

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

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## EXECUTIVE SUMMARY



### 1. Key research questions

Research into the automotive supply chain in the West and East Midlands was carried out for Skills4Auto by BCT Research Associates (BCTRA) in order to inform Skills4Auto's strategic action by improving the understanding of skill, training and best practice issues. A questionnaire survey of 25 companies was conducted between September and November 2004, comprising seven vehicle manufacturers, eleven 1st tiers and seven 2nd tier SMEs, representing a range of production activities and locations across the West and East Midlands.

Key research questions concerned:

- How are people's jobs changing; what is driving those changes; and what knowledge and expertise is needed to operate effectively?
- In which occupations do skill gaps occur, and what specifically do they involve?
- To what extent are leadership and management development perceived to present challenges for individual companies, and for their suppliers?
- What kind of training activity occurs? Are there any strengths or shortcomings? And is there any training they cannot provide or access? If so, why?
- How do local suppliers compare in relation to global best practice, and what do they need to do to embody best practice?

### 2. Business characteristics of the surveyed firms

The 25 companies employed almost 31,000 people overall, of which about 5,000 were in the 1st tiers, and nearly 500 in the SMEs. There was substantial overlap in size, since the smallest vehicle manufacturer – a niche, low volume producer – employed as few people (50) as the smallest 1st tier and less than the largest SME (149), while the largest 1st tier employed as many people (1,650) as the middle-range vehicle manufacturers. The annual turnover of the 1st tiers

averaged £74.2 million, though 2 small UK-owned firms reported figures under £10 million, roughly comparable with the largest turnover of the SMEs, whose average was £3.6 million.

Turnover and employment trends varied, with 3 vehicle manufacturers increasing their turnover and workforces, and others reporting a mixed picture, stability or workforce decline. Only one 1st tier was experiencing a turnover downturn. Six were enjoying increased annual turnover though in 5 cases their workforces were shrinking, mainly due to cost reduction strategies via process improvements and greater productivity and efficiency. Where turnover and employment were static or decreasing, it was because contracts had ended and not been replaced by new business, some contracts had been re-sourced to overseas suppliers, or (in the case of certain forgings and castings) were terminated due to technological obsolescence. A number of 1st tiers saw no option but to transfer [more] production abroad if they could not reduce their costs sufficiently to meet the price reductions their customers demanded.

No SMEs reported a downward trend in turnover or employment, and the trend was largely upwards. But this was not necessarily the picture across Midlands SMEs since firms that were more buoyant were probably more willing to participate in a skill and training survey. The interviewed SMEs included some highly assertive, sales-oriented, well organised and innovative firms succeeding in generating new business to offset lost work; picking up work as other SMEs closed down; or, in one case, offering better services and investing greatly.

The reliance on automotive and other transport-related sectors averaged 96% among the 1st tiers, but only 61% among the SMEs. The oil industry, electronics, furniture, construction and defence equipment were growing non-transport markets. The SMEs also had a more diversified output within the sector than the 1st tiers. This included parts for cars and vans but also for motor sports, off-highway, aerospace, marine, rail, military vehicles, and leisure motorcycling.

### 3. Skill issues for market change, alliances, overseas sourcing

Concerns that were highlighted by firms in relation to market change were generic issues that were exacerbated by global competitive conditions. Key concerns related 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, and*
- *Recruiting suitable employees.*

The two key drivers were the pressure to squeeze out more costs, and keeping at the forefront of technological advances. There was a clear recognition of the role of 'soft' skills like negotiation, customer-supplier relationship building, communication, and networking across businesses. Leadership and 'soft' skills were crucial to motivate people to perform at their best, improve productivity, and so increasing business competitiveness.

Most vehicle manufacturers possessed or were developing production links in the UK or overseas which exerted skill issues, as did 4 1st tiers, but SMEs appeared to have few formal links. Among the vehicle manufacturers and 1st tiers, alliances exerting skill impacts 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, and/or*
- *Customer links relating to supplier development programmes.*

Only two companies – a vehicle manufacturer and a 1st tier – identified any skill issues for sourcing products from outside the UK rather than from UK suppliers. This was because:

- Instead of being skill-related, 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. But one vehicle manufacturer was considering re-sourcing to the UK to save on logistics costs in importing parts that were exported as finished systems. The deciding factor was whether UK suppliers would be able to supply components at comparable quality and reliability as their existing continental suppliers. Their 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.*

Issues raised by suppliers about sourcing from overseas included cultural, communication (language) and time barriers, and finding firms to do business with. The capability of UK suppliers to conduct business in the language of their prospective customer was raised by an overseas-owned vehicle manufacturer where central purchasing decisions and single sourcing occur, as suppliers need the resources and language capability (verbal and documentation) to supply to all their plants if they are to win business even from the local one. A vehicle manufacturer raised the problem of insufficient fabrication skills in the UK, in welding (particularly programming robot welders), and machining.

### 4. Occupational structures

A decision was taken by Skills4Auto and BCTRA that, rather than using the Standard Occupational Classification (SOC), a more definitive representation of the actual occupational groups in the automotive supply chain could be achieved.

The following revised classification fitted quite well, namely:

- Directors and Senior Managers.
- Manufacturing Operations.
- Technical, Design and Engineering, including Maintenance.
- Purchasing.
- Receivals, Stores and Despatch, Supply Chain Logistics.
- Quality.
- Systems and IT.
- Sales and Marketing.
- Finance and Administration.
- Human Resources, and
- Training.

The relative sizes of each occupational group varied among vehicle manufacturers and suppliers but Manufacturing Operations always comprised the largest group. In the SMEs, Directors and Senior Managers were the second largest group, but in the vehicle manufacturers and 1st tiers it was Technical, Design and Engineering. Among the vehicle manufacturers Sales and Marketing, Finance and Administration and Human Resources were larger than among the suppliers. Firms, notably SMEs, were least likely to have a separate Training department.

Perceptions among their customer base of a lack of specialist expertise among SMEs' Directors and Senior Managers were confirmed by the evidence for multi-functionalism in this group, as they were also likely to take responsibility for Sales and Marketing, Financial Management, Quality, and/or Manufacturing Operations. This lack of specialist competences was seen by some as a factor in smaller mixed 1st/2nd tiers' and SMEs' perceived problems in implementing lean manufacture in that they had insufficient resources or specialist knowledge to do this.

## 5. Drivers for changing workforce competences

To understand the impetus for changing skill needs, respondents were asked to rate the significance of various factors in driving changes in the skills and knowledge that people need to do their jobs. The general consensus was that:

- Cost reduction and lean manufacture constituted the primary change drivers as they were 'very significant' to 17 and 15 firms, respectively.

Cost reduction and lean manufacture were inter-related concerns reflecting the need to instil new ways of working and motivate everyone towards the same goals. They were evident in the search for greater production efficiency, the need for multi-skilling on the shopfloor, outsourcing and other organisational changes involving the movement of certain office functions, and more liaison between different divisions.

Other key drivers were:

- *Getting new products or changed products onto the marketplace, and/or positioning themselves at the leading edge of new technology.*
- *Greater customer service and changing customer requirements, which were particularly significant drivers among the SMEs, and*
- *Competition.*

Fierce competition was faced by all firms, but suppliers' comments clearly confirmed that:

- They found competition "very severe", were concerned about "keeping in business" and were affected by the "loss of work to low cost competitors".

