Preparing for the future:

Understanding the skills & training needs of the automotive retail sector

Accident repair

THE INSTITUTE OF THE MOTOR INDUSTRY

Institute **change.**

Contents

Introduction

Purpose

Each year the Institute of the Motor Industry (IMI), as the Sector Skills Council (SSC) for the automotive retail sector, carries out a Sector Skills Assessment (SSA). The SSA, which is commissioned and funded by the UK Commission for Employment and Skills (UKCES), gives a high level overview of the skills needs of the sector.

In order to enable employers to prepare for the future, the IMI initiated and conducted an extensive programme of in-depth granular research, building on the SSA to fully understand the extent of the skills and training needs across each of the 12 sub-sectors within its footprint. The purpose of this research is to recognise, at job role level, within each distinct sub-sector, precise skills and needs within the existing workforce.

It is vital that the IMI, as the SSC and the professional association for the automotive retail sector, understand employers' immediate and critical skills needs in order to identify and/or formulate effective solutions to address these skills needs. We need to ensure that the automotive retail sector begins to improve its overall productivity and profitability. This will ultimately help business position themselves for economic recovery, when it comes, allowing them to compete in a globally competitive market.

Methodology

To achieve our stated purpose the IMI engaged with employers, stakeholders, training providers and trade associations to ensure that the research findings were accurate, validated at each stage, robust and fit for purpose.

To accomplish this, a qualitative phase of research was carried out. This involved 170 in-depth telephone interviews, each lasting one and a half hours, with employers across each of the sub-sectors. The focus of these interviews was on skills and training needs within the business, the issues facing the employer and the future challenges they envisaged over the next 18 months - 2 years. This first qualitative element (i.e. the use of open questions to gain responses) successfully defined the broad skills needs of the sub-sector.

The research instruments for the accident repair sub-sector were slightly different from the other 11 sub-sectors. Following the qualitative phase of research, web survey was conducted specifically for the accident repair sub-sector. This data was then taken to an Expert Working Group[1] which analysed the list of skill needs and arrived at a core list. This stage was also complemented by a web survey, which furnished additional responses, to ensure that as many employers as possible had the opportunity to respond to the questionnaires in as many different ways as possible.

Once all the data had been collected it was analysed by channelling the responses from the initial in-depth interviews into a much more concise number of core skills needs, using the findings from each consecutive stage of the research as the starting point for the next. By doing this, we have achieved a high level of confidence in the conclusions we have arrived at.

For the accident repair sub-sector, the first phase of research involved in-depth interviews with 26 employers. The nature of qualitative interviewing allows conclusions to be drawn from small samples; essentially it is answering the 'what' and the 'why' question and not quantifying the response at this stage. In the second phase of the research industry experts assisted the IMI in prioritising skills needs, adding or refining the skills needs identified through the first phase. The web survey outcomes were used to assist in decision making should there be 'borderline' critical skills needs identified or where it was difficult to distinguish which skills needs should be categorised as critical.

[1] For accident repair, rather than using a focus group specifically pulled together for the purposes of this research, we used a pre-existing expert working group.

Background

Across the automotive retail sector as a whole, in 2008 the sector generated £146 billion or 4.7% of all UK turnover and contributed £25 billion or 2.8% of gross value added. The sales of motor vehicles sub-sector (SIC 50.10) generated the majority of turnover (70%) and contributed the most in value added terms (47%). Geographically England, as would be expected, generated the majority share in terms of both turnover and value added at 88%.

In the latest IMI State of the Sector Report (July 2011), businesses report that trading conditions remain challenging, with 54% of companies experiencing lower orders/sales over the last six months and 66% showing lower profit margins.

Predictions for the next six months are similar, with 41% showing reduced orders/sales and 21% predicting higher sales.

