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Northern Economic Research Unit

North Tyneside Printing Sector Training Needs Analysis

**Report by NERU for
North Tyneside Council**

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Executive Summary

- The printing sector in this region has a proportionately low level of employment compared to the UK as a whole. North Tyneside provides the location for some 36 print-based firms, which account for only 11% of Tyne & Wear's total print employment. However, this survey indicates that the official data significantly under-estimates the employment size of the sector in North Tyneside.
- Printing has traditionally been based on three distinct but integrated sub-sectors: pre-press (design, typesetting and platemaking); press (printing processes); and finishing (collating, folding, laminating, etc.).
- Within the industry overall, these craft-based sub-sectors, each with their developed systems of training-based entry (mainly apprenticeships), have in recent years moved into the highly competitive, multi-skilled context of computer-based manufacturing. Digital workflows and forms of output are becoming common-place. Computer-based production has reduced lead-times and is necessitating closer and longer-term client relationships.
- Technology is the main driver of change within this industry, bringing opportunities for 'value added' but also intensifying competition. This is likely to result to further restructuring of the printing industry involving closer integration of the print and communication sectors.
- As with the sector as a whole the survey of North Tyneside firms found that technological innovation and market pressures are producing a need for shorter lead-times and lower prices. Businesses are using a number of strategies to cope with the changing market, including, expanding the geographical source of their work, moving into niche markets, and re-orientating the way they market themselves by developing closer relationships with clients and offering added value (for example through offering logistics services) within the process.

- All the survey businesses now have some form of digital work flow which begins in-house on AppleMac computers. Fully-automated digital output is being undertaken by around half the firms.
- Inevitably, this has led to the need for a different skills mix including increased task flexibility on the part of employees in the sector. However, the survey indicates that technological and market changes have not given rise to a skills crises. All the firms interviewed reported that their current workforce skill levels were 'adequate' for most of their requirements.
- Some recruitment problems were identified - relating to finishers, print brokers, and conventionally skilled printers. There is also a need for existing and new workers in the sector to have a more general understanding of the whole printing process.
- Meeting the training requirements identified by the firms is made more difficult because of the lack of locally-based specialised training provision: the nearest print-based college is in Cleveland.

Recommendations for training provision

- (1) A basic introduction to computing** – This will introduce production staff to computer technology. It can be provided by either CLAIT or pre-CLAIT courses which are readily available at local colleges.
- (2) A basic introduction to printing** – This will introduce office and pre-press staff to printing processes and the limitations of their output. There is a problem here with provision as the nearest college is in Cleveland.
- (3) Structured on-the-job training focused on basic NVQ or equivalent standards** – This will give staff a recognised qualification, improving employability. It can be provided by the British Printing Industries Federation.

Contents

1. Introduction	1
2. Background to printing industry	3
2.1 Employment characteristics and company size	3
2.2 The structure and organisation of the industry	4
2.3 Changing subcontract relationships	5
2.4 Technological developments	7
2.5 The changing market and pressures on competitiveness	9
2.6 Conclusions	12
3. Survey of North Tyneside employers	15
3.1 Sample and methodology	15
3.2 Research findings	16
3.2.1 <i>Competition</i>	16
3.2.1.2 Restructuring of the market	18
3.2.2 <i>Sub-contract relationships</i>	21
3.2.3 <i>Technology</i>	23
3.2.3.1 Digital printing	25
3.2.4 <i>The methods of recruitment</i>	27
4. Skill needs and training	29
4.1 Introduction	29
4.2 Training provision	30
4.2.1 <i>Current workforce skills</i>	30
4.2.2 <i>Extent of training activity among sample</i>	30
4.2.3 <i>In-house training</i>	32
4.2.4 <i>External training provision</i>	34

5. Skill gaps	37
5.1 Hard-to-fill vacancies	37
5.2 Skill needs	37
5.2.1 <i>Pre-press</i>	38
5.2.2 <i>Press room</i>	39
5.2.3 <i>Finishing</i>	40
5.3 Demand for training: identification of employers' needs	40
6. Current provision of training	43
6.1 Introduction to printing courses	43
6.2 IT skills	46
7. Specific recommendations	47
8. References	49
Appendix 1	51
Interviewee Identification Key	51
Appendix 2	55
Funding sources	55
<i>Individual learning accounts</i>	55
<i>The Union Learning Fund</i>	55
<i>Learning North East</i>	56