Getting products onto the marketplace quicker than competitors was crucial, and quality and efficiency improvements were viewed as a major element of achieving that competitive edge. For the vehicle manufacturers, catering to the end-customers' changing and individual tastes and quality and reliability expectations was vital for competitive models and features. The SMEs were also particularly sensitive to the skill impacts of improving their ability to serve their customers, and responding to changing customer demands, not just in relation to technological, specification and materials changes to the components supplied, but also including the frequency, sequencing, packing, labelling and traceability of that supply.

Overseas linkages such as production alliances and a knowledge of overseas manufacturers in order to win their business were not particularly strong drivers for skill changes overall. Understanding global economics was a major concern

for one vehicle manufacturer in relation to joint venture partnerships. Some suppliers, including SMEs, were keen to form new links overseas, expanding or diversifying their customer base, outsourcing the manufacture of components to low cost countries or establishing their own plants. Overseas links accentuated limited skills in languages, cultural knowledge, and business procedures.

Although e-business and PC and software changes had few skill implications, there were signs of their increasing significance in relation to deliveries, e-auctions, design and technology advances and communications, financial dealings such as e-billing, and internal systems.

Meeting the increasingly stringent emissions standards was an important consideration, notably among the vehicle manufacturers, including limiting noise from electronics (electro-magnetic interference); lowering emissions from furnace operations; and design to achieve reduced engine noise. Recycling was of moderate significance for the recycling of scrap, 'cradle to the grave' product traceability and the impacts of the End of Life Vehicles directive.

## 6. Changing skill needs

Indications about changing skill needs are that:

- Their Directors and Senior Managers were considered by almost one quarter of firms (6) to possess limited leadership abilities. But people at all levels needed to demonstrate strong leadership and management capabilities, including team leaders in Manufacturing Operations, in order to take responsibility for driving changes to ensure more efficient and productive working.

The most prominent concern, though, was that:

- Inadequate process skills occurred among Manufacturing Operators, as well as Technical, Engineering and Design personnel (over half of all the surveyed firms raising this issue). Process knowledge was also needed in other occupational groups such as Sales, Purchasing, Quality, and even Finance and Administration.

Recognition was growing of the crucial importance of possessing 'soft' skills, including communication and personal and relationship skills for building sound relationships with

partners, customers and other stakeholders. Communication skills were important for Manufacturing Operators when cell working brought customers in to survey work in progress.

Improved team working was a fairly prominent need in Manufacturing Operations due to cell working, but also increasingly important, too, in Stores and Despatch to deal efficiently with the increased frequency of deliveries required by customers upping their Just-in-Time demands and their more detailed documentation, labeling and packaging procedures. But limited team working skills were most marked among Directors and Senior Managers (11 firms citing this issue).

Inadequate IT skills were an issue in most occupational groups, including Senior Managers. In Technical and Engineering functions it tended to relate to specialist advanced software for product design and computer simulation and transferring data (including drawings) to customers and suppliers. Data storage, ordering, invoicing and billing were also mentioned, affecting diverse occupations such as Stores and Despatch, Purchasing, and Finance and Administration. Limited IT skills were particularly significant in Manufacturing Operations due to increasing automation, statistical process control, inspection techniques, and the recording and analysis of performance data. About one quarter of those surveyed considered that their existing Systems and IT staff were limited in their existing skill base and commented on their difficulty in keeping up with technological changes.

Firms were now so lean that there was little or no cover for trainees. Lack of time to train affected all occupations, but particularly Technical, Design and Engineering personnel (10 firms), and to a lesser degree Manufacturing Operations, Quality, and Stores and Despatch. Upskilling older workers was a factor particularly for Manufacturing Operations. Problems were also encountered in finding suitable recruits when the labour pool had shrunk.

### 6.1 Changing skill needs for Senior Managers and Directors

Senior Managers and Directors are senior change agents in their company, so it is crucial that they demonstrate leadership and can manage change, motivate everyone in driving down costs and improving their performance, and inspire them to attack this innovatively. They handle increasing business

complexity in operating successfully on a global basis and implementing any changes to products, processes and systems in order to meet customer expectations.

The most frequently raised skill gaps among this group were in:

- *Team working (11 firms).*
- *Personal and relationship skills (8).*
- *Language skills (7).*
- *Leadership, communication, and IT and PC skills (6 each).*

There was general accord that better team working abilities were needed, and this was even more important than strong leadership and management competence. Also prominent was the need for 'soft' skills like personal and relationship and communication skills, ability in foreign languages, and IT and PC knowledge, which was particularly poor among this group.

## 6.2 Changing skill needs for Manufacturing Operators

Technical expertise in processes and equipment, and a knowledge of materials are fundamental competences for the shopfloor, also the ability to move on as these change. Manufacturing operators are key to enabling the business to meet more stringent customer expectations, and to reduce the cost base through productivity, quality, and reliability improvements. It is increasingly crucial to engage their active input to contribute innovatively their ideas to improve. The ability to work well in teams is particularly important with regard to cell working. Multi-tasking capabilities are sought to enable machine downtime to be used productively. Indeed, the operator's role is increasingly a more responsible and complex one, with a growing need for a higher calibre of employee. A striking point, however, was that:

- This was the only occupational group to register skill needs of every type.

Chief among the gaps were:

- *Process, technical and production skills (15 firms).*
- *Basic skills (8).*
- *Team working (7).*

Process and related skills were most notable among the 1st tiers, reflecting the changes occurring in equipment and processes, and a greater focus on quality improvement. One third of all firms also flagged up their basic skills inadequacies and limited IT and PC skills, also deficiencies in team working and communication skills. Health and Safety concerns were fairly prominent. Improved leadership and management competence was particularly relevant to team leaders. Issues were raised by almost one third (7) about the need to upskill older Manufacturing Operators, though outdated skills could occur at any age, such as the fast pace of change. The lack of suitable training, notably in fabrication, was a factor for around one quarter (6), including cold forging, welding, and robotic skills. Lack of time to train, cover, and the cost of training were barriers. Some reluctance to train was reported.

## 6.3 Changing skill needs for Technical, Design and Engineering

Engineers are at the forefront of innovation and must keep at the leading edge of technology as it advances at a furious rate. Innovation is not solely about product differentiation in the marketplace but also through helping to maximize profits and reduce costs by being innovative in the design of products for/and manufacturing processes, by applying lean principles and quality standards and being aware of incoming environmental legislation.

Strong computer literacy in advanced software/programming are paramount, including for design data transfer between customers and suppliers. A sound knowledge of capital equipment, processes and materials is important to convert customer requirements into products or components, to meet, or exceed, customer expectations and give more choice and better options. Dealing with colleagues and customers as well as suppliers needs good communication and personal and relationship skills. But a key finding was that:

- For around half (13) of the surveyed firms, process, technical and production skills were not sufficiently advanced among Technical, Design and Engineering staff, and over one quarter (7) highlighted their deficient technical and design skills.

Limitations were particularly prevalent among the 1st tiers.