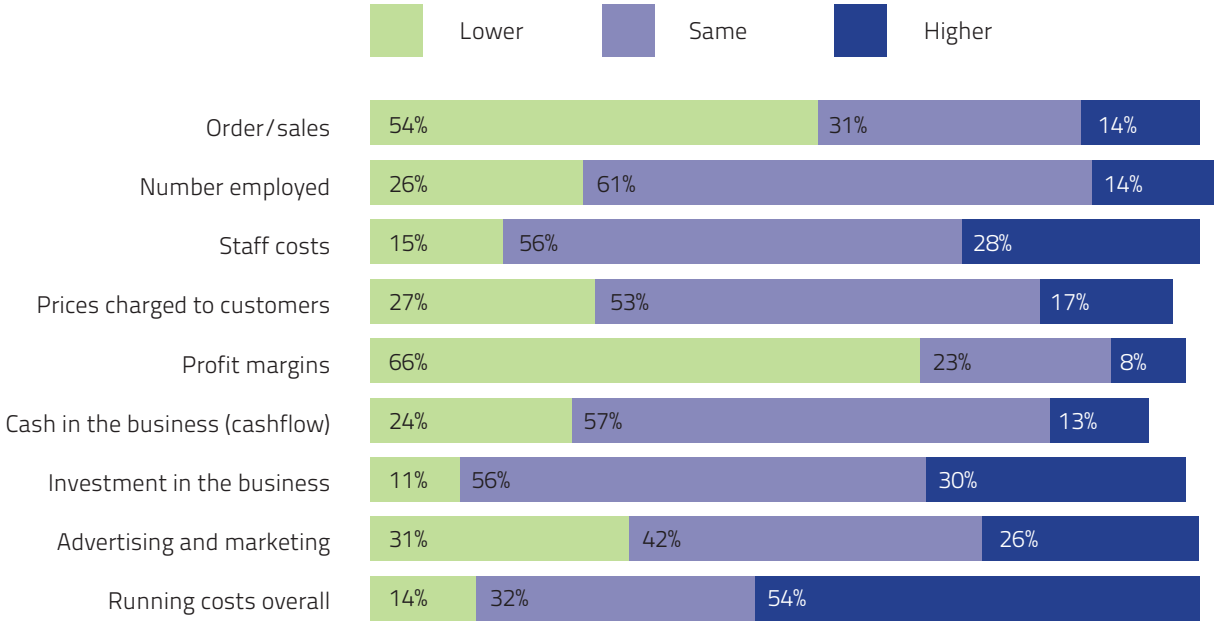

Table 1. Business performance in last 6 months, compared with previous 6 months
Source: IMI State of the Sector (July 2011)

Respondents to this research were asked which issues affected their overall business most. It was clear that three areas were critically important:

- Impact of changes in legislation, and changes in legislation forecast over the next 18 months.
- Trading conditions – the fall in car sales in particular over the last two years and the sluggish revival (particularly important to the sales sub-sector)* see note below.
- The relentless drive in technology development across all vehicle types.

Across the whole automotive retail sector, 85% of businesses are micro, employing less than 10 people. However, they employ only 38% of the total sector workforce. While 57% of all employment is concentrated in those companies that employ over 11 (this accounts for only 14% of all companies), with the remaining 5% of the workforce working for large employers who account for less that 1% of all businesses. Given the make up of the automotive retail sector, we are confident that our telephone research targeted the appropriate range of businesses.

	% of workforce	All UK	Difference
1-10	38%	21%	16%
11-199	57%	47%	10%
200+	5%	32%	-26%

Table 2. Employees by business size
Source: Annual Business Inquiry (2008)

Having experienced great difficulties in obtaining sub-sector business and workforce data in the format that the sector uses, e.g. the breakdown of vehicle maintenance and repair into autoglazing, fast fit, vehicle inspection, roadside assistance and recovery, accident repair and light and heavy vehicle, it is not possible to state reliable government data on numbers of businesses and staff.

However, the accident repair sector is operating in a very challenging market.

