

# SKILL GAPS IN THE AUTOMOTIVE SUPPLY CHAIN IN THE WEST AND EAST MIDLANDS 2005

## BUSINESS CHARACTERISTICS

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### 1.1 Introduction

It is inappropriate to devote a report to a detailed discussion of skills and training issues without first establishing the business characteristics of the firms included in the survey. Accordingly, section 1 sets out details of their:

- Tier, status and ownership.
- Production and service activities.
- Annual turnover.
- Employment, and shift patterns, and
- Sales.

### 1.2 Tier, status and ownership of interviewed firms

#### 1.2.1 Tier of the automotive suppliers

Among the 1st tiers, the majority (8/11) were supplying all of their output directly to vehicle manufacturers (VMs), while the remaining 3 were supplying both direct and indirect. These 11 1st tiers ranged from very large multinational groups to small one-plant SMEs with strong reliance on a single VM customer.

Among the SMEs, all supplied mainly indirect to vehicle manufacturers via 1st tier customers, though 4 also supplied a smaller percentage of their output direct. Two companies were mixed 1st, 2nd and 3rd tier firms (mainly 2nd).

#### 1.2.2 Status and ownership

The lower the tier of firms, the more likely it was that they were independent UK businesses.

Among the 7 vehicle manufacturers, 2 were independent UK firms, and 5 were subsidiaries of overseas corporations: ultimately US (2), Japanese, German or French. Most of the vehicle manufacturers had multiple manufacturing sites in the Midlands and/or the rest of the UK.

Among the 11 1st tiers, less than half (5) were UK companies. Four firms were independent, though one of these was a US multinational, the remaining 3 being UK firms. Two of the remaining 7 were subsidiaries of UK groups, and 5 were

overseas-owned: either Japanese (2) or German (3). The majority of 1st tiers had at least one other plant – some had numerous sister companies – in the Midlands and/or the rest of the UK. Additional Midlands plants employed upwards of 7,180 people overall.

All of the 7 SMEs were independent UK firms. None had any other manufacturing sites in the Midlands. Indeed, one firm had consolidated two sites onto one within the previous year. However, another SME was looking to move to a larger site nearby, and an East Midlands company was in the early stages of setting up a second plant further north.

Although the survey did not specifically ask for details of overseas operations, it is worth noting that various comments were made about outsourcing (more) components production to plants overseas, or considering moving (more) work abroad, or buying more components from cheaper overseas sources rather than from local/UK suppliers. One vehicle manufacturer, for instance, stated that they had mainly outsourced to Poland, Hungary, Russia, India and China. A small 1st tier company had a plant in Thailand. There was deep concern among some 1st tiers as to whether they would be able to continue producing in the UK if they could not reduce their costs sufficiently to achieve parity with global competitors. As we shall see, this shaped the nature of changing competences and skill needs.

### 1.3 The range of production and service activities

#### 1.3.1 Production and service activities of the vehicle manufacturers

Four of the vehicle manufacturers were car producers, the remaining 3 produced fire vehicles, engines, or construction vehicles (see Table 1.1). The vehicle manufacturers were mainly engaged in building or assembly. This could include such processes as fitting, machining, welding and finishing operations including paint. One company also carried out its own on-site casting, pressing and injection moulding of certain components. Engines were in some cases supplied from the UK, either from wholly owned subsidiaries or off-site divisions.

Among the vehicle manufacturers a variety of services was offered including:

- The worldwide supply of engines.
- The worldwide supply of specific vehicles among the group's global output.
- Design.
- Group marketing and sales.
- Retail, or
- After-sales service and repair.

### 1.3.2 Production and service activity of the 1st tiers

The 1st tiers produced a wide range of systems and products for bodies, interiors and engines employing a huge variety of materials and components, mainly in steel, aluminium, plastics and glass (see Table 1.1 above). They included a major seating systems manufacturer and a niche supplier of electronics such as drive by wire, transmission controls, traffic information systems, and central locking. Many firms were producing engine and powertrain systems and components.

**Table 1.1: Production activity of interviewed companies**

Company type	Production activity	Number of firms
Vehicle manufacturers	Cars	4
	Other vehicles/equipment	3
1st tiers	Seating	1
	Interior trim/leather upholstery	1
	Air conditioning	1
	Windscreens	1
	Powertrain components	1
	Steering and suspension components	1
	Electronics	1
	Wiring harnesses	1
	Engines and components	1
	Batteries	1
	Fuel tanks and exhaust systems	1
SMEs	Sheet metal work, bespoke motorcycle parts	1
	Sheet metal work for pre-production, prototypes	1
	Machining and welded fabrications	1
	Tube manipulation e.g. for engines, gearboxes	1
	Steel & friction lined discs for gearboxes, brakes	1
	Cold forgings	1
	Injection mouldings in plastics, ceramics, metals	1
<b>Total:</b>		<b>25</b>

Design predominated among the service activities in which 1st tiers engaged (see Table 1.2, overleaf), though in 2 cases it was not offered externally. One of the smaller 1st tiers undertook development to manufacturer’s designs rather than design itself. Two other firms provided development or prototyping work in addition to design. The engine manufacturer offered design, prototyping, engineering consultancy and ran its own test house. Mentioned by others were warranty, logistics, and aftermarket supply. A logistics service for electronic components was seen as a growing business for a small 1st tier firm that was intent on becoming a distributor rather than a manufacturer, and placing its production offshore. Only one company did not list any service activities at all. This was a Japanese company where design and other service functions were conducted by other parts of the group outside the UK.

**Table 1.2: Service activities in which 1st tiers and SMEs engaged**

Service activity	Number of 1st tiers	Number of SMEs
Design	6	2
Development	2	2
Prototyping	1	1
Engineering consultancy	1	0
Testing	1	0
Tooling/design	0	2
Finishing (via subcontractors)	0	1
Aftermarket	1	0
Warranty	1	0
Logistics	1	0
None	2	3

Cases: 11 1st tiers, 7 SMEs

### 1.3.3 Production and service activity of the SMEs

The SMEs were principally engaged in metals fabrication, sheet metal work, or tube manipulation. One of the sheet metal workers had developed a small bespoke and batch business supplying direct to motorbike enthusiasts, the other was mainly involved in pre-production and prototyping for automotive customers. Other firms included a manufacturer of cold forgings, and an injection moulder of plastics, metals and ceramics (see Table 1.1, above).