#### 6.4 Changing skill needs for Purchasing

The Purchasing function has a primary role in keeping business costs down by sourcing components and materials at the best price. This places even greater significance on good communication, negotiation and relationship building skills. The geography of sourcing is increasingly global, since cheaper supplies are more likely to be found further afield (for example in the Far East or India). The possession of overseas knowledge has therefore risen in importance, not just of suppliers and foreign language skills, but also of packing and shipping, import/export regulations, and the specific data requirements of foreign countries. However, there can be a dichotomy between low-cost supplies sourced at great distance, and increased transportation costs, as well as the ability to closely monitor suppliers and get involved in supplier development, if these are at long distance.

Purchasing staff obviously need a good technical/engineering background as they must understand the technicalities of the parts and materials they procure; have a sound understanding of quality standards and environmental regulations to ensure that parts supplied are compliant and traceable, and of the documentation required from suppliers (e.g. pre-production parts approval – PPAP). They must be IT literate both for data handling and for procurement via internet auctions.

Skill gaps were few in the Purchasing function, particularly among the SMEs. Languages and business planning, as well as process, technical and production skills were raised by up to 3 firms, also limitations in international knowledge. Negotiation skill needs were also mentioned.

#### 6.5 Changing skill needs for Receivals, Stores and Despatch

Where it was not outsourced to partner organizations, the role of Receivals, Stores and Despatch and Supply Chain Logistics has intensified in workload and complexity, is increasingly high tech, requires greater responsibility and organizational capability, and is more pressured in terms of deadlines, data handling and documentation, and the way that parts and materials are supplied. The drive among vehicle manufacturers to embed lean principles and cut costs has intensified Just-in-Time deliveries. Staff require familiarity with electronic integrated management systems. Ensuring traceability is crucial and firms were increasingly moving to the computerized booking in of parts and materials. A sound

understanding of the production process is necessary.

Two distinct levels of competence exist (especially noticeable at 1st tier level). At the lower level, NVQ2 level skills are needed in warehousing, basic IT skills, and adequate numeracy and literacy to cope with the paperwork. At the higher level, people of degree level calibre are needed.

The most prominent skill gaps were in:

- *Team working (5 firms).*
- *IT and PC skills (5).*
- *Process, technical and production skills (5).*

The identification of deficient leadership skills (2 firms) indicates the importance of good organizational ability. In view of the greater requirement for documentation, basic skill needs were highlighted. Being more customer-facing has brought into sharper focus the need for customer care skills and communication skills, and even, in some cases, languages.

#### 6.6 Changing skill needs for Quality

Keeping abreast of world standards – whether in automotive, rail, aerospace or other sectors – and specific customer requirements is an increasingly onerous task for Quality staff given the ever tighter quality expectations associated with the implementation of lean manufacture and the pressure for reduced cost, better performance, greater reliability, and higher output. ISO/TS 16949 and 6 Sigma were particularly mentioned. Some Quality staff were also responsible for environmental management standards and systems. A greater focus occurred on customer service and relationship building for problem identification and resolution, and the need for strong leadership.

Higher quality demands have raised the calibre and qualifications required of Quality staff, whether quality engineers/managers of graduate calibre or lower level personnel involved in quality assurance. The increased expectation for improved reliability and reduced defects has filtered through to SMEs.

The most frequently raised skill gaps for this group were in:

- *Technical and design skills (5 firms).*
- *Process, technical and production skills (5).*
- *IT and PC skills (4).*

Quality staff were perceived to need technical skills in the latest quality improvement techniques, process knowledge (whether of customers, own company, or suppliers), and greater IT literacy associated with more data handling, diagnostics and problem resolution. It is precisely in these areas, though, where firms were most likely to record skill gaps in their Quality staff. The importance of Quality staff having strong leadership skills, communication skills and the ability to build good relationships with customer, colleagues and suppliers highlighted inadequacies in 'soft' skills.

### 6.7 Changing skill needs for Systems and IT

The role of Systems and IT personnel is reliant on the sophistication of the IT system and the extent to which IT is outsourced. Their supporting role covers the spectrum of electronic data handling, including for production and engineering, the transfer of designs and technical specifications, materials resource planning and tracking, internet purchasing, and supply chain logistics. Their role could also require technical authorship of IT and systems manuals. They need appropriate qualifications and experience, as well as communication skills for dealing with colleagues and external contacts.

IT staff also have a more strategic role in relation to improving the firm's business competitiveness through closer attention to high levels of customer service (e.g. through systems integration), similarly supplier development, and better aligned intra-group operations. They may also advise the Board on IT strategy. The contribution of IT to the implementation of lean principles is well understood, by helping to improve efficiency through reducing inventory levels.

The only significant skill gap was specifically in IT and PC skills, as noted by 7 firms overall, particularly SMEs. The responsibility placed on IT staff in their supporting and strategic role underlay some concerns about inadequate management skills. Language skills were needed for intra-group working across European borders. Clearly, their support role in dealing with managers, employees, customers and suppliers underpinned the comments about gaps in communication skills, personal and relationship skills, and customer contact and care skills.

### 6.8 Changing skill needs for Sales and Marketing

Sales and Marketing staff are now operating in a more competitive global market. It is more difficult to make a sale, and they must go about this more innovatively. Keeping an eye on the global competition is vital in order to identify opportunities for product differentiation, communicating these prospects to manufacturing colleagues to translate into workable reality.

Sales people have a role in cost reduction programmes by getting the best possible price from the customer in order to maximize profit margins, so they need good negotiation skills. They must understand the procedures and costs for exporting/shipping and logistics. Their possession of sound technical understanding of their company's production processes and product range is crucial, and environmental knowledge is also needed. In most cases an engineering background is preferable. IT literacy is mandatory where customer scheduling is done online.

Several firms were trying to attract the interest of customers by innovative means. One small 1st tier wiring harnesses supplier offered prototyping, support for the design stage and low cost country sourcing. They could also use their small Euro hub to get business. A forgings SME was giving design and aftersales support to their customers. Two 1st tiers intended to focus on the Sales and Distribution function rather than manufacture, and two vehicle manufacturers were forming closer relationships with the end-use customer, so links with their dealer networks would change.

Limitations were most frequently noted among Sales and Marketing staff in:

- *Language skills (5 firms).*
- *Business planning and development (4).*
- *Process, technical and production knowledge (4).*

Lesser skill gaps mainly relate to deal making, contracts, and financial arrangements.

## 6.9 Changing skill needs for Finance and Administration

Increasing emphasis on the financial function occurs for two main reasons:

- *The tightening financial regulations and controls on businesses, and*
- *The pressure to reduce business costs.*

Firms were looking ahead to new legislation on accounting standards in 2005. Where Finance, Administration and Human Resources are combined into one division staff are burdened by constant legislative changes in dealing with financial and accounting regulations, as well as those relating to employment, pensions and dismissal. IT literacy is important for records and statistics (including the conversion of marketing, sales and production data into business plans), also for online billing. Finance and Administration can help the business reduce costs by making people aware of the cost implications of their decisions and encouraging thrift; by outsourcing some financial and administrative work; or keeping track of investment opportunities and preferential interest rates. They can assist the company in providing good customer service to vehicle manufacturers by helping them to reduce their costs, identifying cost savings in distribution, and in product costs.