1. Introduction

The objective of this project is to conduct a systematic training needs analysis (TNA) of the North Tyneside printing sector which takes into account the commercial and technological trends in the industry as a whole. This TNA will be developed from intelligence gathered via interviews with senior managers in printing firms. This will cover the position of their businesses within the market for printed products, trends within the industry, including the influence of technological change upon the organisation of the firms, skill requirements and training needs. Training providers will also be consulted to gain additional perspectives on courses and training opportunities. A number of recommendations will then be made concerning the courses on offer, those which might be developed and the forms of delivery which are most appropriate to the sector in this locality.

2. Background to printing industry

2.1 Employment characteristics and company size

The printing industry¹ in the North East is relatively small within the region's manufacturing sector overall. Some 4,900 people are employed in printing, equivalent to 0.5% of the total workforce, the lowest proportion of any English region, albeit by a small margin. Furthermore, North East printing employment makes up just 2.4% of all GB employment in the printing sector, whereas the region's share of all manufacturing employment was more than twice as large (4.5%). Printing's share of manufacturing employment is similarly low (2.8% in the North East, compared to 5.2% nationally). Thus the sector is under-represented within this region.

The significance of the sector within the local economy is in line with the average. Official figures show that the printing industry in the Borough of North Tyneside represents around 0.6% of all employment, much the same proportion as printing employment in Tyne & Wear as a whole, where the sector employs 3,200 people. The most recent figures provided by the Annual Business Inquiry, relating to December 1999, put the number of employees in the printing industry in North Tyneside at around 350. On the basis of this measure², the Borough's printworkers comprise 11% of all print employees in the county – slightly below North Tyneside's share of 13% of total employment.

The sector within North Tyneside appears from official figures to be fairly stable in that the current employment figure is only slightly below that for 1991 (just under

¹ Defined as SIC92 classes 2221-2225: printing of newspapers, bookbinding and finishing, composition and platemaking, printing not elsewhere classified and other related activities. It excludes publishing.

² This figure is sharply at variance with the magnitude indicated by the survey results (Section 3); the latter, more reliable, source suggests a current total employment figure for the printing sector in North Tyneside of in excess of 1,000 – more than three times the size of the official figure for 1999.

500). This compares with a situation where printing within Tyne & Wear as a whole has contracted over the 1990s (from over 5,000 to 3,200).³

The majority (68%) of employment is concentrated in 'printing not elsewhere classified', i.e. general printing firms. Although the proportion of employment in general printing firms in the Borough is lower than in Tyne & Wear (87%) and the North East region (86%), employment in bookbinding and finishing is relatively high (23% of all print sector workers, compared to around 3% in the county and region).

In terms of numbers, North Tyneside provides the location for 36 printing firms, some 16% of the Tyne & Wear total of around 250 – roughly in line with the Borough's share of the county's employment. Around 86% of the Borough's firms have ten or fewer employees, very similar to the pattern for the county as a whole, to the national situation (where 82% of all print firms fall into this category), and, indeed, to the situation in Europe.⁴ Average employment per firm in the Borough is small compared to the average for manufacturing.

Employment in the Borough is weighted towards males, who make up 70% of the workforce, the same as the average for the county as a whole, and the overwhelming majority of the workforce is full-time (92%, the same as in Tyne & Wear as a whole).

2.2 The structure and organisation of the industry

The printing industry has traditionally been based on the three distinct sub-sectors:

- pre-press (design, typesetting and platemaking)

³ The bulk (nearly 1000) of this fall in employment in Tyne & Wear since 1991 relates to 'printing of newspapers' in Newcastle. This is likely to be the result of variation in the *classification* of employment related to the area of publishing/printing of newspapers, rather than a real fall.

⁴ A Pira International survey of 17 European countries with 61,250 printing companies found that three-quarters of these firms employed fewer than ten people.

- press (printing processes)
- finishing (folding, collating, laminating, etc).

