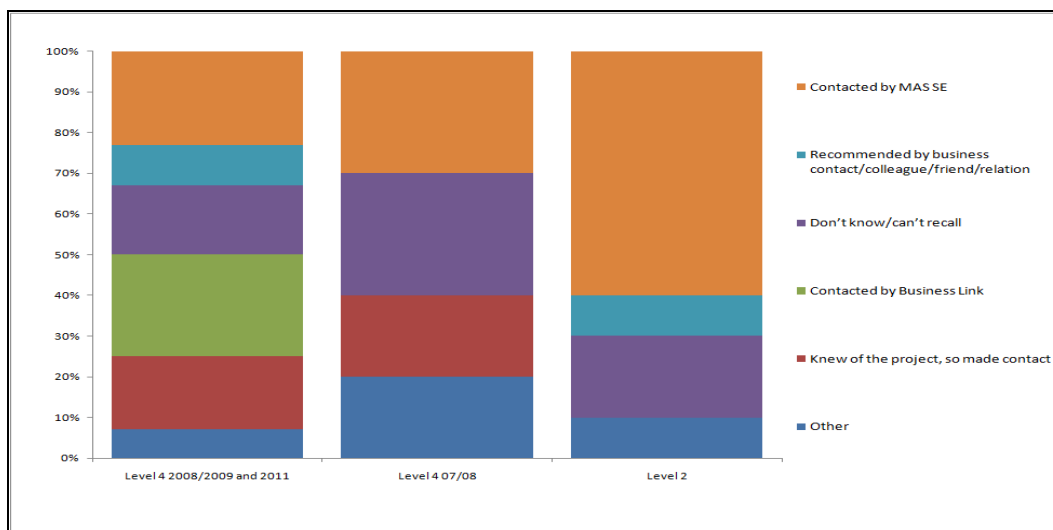
4.6 Over a quarter (26.7%) of all survey participants report they initially became involved with MAS having been contacted by MAS SE, with a further 20.8% getting involved having been contacted by Business Link, which suggests that MAS SE but also other business support services have been proactive in approaching businesses in need of support. 16.7% contacted MAS as they were aware of the project and 9.2% had been recommended the service by a contact/colleague/friend/relation. Other respondents had met MAS representatives at a seminar /event or courses.

Figure 4.5: Initiation of Involvement with MAS



4.7 The chart below shows that 60% of respondents that had accessed Level 2 support were contacted by MAS SE; compared to around 30% of those that had accessed Level 4 support in 2007/08; and 23% of those that received Level 4 support in 2008/09 and 2011. Around 20% of Level 4 recipients (in both periods) knew of the project and made contact with MAS, with a quarter of the most recent Level 4 recipients been contacted by Business Link. Generally, and perhaps unsurprisingly, Level 4 recipients were more aware of the MAS offer.

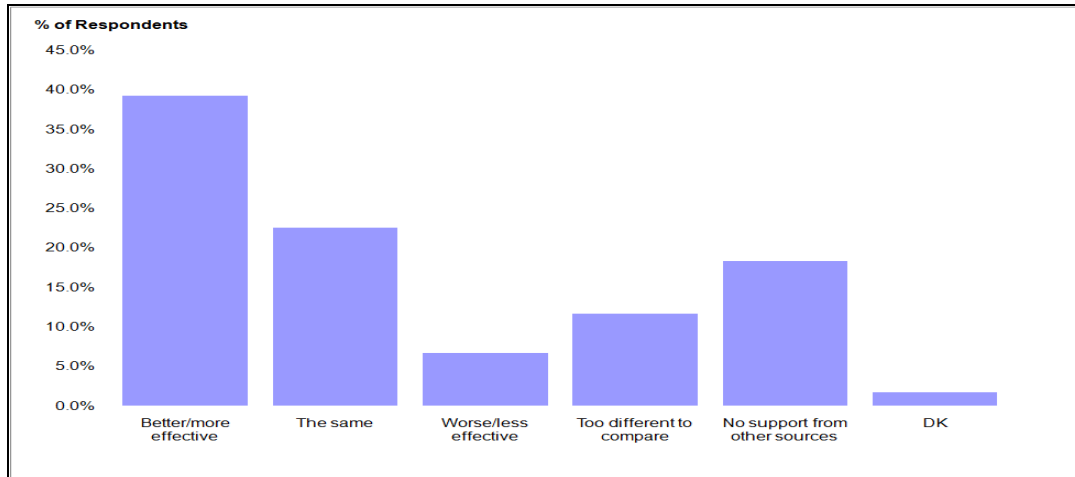
Figure 4.6: Initiation of Involvement with MAS (by level of MAS support)



4.8 For most respondents (79.2%) MAS is the only business support received from EEF/SEEDA.

4.9 The chart below shows that almost 40% of all businesses surveyed feedback that the support received from MAS is better or more effective than that received from other sources of business support; while 22.5% feel that the effectiveness of support is the same. Less than 7% of respondents indicate that MAS support is less effective than other sources.

Figure 4.7: Effectiveness of MAS Support Compared to Other Sources of Business Support



4.10 The table below shows how respondents that have received different levels of support view the effectiveness of MAS support compared to other sources. The table shows that Level 4 recipients rate the effectiveness of the MAS service much more highly than Level 2 recipients.