The only significant limitation occurred in IT and PC skills (7 firms overall, particularly SMEs). Other minor inadequacies related to 'soft' skills. Better business planning and development skills, process knowledge, management skills, and languages ability were needed. Customer contact and care skills, as well as leadership skills, just crept onto the list of gaps.

## 6.10 Changing skill needs for Human Resources

The workload of Human Resources staff has increased with the weight of legislation on all aspects of employment, such as Employment Law, Health and Safety, and dismissal procedures. Human Resources' responsibility for employee records, and electronic methods of data storage and managing people, means that good IT and PC skills are needed for 'e-HR'. Their traditional role is one of 'hiring and firing' and maintaining disciplinary procedures. Possession of the 'soft'

skills is vital in their role. Their workload also often includes workforce development and learning. There were some indications –of a higher profile role for Human Resources staff among 1st tier suppliers, in recognition that they can contribute strategically to business planning and development.

No major areas of deficiency were noted for Human Resources, though skill gaps featured leadership skills (4 firms). Given the prominence of 'soft skills' among the competences they need, it is surprising to find communication skills, team working and personal and relationship skills among the gaps. It may reflect the need for good employee relations or in dealing sensitively with workforce downsizing. Counselling skills, and a knowledge of best practice in their field would be useful. A better knowledge of legislation was also raised, professional qualifications, and process, technical and production knowledge. Business planning and development also appeared. IT and PC needs reflect the increased use of electronic data – e-HR – including for training.

## 6.11 Changing skill needs for Training staff

The role of Training staff is often one of analysis and appraisal, organization and co-ordination rather than of training delivery since one or two staff cannot cover the spectrum of training needs. Where technical training is conducted in-house, trainers must possess appropriate technical knowledge. A trend was seen towards placing technical training with specialist providers, because functional staff are too busy. Where apprenticeships are pursued in-house, the task is considerable. Locating and organizing appropriate external training provision is a major part of the trainer's role, similarly training records. E-learning was becoming a significant training tool, at least in some vehicle manufacturers, for a wide range of topics. In one case, e-learning was to include 'soft' skills and languages.

Minor skill gaps occurred. Firms saw a need for improved process knowledge, IT skills, personal and relationship skills, better leadership and management skills, and languages. Knowledge was required of e-learning, NVQ syllabuses and training, where to source other courses, training needs evaluation, and improved ability in delivering training.

## 7. Further skill and workforce development needs

Some additional points were raised about skill needs, mainly in the survey participants but also opinions of their suppliers. The priorities were aired for addressing their in-house limitations.

### 7.1 The distinction between leadership skills and management skills

To gauge the level of understanding of the distinction between leadership skills and management skills, the survey participants were asked to give their definitions of these. Their combined opinions yield the following composite definitions:

Leadership skills involve technical knowledge, as well as strategic capability, innovative thinking, setting the vision, business direction and the culture of the organization, planning ahead, managing all resources, and having strong people skills to inspire, motivate and enable them to work towards achieving the business objectives.

Management skills require functional competence, efficiency and good inter-personal and communication skills in the day-to-day tasks needed to run the factory, office and systems, dealing with processes, and organizing and monitoring people so that the business objectives can be achieved.

### 7.2 Skill issues for managers in meeting the business objectives

Key business objectives were headed by:

- *Improved profitability (9 firms).*
- *Increased turnover (7), and*
- *Winning new business, cost reduction, and/or achieving high quality products or components or being best in class (6 firms each).*

Five firms were adamant that there were no skill issues that hindered their managers from achieving the business objectives, and another 18 mainly reiterated earlier points, such as a better knowledge of the marketplace and customers, leadership skills, or improved efficiency.

### 7.3 Challenges for leadership and management development

Asking whether leadership and management development presented challenges for their company produced a resounding 'yes', because:

- 15 firms confirmed that these did present challenges for their company, and only 4 firms asserted that they did not.

Points contributed on the subject of leadership and management development concerned:

- *Cultural, attitudinal and methodological issues (6 firms).*
- *Issues related to lack of time and resources (i.e. business pressures) (8).*
- *Issues for commencing a development programme or training (8).*

Survey participants were subsequently asked about their suppliers, and their responses showed that:

- About half of the vehicle manufacturers, and most of the SMEs, also considered that there was a challenge for their suppliers in relation to leadership development, but virtually none of the 1st tiers were able to comment.

Issues raised by vehicle manufacturers and 1st tiers were often obliquely relevant to leadership and management development, as they tended to complain about suppliers' deficient quality and delivery reliability and poor customer service, which were clearly attributed to inadequate business planning. Some considered that suppliers need to do leadership and management training. Others were aware that they could do more, themselves, to help their suppliers develop the necessary competences, though the relationship between customer and supplier – which was usually not one of amicable and close partnership – was generally not conducive to this. Various points concerned the lack of resources among their suppliers to effect change. The main deduction was that:

- Firms were too small, and/or their workforces and management structures too lean, to enable them to fulfil their obligations to their customers.

#### 7.4 Skill issues in working towards accreditation

Eight firms were currently working towards or maintaining various standards or accreditation that exerted skill needs. The standards which were most frequently cited were:

- *The automotive industry standard, ISO TS 16949 (5 firms), the environmental standard, ISO 14001 (5 firms), and the occupational Health and Safety standard, OSAS 18001 (3 firms).*

Issues particularly concerned:

- *Understanding and attaining the competences to work towards a specific standard.*
- *Identifying procedures the business needed to achieve the accreditation.*
- *Transferring that knowledge from the 'process owners' to the rest of the company.*
- *Up-to-date knowledge and best practices to maintain those already reached, and*
- *Having the right skills to audit those that were in place.*

#### 7.5 Priorities in addressing current and evolving skill needs

Their main priorities for addressing their current and evolving skill needs were currently:

- *Process skills (9 firms), including welding, tube manipulation and cold forging.*
- *Quality, continuous improvement, lean manufacture and cost reduction (9 firms).*
- *Leadership development, particularly at lower levels of responsibility such as team leaders, supervisors and junior line managers (8 firms, though few SMEs), and*
- *Engineering and design/product development skills, including lean product development to enable shorter time-to-market (6 firms).*

Less frequently raised priorities included:

- *Basic skills: numeracy, literacy, communication, and operative.*
- *New and/or advanced technology, including materials testing and laser technology.*

- *IT, software and electronics skills, including customer-supplier interfacing.*
- *Succession planning by an SME Managing Director nearing retirement.*
- *International knowledge and expertise: learning about global economics.*
- *Marketing, distribution, sales and retail, including (for vehicle manufacturers) more control over dealership operations, and (for an SME) modern sales techniques.*
- *Other points on training, such as the most cost-effective delivery method.*

## 8. Training and workforce development

The vehicle manufacturers had written training and workforce development plans. The 1st tiers had written training plans, matrices of training needs and courses undertaken, or had prepared training plans for obtaining certain standards or accreditation. But 3 SMEs did not have a written training plan.

Four 1st tiers revealed that they did not have a budget set aside specifically for training and workforce development, nor did 3 of the SMEs. This usually meant that any training expenses were deducted from the central budget.