Over the last two decades, the distinct boundaries between these sub-sectors, and the subcontracting relations associated with them, have become blurred through technological change and increasing competitive pressures. **An essentially craft-based sector with a developed system of training-based entry, mainly apprenticeships, has moved into the highly competitive, multi-skilled world of computer-based manufacturing (DTI, 1997).** The crucial development is that customers are now able to send jobs electronically to printers who 'originate' the job (pre-press processes) and then produce the final product.

At one end of the spectrum, it is now possible for a job to be electronically dispatched, originated and produced all through digital processes, even including finishing. In such cases, the only non-electronic part of the process occurs with the physical introduction of the paper on which the print is to be made, together with any other finishing materials required. In sum, a job is electronically dispatched and introduced into a digital workflow via modern computer-controlled machinery which ends when the finished product is ready for dispatch back to the client. This reflects the direction in which the industry is headed.

At the other end of the scale, jobs are still dispatched electronically to printers but in many cases the digital flow is interrupted by manual processes e.g. at the stage of platemaking for the printing process, and/or in the press area, where many traditional machine tasks are still undertaken by hand. Those jobs requiring finishing are similarly processed manually.

2.3 Changing subcontract relationships

The industry was traditionally organised via a web of sub-contracting relationships. Most clients would organise the supply of their required printing needs through either a designer, acting on his/her own account or a printing firm. The designer or printer would offer a whole process of idea/concept through to finished product. The various steps in this process, however, might involve a number of different firms depending on specialism. The initial design, for example,

would often be sub-contracted to a typesetter, then on to a platemaker who produced films and plates. Following printing, the job would often be out-sourced for finishing, e.g. the collating, folding, binding. Thus, printers would invariably subcontract to designers, typesetters, platemakers and finishers. Print brokers working on behalf of large organisations would either sub-contract to one source (i.e. the printer) who undertook the whole process or attempt to keep some control over the distinct processes by going to each specialist in turn.

There were, of course, variations to this general pattern - for example, specialist printing and where printers had their own platemaking or finishing activities in-house. The sector was nonetheless identifiable by these complex relationships and the small size of companies, which in many ways were dictated by the sub-sector specialisms. **Importantly, this also defined the geographical location of companies and consequential business relationships, which were spatially tightly bunched at a local or regional level**, representing a degree of clustering in the business organisation of the sector.

From these relationships a print 'fraternity', underpinned by apprenticed craft workers, developed. This gave rise to, among other things, a number of 'gentleman's agreements' between print employers, in particular concerning the need to respect the fact that each company had its particular clients, and that direct poaching by competitors within the network was frowned upon (although this did not entirely prevent such behaviour).

To an increasing extent this 'world' is disappearing. First, through the changing mode of operation of the pre-press environment associated with the wholesale introduction of computerisation. Typesetting no longer exists, having been replaced predominately by AppleMac hardware and numerous software packages dedicated to the needs of the print sector. Platemaking as a separate stage has also diminished as the need for film to plate is replaced by either or both (1) full digitalisation and (2) printers increasingly bringing it in-house because of falling margins. **A typical printers now has an AppleMac-based bureau with basic platemaking facilities and is progressively moving to a modern multi-skilled workforce capable of laying plates from film, machine-minding and basic finishing.** Gennard *et al.* (1999) see this process of technological change and

vertical integration continuing: 'As printers take pre-press and finishing operations in-house thus enabling them to provide customers with a one-stop service and greater control over service and product quality' (p13-14). Finishing has also suffered because of falling margins and many of the standard finishing tasks (e.g. folding) are now undertaken by printers in-house.

2.4 Technological developments

Technological developments are a major driver of change within the industry.

This section outlines how electronic developments have been harnessed to individual printing stages and to the interaction between these stages to transform the whole way in which the industry operates. This is more pronounced in this sector than in more or less all other traditional manufacturing sectors. The dual pressures of (1) technological change, and the opportunities it brings for 'value added', and (2) reduced margins because of intensified competition, are leading to a situation where, even by 1997 'the average printers – about one-third to one-half of firms – [were] using electronic processes, with in-house printing' (DTI, 1997, p43).

On the pre-press side - virtually all initial design, artwork, typesetting and pagination is computer-based with digital cameras, scanners and other optical techniques completing the electronic flow. These files are then sent electronically (e.g. via e-mail, ISDN, disk or CD-ROM) to either the platemakers or printers. Here they are output either to film or, increasingly, sent 'computer to plate' (CTP).