Figure 4.8: Effectiveness of MAS Support Compared to Other Sources

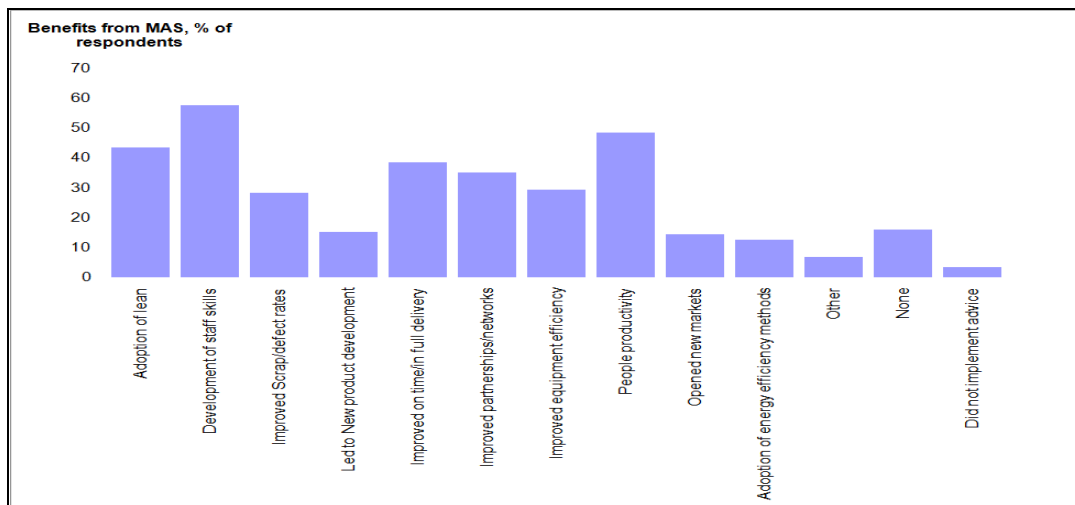
	Level 2	Level 4 2007/08	Level 4 2008/09 and 2011
Better/more effective		70%	40%
The same	70%		20%
Too different to compare		10%	13%
Worse/less effective	30%		5%
DK			2%
No support from other		20%	20%

Benefits and Impact

4.11 As figure 4.9 indicates, the surveyed businesses have identified the following as the main impacts of MAS:

- Development of staff skills (57.5%) and linked to this, people productivity (48.3%);
- Adoption of lean (43.3%);
- Improved on time/in full delivery (38.3%);
- Improved partnerships/networks (35%);
- Improved equipment efficiency (29.2%);
- Reduced scrap/defect rates (28.3%);
- New product development (15% of respondents identified this); and,
- Opening up new markets (14.2%).

Figure 4.9: Benefits from MAS



4.12 It is interesting to note that development of staff skills lead to significant productivity and other benefits and the examples below demonstrate this.

Skills Development a key driver of productivity and production improvements...

The Company: CPV Ltd, Romsey, Hampshire

Founded in 1949, CPV (Chemical Pipe & Vessel) has become established as a specialist in processing thermoplastics and providing engineering pipework solutions. A manufacturer of corrosion resistant pipe systems, CPV’s wealth of technology and experience enables their engineers to design systems and products for the safe containment and movement of aggressive and corrosive media. Market sectors they deliver include:

- pharmaceutical
- power generation
- hospitals
- food and beverage
- research labs
- water treatment

Following an initial assessment of the business, **MAS SE identified a need for training of 5 members of staff in polypropylene welding techniques** – bringing their skills up to the recognised standard and gaining accreditation, to help with future tendering for new projects (many civil consultants now require this accreditation for any supplier).

Results reported to date include:

- **Improved people productivity – 10%**
- **Reduced scrap/defect rate – 10%**
- **Improved on-time delivery – 3%**
- **Created 2 new full time jobs**

The Company: Roscomac Ltd, Worthing, Sussex

Roscomac is an established specialist in high quality precision engineering, manufacturing a wide range of components and subassemblies using the latest CNC technology. Components are manufactured and supplied to customers’ specifications, either as standalone parts or as subassemblies, with design and product development input from Roscomac as required.

Operating from its own 2 acre industrial site in Worthing, West Sussex, quality is assured with extensive inspection facilities and quality control systems supported by ISO 9001 and other industry approvals.

MAS South East **arranged training for 3 employees on Zeiss CMM**, a specialised form of an industrial robot which measures the physical geometrical characteristics of an object and tests a part or assembly against the design intent.

The immediate results to the business include:

- **Improved people productivity 15% - equivalent of £8439**
- **Improved on-time delivery 5%**
- **Increased stock turns 15%**
- **Improved equipment productivity 15% - £8400**
- **Increased value add per employee 5% - £2800**
- **Reduced time to market 5% - 208 hours**

“The help from MAS South East has given us more flexibility and ultimately means we can get through work quicker, which has had immediate results.”

- 4.13 As the survey findings indicate, adoption of lean tops the list of key benefits of MAS and this leads to transformational change within organisations as the following example indicates.

Lean leading to transformational change...

Company Name: Siemens Magnet Technology. Siemens MR Magnet Technology is the world’s leading designer and manufacturer of superconducting magnetic resonance imaging magnets for medical applications. Around 95 per cent of the magnets produced at its Oxfordshire facility are exported and the business has been awarded several Queen’s Awards for export success. More than 30 per cent of the MRI scanners installed in hospitals worldwide have at their heart a superconducting magnet manufactured by Siemens MR Magnet Technology. Understanding the importance of lean manufacturing when it comes to delivering quality products to customers, Siemens Magnet Technology has been working with MAS South East for over five years on a series of lean manufacturing implementation programmes to support its ongoing commitment towards continuous improvement of both employees and production processes.

MAS SE Input

The long-term goal of Siemens Magnet Technology has been to develop an internal culture of continuous improvement and change, to completely transform the mind-set of its employees whilst striving towards a streamlined production plant. All projects have been undertaken to benefit the entire manufacturing line and ultimately the end-customer – helping the business to remain at the forefront of its industry. Each programme undertaken with MAS South East was aimed at moving Siemens Magnet Technology one step closer to its goal of a totally transformed lean manufacturing facility – examining and removing waste from its shopfloor, reorganising the shopfloor, training up lean facilitators, introducing workplace organisation and up-skilling the workforce – all while driving costs down and making significant improvements to bottom line figures. Increased efficiency, productivity and flexibility were the three goals of each and every activity performed.

Siemens Magnet Technology first worked with MAS South East on a Lean Boot Camp programme, giving the company a real taster session of what it means to be a lean manufacturer and the benefits of ‘going lean’. The success of the first Lean Boot Camp was swiftly followed by another five Boot Camps led by MAS South East Specialists Roger Dyer and Chris Needham, focused on

streamlining the shopfloor and looking at ways to further improve manufacturing processes whilst getting more employees on board the lean train.