Data on the values of their training budgets is rather scant.

Averages of the known values are:

Vehicle manufacturers:	£2 million.
1st tiers:	£57,000.
SMEs:	£19,000.

### 8.1 Qualifications held and in course of study

Masters degrees that people in vehicle manufacturers and 1st tiers were currently working towards were all MSc degrees in engineering and MBAs in business administration. No personnel among the SMEs were studying for a higher degree and only one was working towards a first degree.

Few first degrees were held across the SMEs - only 7 in the 7 firms, all in engineering. Indeed, engineering subjects were most prevalent among first degrees held and in course of study in all firms, secondly, degrees in management, particularly among the vehicle manufacturers.

Among business and technical diplomas and certificates held and in course of study HNCs and HNDs were prominent, mainly in technical subjects and qualifications relating to functions like accountancy, purchasing and supply, and personnel and development. Certain subjects, such as quality and health and safety, were little in evidence.

Apprenticeships were most prolific in the vehicle manufacturers, one providing around 50 Modern Apprenticeships a year. A distinction was drawn between adult apprenticeships and young people's apprenticeships. Graduate apprenticeships were only mentioned by the vehicle manufacturers, while the SMEs tended to emphasize City and Guilds and NVQs, citing subjects like IT, joinery and customer service, as well as production.

Among the vehicle manufacturers possession of NVQ2 and 3 was most common, compared to NVQ 1 and 2 among the SMEs. Subjects were wide-ranging, though among the SMEs they mostly related to shopfloor competences. An SME employee studying networking skills was the only 'soft' skill noted.

## 8.2 Training and providers used

Dominant features of training activity using a range of providers and their own staff were as follows:

- Training activity was particularly prolific for Managers (including Senior Managers and Directors), Manufacturing Operators, Technical and Engineering and Quality staff.
- Much of the training for Manufacturing Operators was process or materials related, an important exception being team leader training.
- Much of the training for Engineers related to advanced technical, production/process and design/software skills. Key exceptions were training in 'soft' skills for customer facing personnel e.g. in Development, and in leadership, management and team working.
- Training for Stores, Warehouse, Despatch and Supply Chain Logistics personnel tended to be practical and functional, including IT/software tracking and handling systems.
- Training for Quality centred on quality tools and techniques, and included other activity such as problem resolution, lean manufacture, leadership skills, and processes.

- Training for Finance and Administration covered a range of functional competences, legislative knowledge (e.g. financial regulations) and IT.
- Human Resources received training in employment-related skills such as new legislation (notably Employment Law), discipline and dismissal procedures and recruitment.
- Little training activity was mentioned specifically for Purchasing, IT and Systems, Sales and Marketing, and Training staff.

Definite plans revealed by 14 survey participants for new courses and training topics starting in 2005 bore strong similarities to existing training – for example in IT, NVQs, leadership training (though with less emphasis on team leaders and supervisors), and technical and process skills. Continuing and additional plans included more training via in-house or intra-group training facilities, including management and staff appraisal and development, e-learning, a European learning network, training in production processes like cold forging, and training for Purchasing staff at an intra-group academy.

Conceivably:

- There will be a growing need for in-house process training provision as external organisations fold or cease to provide training because it is uneconomic to do so.

Existing and proposed leadership training identified various providers among Government agencies, specialist and business associations, HE and FE institutions and commercial providers, but was almost wholly absent among the current and future plans of SMEs.

Several suppliers, and a number of vehicle manufacturers, had already embarked on training in continuous improvement and lean principles and new training plans were specially marked among the vehicle manufacturers (one proposing a lean centre of excellence), though limited among suppliers.

### 8.3 Strengths and limitations of the training provision

Individuals identified 5 main strengths of their training activity:

- *They ensured that any training fitted the business objectives/needs.*
- *The mode and suitability of training that was delivered internally.*
- *The quality of the training done by internal trainers from within the company.*
- *The personal development and promotion opportunities it gave to individuals, and*
- *The use [and calibre] of specific external training provision and support.*

The recurring themes among limitations that firms encountered were:

- *The lack of finance for training, or its cost (7 firms, though none were SMEs).*
- *Time pressures, and/or the inability to cover for people while they trained (7 firms).*
- *The unsuitability or inadequacy of the content of the training undertaken or available (9 firms, mainly among the 1st tiers and SMEs).*

Other points were:

- *Issues about inadequate training materials and delivery (mentioned only by suppliers).*
- *Problems in locating suitable training, or in completing courses (noted only by the SMEs).*
- *Issues about the eligibility of people (trainee selection), appraisal of training needs, and evaluation of the training undertaken (though not raised by any SMEs).*

### 8.4 Training needs, barriers and support issues

Those who named specific training that they had not been able to do indicated that:

- Most of the training they would like to do was for Manufacturing Operators in processes, equipment and materials, and multi-skilling for production cell working. Problems arose in getting people to train, including out of work time, and locating suitable, affordable training within a reachable distance.

Several vehicle manufacturers and 1st tiers stated that there was no training that they could not do but they might have to proceed more slowly than otherwise. This raised an important issue:

- The need for speed to get as many people trained in as short a time as possible, because it was holding back their ability to change, and therefore limiting their competitiveness.

This applied, for example, to welder training, and also to leadership training.

Managing change was a topic that one vehicle manufacturer thought their Directors and Senior Managers needed training for, but could not fit this in. Indeed, comments about changes in the business environment and the changing competences people need could indicate that:

- Training in how to manage change could have much broader relevance for the industry more generally.

Among the issues about funding and training budgets appeared 4 concerns or suggestions:

- *The negative effects of existing funding ceasing imminently, not just on training activity, but in managing expectations among the shopfloor when training ceased.*
- *The case for receiving funding, such as the removal of age-related restrictions.*
- *Funding for a 'floaters' to cover for people while they are training.*
- *Funding to hire someone to do the training they need to provide in-house.*

## 9. Best practice

Questions on best practice allowed an insight into what firms consider represents best practice in their industry and their own businesses, and what they expect or need from their suppliers in terms of their expertise, performance, and customer service.

Nineteen firms highlighted elements of their own best practice. Their points covered:

- *Specific aspects of their production and internal systems (8 firms).*
- *Their ability to meet their customer requirements, mainly in quality, cost and delivery (7 firms, all suppliers).*
- *Training and workforce development (6 firms, mainly vehicle manufacturers), and*
- *Company policies and working practices (4 firms, but none were SMEs).*

However, the SMEs were generally unsure what denotes 'best practice' and a 1st tier also found this difficult due to their insularity. So, it is pertinent to ask:

- What are these firms benchmarking their own performance against? Is it against firms they know rather than acknowledged exemplars? And does the problem of insularity highlighted by a 1st tier supplier reflect a more widespread issue?

### 9.1 Suppliers considered to represent best practice

Suppliers considered by the vehicle manufacturers to represent best practice were mainly in Europe and the UK, also 6 Midlands-based suppliers including seating, engines, steering gear and transmissions. The 1st tiers singled out 4 Midlands suppliers of mouldings, machine tools, precision engineering and coatings, and overseas suppliers mainly in the US and Far East.