- 2010 overall motor vehicle traffic volume in Great Britain was 308.1bn vehicle miles, down by 5.1bn vehicle miles from 2009.
- Insurance total losses continue to rise, increasing from 8.8% in 2003 to 10.1 % in 2010.

Both of the above has a negative effect on trading conditions in the sector[2].

[2] ABP convention figures 2011

Accident repair business approach to staff training and development

The training culture in accident repair is driven by the need to meet the requirements of insurance companies and their contract agreements with the bodyshop networks. Approximately 50% of major motor insurers require audits and Kite marks against BSI PAS 125 standard, which includes proving current competence of technicians engaged in repair activities. Vehicle manufacturer standards also drive training and competency assessments within the sector, especially in areas such as welding.

Data from this study shows that across the automotive retail sector 43% of companies train when they feel it is necessary compared with 30% who train as part of a business strategy. Training plans and business plans are common within the automotive retail sector as a whole, with approximately 56% and 54% of organisations having these plans. Previous surveys undertaken by the IMI have shown the accident repair sub-sector to be satisfied with the skills available[3].

[3] IMI Employer Skills Survey 2010

Qualitative in-depth interviews

Qualitative research was carried out with 26 businesses within the accident repair sub-sector. These were pre-arranged telephone conversations with previously identified, appropriate staff who could comment authoritatively on relevant job roles within their business. These interviews lasted approximately one and a half hours and were conducted by researchers from BMG Research, Birmingham.

The interviews were mostly unstructured and used open questioning (i.e. they didn't ask questions where an 'yes'/'no' answer could be given), covering a range of different types of organisation, mostly independents employing up to 50 people, but with a small number of franchise organisations contacted as well. Interviews were conducted across all nations, England, Scotland, N Ireland and Wales in August 2011.

The following questions were asked by the researchers, who asked to speak to employers capable of covering at least two job roles within the interview:

- What job roles exist within the business?
- What are the current skills and training needs required by (each job role)?
- Which of these skills and training needs are particularly important or critical to your business?
- What skills and training needs do you anticipate you will have in the next two years?

The focus was on identifying skills needs related to key job roles. From the responses to the open questions it was possible to identify the training and skills needs, which are listed overleaf.

Job-role specific skills needs

The following skills needs were identified across the accident repair sub-sector. The focus was on identifying skills needs related to key job roles. From the responses to the open questions it was possible to identify the training and skills needs, which are listed below.

Vehicle damage assessor

Establishing vehicle damage circumstances

- Establish and record circumstances of vehicle damage sustained the direction and area of impact, and the vehicle occupancy at the time of the incident.
- Confirm and record the actual damage matches incident circumstances

Establish and record vehicle data

- Identify and record the vehicle manufacturer, model, specification, fuel type and vehicle transmission type
- Identify and record the vehicle registration number and VIN
- Identify, record and report the static checks on parking brake, footbrake and steering operation
- Check and record the condition of all vehicle occupant seat belts
- Identify all vehicle safety systems including: ABS, ESC (switchable TRC), SRS components (inc knee and rear, rear screen etc)
- Identify and record tyre tread depths and condition (Inc. spare)

Appraising the damage, establishing a safe & appropriate repair specification

- Establish and accurately record safe repair method(s) and appropriate repair method(s) for accident damaged vehicle
- Identify and record safety related components to be removed, repaired, renewed and refitted and/or reset during the repair of accident damaged vehicle
- Establish and record any geometry checks (including jig mounting and measuring operations) where needed during the repair of an accident damaged vehicle
- Establish and record any air conditioning operations where needed during the repair of an accident damaged vehicle
- Establish, calculate and record any appropriate panel repair opinion times where needed during the repair of an accident damaged vehicle
- Understand the vehicle repair method

Cosmetic repair technician

Visual vehicle appraisal

- Carry out a visual vehicle inspection
- Record vehicle damage
- Identify the vehicle damage repair method, including Cosmetic (using either PDR/SMART) and/or Accident Repair Centre techniques