Siemens Magnet Technology then embarked on an ambitious programme with MAS South East to improve workplace organisation using a unique shift pattern with flexible working, changing from a 'push' to a 'pull' system in order to increase the ability to respond to flexible demands and increase labour efficiency whilst reducing overhead costs – an achievement that has been exceeded.

Shopfloor teams, supervised by new Cell Leaders, are now encouraged to head towards a 'self-managed team culture', to become more efficient and to adopt a policy of 'work when it is needed and go home when the job is complete'. All processes are measured to provide a standard time for efficiency and productivity – a MAS South East Cell Leader Facilitation programme enabled Cell Leaders to become trained as lean facilitators, to actively look for improvement opportunities and take ownership of moving forward with projects and engaging with team members in addition to senior production management.

5S and Kanban were then introduced across the shopfloor, improving workflow with employees being encouraged to adopt a 'self-managed team culture' – individuals now take responsibility for key aspects of the newly implemented operations. All processes are measured to provide a benchmark for efficiency and productivity.

In order for Cell Leaders to release 5S work to Lead Technicians, MAS South East ran three 5S training sessions – the technicians who were trained now meet on a quarterly basis to cross-fertilise ideas for improvement.

In addition to on-going internal developments, Siemens Magnet Technology now have six Lean Champions, having sent six key staff members on the MAS South East Lean Facilitator course, a workshop designed not only to achieve significant company cost savings but to provide a training ground for chosen individuals – people that can lead change. The course concentrated on lean manufacturing tools and techniques followed by individual facilitation skills using a mixture of training, real-life examples, discussion, group exercises and simulations.

Key benefits:

- Internal culture of continuous improvement and change
- Lean Manufacturing Facility
- Six Lean Champions
- Increased efficiency and productivity
- Adoption of unique shift pattern with flexible working
- Cell Leaders and Lead Technicians trained in 5S
- Self-managed team culture

According to Siemens:

“Without doubt MAS South East has been instrumental in our drive towards a completely lean manufacturing facility. Over the past five years we have worked closely with a number of MAS South East Specialists and we truly feel that they are an extended addition to our workforce. UK manufacturing businesses are shrinking – we want to still be here in 10 years time and the day we stop improving is the day we are finished. Our policy is 'lean to grow, lean to survive'.”

- 4.14 As the following example also indicates the benefits for the companies tend to be multiple and cover outcomes as described above but also improvements in financial indicators.

Benefits – More than one positive result...

Company Profile: Kittiwake Developments – Oil Condition Monitoring. 51 employees, £8m turnover. Established in 1993, Kittiwake Developments, an expert in machinery condition monitoring, fuel and lube oil analysis and water testing, has grown into a leading global provider of monitoring and testing technology solutions. Kittiwake research, create and develop innovative technology solutions for condition monitoring that offer consistent results for its customers – clients include Shell Marine Products, ExxonMobil and Wilhelmsen Ship Services.

Following an introduction to MAS South East through the SMARTA programme, Kittiwake underwent a complimentary workshop on lean manufacturing. Impressed with what could be achieved using basic lean tools and techniques, MAS South East were called back in to train key staff as part of a Lean Implementation Programme aimed at the manufacture of its primary product, the DigiCell - in order to improve overall bottom line benefits, productivity levels, process flow, shopfloor organisation and overall workplace satisfaction.

MAS SE Input

Stuart Wood, MAS South East Senior Specialist, worked closely with the senior manufacturing team at Kittiwake and facilitated a 1 day Lean Implementation Programme. Basic training on lean manufacturing tools and techniques was followed by a guided paper mapping exercise and waste identification.

A proposed solution in the form of a one-piece-flow cell with Kanban replenishment triggers from order receipt to material supply was tested. Kanban replenishment triggers enabled the team to understand what to produce, when to produce it and how much to produce. Each process was timed and the work content balanced around the longest process, which required equipment and benching to be rearranged and software modifications introduced. The management of raw material was reviewed and Kanban triggers introduced.

The cell was then run over a four week period and evaluated. Finished goods and work in progress levels reduced significantly but replacement from stores proved a constraint so a milk-round was introduced. Staff were eager to make carefully evaluated improvements, for example, building in batches of ten and one at a time were times, proving that one-piece-flow really was more efficient, rather than taking suggested changes at face value.

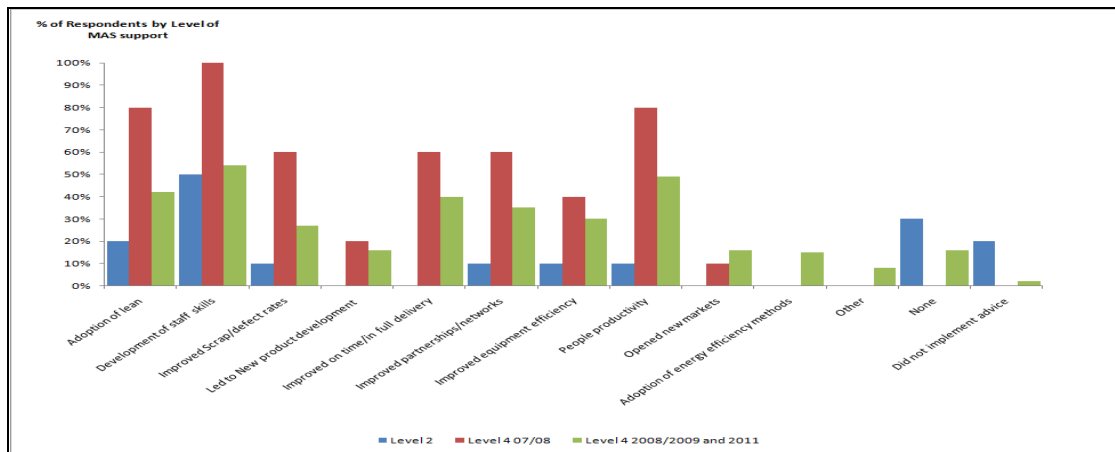
Key Benefits

- **92% reduction in distance travelled across the shopfloor**
- **89% reduction in lead times**
- **89% people productivity improvements**
- **34% increased value add per employee**
- **Initial £2K inventory reduction**
- **£40K of tangible benefit generated**