The SMEs highlighted mainly customers or major industry exemplars like Rolls-Royce in Derby, BAe, Pratt and Whitney, and Toyota in Derby (the last two for their working practices) and Siemens VDO, Birmingham. They also cited key competitors due to their:

- *Higher volumes.*
- *Cheaper price.*

- *Greater proximity to customers.*
- *Service offered to customers.*
- *Quality, efficiency, and automation.*

### 9.2 Comparing local suppliers with best practice firms

Both vehicle manufacturers and 1st tiers were asked how their locally based suppliers compared with these best practice exemplars. Among the 5 vehicle manufacturers and 6 1st tiers that gave an opinion:

- The results are rather damning, as numerous deficiencies were identified, and even where good practice was identified reservations were still expressed.

Issues raised about locally based suppliers were:

- The lower quality of their products and components (4 firms), and/or limitations in quality checks and process surveillance (2), issues noted by vehicle manufacturers.
- Their inability to meet delivery deadlines (4 firms, mainly vehicle manufacturers).
- A less professional approach or lower managerial ability was evident (4 firms).
- They were less focused on customers, or their customer service was poorer (3 firms).
- They were less proactive in implementing best practice or continuous improvement (3 firms).
- Although some did good work and/or were reliable, there were uncertainties about their financial soundness, or they were more pricey than suppliers overseas.

### 9.3 Expectations in relation to certain key criteria

Vehicle manufacturers were asked to rate their 1st tiers and, separately, their lower tier SMEs, to indicate the level of their expectations of suppliers in relation to certain key criteria comprising different elements of best practice. Similarly, 1st tiers were asked to provide a rating of their expectations of their own SME suppliers, while the SMEs were asked to use these criteria to rate themselves against best practice exemplars, or against their key competitors. The key criteria were:

- Quality, Cost and Delivery (QCD).
- Customer service.
- Design expertise.
- Development collaboration.
- The use of e-business.
- Problem solving/rectification.
- Project management ability.
- International experience, and
- Adaptation/flexibility/mirroring the changes that the customer makes.

A few firms contributed additional points, including:

- Lean manufacture/principles.
- 6 Sigma.
- Environmental management capability.
- Quick responsiveness.
- Working towards TS 16949

Responses to questions about their expectations revealed some startling contrasts between the expectations of vehicle manufacturers, 1st tiers and SMEs. One major conclusion is inescapable:

- There is a substantial gap between what customers among the vehicle manufacturers and 1st tiers want, and what the SME suppliers (most particularly) believe they have the competences to provide.

But also:

- *The 1st tiers are some way off fulfilling vehicle manufacturers' expectations.*
- *For certain criteria, notably QCD performance, customer service, design expertise, project management ability, and international experience, both the vehicle manufacturers and 1st tiers generally had higher expectations of their direct suppliers than the SMEs did of their own competences. An important exception was development collaboration, where expectations were more in balance.*
- *The ratings that the SMEs gave to their own customer*

*service were generally lower than the vehicle manufacturers' expectations of their 1st tiers and SME suppliers.*

- *Vehicle manufacturers clearly considered it crucial that their 1st tiers were highly competent in problem solving and rectification. They were almost as adamant about its importance in relation to their lower supply chains.*

#### **9.4 Skill needs for best practice in the local supply chain**

Vehicle manufacturers and 1st tiers were asked what their locally based suppliers need to do to embody best practice, and what skills are required. Comments revealed that:

- Vehicle manufacturers' requirements from the 1st tiers are not dissimilar from what the 1st tiers want from their SMEs in relation to more support, reliable delivery, high quality, greater responsibility, and improved flexibility.

Importantly, it was evident among 1st tiers' forceful comments that:

- It is not just an issue about limited capabilities or resources, but some thought that many SMEs also displayed a lack of appreciation of what best practice entails, have a poor understanding of their customers' needs, and are reluctant to implement the necessary changes or to keep the momentum going when they do.

There was some appreciation that certain suppliers face more problems due to their production activity, technology or materials, though vehicle manufacturers and 1st tiers expect all their suppliers to perform to their optimum and display the same level of customer service.

#### **9.5 SMEs' views on best practice firms' advantages and changes needed**

SMEs' comments show that best practice firms or their key competitors were thought to possess certain superior knowledge and capabilities and other business advantages, notably:

- Their larger size gave them more income and people resources:
  - *The ability to recruit more people, and better experienced and qualified ones, including graduates, because they had more status and could pay better.*
  - *Easier retention of the people they recruited.*

- Greater organisational reliability because they were less stretched and people did not have to carry out multiple jobs at the same time.
- Their larger size enabled them to win more business and make more profit.
- They could afford to equip their plants with advanced technology.
- They were better equipped with technological resources, so they were able to:
  - Do more in-house manufacture, and subcontract less.
  - Do their own materials and engineering inspection, analysis and testing in-house, instead of subcontracting this to external engineering specialists.
  - Because they did in-house inspection, analysis and testing, they had a greater knowledge of engineering.

What did SMEs believe they need to do to compete more effectively? Points they raised were to:

- Be more inventive.
- Invest in new technology.
- Cut waste and focus on lean manufacture.
- Offer more added value to their own employees.
- Offer a higher level of customer service, and give more added value to them.
- Focus on getting more customer sales.
- Locate funding to recruit an extra person and develop new products.
- Develop their internal information systems.
- Upskill the whole workforce.

Affordability was raised as a significant barrier to problem resolution. Other issues included organisational limitations, and the calibre and culture of the workforce.

## 10. Further observations and recommendations

### 10.1 Best practice, lean manufacture, and continuous improvement

Firms need to implement lean principles and ensure that they make continuous improvement, cutting costs and reducing time and waste across their businesses in general, not just on the shopfloor. Lower tier SMEs face a particular problem in implementing lean principles due to their lack of resources. They are not investing enough in training and workforce development or new technology, nor doing enough to ensure that they continuously improve, because expectations are continuously evolving.

### 10.2 Meeting customer requirements and best practice expectations

There is an issue for all tiers, including the vehicle manufacturers, of meeting increased and changing customer expectations. There is a danger to suppliers of losing business if they are unable to bring down their prices to the level that their customers want, to prevent them sourcing offshore. They must improve their customer service, invest in technology to improve productivity, ensure speedier responsiveness, and gain appropriate accreditation, such as ISO/TS 16949 and ISO 14001.

In meeting ever reducing Just-in-Time deadlines which entail radically more frequent deliveries, there is an issue of who has the burden of storage to enable firms to meet JIT deadlines. More inventory holding equals more cost, so this is clearly an area for attention to reduce costs further.

There is increasing emphasis on quality improvements in helping to reduce costs because then fewer problems will occur. Some suppliers seem insufficiently aware of how much tighter the requirements have become. Few SMEs appear to attend quality circles. Is there scope for an initiative here?

In the Quality function there is ongoing change in standards and quality tools and techniques due to increased customer expectations of product reliability, endurance and performance, but skill gaps occur, and training is not keeping in step. Quality staff need motivating and influencing skills to get people to change (notably in production and engineering). Some suggested that schools are not teaching about quality and continuous improvement, nor do universities or colleges teach best practice.