MET

- Identify the correct hand tools used to remove and refit vehicle trim and components
- Replace vehicle interior trim
- Replace vehicle exterior components / trim
- Ensure that vehicle components replaced operate as intended by the vehicle manufacturer after the repair/replacement
- Identify any components that are damaged/missing/broken during the replacement of body components

Panel damage rectification

- Select/use panel damage equipment (pin pull) to rectify panel damage
- Use panel-beating techniques to rectify the panel damage
- Minimise the effect of panel rectification work on the surrounding area
- Correctly identify the 'high' and 'low' spots of the repair
- Use hand tools during panel damage rectification
- Restore the damaged area to accept body filler of no more than 2mm in depth in preparation for the panel to accept paint
- Reinstate any sealer and sound deadening material to the vehicle manufacturer specification

Panel repair, including plastic and aluminium

- Clean the panel surface with the appropriate materials
- Repair the damage to the panel using correct tools and equipment
- Minimise the impact of panel rectification work on the surrounding area
- Correctly identify the 'high' and 'low' spots
- Continually check the shape and line of the repair site
- Slowly lift the dent(s) to a uniform level using the appropriate tools and equipment
- Select and use the correct abrasive material to remove/shape the repair to the contours
- Carry out any corrosion, sealing, sound deadening activities post repair

Filler

- Prepare the repaired areas to enable the application of body filler
- Select the appropriate filler and mix correctly to the appropriate quantity
- Apply the body filler to the panel using industry recognised techniques
- Select the appropriate range of abrasive for each stage of repair
- Use industry approved methods for shaping/removing filler
- Restore the repair site/area to the original panel profile including swage line
- Finish the final repair using suitable materials
- Feather the edges of the repair
- Ensure that the panel is in a suitable condition to accept foundation paints

Surface preparation, primer application, drying, flatting

- Clean panel contamination before application of foundation materials
- Accurately mix the repair materials
- Apply the repair material(s) to the repair area and match the panel contours
- Establish that the surface is sufficiently cured to undergo flatting procedures
- Use flatting procedures and flatting equipment
- Check that the panel is flatted and cleaned ready to accept the topcoat

Panel preparation and fadeout

- Mix and prepare the base material
- Select, test and adjust the spray equipment to blend with the existing vehicle colour
- Use a 'spray out' test card / panel to achieve sufficient opacity and colour match
- Apply the base coat, a second stage coat and clear coat
- Fade out into existing paint

Paint technician

Preparation

- Prep standards
- Grades of sanding
- Sanding wet - old tech but still use
- Sanding dry - require knowledge
- Dust extraction, Awareness and understanding of
- Health and safety of preparation
- Product knowledge
- Special primers, Awareness and understanding of
- Identification of substrates – materials
- Mixing of the paints / primers, Ability to
- Sealers- replicate sealing pattern to align to VM etc
- Use of extraction equipment, Awareness and understanding of
- Masking skills
- Paint mixing system workings
- Fill it, prime it, mask it correctly
- Water based - now used, Awareness and understanding
- Solvent based - old technology
- Flatting of a panel

Prime / flatting

- Prep standards, awareness and understanding of
- Required prep to give acceptable finish
- Tools and equipment to use correctly
- Drying times – methods
- PPE
- MDSS-Data safety Sheets
- Materials used for flatting
- Understanding of correct primer for substrate
- Application of base coats
- Mixing of the materials for prime
- Application of the materials for prime
- IT skills for prep
- IT skills for mixing
- IT skills for colour ID
- Computerised system within paint
- Roller priming
- Drying systems

Paint types

- Amount of materials used - foundation / paint
- Colour ID, Awareness and understanding of
- Use of colour swatches
- Use of PC based systems to colour match
- Variants of colours
- Drying times
- Lacquer's and drying times
- Matt paint finish
- 3 Stage Pearl
- Non flat colours
- Chrome effect
- Plastic - metal panels
- Knowledge of paint types
- Matching existing paintwork
- Pigments
- Spray out cards
- Application of paint
- Paint spray guns