“We are delighted with the results of the MAS South East Lean Implementation Programme which are now summarised on display boards around the DigiCell shopfloor. We are now motivated to further review the production process of other products using this newly acquired knowledge and information and we will continue to identify further gains within the DigiCell production unit. Inventory levels have reduced and will continue to fall alongside reduced lead-times. We are in talks with MAS South East to review our packaging operation focusing on the links between the warehouse and dispatch functions.” **Steve McKelvie, Production Manager, Kittiwake**

4.15 Figure 4.10 shows that the benefits reported for businesses that have received Level 4 support are more pronounced compared to those that have received Level 2 support. Furthermore, Level 4 recipients of the MAS support are more likely to involve their supply chain in the programme than Level 2. For example, none of the Level 2 participants had involved their supply chain. This compares with 20% of Level 4 participants in 2007/08 who had done so and 20% of Level 4 participants in 2008/09 and 2011. **Involvement of the supply chain in the programme (e.g. Lean/Carbon), indicates further multiplier impacts.**

Figure 4.10: Benefits from MAS by level of support



Duration of Benefits

4.16 The benefits identified are expected to continue for more than 5 years by 61.7% of respondents; while 3.3% expect them to last for 4-5 years; 5% for 2-3 years; and less than 1% expects them to last one year. These results are detailed below for each level of support received from MAS:

- **Level 2** – 40% of Level 2 participants expect future benefits to last more than 5 years, compared to 10% who believe they will last 2-3 years. The remaining 50% did not identify any future benefits.
- **Level 4 2007/08** – 60% of those that received Level 4 support in 2007/08 expect future benefits to last more than 5 years, while 10% believe they will last one year. The remaining 30% did not expect future benefits.
- **Level 4 2008/09 and 2011** – 64% believe benefits will last more than 5 years; while a further 4% believe they will last 4-5 years; and 5% believe they will last 2-3 years. The remaining 27% did not envisage any future benefits.

4.17 Generally those that received Level 4 support anticipate longer-term benefits.

Additionality and Deadweight

4.18 Businesses were asked to state what they would have done if MAS SE support was not there. Their responses are depicted in figure 4.11. In summary, in the absence of MAS support:

- 19.2% would not have undertaken these activities (indicating full additionality of the support/advice);
- 45% of all respondents believe they would have undertaken the same activities but at a later date (also full additionality for these business);
- 18.3% would have undertaken the activities but quality would have suffered (partial additionality for these businesses);

- 11.7% would have undertaken the activities but on a smaller scale (also partial additionality); and,
- 23.3% claim they would have undertaken the activities over the same timeframe to the same quality and on the same scale (deadweight).

4.19 Estimates vary depending on level of support received as follows:

Level 2

- 60% would have undertaken the activities over the same timeframe, to same quality and on same scale (this indicates a relatively high level of deadweight in comparison with Level 4):
- 30% would have undertaken the activities, but at a later date; and
- 10% would not have undertaken these activities.

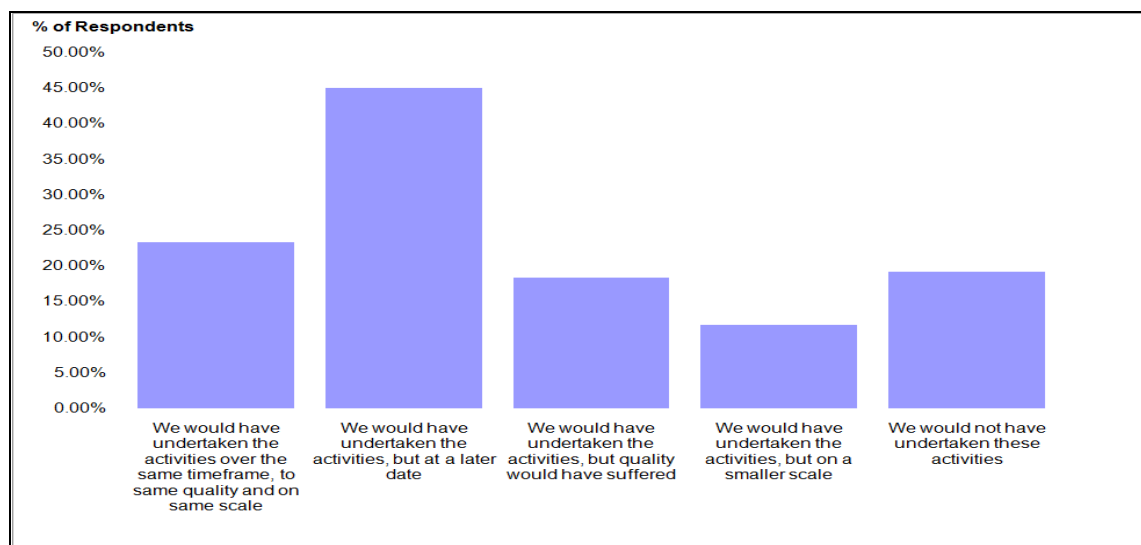
Level 4 2007/08

- 40% would have undertaken the activities, but at a later date and/or not to same scale, or the quality would have suffered;
- In total 30% said they would have undertaken activities on a smaller scale;
- 10% would not have undertaken these activities; and,
- 20% would have undertaken the activities over the same timeframe, to same quality and on same scale (this figure indicates deadweight).

Level 4 2008/2009 and 2011

- In total 58% would have undertaken the activities, but at a later date and/or the quality would have suffered, or activities would have been of a smaller scale;
- 22% would not have undertaken these activities
- 20% would have undertaken the activities over the same timeframe, to same quality and on same scale (this indicates deadweight)

Figure 4.11: Respondents’ predictions on what would have happened without MAS support



Gross Impact on Key Business Indicators Employment and Turnover

4.20 Businesses were asked to estimate the impact of the support and advice received on key business performance indicators such as employment and turnover, profits and savings from the introduction of solutions provided by MAS. Their responses are summarised below:

Employment

- All Businesses - 82.5% businesses report that there were no additional FTEs as a result of MAS support, while one respondent reports that due to productivity improvements 10 FTEs were removed. On the other hand, one business reports an increase of 9 FTEs. While 2 businesses were unable to say, the remainder of businesses (4.1% of respondents) estimate the increase in FTEs to be less than 5. (A total of 29 FTEs are estimated to have been created – if you account for the reduction of 10 at one firm).
- Level 2 - All respondents say no additional FTEs have been created.
- Level 4 07/08 – 1 respondent (10%) says 3 FTEs have been created, the remainder say none have been created.
- Level 4 2008/2009 and 2011 – 80% say no FTEs have been created; 2% do not know; the remaining 18% estimate an average of 2 FTEs have been created ranging from 1-9 with the exception of one respondent reporting a reduction of 10 due to productivity improvements. Altogether this indicates 26 FTEs in the survey group as a result of MAS support.