On the press side - there are a number of printing processes which can be used, according to the nature of final output required. These include screen printing, litho (the dominant technique), gravure, flexography and web offset. Each of these in their turn have become increasingly computerised with optical scanners for colour measurement and registration; consoles for ink measurement and flow control; and automatic and semi-automatic plate loading. **As these developments have occurred so have customer demands for shorter lead-times which in many cases now means 'just-in-time rather than lead-time printing'** (DTI, 1997, p44).

These demands, together with the opportunities provided by computerisation, have led to a technique loosely termed 'digital printing'. This should not be confused

with digital workflow or other uses of digital in the printing context; it specifically relates to the output of printed material directly from computers *without any manual operation*. **The extent of digital printing at the moment is largely dictated by factors such as required length of run, size of machines available and required quality of finished product.** It is generally agreed that medium to long runs are not cost-effective (unless there is an urgent need for the product to be completed quickly) and in the non screen printing market the majority of machines are only A3 at present. Medium to long runs would typically be undertaken on an A2 or larger press, depending on availability of machine and client lead-times. Laser Jet printers are available which take much larger paper sizes, but speed and quality are affected, although for screen printing this is not as an important issue.

The term 'digital print' is wide ranging in terms of output quality. At the high end of the quality scale there is the Heidelberg Direct Imaging (DI) press, which uses digital technology to pre-determine ink settings and produce plates which are then printed litho style, without water, onto paper. It does this in four colour process – a method being shifted in-house by an increasing number of printers - to a standard equal to litho. However, sheet size is only A3, meaning that long runs are more cost-effective on larger presses (see above).

As we move down the scale output quality now deteriorates compared with litho techniques as 'dot size' increases. Digital printings four colour process at the lower quality end of the market is *not* equivalent to litho four colour process. In spite of this, digital printing is beginning to take a hold within the sector, particularly for screen printing where dot size is not as important a determinant of quality. In screen printing image quality is not as important as it is in litho because of the type of output. Here digital images are directly output onto laser printers which take much larger sheet sizes. Importantly, run length is not always an issue since the techniques is often used for one-off proof runs before a longer four colour process job or for point of display advertisements.

Analysts are arguing that digital printing offers a unique opportunity for new markets, especially those characterised by short lead-times. It offers innovations such as outputting variable text and images on a page-by-page basis. The British Printing Industries Federation (BPIF 2000a, p3) argues that this is how

digital printing should be defined, moving it away from the traditional four colour process market dominated by litho towards the growing personalised/customised markets of mailshots, brochures and catalogues, and generic type documents which need a local amendment. Pira International (2000) have argued that 'digital printing will be more of a service than a product, involving consulting and systems integration to transform the communication process for customers, and then sustain the changes over the long term' (quoted in *Printing World* 2001, p25). **Pira believe that digital printing will increase its present market share from 9% to 20% by 2010.**

On the finishing side - technology will also play a significant role. Gennard *et al.* (1999) argue that 'in the post-press areas, future technological developments will aim to remove bottlenecks which arise because it takes longer to finish and distribute a job than it does to print' (p16). **They believe that fewer people will be employed in finishing but that such people will need to have a 'high level of computer-related skills'** (Gennard *et al.*, 1999, p11). Finishing is becoming part of digitalisation:

Which will eventually integrate the pre-press, press and post press areas into a combined process, merge the production process with management control systems and converge hitherto separate technologies. CTP will bridge the pre-press and press areas whilst on-line stitching, trimming and inkjet will move post press activities into the pressroom. The job will be meeting customer needs not putting ink on paper. (*ibid.*, p17).

2.5 The changing market and pressures on competitiveness

The printing industry as a whole has been going through an unsettled period, with considerable uncertainty within the sector regarding the potential and implications of technological developments (i.e. the move to digital developments and use of the internet).