Refinish

- Paint faults – blemish
- Electric mopping
- Smart repairs
- Polishing and burnishing
- PPE
- H&S,
- Good and poor finish to acceptable standard
- Fault ID and how to rectify
- QC
- Cleanliness before refinishing
- Alloy wheels refinish
- Paint already made up to correct strength
- Training in application

Panel technician

Methods of repair

- Welding – structural
- Bonding – structural
- Riveting – structural
- Panel removal - cutting panels
- Identifying the correct repair method
- Ability to generate the correct repair

Materials

- Knowledge of types
- Reaction – cross contamination, knowledge and understanding
- Identification of materials

Joining techniques

- Welding - Steel
- Welding - HSS
- Welding - Boron
- Welding - Aluminium
- Composite
- Carbon Fibre
- MG Braze
- Bonding – adhesives
- Riveting
- Understanding of techniques
- Plastic riveting / repair
- Bolted panel
- Alignment of panels
- Set up and use of equipment (welding)

Panel repair

- Ability to conduct panel repair – steel
- Ability to conduct panel repair – aluminium
- Ability to conduct panel repair – fibreglass
- Composite, awareness and understanding
- Ability to conduct - panel beating and application of filler
- Ability to conduct panel repair
  - vehicle body alignment – jig
- Panel repair tools

MET technician

Cooling systems

- Effectively drain and refill
- Effectively bleeding systems
- Understanding and awareness of drive mechanisms - belts/align
- Diagnosis of system faults

AC/Climate control

- Awareness of legislation, including health and safety

Scan tools

- Awareness and understanding of fault code retrieval
- Ability to erase fault codes
- Understanding and awareness of actuator test
- Ability to programme components
- Ability to calibrate component to vehicle

Electrical

- Ability to recognize faults
- Ability to use wiring diagrams
- Awareness and understanding of network communications - CAN/LIN/Optical
- Ability to diagnose simple and complex faults
- Awareness of lighting/adaptive headlamps

Electric vehicle and hybrid

- H&S relating to EV / Hybrid
- Awareness of Battery R&R
- Awareness of 3 phase component (inverter)

Occupant comfort

- Health and Safety
- Occupant safety (internal)
- Pedestrian safety (external)
- SRS pre-tensioner
- Awareness of cruise control, camera technology, lane detection, ESP
- Awareness and understanding of parking / proximity sensors
- Awareness and understanding of ABS - electrical fault

Steering and suspension

- Suspension knowledge and understanding
- Suspension remove and refit
- Understanding of geometry / alignment
- Electronic / air suspension
- Steering angle sensors
- Basic suspension knowledge
- New technology suspension knowledge
- Four wheel drive systems knowledge
- Awareness and understanding of Electric / Electro hydraulic - power steering

MET

- Ability to align panels
- Ability to align headlamps
- Removal and refit of panels - understanding and awareness
- Awareness and understanding of joining techniques
- Ability to conduct plastic repairs/joining
- Exterior trim, awareness and understanding, remove and refit
- Interior trim, awareness and understanding, remove and refit

Glazing

- Bonded glass remove and refit
- Ability - glass alignment

Management staff and customer service staff

As a different research approach was taken in this sub-sector. i.e. a focus on technical skills, the IMI is planning to undertake further research into the skills needs of Management and Customer Service job roles.

Skills needs across the accident repair sub-sector over the next two years

Respondents were asked to record the changes they expected to their skills and training needs over the next two years.

One of the most striking features of the survey has been the references to new technology made in the in depth interviews, across all sub-sectors.

The relentless drive in technology development across all vehicle types was noted across all sub-sectors, with the impact increasingly being felt within sales, technical and customer service roles within the sector (data taken from the IMI State of the Sector Report 2011).