Services offered by 4 of these SMEs included design, development, tooling and finishing (where customers required this, it was subcontracted) (see Table 1.2, above). The remaining 3 firms possessed no service activities.

## 1.4 Annual turnover

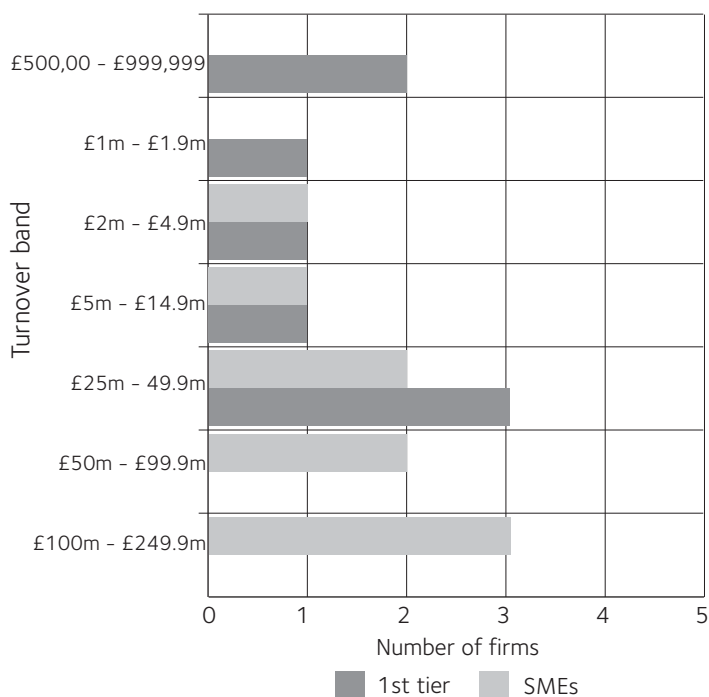
### 1.4.1 Annual turnover of the vehicle manufacturers

Annual turnover statistics were obtained for few of the vehicle manufacturers. For some, it was problematic to separate figures for Midlands plants from those of the wider group, though in one case a turnover of approximately £502.8 million was quoted.

### 1.4.2 Annual turnover of the 1st tiers

Among the 9 1st tiers who revealed their annual turnover, figures ranged from £4.5 million to £230 million (see turnover banding, Figure 1.1). The total figure was £557.5 million, and the mean was £74.2 million. The two companies with annual turnover less than £10 million were both small UK-owned companies with customers among the vehicle manufacturers and 1st tiers. At the other end of the scale, the company with the largest turnover (£230 million) was overseas-owned. Indeed, those with the largest turnover sizes (£100 million plus) tended to be non-UK groups.

**Figure 1.1: The turnover size band of 1st tiers and SMEs**  
**Annual turnover band: 1st tiers and SMEs**



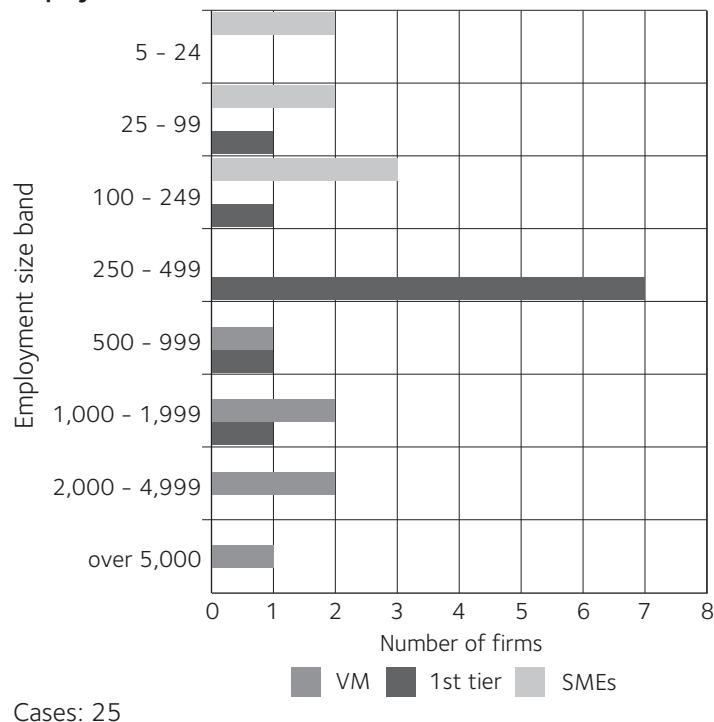
### 1.4.3 Annual turnover of the SMEs

There was some overlap in respect of turnover size between the smaller 1st tier firms and the SMEs (see Figure 1.1, above). Annual turnover for the 7 SMEs ranged from £500,000 to £7.2 million, totalling £25.1 million. The mean figure was £3.6 million.

### 1.5 Employment size

Looking across the entire West and East Midlands survey participants, these 25 companies employed 30,978 people overall. There was substantial overlap in size between the vehicle manufacturers, 1st tiers and SMEs, since the smallest vehicle manufacturer – a niche low volume producer – was smaller than some lower tier SMEs, and the largest 1st tiers were as large as some vehicle manufacturers (see Figure 1.2).

**Figure 1.2: The employment size band of firms**  
**Employment size band: all firms**



### 1.5.1 Employment size of the vehicle manufacturers

The workforce size of vehicle manufacturers in the survey ranged from 97 to 9,500 employees though in certain cases these were composite figures for multi-site West Midlands operations. The total number of employees among these 7 manufacturers was 25,419, and the mean (average) employment size was 3,631 (see Table 1.3).