Jobs Safeguarded

- All Businesses - 70% claim that no jobs have been safeguarded, while 4.2% do not know. A total of 387 jobs are estimated to have been safeguarded at the remaining 31 businesses (average of 12.48 jobs safeguarded, ranging from 1 – 160).
- Level 2 - All respondents say no jobs have been safeguarded.
- Level 4 07/08 – 3 respondents (30%) say 2 jobs have been safeguarded; the remainder say no jobs have been safeguarded.
- Level 4 2008/2009 and 2011 – 67% say no jobs have been safeguarded; 5% do not know; the remaining 18% estimate an average of 14 jobs safeguarded ranging from 1 – 160 (although this is skewed by only 2 results above 20). The total number of jobs safeguarded is estimated to be 381.

Additional Turnover to date

- All Businesses - 21.7% could not give figures on additional turnover, while 72.5% estimate there has been no additional turnover. The remaining 5.8% estimate a range between £40,000 and £700,000 with an average of £167,857. Total additional turnover is estimated at £1,175,000 from those businesses surveyed.
- Level 2 - 90% say £0 (10% do not know)
- Level 4 07/08 – 50% do not know; 40% say £0; 10% (1 respondent) say £45,000 improvement in turnover.
- Level 4 2008/2009 and 2011 – 19% did not know or could not give figures; 74% estimate there has been no impact on turnover; the remaining 7% estimate turnover has increased by a range of £40,000 – £700,000 with an average of £188,333 (and a total increase of £1,130,000).

- It is recognized that for some intervention, impact of turnover will materialize in the future following implementation of recommendations and advice as the following example indicates.

Potential Impact on Turnover

The Company: Rimor Ltd, Denmead, Hampshire

Established in 1979, Rimor is a privately owned company, based at a showpiece 35,000 sq. ft. plant in Hampshire. Rimor operates in three distinct business areas: precision engineering, modular assembly and converting solutions. Rimor has a well-established reputation for high precision, low volume complex piece part manufacture, in demanding materials to critical levels of quality. The company is experienced at providing solutions for oil & gas, semi-conductor, energy, defence, aerospace, electronics, marine and other quality-critical industry sectors.

Recently, Rimor contacted MAS SE to discuss a new product concept. MAS SE supported them with study into the application of subsea electrical and hydraulic connection technology for use in offshore wind-farm and tidal applications. A project was rolled out to develop a unique fixture for testing vessels to store subsea electronics, in order to control oil heads in subsea oil exploration and extraction. MAS SE also worked with Rimor to develop the concept – considering water depth, distance to shore, tidal conditions, wave surge etc. and take the prototype into production, with specific consideration given to advanced materials and connection technology.

As a result of this project Rimor expects to see an increase in turnover of 9% (£1m).

Additional Profits to date

- All Businesses - 36% are unable to give figures on profit as a result of MAS support, while 57.5% estimate there has been no additional profit. The remainder estimate a range of £10,000 - £60,000 with an average of £31,563. Total additional profit is estimated to be £252,500 from all businesses surveyed.
- Level 2 - 80% say £0 (20% do not know)
- Level 4 07/08 – 70% do don't know; 20% say £0; 10% say there has been a £10,000 improvement in profit.
- Level 4 2008/2009 and 2011 – 34% do not know or could not give figures; 59% estimate there has been no additional profit as a result of MAS support; the remaining 7% estimate an average of £34,643 additional profit, ranging from £10,000 to £60,000 (and a total sum of £242,500).

Total Savings made to date

- 4.21 MAS SE can demonstrate examples of good practice in terms of savings as a result of new business process introduced as the following case study demonstrates.

Going Greener – Impact on Business with Savings...

Company Profile

H+H UK, is the UK's largest manufacturer of environmentally friendly aircrete blocks, using a highly efficient process which sees most waste material and energy being recycled back into the process. Winners of three Sunday Times Green awards, H+H UK works hard to reduce its energy consumption and currently holds ISO 14001 for environmental management, BES 6001-2008 Standard for the Responsible Sourcing of Construction Products, Carbon Trust Standard

certification for efforts to cut carbon emissions and was one of the first manufacturers in the country to achieve accreditation of its Integrated Management System (quality, safety, and environment) to PAS 99:2006).

MAS SE Input

In the latest project with MAS SE, the company was looking to undertake detailed process mapping in order to identify potential sources of waste, address Carbon Reduction Commitment legislation and reduce energy consumption in light of increasing costs. MAS worked with the H+H team to undertake a complete waste management exercise, identifying three key projects: Slurry Management (Six Sigma); Energy Usage (looking particularly at the autoclaves); and packaging and waste reduction (particularly for the finished product). *“On-going Corporate Social Responsibility for all companies to go ‘green’ means that we are committed to continuous environmental improvements – our whole company is focused on minimising environmental impact – across all areas of the business. The latest waste project with MAS has highlighted a number of key areas for review that will be worked on in the near future, reinforcing our continuing carbon reduction commitment.”* Dr Colin Cook, Chief Scientist, H+H UK

Potential savings

- Overall defects reduction
- Potential 1.4% scrap reduction representing an additional £300k of saleable product.
- Significant reduction in energy consumption during reprocessing
- Potential 3% reduction in amount of cement required, equivalent to a reduction in CO₂ of 2790te/year

4.22 On the other hand, the survey results indicate that a large number of businesses are unable to provide figures in savings made because of the MAS support they received. For example:

- Amongst all businesses - 40% were unable to provide figures on savings made, while 47% estimate there have been no savings as a result of MAS support. The remainder (13%) estimate a range of £1,500 - £250,000 with an average of £40,813. Therefore, total savings are estimated to be £653,000 across all businesses surveyed that recognised some savings impact as a result of MAS support.
- Level 2 = 80% say savings impact has been £0 (20% do not know what the impact is).
- Level 4 07/08 – 60% do not know; 20% say £0. The remaining 20% report an improvement: 10% of these say £150,000 savings have been made, while 10% say £10,000 savings have been made as a result.
- Level 4 2008/2009 and 2011 – 40% do not know; 46% estimate there have been no savings as a result of MAS support (as yet), while the remaining 14% estimate savings at an average of £35,214, ranging from £1,500 - £250,000 (producing total estimated savings for these companies from this latest MAS contract period of £493,000).