Focus groups and web surveys

Accident repair web survey

For the accident and repair sub-sector a specific web survey was conducted following the initial qualitative telephone survey. In total 50 in-depth surveys were completed.

Focus group

The accident repair Expert Working Group (EWG) was held in September 2011 and comprised representatives from accident repair employers and training providers. The main agenda for these meetings was to confirm the validation of the findings from the qualitative telephone interviews and the initial web survey. For the accident repair sub-sector, the EWG confirmed the skills and training needs of the accident repair sub-sector.

The final outcomes of this process are detailed in the Conclusions section of this report.

Web survey

A web survey was conducted across the entire automotive retail sector, with respondents identifying which sub-sector they worked in and was able to comment on. However, in the accident repair sub-sector a specific web survey was designed and the outcomes are included in this report.

Conclusions

The aim of this research was to be able to identify and prioritise the skills and training needs of the automotive retail sector at a 'granular' level, which has never been achieved before. We have been able to achieve this by looking at each individual sub-sector across the whole of the automotive sector footprint.

For the accident repair sub-sector we have achieved this aim, through a blended approach of telephone interviews, focus groups and web surveys.
The methodology specifically applied for the accident repair sub-sector was as follows:

- Taking the skills needs identified by the in-depth telephone survey at the beginning of the research project as the basis for the analysis.
- Taking the skills needs identified by the accident and repair web survey.
- Taking the EWG, accident repair web and telephone responses and comparing the skills needs identified by the group with the results from the in-depth telephone survey, to arrive at a more refined set of skills, set in a priority listing.

Prioritised skills and training needs for the accident repair sub-sector

As a result of the three-stepped approach outlined previously, the following sets of skills and training needs were identified as critical to the accident repair sub-sector. They have been ranked in order of criticality with 1 seen as the most critical.

Vehicle damage assessor

1. Vehicle appraisal – appraisal of a vehicle to identify the method of repair is correct and in line with manufacturer guidelines
2. Identifying correct methodology for a repair/replacement, including correct materials
3. IT skills for vehicle identity, research, and for estimates of repair
4. Communication and negotiation skills with customers and insurance companies
5. Identify what is likely to have happened in an accident by looking at the damage and the use of photographic sequences for evidence

Cosmetic repair technician

1. Vehicle appraisal – appraisal of a vehicle to identify the method of repair is correct and in line with manufacturer guidelines
2. Mechanical Electrical Trim – the replacement of vehicle components and ensure that they function correctly after replacement
3. Rectify panel damage using the appropriate tools, equipment and following the correct repair methods
4. Prepare a panel ready to accept paint primers and top coats
5. Application of top coat to match/blend into existing vehicle paint work.

Paint technician

1. Identify vehicle substrates and products used to repair vehicle
2. Sealing and masking of repaired/new panels prior to the application of primers/paint
3. Prepare a panel ready to accept paint (primers and top coats)
4. Application of top coat to match/blend into existing vehicle paint work
5. Identify the rectification of paint defects and the procedure to rectify the fault(s)

Panel technician

1. Vehicle panel joining techniques including such functions as welding (MAG/MIG Braze), bonding and riveting
2. Removal and replacement of fixed (welded or other) panels with a vehicle body structure
3. Mechanical Electrical Trim – the replacement of vehicle components and ensuring that they function correctly after replacement
4. Panel alignment, to ensure that a vehicle panel (fixed / cosmetic) aligns with the vehicle structure
5. Vehicle structure alignment using workshop equipment such as a vehicle jig and appropriate workshop tools and equipment

MET technician

1. The replacement of vehicle components including lighting, suspension components and refilling cooling systems to ensure that they function correctly after replacement (understanding the implications of not carrying this out correctly)
2. Alignment of cosmetic panels within a vehicle structure
3. Vehicle electrical system fault finding including the use of electrical test equipment and computer based test equipment
4. Vehicle wheel geometry and the diagnosing of faults
5. Removal and replacement of SRS components such as air bags and other vehicle occupant safety components

Recommendations

The Skills and training needs listed in this report are those that employers have reported as being critical for their business. Numerous reports have identified the link between training and business performance. The IMI itself has recently conducted ROI studies across a number of sectors that have identified significant increases in business performance from rolling out training and accreditation programmes. The studies show that up-skilling in the automotive retail sector delivers a conservative gross value added (GVA) of £4,000 per person per annum[4].