**Table 1.3: Comparisons between employment sizes for each group**

Survey participant	Total number of employees	Average number of employees per company
Vehicle manufacturers (7 cases)	25,419	3,631
1st tiers (11 cases)	5,069	461
SMEs (7 cases)	490	70
<b>TOTAL (25 cases):</b>	<b>30,978</b>	

Cases: 25

### 1.5.2 Employment size of the 1st tiers

Among the 1st tiers, workforces ranged from 50 employees (a small 1st tier firm) to 1,650 (a Japanese transplant). The 3 smallest firms were all in the East Midlands. The total number of employees among the 11 1st tiers was 5,069. The average per firm was 461 employees.

### 1.5.3 Employment size of the SMEs

Workforces among the 7 SMEs ranged from 6 to 149 employees. These firms employed 490 people in all, an average of 70 per SME.

### 1.6 Shift patterns

It was apposite to ask about shift patterns because shift working can affect training access. The smaller vehicle manufacturing plants did not yet operate shifts, unlike the larger ones. The majority (9/11) of the 1st tiers and 5/7 of the SMEs also operated shift working. Shift patterns varied, but could comprise a day and night shift, rotating or double day shifts, and (less commonly) weekend working, or a mixture of these.

### 1.7 Turnover and employment trends

Clearly, the extent of skill needs and training activity can vary according to whether a company is seeing an upswing or a tightening of its finances and whether they are taking more people on or reducing the labourforce, so all firms were asked whether their turnover and employment were currently growing, static or decreasing. Their responses (shown in Figure 1.3, overleaf) reveal a mixed picture.

#### 1.7.1 Turnover and employment trends of the vehicle manufacturers

Of the vehicle manufacturers, three were increasing their turnover through higher product demand, and were taking on extra people as a result, though one indicated that they needed to become leaner in order to reduce their operating costs. A fourth stated that the trend for both was static because their production and workforce were both stable, while a fifth was reducing in size. A further vehicle manufacturer was seeing a mixed picture as regards turnover and employment.

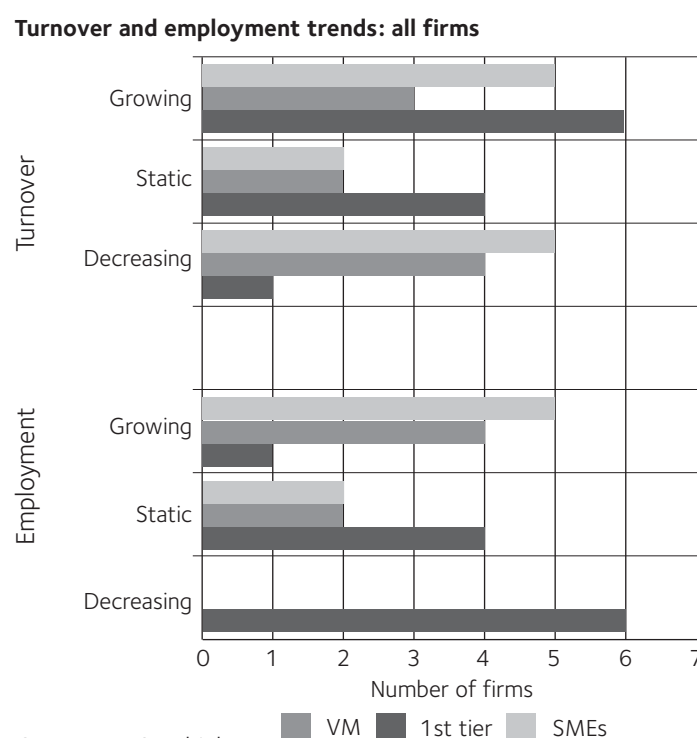
Two vehicle manufacturers commented on the fast rate of labour turnover, one indicating that this was due to other sectors (e.g. retail) offering higher salaries which lured certain occupations including those in the workshops. Similar comments about this competition for staff were also made among the suppliers.

#### 1.7.2 Turnover and employment trends of the 1st tiers

The principal finding was that:

- Just over half (6/11) of the 1st tiers were enjoying increased annual turnover, but at the same time their workforces tended to be shrinking. Only 1 company reported a deteriorating turnover.

**Figure 1.3: The turnover and employment trend of firms**



It is important to examine the reasons for the contradictions among some 1st tiers.

### **(i) Turnover and workforce growth**

Only 1 1st tier reported an upwards trend for both their turnover and workforce. This was due to increasing business from Land Rover and new models in the pipeline.

### **(ii) Turnover growth, but static or decreasing workforce**

The key point was that:

- Nearly half (5) of the 1st tiers stated that their turnover was growing, but their workforce was either stable or reducing.

Turnover growth was mainly the outcome of business growth through winning new business, or through increasing demand from existing customers. This was not necessarily linked to employment growth due to cost reduction strategies, mainly process improvements, more automation, more machines, improved productivity or greater efficiency.

One company had increased their competitiveness by developing the ability to supply larger units instead of (as previously) individual components.

### **(iii) Turnover and workforce static or decreasing**

Where turnover and employment were static or decreasing, this was due to:

- Increasing difficulty in winning new business against competition from overseas. Contracts that were won, tended to be small ones.
- Existing contracts had ended when product runs had completed and not been replaced by new business.
- Some contracts had been re-sourced by the customer to overseas suppliers.
- In 2 cases the workforce was reducing as certain process activities – forgings for steering and suspension, engine castings – were terminated due to technological obsolescence. Issues about cost competitiveness or re-sourcing were not mentioned.

One 1st tier explained the complex problems which threatened their business viability, planned to outsource more ancillary functions, commenting that less Government support was available here than in Spain or France:

*“We are facing very aggressive price downs from customers so the value from sales is decreasing even if we can maintain the business. There is a 7-10% price reduction on existing business and up to 30% on new business. Steel prices are increasing and we can't do anything about that. So there is a question of the business being viable. Linked to this, we are trying to do what we can to protect our profit margins and so we do what we can to improve our processes. And we are currently reducing the workforce by one in 7, e.g. by outsourcing security, outsourcing machine build, so having less ancillary costs e.g. pension, sick pay etc.”*

Another company, overseas-owned, revealed that despite turnover increases a group decision had been made to pull out of the automotive industry altogether and to cease all manufacture in the UK. The decision was due to the increasingly demanding requirements of vehicle manufacturers including their intensifying price reductions, operating in a highly aggressive business environment, and facing a mounting burden in implementing new legislation

It is important to note that:

- A number of other 1st tiers stated that they would have no option but to transfer [more] production overseas if they could not reduce their costs to meet the price reductions their customers demanded and to ensure they were globally competitive in winning business against low cost manufacturers.