Additional Benefits

4.23 In addition to the above benefits, MAS SE with the support of FAC and Olive Consulting has been delivering support to implement Low Carbon and Advanced Manufacturing related activities and outcomes including:

- Innovation in low carbon and other sustainable technologies in manufacturing, including signposting to appropriate exemplars.

- Improvement in resource efficiency, remanufacture and reuse, including the uptake of sustainable sourcing and renewable energy.
- Advice and support on new product development with respect to the Low Carbon agenda, economy and products.
- Develop a Continual Sustainable Improvement Plan (CSIP) approach to sustainable procurement in a manner that is consistent with potential future integration within the framework of SC21.
- Raising of awareness on environmental/sustainable opportunities and the transfer of appropriate skills to promote a medium to long term sustainable design, manufacturing and supply strategy.
- Competitive advantage through improved fitness to supply, for instance by being Sustainable Procurement ready and understanding and working with suppliers.
- Uptake of Environmental Management Systems, either to ISO14001 or BS 8555.

4.24 At this stage of the support, FAC and Olive Consulting are providing advice, support and training/raising awareness as above. However, potential estimated annual savings and impact for businesses implementing the above and recommendations made by FAC and Olive Consulting consultants would include:

- Carbon savings (CO₂)
- Energy efficiency (kWh)
- Waste management
- Water resource control
- Financial savings (ranging from a few thousand pounds up to a hundred)

4.25 No information on these potential benefits currently exists as support is limited on advice and provision of recommendations rather than following up with implementation and recording of impact. The case study below aims to provide a brief description of advice and benefits in this area of work.

Potential Benefits and Impact - Review of Environmental Management Systems

Company Profile

Apollo Fire manufactures smoke detectors and exports to over 100 countries; it employs 366 employees and reports £65m turnover. Customers are increasingly asking for more data on environmental performance (as well as the parent company Halma PLC), so there is a need for increased data collections and analysis. Apollo fire is certified to ISO 14001:2004 and ISO 9001:2008. There is also an Environmental Committee that meets regularly to consider ways to reduce the impact of the business on the environment.

MAS SE Input – Support by Olive Consulting

The aim of the assistance is to provide advice with resource efficiency improvements and the development of systems and practices that will ensure the business is best able to achieve financial and other savings from a focus on resource use and efficient practices. The specific areas of advice by Olive Consulting included:

- A full Environmental Review of the business, report, recommendations and Action Plan
- A review of environmental legal compliance

- Advice on an appropriate Environmental Policy
- Advice on what an Environmental Management System (e.g. BS 8555 or ISO14001)

Potential savings

Review of issues indicates that potential opportunities for savings existed for Apollo with:

- Improving insulation to the ovens
- Installing destratification fans in the office area
- Improved monitoring and measurement of energy consumption
- Consideration of developing additional on-site coverage

It is estimated that implementation of specific recommendations by Olive Consulting would lead to:

- Total Carbon savings (tCO_{2e}): 93.806t
- Total Energy: 237,618kWh
- Total Financial savings: £12,910

CONCLUSIONS

Business feedback indicates that key benefits from MAS include:

- Development of staff skills (for 57.5% of businesses)
- People productivity (48.3%)
- Adoption of lean (43.3%)
- Improved on time/in full delivery (38.3%)
- Improved partnerships/networks (35%)
- Improved equipment efficiency (29.2%)
- Reduced scrap/defect rates (28.3%)
- New product development (15%)
- Opening up new markets (14.2%)

Benefits reported for businesses that have received Level 4 support are more pronounced compared to those that have received Level 2 support. Furthermore, Level 4 recipients of the MAS support are more likely to involve their supply chain in the programme than Level 2. Almost one fifth (18.3%) of all respondents had involved their supply chain in the programme (e.g. Lean/Carbon), which indicates further multiplier impacts.

The benefits identified are expected to last for 4-5 years or more by 66% of respondents. Less than 1% expects them to last one year. Those that have received Level 4 support anticipate longer duration of benefits than Level 2.

Deadweight – businesses would have undertaken the same activities, to the same scale, time and quality without the MAS SE support is relatively low at 23%. It needs to be noted, however, that deadweight is relatively high amongst Level 2 recipients of MAS support; the number of companies interviewed is relatively small, but 6 out of the 10 say that they would have undertaken the activities over the same timeframe, to same quality and on same scale.

For approximately 75%-80% of businesses there has been no impact on turnover or jobs created and safeguarded as yet as a result of MAS intervention. However, it is estimated that for 18% of respondents

an average of 2 FTEs per business have been created and 14 jobs on average have been safeguarded as a result of the MAS support.

Review of information also suggests that advice provided could yield potential estimated annual savings and impacts for businesses implementing recommendations related to environmental management issues. These would include:

- Carbon savings (CO₂)
- Energy efficiency (kWh)
- Waste management
- Water resource control
- Financial savings generated by the above

However, no information on these potential benefits currently exists as support is limited on advice and provision of recommendations rather than following up with implementation and recording of impact.