The value of this project is the underlying understanding and knowledge in granular detail required to direct provision across the sub-sector and all job roles. Our challenge is to use this research to ensure that training is relevant and up to date, meeting the needs of the whole sector.

As the SSC, the IMI will focus on developing skill solutions across job roles, against the priority skills needs highlighted in this report.

The IMI commits to prioritising the development of solutions to meet the skills needs where employers have identified their need as being either critical or of some need. Therefore, solutions to the following skill needs will be progressively developed over the next 12 months.

For vehicle damage assessors in the sub-sector the following were critical skills needs.

- Vehicle appraisal – appraisal of a vehicle to identify the method of repair is correct and in line with manufacturer guidelines.
- Identifying correct methodology for a repair/replacement, including correct materials.

For cosmetic repair technicians in the sub-sector the following were critical skills needs.

- Vehicle appraisal – appraisal of a vehicle to identify the method of repair is correct and in line with manufacturer guidelines.
- Identifying correct methodology for a repair/replacement, including correct materials.

For paint technicians in the sub-sector the following were critical skills needs.

- Identify vehicle substrates and products used to repair vehicle.
- Sealing and masking of repaired/new panels prior to the application of primers/paint.

[4] www.theimi.org.uk/information/roi-ata.html

For panel technicians in the sub-sector the following were critical skills needs.

- Vehicle panel joining techniques including such functions as welding (MAG/MIG Braze), bonding and riveting.
- Removal and replacement of fixed (welded or other) panels with a vehicle body structure.

For MET technicians in the sub-sector the following were critical skills needs.

- The replacement of vehicle components including lighting, suspension components and refilling cooling systems to ensure that they function correctly after replacement (understanding the implications of not carrying this out correctly).
- Alignment of cosmetic panels within a vehicle structure.

As a different research approach was taken in this sub-sector. i.e. a focus on technical skills, the IMI is planning to undertake further research into the skills needs of Management and Customer Service job roles.

However, for Management staff across the eleven automotive retail sub-sectors, the following were identified as critical skill needs.

- Understanding and awareness of health and safety legislation.
- Understanding the customer viewpoint, defining their needs and meeting them (10).
- People management/How to keep staff effective (8).

In addition, for customer service advisors across the eleven automotive retail sub-sectors, the following were critical skill needs

- Effective communication skills.
- Effective problem solving – dealing with customers to ensure their needs are addressed.
- Effective telephone skills.
- How to deal effectively with complaints.

We commit to work with partners to

- Develop high quality, cost effective training.
- Ensure that the link between business performance and training is clear.

As the SSC we commit to

- Further develop the innovative online CPD management system for the sector.
- Create a common template for training in the sector by ensuring that all provision has clear and measurable learning outcomes that link training to increased business performance.

The automotive retail sector as a whole has a high incidence of business and training plans at 56 and 54% respectively.

- We will continue to work with the accident repair sub-sector to advocate the use of training plans.
- We will continue to work with the accident repair sub-sector to advocate the use of training plans.

The automotive retail sector as a whole has a high awareness of the IMI at 78%.

- As the SSC we will work to build on the awareness of the IMI in the accident repair sub-sector and the awareness of skills solutions as being necessary for successful businesses.

We would like to express our gratitude to the employers and stakeholders who committed time to participate in the accident repair part of this research project.

Annex 1:

Focus group

The focus group (Expert Working Group) for accident repair was conducted in September 2011 and comprised representatives from:

- AVIVA
- BASF
- Thatcham College
- Manchester College
- VBRA
- GTG

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