As we shall see, this pressure had a profound impact through ongoing operational and organizational changes, or were those they were anxious to install, and on the competences that employees needed.

### **1.7.3 Turnover and employment trends of the SMEs**

The most significant finding was that:

- None of the SMEs reported a downwards trend in turnover or employment overall, and the trend was largely upwards.

But this was not necessarily the picture across the whole of the Midlands lower tier suppliers, or even among the 1st tiers, as firms that were more buoyant may have been more willing to take part in a skill and training survey than those undergoing a downturn.

Five SMEs among the survey participants who reported increased turnover and employment included some highly assertive, sales-oriented, determined, well-organised and innovative companies.

These firms were:

- *Succeeding in generating new business to offset lost work.*
- *Picking up work as other SMEs closed down.*
- *In one case, offering better services, and investing greatly.*

Two SMEs stated that their turnover and workforce levels were static, citing the economic climate. One reported a lack of work, and encountering Chinese competition.

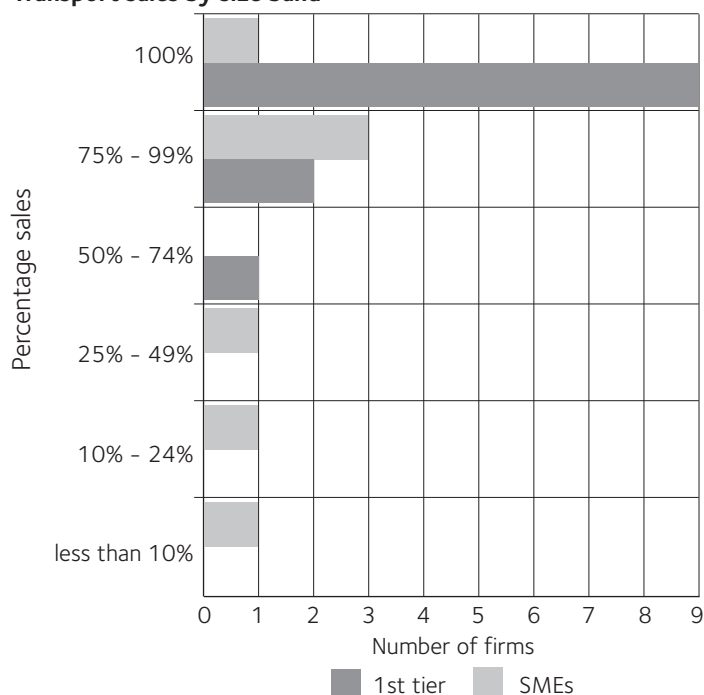
### 1.8 Sales by sector

Whereas vehicle manufacturers' sales were focused on the transport sector, the suppliers exhibited a varying degree of sales concentration on this sector. Indeed:

- The majority of 1st tiers (8/11), but only one SME, were 100% reliant on transport supply: sales by 1st tiers averaged 96%, compared to 61% for SMEs (Figure 1.4).
- None of the 1st tiers sold less than 70% of their output by value to the transport sector.
- Although the majority of SMEs (4/7) sold 85% or more into the transport sector, another 2 firms achieved at least 90% of sales or more outside this sector.

The differences between 1st tiers and SMEs are confirmed visually by the distribution of sales according to percentage size bands shown in Figure 1.4.

**Figure 1.4: Transport sales by percentage size bands for 1st tiers and SMEs**



Cases: 11 1st tiers, 7 SMEs

#### 1.8.1 Sales by subsector

Businesses were asked to supply a more detailed breakdown of their sales, differentiating their total transport sales according to 5 main subsectors, and to indicate which non-transport sectors they supplied into. They were also asked to indicate whether each sales subsector was growing, static or decreasing, and subsequently they were invited to comment briefly about particular skill issues relating to any market changes.

##### (i) Transport sales by subsector

Transport subsectors were listed as:

- Cars, vans, trucks.
- Motor sports.
- Off-highway (e.g. construction) and agricultural.

- Aerospace.
- Marine, rail, other transport.

Mapping each subsector by specific sales bands (Table 1.4, overleaf) reveals that:

- Among both 1st tiers and SMEs, cars (rather than vans or trucks) comprised the most important single sales destination.

- The motorsports subsector was significant only to 2 SMEs, but only in a minor way, and virtually insignificant to 1st tiers.
- Two firms were particularly focused on the off-highway subsector for the major percentage of their output.
- Aerospace was important only for the SMEs.
- Marine, rail, military transport, and leisure motorcycling were also mentioned.

**Table 1.4: Transport sales by subsector**

Sales percentage size band	Cars, vans, trucks	Motor sports	Off – highway & Ag.	Aero-space	Marine, rail, other transport
<b>1st tiers</b>					
0%	0	10	8	11	9
Less than 10%	1	0	0	0	2
10% - 24%	0	0	0	0	0
25% - 49%	1	0	1	0	0
50% - 74%	0	0	0	0	0
75% - 99%	2	0	1	0	0
100%	6	0	0	0	0
% unknown	1	1	1	0	0
<b>SMEs</b>					
0%	2	5	4	4	2
Less than 10%	2	2	1	2	3
10% - 24%	0	0	1	1	2
25% - 49%	0	0	0	0	0
50% - 74%	1	0	0	0	0
75% - 99%	2	0	1	0	0
100%	0	0	0	0	0

Cases: 11 1st tiers, 7 SMEs.

Ag = Agricultural.

### (ii) Non-transport sales

Three 1st tiers had sales destined for non-transport subsectors, notably for:

- Furniture.
- Electrical; whitegoods e.g. showers; lighting; drinks dispense.
- Monitoring equipment; safety critical equipment.
- Defence equipment.

The most diversified output was achieved by an electronics manufacturer.