Certain engineering and quality skills which are particularly important in relation to reducing faults and increasing production performance are in short supply, namely:

- *Experienced quality engineers, including with an environmental specialism.*
- *Project management engineers, and*
- *Maintenance engineers.*

Project managers' skills are to the fore in relation to problem solving, rectification, and QCD. They must ensure things are done right first time, so no problems can occur, deadlines can be met and project costs kept within budget. Yet the level and availability of project management skills is an issue both among the 1st tiers and SMEs. Maintenance engineers, too, are in limited supply. Training and apprenticeships need to be addressed.

The shopfloor are the key to performance improvement and are best placed to identify innovative improvement opportunities in production areas. But there is a trust issue because people think they will lose their jobs if they implement performance improvements or suggest ways to conserve resources and cut time and waste. But they could lose their jobs if they do not do this, because employers will move production offshore if costs remain high. It is vital to get this message through to workforces. Leaders, including team and line leaders, need to engage workers in assuring that they operate to their optimum. 'Softer' skills like communication, motivational, personal relationship and team working skills are seen as key (though this also applies off the shopfloor, too).

### **10.3 Best practice**

What is 'best practice'? According to certain respondents, this term has become a cliché and its connotations are not fully understood. The issue was raised of a need to define what best practice is, and of achieving consensus on what it entails. For the vehicle manufacturers, best practice suppliers achieve reliable delivery, are financially sound and so on, but what values and abilities within those suppliers underpin this achievement? There may be a need for more education and training specifically on 'best practice,' also the identification of criteria, procedures, standards, and documentation.

Best practice needs to be embedded throughout companies, though certain functions are front line including Purchasing,

Quality, Manufacturing, Maintenance Engineering, Project Engineering, and Design Engineering. Is best practice a part of study for qualifications and in-post training undertaken by these personnel, and by apprentices, as well as managers at all levels? Some implied that it is not.

It is important that SMEs have some best practice exemplars to benchmark themselves against. People need to benchmark their own roles, working practices and individual performances with comparable personnel in other companies, not just looking at companies at a business performance level.

### **10.4 Customer-supplier relationships**

Certain vehicle manufacturers are evidently against getting involved in supply chain development programmes with their suppliers but others are doing it or are about to start. For whole supply chain competitiveness surely the whole supply chain should be developed as one unit? Lower tiers are likely to understand more clearly what they have to achieve, and why, if they have direct contact with the vehicle manufacturer, and see themselves as working for mutual gains. They would also benefit from having direct access to the resources and knowledge of the vehicle manufacturers. Is there a trust issue to resolve between the 1st tiers and lower tiers for this to happen? A vehicle manufacturer stated that promoting trust between customers and suppliers would be a powerful training programme.

### **10.5 Design and development collaboration, and e-business**

It is crucial that firms can keep at the leading edge of change, and invest throughout their businesses, within and outside the design engineering function. It is also crucial for vehicle manufacturers to be able to transfer designs and other development materials to their 1st tier suppliers and that the 1st tiers mirror them in the technical, IT and skill investments they make. This may filter through to the SMEs and therefore poses a question for their own investment and skill needs. A limit to individual suppliers' potential survival, growth and diversification potential could also arise from their lack of experience of product design and development, as distinct from development assistance.

Aspects of e-business include not only design and development, but also communication and information handling of all kinds, as well as purchasing, marketing and selling, billing, and despatch. This presents a training issue as well as a compliance issue in relation to their customers' procedures.

It is important that the whole spectrum of e-business skill needs is evaluated with regard to individual suppliers' expertise as well as whole supply chain competence. SMEs certainly have considerable limitations as regards e-business such as video conferencing; documentation for the traceability of products and materials; materials resource planning; and internet auctions.

#### **10.6 The business environment and the global marketplace**

Managers, purchasing and sales staff, in particular, need more international knowledge. It is difficult to identify firms suitable to do business with. There are also communication and time barriers, and limited cultural knowledge. This is the case even among the vehicle manufacturers. Understanding about global competition, and how to compete globally, is important. Firms need to know how to clinch business overseas, about financial regulations, packing and shipping and so on. Where can they find this knowledge? Is there training of the right kind available? Is there information on potential firms to do business with? Is there help for suppliers to translate documentation (e.g. on production processes) for overseas customers?

#### **10.7 Skill gaps and the supply of suitable labour**

Many issues were raised about skill gaps and the supply of suitable skills. Working practices are changing due to the search to reduce costs and to maximise operational effectiveness. More outsourcing, for example, will alter the competences required by manufacturers. There is a greater emphasis on new legislation and environmental standards. Does appropriate training exist? Do firms need to do more training on health and safety?

The supply of appropriate labour is evidently not being resolved. Many issues concerned problems in recruitment. Attracting the right level and experience of process and technical skills is proving difficult. Issues were raised about unsuitable graduates in the labour pool and about recruiting a suitable calibre of employee straight from school. Certain comments also indicate that gender stereotyping is preventing

young women from entering apprenticeships and working in shopfloor jobs, certainly in rural Derbyshire. There were comments about the need for schools to interest pupils in manufacturing. A higher calibre of recruit is needed for team working in production cells.

The need for better leadership skills was identified not just for senior management but throughout workforces, in Engineering, Quality, and in Manufacturing Operations at team leader, line leader and supervisor level. There was some agreement that it is important for leaders to have business planning skills, though these are skills needed at all levels and functions. Does existing business school or other managerial training instil the right competences? Is it affordable?

A repeated opinion was the need for 'soft' skills like motivation, relationship building and communication skills, in order for leaders to get the best out of people. It may be that additional strands need to be added to existing leadership and management training at all levels (including for team leaders), or new courses established. Possibly firms, more particularly the SMEs, need to be made aware of any new thinking. Consideration also needs to be given to the level of training currently available, as there were some criticisms of the suitability of existing training.

Some awareness was discernible among firms that they could do more to help develop their suppliers' leadership and management competences, but with one well-known exception no firm plans were in evidence. The support agencies could assist.

There was a concern about the declining availability of process training. A vehicle manufacturer said, for instance: "We need to do something to keep process skills alive." Process skills need to be urgently addressed, both on the shopfloor and outside it, including among engineers, purchasing and quality staff. It warrants an examination of the broader spectrum of needs including locally available training on advanced machines, robotics, inspection and testing equipment, advanced software and appropriate IT skills. Good, time-served apprentices who know about milling and turning are hard to find. Why? Toolmakers are in short supply. Even though many firms are closing they do not want to come back into the business. What might persuade them to do so? There is a shortfall in welders who can weld, they do not possess relevant

qualifications like City and Guilds or NVQ, and they lack an understanding of materials. How can they obtain this knowledge? People who can programme robot welders are few. Where do they learn this skill? Machinists are in short supply – good fabrication skills. Why?

Anxieties were voiced about insufficient apprentice numbers: attracting people to do apprentices; issues about few women apprentices; retaining apprentices until finished; graduate apprentices. For NVQ training, the caps on age (25 years) for funding eligibility need to be removed to enable mature people to receive training. Upskilling older workers is also an issue on the shopfloor. Why not tailor apprenticeship training to suit this group?