5. Assessment of Net Economic Impact

5.1 This section presents quantification and assessment of the impact of the grant in GVA terms and Net Present Value terms. Estimates of costs benefits analysis are also presented. **The contract will come to a completion in March 2012 and therefore, these estimates represent an early assessment of the net economic impact to date.**

5.2 Impacts and returns are calculated using the following relationships.

Gross Additional Benefit i.e. GVA = Gross GVA x Additionality of Support

Net additional GVA = [G x (1-D) x (1-S) x (1-L) x (1+M)], where

G is the additional gross value added

D is displacement

S is substitution effects

L is leakage

M is the composite multiplier effect

Cost Benefit Ratio = Net additional impact/public sector spend

5.3 The following assumptions have been made:

- **Estimated gross GVA:** on the basis of the survey results, 2 FTEs have been created for 18% of businesses as a result of the MAS support. Applying these indicators to the total number of Level 4 interventions to date (i.e. 717) would mean that 129 businesses have created 2 FTEs on average each, totaling 258 FTEs. According to the latest available data¹¹, the South East Manufacturing sector GVA per employee is £65,400.

a) Additional Gross GVA due to employment generation = 258 x £65,400 = £16,873,200

The estimated gross impact reported by MAS SE may be used for these calculations, on the assumption that the reported figures are consistent with the data and calculations provided by all other MAS Regional Centres and are externally verified. On this basis, it would be assumed that:

b) The gross impact of the MAS interventions in the SE is as reported in the MAS KPIs, i.e. £125,796,568 to date. It needs to be noted that the reported figure includes changes in both QCD and turnover.

Calculations are undertaken using both estimates.

- **Additionality of support:** this is assumed at 77% (i.e. deadweight stands at 23% as indicated by the survey).
- **Leakage:** this has been assumed at 10%. The vast majority of benefits generated by MAS appear to benefit the region.
- **Displacement:** this has been assumed at 0%; there is no evidence to suggest that benefits achieved reduce benefits to other businesses in the South East.

¹¹ GVA and COE NUTS 1 December 2010 <http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14650> and Business register and employment survey; <https://www.nomisweb.co.uk>

- Multiplier: this has been assumed to be 1.4. In the national evaluation a multiplier of 1.4 was used (mid-point of the range recommended by the Green Book guidance for this type of business support activities).

5.4 On the basis of the above, the figure below presents calculations of the net GVA impact of MAS SE III to date.

Figure 5.1: Net Impacts to date – MAS SE III

Indicator	Additional Gross to Net GVA and Overall Impact	
	Based on Employment Generation	Based on reported KPI Impact
Gross GVA due to new employment generation	£16,873,200	
Gross Impact as in MAS KPIs		£125,796,568
Additional GVA	£12,992,364	£96,863,357
Gross GVA – Leakage	£11,693,128	£87,177,021
Gross GVA – Leakage – Displacement	£11,693,128	£87,177,021
Net GVA: Gross GVA – Leakage – Displacement x multiplier	£16,370,379	
Net Impact: Gross Impact – Leakage – Displacement x multiplier		£122,047,829

5.5 The Cost Benefit Ratio (CBR) for public spend to date is presented below. Looking at the rate of return from SEEDA’s investment, the GVA to cost ratio for MAS is 3.98. This appears to compare favourably with other SEEDA funded activities that have been part of Solutions for Business (SfB). For example, the estimated CBR for the Train to Gain brokerage service was estimated to be 1.67.

Figure 5.2: Cost Benefits Ratio – Public funding to date

	Estimated Values	
	Employment Generation	Reported Impact
Net additional GVA to date	£16,370,379	
Net additional impact to date		£122,047,829
Estimated Public Spend (SEEDA spend) to date	£4,108,856	£4,108,856
Cost Benefit Ratio for public spend	3.98	29.7

5.6 The table below presents the net present value of GVA and the Impact using the following assumptions:

- Persistence of benefits: based on the survey responses (for 66% benefits would last for 5 years or more), we could assume that benefits will persist for at least another 7.5 years.¹²
- Present value of GVA and other impacts are estimated using a discount rate of 3.5% - with a base year a year after the start year of the intervention – therefore 2010/11 and for the duration of benefits estimates i.e. up to 2018.

Figure 5.3: Net Present Value of GVA

Indicator	Net Present Value of GVA and Impact	
	GVA	Reported Impact
Estimated Net GVA per year	£8,185,190	
Estimated Net Impact per year		£61,023,914

¹² PwC Assumptions for IEF Compliant methodology.

Estimated Net Present Value (8.5 years benefits)	£61.3m	£475,328, 453
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6. Conclusions and Recommendations

- 6.1 The South East is one of the largest manufacturing regions in the UK and home to important manufacturing technologies such as aerospace, motor sport, marine, and healthcare as well as an extensive regional supplier infrastructure. The region's manufacturing sector is dominated by SMEs – nevertheless in 2008, manufacturing was the third largest contributing sector to the region's GVA contributing approximately £18.5 billion.
- 6.2 In terms of business support services, although 1 in 4 businesses do not use any external business support (according to the survey for this evaluation), in addition to MAS, businesses appear to have access and draw support from a wide range of organisations including Chambers of Commerce, Trade Associations, the Federation of Small Businesses, Universities (such as the University of Brighton) but also private sector Management Consultants such as Oxford Innovation.
- 6.3 Within such an environment, MAS SE has been the key driver of business generation for the MAS programme in the South East attracting businesses to the programme through its previous work (i.e. reputation) and business development activities. In line with the national MAS guidelines, MAS SE has been delivering a series of products to businesses such as lean thinking, value stream and process mapping, 6 Sigma, improving layouts and space utilisation, reducing Waste (Waste Improvement Plans – WIP), and overall, only 7% of our survey respondents indicated that MAS support is less effective than other sources.
- 6.4 Previous research also showed that MAS South East has been a successful programme. For example, one of the earlier independent studies undertaken on behalf of SEERA's select Committee on SEEDA's interventions in manufacturing in the South East region (Published in March 2005), found that overall MAS in the South East achieved more than was expected of it in its first 3 years of operation, having exceeding targets after 3 years of being fully operational, with benefits from MAS interventions estimated at over 6.5 times the programme funding; and with demand for the service outstripping supply. The latest evaluation of the second phase of MAS SE (covering the period July 2005 to March 2007) i.e. MAS II, produced by Kingshurst Consulting in April 2007, also showed that 90% of MAS interventions were rated as good or excellent for their effectiveness in meeting company needs, 80% would recommend MAS to another business and 82% said they were either satisfied or very satisfied with support received.
- 6.5 In the last 3 years, MAS SE has continued to support businesses in key sectors in the region with the MAS III programme – focusing on innovation, design and research and development capability including marine technologies, health technologies, aerospace and defence and environmental technologies including specific services and advice for low carbon innovation in aerospace and defence (teamed up with Farnborough Aerospace Consortium (FAC), and the Olive Consultancy). Its delivery approach has been designed to address SEEDA's priorities and the Government's agendas for Low Carbon and Advanced Manufacturing. Additional activities include SC21 – 21st Century Supply Chains – specifically targeting the aerospace and defence industries, export readiness for advanced manufacturers including working closely with UKTI to help manufacturers to exploit and leverage opportunities in China, the Ambassadors programme and training for own staff on environmental management issues.
- 6.6 This interim evaluation of the third phase of the programme has reviewed in detail the achievements and performance of MAS since the beginning of this contract (April 2009) to date