Among the SMEs, non-transport subsectors that components were sold into included:

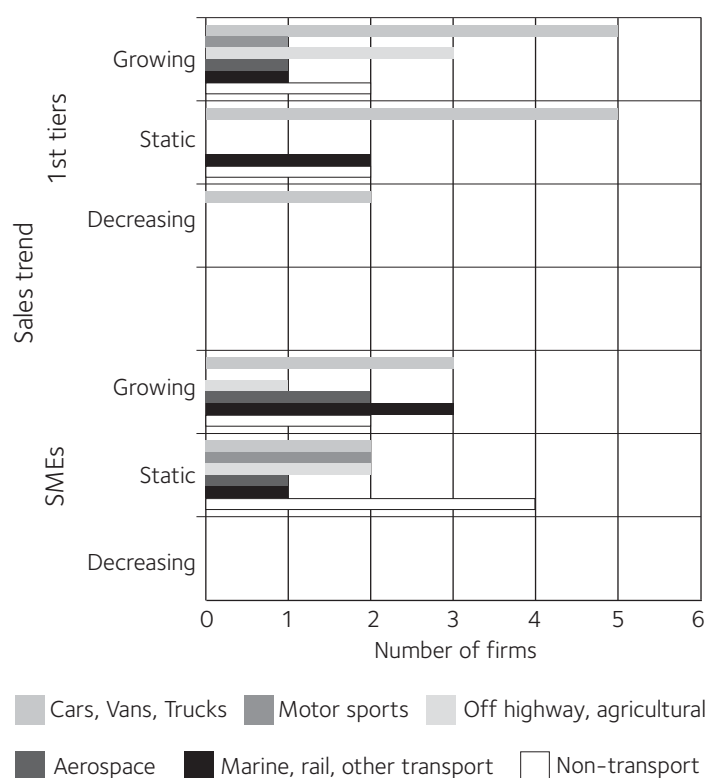
- Electronics.
- Electrical goods e.g. lighting, heating.
- Power generation.
- Building and construction equipment.
- Industrial and engineering.
- Oil.
- Medical equipment including mobility.
- The food industry.
- Defence.

The 3 most important subsectors for these diversified SMEs were electrical goods, building and construction, and defence.

### 1.8.2 Sales trends for transport and other sectors

Analysis of the sales trends for transport subsectors and non-transport overall reveals some important differences between subsectors (see Figure 1.5).

**Figure 1.5: Sales trends by subsector for 1st tiers and SMEs.**  
Sales trend by subsector: 1st tiers and SMEs



Cases: 11 1st tiers (max.), 7 SMEs (max.). Note: not shown are cases for 'not relevant' and 'unknown'.

### (i) Sales in the car, van and truck subsector

- 1st tiers that reported growth in their sales to car, van and truck manufacturers were in seating systems, batteries, steering and suspension, exhaust systems, and electronics.
- SMEs that reported growth in their sales to car, van and truck manufacturers were in tube manipulation, prototype and sheet metal work, and forgings.
- Static sales were almost as significant a feature of this market as sales growth.

- The only company to report that their sales to car, van and truck manufacturers were decreasing was a 1st tier producer of powertrain components.

#### **(ii) Sales in the motor sports subsector**

- One 1st tier producing exhaust systems and fuel tanks commented that their combined sales to cars and motor sports customers were increasing, but no market growth was reported by other suppliers to the motor sport subsector.

#### **(iii) Sales in the off-highway subsector**

- Growth in off-highway (construction vehicles) sales was particularly pronounced for 1st tiers (rather than for SMEs), and those enjoying sales growth were in electronics, wiring harnesses, and engines and components.
- The only SME noting growth in off-highway sales was in tube manipulation.

#### **(iv) Sales in the aerospace subsector**

- SMEs reporting sales growth in aerospace components were in injection moulding of plastics, metals and ceramics, and in prototype and sheet metal work.

#### **(v) Sales in the marine, rail and other transport subsector**

- The only 1st tier reporting growth in this sector was supplying batteries for marine transport and caravans.
- Growth in this sector was particularly marked for the SMEs, comprising the manufacture of parts for leisure motorcycling (sold direct to enthusiasts), military transport and rail.

#### **(vi) Non-transport sales**

- Sales growth for the 1st tiers was reported in:
  - *The furniture industry.*
  - *Electronics for electrical appliances e.g. whitegoods, heating and ventilation (such as showers), lighting, drinks dispensers, safety critical and monitoring equipment.*

- Among the SMEs, sales growth was identified in supply to:

- *The oil industry.*
- *Defence equipment.*
- *Electronics.*
- *Construction equipment.*

The next section looks at the skill implications for UK businesses of market change, overseas sourcing decisions, and alliances with other organizations.

# SKILL GAPS IN THE AUTOMOTIVE SUPPLY CHAIN IN THE WEST AND EAST MIDLANDS 2005



## SKILL ISSUES FOR MARKET CHANGE, ALLIANCE AND OVERSEAS SOURCING

### 2.1 Introduction

This section provides a link between the preceding overview of the business characteristics of interviewed firms (section 1), and the evaluation of skill gaps particularly within each occupational group (section 3), by looking at the skill impacts on businesses of growth, stability, or decline in their sales to different sectors. It then proceeds to address whether firms had any alliances, either in the UK or overseas, that had skill implications for them, and then assesses whether there were any skill or personnel availability issues which influenced their decision to source from overseas.

### 2.2 Skill issues relating to market change

Although most comments about skill issues were reserved for later discussions on changing competences and skill gaps, some important points were aired at this stage about skill issues in relation to market change. With one exception (market decline), points mainly concerned market growth or to a lesser extent, market stability. An outline of the issues raised is shown in Text Box 2.1, overleaf.

Key concerns relate to:

- *Cost reduction, not just in the production areas, but business-wide.*
- *Acquiring leading edge technology, and upskilling the workforce.*
- *Increasing organizational complexity.*
- *Improving workforce productivity.*
- *Recruiting suitable employees.*

It was not unusual for concerns to cover a variety of issues as firms strived to reduce their costs and improve their competitiveness. It is also important to note that (as we shall see in the later discussion of changing competences and skill gaps), these concerns were not solely the impact of market changes, but were generic issues that were exacerbated by market conditions, and were shaped, intensified and lent a sense of urgency by global competitive forces.