Does their training equip people to meet the added expectations placed on them? Does training for engineers give them the broader knowledge they need, such as business planning, team working and communication skills? Does current training for Finance staff prepare them for a more integrated business/supply chain role? Increasingly, IT and Systems staff need customer facing skills as well as sound efficiency and business planning. Human Resources staff have acquired a more strategic role in some companies, for example by supporting the Plant Manager in their business planning.

#### **10.8 Issues for training provision and access**

It is vital to train people in numbers, not just ones and twos, and as speedily as possible, or firms cannot respond quickly to changes in the marketplace and be globally competitive. The cost of training is frequently problematic, and funding to enable people to train – or to continue training once started – is a concern. The matter of the suitability, availability and quality of training is an issue, particularly for 1st tier and lower tier suppliers. Is there an information gap? Does it indicate that training is not targeted at SME needs? The eligibility of people to receive funding for their training is an issue. Issues about training materials and the quality of training delivery by their own staff were raised by some suppliers. What can be done to encourage shopfloor employees to train? There is also an issue about training for the trainers, this being relevant to all firms at any tier.

A few cases occurred of in-house or intra-group training or development centres starting up or at the planning stage for

management training, technical training, a purchasing academy, in specific production processes, and lean development. What is the prospect of suppliers both within and outside the supply chain using these? Or at least using the training materials?

What potential is there for establishing other training centres, perhaps as independent entities, or attached to existing institutions or organisations: say, for best practice, continuous improvement, training in 'soft' skills including customer care, or for web-based learning? At least two of these centres were using or plan to use e-learning methods. One was intending to prepare e-learning materials in 'soft' skills. Could these be made available more widely, also in other subjects? What access do suppliers really have to e-learning facilities or materials that their customers possess? Is it appropriate to their needs if they do have access? A skill gap was considered to exist in e-learning methods. What training provision is available to remedy this? Is there a possibility of an e-trainer training course? Are standards in force for e-training?

#### **10.9 Issues for business support**

It is difficult to establish where any priorities might lie due to the many pressing issues which abound, but the following are among primary considerations:

- *Whole supply chain development involving vehicle manufacturers, 1st tiers and SMEs.*
- *Technological investment for SMEs and smaller mixed 1st/2nd tier firms, to reduce their costs.*
- *SME benchmarking of best practice exemplars.*
- *A re-education programme on lean manufacture/best practice to go deeper into the principles.*
- *Process skill training across workforces; address the recruitment of fabrication skills.*
- *Local access to process training, including training on new/advanced equipment.*
- *Project management, maintenance and business planning training.*
- *Training in 'soft' skills: how to engage and motivate workforces to 100% performance.*
- *Training for mature workers including post-25 years training and apprenticeships.*

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

## PREFACE



- *Quality management training combined with environmental management.*
- *International knowledge through training, information and links; including training for Sales and Purchasing.*
- *Development centres: specialist training centres for specific skills/knowledge development and access by all; establish learning networks.*
- *E-learning materials and standards.*
- *Training for Training personnel in training techniques and delivery materials, also up-to-date process knowledge (where relevant).*

Finally, it is vital that solutions to firms' skill needs are found that enable them to manage change speedily. In the spirit of continuous improvement, the support base helps industry adapt to change by continually reassessing and progressing what they do and the methods they employ, and by their positioning at the leading edge of change. In providing the model for continuous evolution the support agencies are well placed to motivate sections of the automotive and engineering sector that believe that a one-time effort will suffice.

### (i) Key research questions

This report presents the findings of a survey of the automotive supply chain in the West and East Midlands carried out for Skills4Auto by BCT Research Associates (BCTRA) from September to November 2004. The objective was to improve the understanding of skill, training and best practice issues among manufacturers in order to inform Skills4Auto's strategic action.

Key research questions included:

- How are people's jobs changing across the whole workforce; what drives those changes; and what knowledge and expertise do they need to operate effectively?
- In which occupations do skill gaps occur, and what specifically do they involve?
- To what extent are leadership and management development perceived to present challenges for individual companies, and for their suppliers?
- What kind of training activity are people undertaking? Are there particular strengths or shortcomings in their current activity; is there any training that companies are unable to provide or access, and if so, why?
- How do local suppliers compare in relation to global best practice, and what do they need to do to embody best practice?

### (ii) The report structure

The report is structured as follows:

- The remaining paragraphs of this preface describe the survey method, the survey participants and their locations.
- Section 1 sets out the business characteristics of the surveyed firms.
- Section 2 looks at skills issues for market change, alliances and overseas sourcing.
- Section 3 presents the data on the occupational structure of firms.
- Section 4 assesses the drivers for changing competences.
- Section 5 presents a comprehensive analysis of changing skill needs.
- Section 6 looks at further skill and workforce development needs, focusing on leadership and management development.
- Section 7 is devoted to training and workforce development.
- Section 8 completes the evaluation of survey responses by focusing on best practice, and
- Section 9 presents some conclusions and recommendations.

A wealth of supporting data is given in the appendices.

### (iii) The survey method

Using a questionnaire developed by BCTRA and Skills4Auto, 25 exhaustive face-to-face interviews were conducted with 7 vehicle manufacturers and 18 suppliers across a wide range of manufacturing activities, employment sizes and geographical locations. Fifteen companies were located in the West Midlands region, 10 in the East Midlands region (see Table A).

The questions were mostly standard for all firms – whether a vehicle manufacturer, 1st tier supplier, or a lower tier small or medium-sized enterprise (SME). An important exception concerned the questions on best practice, where vehicle manufacturers were asked for their expectations of both their 1st tiers and SMEs, while 1st tiers were asked about their SMEs, and the SMEs were asked to rate themselves.

**Table A: Location of interviewed firms**

County	Number of firms			TOTAL
	Vehicle manufacturers	1st tiers	SMEs	
West Midlands	3	5	2	10
Warwickshire	1	0	0	1
Herefordshire	0	0	0	0
Worcestershire	1	0	1	2
Shropshire	0	1	0	1
Staffordshire	0	1	0	1
Northamptonshire	0	2	0	2
Leicestershire	1	1	0	2
Derbyshire	1	1	1	3
Nottinghamshire	0	0	2	2
Lincolnshire	0	0	1	1
TOTAL:	7	11	7	25

In the larger companies, interviews were usually conducted with the Human Resources Manager or Director, or the Training Manager. Occasionally, though, there was no separate Human Resources and Training functions as these were part of other divisions such as Operations. Few Human Resources or Training staff were able to answer questions on best practice in the supply chain, so these often had to be put to the Purchasing Manager, Supply Chain Manager or Quality Manager. To lend even more complexity to the survey, in some cases certain other questions had to be directed at a third individual among the senior management, such as the Managing Director. These included questions on leadership development, Senior Managers’ skills gaps, and key business characteristics such as annual turnover and sales.

In the smaller companies it was rare to find dedicated Human Resources or Training functions due to Senior Managers holding multiple roles. Interviews were usually carried out with the Managing Director or another Senior Manager or Director. Getting the questionnaires completed was in many cases a major logistical exercise, exacerbated by the extreme time pressures that interviewees faced in taking part in a survey that, on average, took 2 hours out of their busy schedule.