and has shown that the programme has been successful in reaching the market and delivering results within a challenging economic environment and changing operational environment. For example:

- In the last year, MAS SE has undertaken 255 seminars/events/workshops/best practice visits. This represents 62 more in the year than the average of the two highest MAS Centres.
- MAS SE has also supported 2,748 businesses in the region to date, representing 76.4% of the original target for the contract period.
- The programme has also up-skilled over 2500 individuals (through provision of training of over 6 hours) and this represents 100.4% over the original target;
- The work of the MAS SE team has also generated additional income of £818K for MAS SE – 19.9% of the public investment to date, and £232million of total value added for the businesses supported.

6.7 Benefits from all these interventions have included to date:

- Development of staff skills (57.5%) – relatively higher than the 45% equivalent national figure¹³;
- Adoption of lean techniques (43.3%);
- Improved on time/in full delivery (38.3%);
- Improved partnerships/networks (35%);
- Improved equipment efficiency (29.2%);
- Reduced scrap/defect rates (28.3%);
- New product development (15% of respondents identified this); and,
- Opening up new markets (14.2%).
- Involvement of the supply chain in MAS related programmes e.g. Lean/Low Carbon (18%)

6.8 Without MAS, only 2 out of 10 businesses would have gone ahead with activities that would have resulted in these benefits.

6.9 Customers have also been satisfied with the service provided by MAS. For example:

- For 82% of businesses expectations were met or had been exceeded - only 10% of all respondents believe that MAS SE assistance did not meet their expectations.
- Company expectations were much more likely to be met and exceeded for those that have received Level 4 support.
- The competence of advisors appears to have been a key factor in driving up levels of business satisfaction from MAS SE.
- Amongst respondents 91.7% would recommend MAS to others, only 8.3% would not.

6.10 Looking also at the rate of return from SEEDA's investment:

- Gross impact of £125,796,568 has been reported to date. Against public spend of £4,108,856 to date this represents a 31:1 return. If estimated increase in impact accounts only for QCD impact and no increase in turnover, impact equivalent to approximately £50m in total has been generated to date (since April 2009), representing a 12:1 return. This compares with 6:1 return reported in the previous evaluation report covering the 2005/2007 contract.

¹³ BIS Business Support Cross-Product Monitoring Survey in relation to MAS (Wave 9 in May 2009) Based on interviews with 330 businesses that received Level 4 MAS and 101 businesses that received Level 2 support between April 2007 and March 2008.

- The net GVA to cost ratio for MAS is 3.98. This appears to compare favourably with other SEEDA funded activities that have been part of Solutions for Business (SfB). For example, the estimated CBR for the Train to Gain brokerage service was estimated to be 1.67.

6.11 On the other hand, the evaluation has identified a number of areas that need the attention of MAS SE in the future:

- Only a quarter of the businesses supported by MAS SE to date have received Level 4 support. This is below the expected target to date. However, the survey has shown that it is Level 4 interventions that deliver more pronounced benefits (compared to those that have received Level 2 support) and are more likely to report creation/safeguarding of jobs and improved turnover. Those that have received Level 4 support also anticipate longer duration of benefits than Level 2. Level 4 recipients are also more likely to involve their supply chain in the programme than Level 2.
- Most importantly, deadweight of the support amongst Level 4 businesses is 23% compared with 60% amongst Level 2 recipients. In addition, Level 4 recipients rate the effectiveness of the MAS service much more highly than Level 2 recipients and company expectations are much more likely to be met and exceeded for those that have received Level 4 support. Level 4 recipients are more likely to recommend the service to others and are also more likely to pay for the support they have received than Level 2.
- It may be difficult to alter contractual arrangements, but these findings suggest that consideration should be given in the future on the allocation of resources on Level 2 and Level 4 interventions and the desired impact. Level 2 interventions are more likely to generate the volume of interventions needed to meet targets that primarily seek to 'reach' the market. On the other hand, Level 4 interventions are more likely to create lasting impact.
- It is not clear how the target on client income was originally set and agreed (at £1.5m over the 3 year contract period). In terms of progress to date, around 54.5% of the target has been met. On the basis of this, it may be challenging to meet the target within the final year. The survey has also found that the value for money perception of businesses is not particularly high and this may drive downwards satisfaction levels with MAS SE. Within this context, there may be scope for MAS SE to review its pricing policy and delivery strategy.
- Involvement of MAS in the Low Carbon and Advanced Manufacturing agendas means that additional benefits could be also generated in the future (and attributed to MAS) from the implementation of advice related to environmental management issues. These would include carbon savings (CO₂), energy efficiency (kWh), waste management and water resource control as well as financial savings associated with all these. However, support provided on these issues is currently limited on provision of advice and recommendations rather than assisting companies with implementation of these. It may not be possible to alter the contractual arrangements of the Grant received for support provided in these areas. However, consideration should be given in the role that MAS should play in the future in these areas given the expertise that its advisors have acquired through specific training and CPD and their in-depth knowledge of manufacturing processes.

ANNEXES