Text Box 2.1:

A summary of skill issues relating to market change

Vehicle manufacturers:

- Dealing with increasing organizational complexity as the business expands is an issue for the workforce, but not necessarily skill-related.
- Taking on temporary workers; issues about tackling the imbalance of skills between these and permanent workers via induction and 'buddies.'
- The need for technological upskilling due to more sophisticated technology for producing cars, and in the features which cars possess; digital technology to design cars, reduce prototyping and lead times.
- Hybrid skills required at high levels, so becoming retailers, logisticians, experts in global economics and distribution, refocus engineering on lean product development. More a service industry than manufacturer.
- Associated with building more advanced cars, a more computer literate workforce will be needed e.g. skills for team leaders in use of spreadsheets.

1st tiers:

- Shortages of skilled labour in manufacturing operations e.g. tooling, welding; insufficient apprentices; people lacking right experience.
- Recruitment problems; problems in getting experienced quality engineers, including re environmental systems and few want to go into this side of engineering; affordability of good skilled workers; project engineer needed.
- To reduce business costs everything must be right first time; more adaptability, flexibility, 100% workforce performance. Leadership issues and softer skill needs among managers and engineers to help achieve this.
- Increasing quality expectations.
- Need for more sales, marketing and distribution skills.

SMEs:

- Cost pressures put added burden on purchasing to source at best price worldwide, so need better negotiation skills, networking skills.

- Need more adaptable, flexible operators, able to multi-task, using CNC machine downtime productively.
- Recruitment problems e.g. apprentices, few school leavers entering manufacturing; lower calibre of recruits; unsuitable graduates; shortage of skilled labour.
- Imperative to get the best technology and then staff are developed to use it.
- Need workforce to appreciate and respond to global threats; recruits want to work repetitively, don't support productivity changes, don't want to work smarter.

Note: Points in italics relate to market decline, remainder relate to growth or static markets

- The two key drivers for firms were, firstly, the pressure to squeeze costs out business-wide, and, secondly, keeping at the forefront of technological advances.

### 2.2.1 Reducing business costs

The defining point for firms at whatever level was the crucial need for achieving major cost reductions, in one case by 20% by the end of the year, not just on the shopfloor but through every aspect of the business. Getting things right first time and getting project management right were absolutely vital, insisted one first tier. Another cited their increasing quality expectations, but this was clearly a more general trend.

Points made about the need for multi-tasking on the shopfloor, and using machine downtime productively relate to cost efficiencies. For another SME the pressure to reduce costs due to raw materials price rises placed an added burden on their purchasing staff in scouring the world to secure the best prices. They explained that:

"They are also having to adapt their skills in offsetting these raw material prices e.g. doing negotiating courses and purchasing related functions to counteract the price increase e.g. by going to networking events such as meet the buyer events, and purchasing people come together to discuss issues and exploit any opportunities."

The need emerging here for softer skills like negotiation, deal-clinching, customer contact and relationship, communication,

persuasion and networking was not confined to sales and purchasing functions. As we shall see in more detail later:

- There was a clear recognition of the role of soft skills in getting people to perform at their best, and achieving 'buy-in' to changes which were crucial to improve business competitiveness.

### 2.2.2 Acquiring leading edge technology, and upskilling the workforce

Various points were made about keeping at the forefront of technological change, and how the workforce would need to be more technically proficient, and more IT literate. For one vehicle manufacturer, the key issues were, firstly, ensuring that leading edge digital technology and associated skills were embedded across the workforce, and, secondly, organizational change (see 2.2.3 below).

Another vehicle manufacturer foresaw that building more technologically advanced cars meant that team leaders needed better statistical/IT knowledge e.g. in constructing spreadsheets.

### 2.2.3 Increasing organizational complexity

The vehicle manufacturer highlighting the need for organizational change alongside their technological objectives was intent on developing the skill base of a hybrid business. They explained that:

*"Becoming a 'hybrid' business entails becoming 1) retailers, 2) logisticians, 3) experts in [global] economics and distribution, and 4) engineering needs to refocus on lean product development (so selling the knowledge dimension of the company's engineering)."* They added: *"Manufacturing will mean nothing. The business as a service industry will become far more dominant."*

### 2.2.4 Improving workforce productivity

Key issues about improving workforce productivity were:

- *This could be a business-wide objective, not just on the shopfloor.*

- Getting people's engagement with this objective was vital.
- Leadership issues and softer skills were emphasized.

A powertrain 1st tier whose supply to car manufacturers was declining stated:

*"It is crucial to reduce our business costs by 20% in a year. Everything must be right first time, right accuracy, project management right. There are some leadership issues and with shrinking numbers we do require an increase in flexibility and adaptability. We must ensure every person is able to perform 100% in their business. There are issues about their attitude and capability. We are facing how/whether to dismiss those with reduced performance. Our tolerance of this is less if people are only performing at 70% of capacity. We need leadership among engineers/managers for those to deal with this in a considerate manner. They need softer skills."*

The issue of getting employees to engage proactively with productivity improvements, particularly on the shopfloor, and the difficulty of getting them to understand the rationale for this and give their best, was also raised by a prototype and sheet metal SME:

*"I would like to see more awareness of the actual threats that are posed to the manufacturing sector compared with other parts of the world. There is a lot of apathy about it. There is a threat from the lack of realization from the workforce. The 'powers that be' tell them but are powerless."*

The importance of developing greater flexibility and adaptability was raised by another SME who was frustrated in getting CNC machinists to multi-task and be productive during machine downtime. "Men can't multi-task" they observed.

### 2.2.5 Recruiting suitable employees

For both 1st tiers and SMEs, turnover growth exacerbated shortages of technical skills e.g. in welding and toolmaking. A 1st tier exhausts supplier remarked that despite many toolmaking firms closing they did not seem to want to come into the business. Shortages were also reported at apprentice/craft level (school leavers/vocational), and at graduate level due to the reduction in manufacturing/engineering courses at universities and the

lesser suitability of graduates. As we shall see later, similar concerns were also voiced by some of the vehicle manufacturers. On deterioration in the calibre of school leavers and fewer coming into manufacturing, or taking apprenticeships, a machining and fabrications SME commented:

*"We are affected by changes in the educational system. Now more people do 'A' levels instead of vocational training so there are fewer people coming into manufacturing. There is a smaller population of school pupils coming into manufacturing and increase in those who were disaffected in school who don't support productivity changes but can work repetitively. They don't want to work smarter so there is a difficulty to get apprentices in future. There is also an issue re the supply of suitable labour. There are useless graduates in the labour pool. 30 years ago we got good people."*

For them, the solution lay in providing more appropriate education and training:

*"We've got to offer something that's more attractive re vocational training and continued graduate training that is higher calibre than is currently available."*

### 2.3 Skill issues related to alliances and other linkages

In recognition that there could be skills issues arising from any alliances, joint ventures or production links that firms might have or be planning, either in the UK or overseas, businesses were asked for details of:

- The company and location.
- The purpose or activities of the alliance, and
- Any skill or workforce development issues these created.

The research revealed that:

- 5/7 vehicle manufacturers possessed or were developing linkages which exerted (or could exert) skill issues for their company.
- 4/11 1st tiers highlighted linkages with skill impacts, but
- No SMEs had any alliances that exerted skill issues for them.

Alliances exerting skill issues involved:

- Overseas production links.
- Intra-group links for pan-group skills development or harmonisation.
- Links with sales companies/dealerships.
- Customer links for product design and development.
- Customer links relating to supplier development programmes.

In other cases mentioned by both vehicle manufacturers and 1st tiers, alliances involved technology/knowledge transfer from the Midlands plant to their ally or other parts of the group worldwide, for example in building vehicles or manufacturing components to the right specification.

But it important to note that:

- None of these points were made by the SMEs, who had no alliances that exerted skill needs, and formal linkages of any kind appeared to be infrequently held.

Indeed, a West Midlands SME remarked with a tinge of bitterness:

*"We tried to get joint ventures with other companies sharing employees, machinery, training and purchasing. None will do it. We are not trying to form any alliances now."*

An East Midlands SME was a member of an employer organization looking at how to obtain a skilled workforce, and was part of the Northern Defence Association, but neither of these specifically created skill needs for their business.

### 2.3.1 Overseas production links

Overseas production alliances exerting skill needs affected only the vehicle manufacturers in their linkages with other vehicle manufacturers for building cars under joint venture and/or licensing partnerships. One vehicle manufacturer mused that their new link with a Japanese vehicle manufacturer could possibly raise technical and engineering skill issues for them. Two other vehicle manufacturers had overseas production alliances with vehicle manufacturers in China, and another in India. *"Importing goods manufactured overseas under licence*

*emphasizes logistics issues such as routes, legislation, insurance, timing, goods handling/preparation and storage,"* commented one respondent.

A new Chinese joint venture raised issues about products and: *"...resourcing projects which are very sophisticated in the way a job is managed."* They were receiving from the Technology Innovation Centre the kind of technically advanced help they needed, which was not solely focused on manufacturing.

For another vehicle manufacturer, their joint venture for car production with a Chinese manufacturer highlighted: *"...development needs related to cultural differences between China and the UK."*

### 2.3.2 Intra-group links

Two companies highlighted intra-group links which had skill impacts. For a vehicle manufacturer, their links with European sister companies concerned harmonization across the different parts of the group:

*"We are looking at pan-European skills acquisition across plants and common skills harmonization. For example, at manager level development programmes will take place at a European source to achieve standardization, a common philosophy. Production and maintenance people will have a common European centre to learn/share common skills and can go into plants and pass knowledge on as 'local trainers.'"*

A 1st tier company was striving to embed the Toyota Production System across the group, so their links with sister companies were highlighting their own skill needs. They had an ex-Toyota manager who was helping them to improve.

### 2.3.3 Sales links

For one 1st tier, sales and distribution changes had skill implications for their business as they were centralizing sales and distribution in Europe and needed to improve these skills.

A vehicle manufacturer commented that there were issues for them about quality control of dealer training, arising through their links with national sales companies that represent dealer networks worldwide. *"Changing products and facelifts exert skill and training needs"* they commented.

Another vehicle manufacturer also noted the increasing importance of having more control over dealership training and its standards. They had established a school to do skill training for dealerships and organizations that run off these and were doing part of the training themselves. *“We want to improve sales delivery, recruitment of sales managers, product knowledge, understanding of the sales processes, and are looking at emotional issues”* they asserted, adding: *“We need to understand this concept.”*

### 2.3.4 Customer links for product development

Their links with vehicle manufacturers had skill impacts for a 1st tier company engaged in engineering consultancy. Issues concerned project management competences, and technology (and associated skills) for transferring data between customer and supplier. They also needed to keep a close watch over their competitors.

They commented:

*“We work closely with some OEMs and have some of their engineers on our site. We have to be good at managing projects that are internationally based. There is a key issue about transferring data over to them and what software to use e.g. Catia, Pro-E etc. I can’t say about the future until we know what our competitors are offering in the marketplace. We mustn’t be seen to fall behind.”*

### 2.3.5 Customer links for supplier development

Surprisingly, perhaps, only one company – a 1st tier – indicated that their involvement with a customer on a supplier development programme had skill implications for them. In their case, involvement in the Toyota supply chain development programme (i.e. TEAM) helped their engineers improve their cell working through Toyota transferring their knowledge and expertise.

## 2.4 Skill issues influencing sourcing outside the UK

Survey participants were asked whether there were any issues about skills or personnel availability which influenced their company in the sourcing of products from outside the UK rather than from UK suppliers. Nearly all respondents commented on the reasons for their decision to source

overseas and compared UK suppliers with those overseas. Only two companies – a vehicle manufacturer and a 1st tier – identified any issues for their own skill base. This was certainly because:

- The supreme rationale for sourcing overseas was to obtain materials and components at lower cost than UK suppliers could provide: 13 of the 25 surveyed firms overtly made this point.

Countries like China, Taiwan and India, and also east Europe (e.g. Poland) were singled out.

The only company that was considering re-sourcing to the UK was a vehicle manufacturer with higher labour costs in their country of origin than in the UK supply chain, and they also saw the advantage of reducing their logistics costs through avoiding a double journey to import components into the UK only to export the finished products.

The deciding factor was whether UK suppliers would be able to supply components at comparable quality and reliability as their existing continental suppliers. The perception was that UK suppliers do not realize how the quality requirement (in relation to absence of defects) has radically increased and are lagging behind in capability.

Issues about quality and reliability were prioritised by other firms, too, and it was stressed that suppliers must be able to supply:

- *The required products or materials, to the right specification.*
- *In the right volumes.*
- *At the right quality, and*
- *Meet the required (tight) deadlines with guaranteed reliability.*

In certain cases, too overseas sourcing from specified suppliers was dictated by the customer.

Table 2.1 sets out the spectrum of issues about sourcing overseas. Most of these relate to perceived limitations in the UK supply base, but various issues were noted by a vehicle manufacturer and a 1st tier concerning their own limited in-house capabilities. Language problems were a central factor among these.

**Table 2.1: Issues for sourcing overseas rather than from UK suppliers**

Issues for sourcing overseas	VMs	Number of firms 1st tiers	SMEs
<b>In-house issues:</b>			
We have limited foreign language skills	1	1	0
We have limited cultural knowledge of overseas firms	0	1	0
Difficult to identify suitable overseas suppliers	0	1	0
<b>UK supplier [skill] issues:</b>			
Issue/question mark over UK suppliers' quality	3	0	2
Suppliers need capability to supply in right volumes	1	1	0
Suppliers have limited foreign language skills	1	0	0
Lack of good welding/machining/robotic skills here	1	0	0
UK suppliers unable to manufacture productively	1	0	0
Suppliers must provide delivery reliability/to deadlines	0	1	0
<b>Other issues:</b>			
We can obtain lower costs by sourcing overseas	3	7	3
Have to go overseas to obtain right materials, products	0	3	1
Single sourcing in Europe, our plants mainly outside UK	1	0	0
Customer specifies overseas sources	0	2	0
The euro is a factor re exchange difference	1	0	0
Want to re-source to cheaper UK suppliers if quality OK	1	0	0
We use UK suppliers where JIT applies	1	0	0
We use UK suppliers for right hand drive components	1	0	0
Not applicable/no response	1	3	1

Cases: 7 vehicle manufacturers, 11 1st tiers, 7 SMEs.

Multiple responses were possible.

## 2.4.1 Issues for international versus UK sourcing

### (i) Language and cultural knowledge

The cost and global competitiveness advantages of overseas procurement mentioned by a large number of respondents lend weight to the complex point made by a 1st tier about the problems of sourcing overseas:

*“It is not easy for us to source products from overseas due to cultural, communication and time barriers. If I wanted to buy products from Taiwan, for example, we have no-one with links into Taiwan or with the language and cultural knowledge. Also we can't identify companies that are suitable to do business with.”*

Pertinent issues were made about the limitations of UK suppliers which affected their success in obtaining business from overseas based vehicle manufacturers. The capability of UK suppliers to do business in the language of their prospective customer was a key issue for one multi-national group:

*“UK suppliers struggle with anything that is multicultural and foreign and have difficulty in adopting a global view. They don't appreciate the implications of supplying a customer that is multicultural. For example, UK suppliers want to send quotations in English not [our group's main language] whereas other suppliers, e.g. German and Spanish, would send them in [the required foreign language].” Also, for process surveillance documentation (i.e. key quality control data - what is checked, when, and how): “A UK supplier would want to send this in English not [our group language] to one of our group's overseas plants. They must send things in a foreign language if they want to get business overseas.”*

### (ii) Overseas purchasing decisions and single sourcing

Another issue concerned the centralization of purchasing decisions on the continent, and the practice of single sourcing. This enabled the group to reduce their investment costs in tooling, as well as their logistics (supply) costs. Suppliers had to be able to supply to all the group's plants, so the ability to supply in the required volumes was clearly an issue for small UK suppliers. As the group had more plants outside the UK than in the UK, UK suppliers were also at a disadvantage because it would cost more to transport components from further afield than from the continent. The exceptions involved Just-in-Time

delivery (such as bumpers, seats, tyres and wheels) when a local supplier was generally the preferred solution, or when there was an issue about right hand drive components. Clearly, the comparative size of the UK market was also an issue.

### (iii) Issues for re-sourcing to the UK

Encouragingly, another overseas group had decided that, where practicable (and quality was on a par with existing European suppliers), purchasing would be re-sourced to the UK because it was cheaper than the group's existing European manufacturing and supply base. This meant that the group would no longer import components to build systems to export, and they could supply finished goods into the UK – their 3rd largest market – from closer at hand.

It is worth bearing in mind that the crucial point here is that:

- Re-sourcing to the UK will occur where the quality and reliability of UK suppliers is comparable. This represents an opportunity for UK suppliers, but only if they prove to be of the right calibre.

Problems in relation to the inferior quality of certain components from UK suppliers had at some time decided another overseas vehicle manufacturer to re-source a part of their UK purchasing to Europe, and they did not seem to have reversed that decision.

### (iv) Issues about fabrication skills

Issues about fabrication skills were uppermost for a further vehicle manufacturer. Cost was a key factor in their sourcing from low cost countries like China and India, and currency exchange rates were a deterrent in terms of exports to Europe, but production skill deficiencies in the UK were also significant. They were adamant that:

*“If we had skills here to enable firms to manufacture productively we wouldn't have to go overseas because of the cost of the product. There is a lack of good welding skills here (fabrication skills). If I could get good skills in fabrication and automation I could save a packet. This is the best place to do fabrication and logistics. We have fabrication suppliers here who are buying from Poland. We have no-one who can programme robot welders, and a lack of machinists.”*

A range of pressing and ongoing concerns arose in this section in relation to market changes, alliances, and sourcing. Many of these issues and skill needs will reappear in later discussions on changing competences and skill gaps. It is already clear that:

- Firms were keen to embed change as speedily as possible to reduce their operating costs, improve the performance of the whole workforce and compete successfully in the global economy.

The following sections now look in some depth at how these concerns translate into changing competences and skill gaps, commencing with an analysis of the occupational structures of the 25 surveyed companies.