The BPIF's survey *Directions* (vol. 17:3, 2000b) found that the summer quarter of 2000 was one of the worst in memory for the sector, with fears that the traditional seasonal lull would not be compensated by the surge in activity in the run-up to Christmas. The main problem highlighted was continually rising costs (driven both

by increases in the cost of materials, and the increasing demands of customers), with two-fifths anticipating further cost rises in the future. Other reported concerns included over-capacity within the sector and reduced margins, with nearly two-thirds of firms surveyed working below capacity in the last quarter of 2000. Although trading volumes were improved, they still fell short of previous expectations. The latest *Directions* survey (vol. 18:1, 2001a) reports continued downward pressure on prices and problems for many firms in recovering increases in the cost of materials resulting from rising world demand for paper etc.

Employment is on a declining long-term trend, albeit a relatively slow one, with more companies cutting workforce numbers than increasing them, in spite of the increased tendency for the recruitment of temporary workers to cope with seasonal fluctuations (BPIF, 3Q/2000). Printers, however seem to be both continuing to invest and retaining their core workforce in anticipation of greater order volumes - nearly seven in every ten believed the state of trade would remain the same or improve in 2001.

The long term forecasts of the 1998 *TrendWatch* reports identified that these trends would lead to a smaller number of companies by 2005 and in all but the commercial printing area, a substantial drop in revenues. Although, growth in revenues of around 33% by 2008 is predicted, *TrendWatch* argues that this will probably be in-line with inflation and significantly the bulk of the increase in revenue is identified as coming from 20% fewer companies (bi-annual reports for 1998). Pira International (2000) concur with this view, predicting a more competitive market with the increasing use of digital printing. They state that printers under pressure to reduce costs and lead-times will invest in new technology but argue that other areas of their business must be developed to make this cost-effective. Pira highlight the development of an effective supply chain and close working with clients and suppliers to reduce costs as critical for effective digitalisation – similar, in fact, to developments within manufacturing generally.

The Gennard *et al.* (1999) study of the printing industry, which was on an international scale, also forecast greater competition but with increased revenues overall. They noted that 'general printed products [would] supplement electronic modes of communications rather than be replaced by them. In the longer term,

although, in the face of the growth of electronic modes of communications, its market share will fall, the graphical industry will be larger in sales terms than present' (p9). They quoted Heidelberg UK's Managing Director as forecasting that between 1990 and 2010, the overall market for print and electronic media would rise by 135%. This, he stated, would involve an increase in electronic media of 235% and in print of 70%. Overall, printing's share of the total communications market would fall from its current 70% to 50% (p25).

The conclusions of Gennard *et al.* were that the industry's:

Manufacturing practices will be flexible, the turnaround of jobs quicker and printers will provide their customers with a wider range of services than a printed product' (1999, p10).

More significantly they identified a major restructuring trend that would see a greater integration of the electronic media and printing sectors through mergers and acquisitions driven by accelerating technological change. The result of this would be a polarisation 'between a few large multinational conglomerates', increasingly diversified into communications media: 'and a large number of small companies' (p14). They had previously noted that 'the former will account for a disproportionately high share of employment and sales and will open up new markets by acquiring large and/or medium firm. The small firms will focus on providing customised products for localised markets' (Gennard *et al* 1999, p9).

Customers will in future be offered a wider range of services as a means of 'differentiation from competitors and gaining customer loyalty' (p14). The DTI (1997) in its Benchmarking report drew the same conclusions, arguing that 'customers want better value, shorter runs, faster production times and closer relations with printers' (p44). Importantly, the report further noted that **leading firms were beginning to integrate their operations into those of their customers, an opportunity afforded by digitalisation** (DTI 1997, p43).

This move to digitalisation allows markets to be expanded, with 'even small printers in one country winning work in others' (DTI 1997, p46). However, the extent to which small firms will be involved in this process is difficult to predict, particularly if Gennard *et al.* (1999) are correct in predicting 'polarisation'. The possibility is that

work will move out of the UK: the DTI (1997) noted that 'there is evidence [of] excess capacity in the industry on the Continent at present. Together with lower prices for paper in the rest of Europe' (p46).

2.6 Conclusions

In 1998 the Annual Employment Survey estimated that the North Tyneside printing sector employed around 450 people. This survey, carried out in 2001, suggests this was a significant under-estimate and that the true figure was probably substantially higher than that. **The sector has plainly been a relatively stable one, making an important contribution to the North Tyneside economy.** Equally, it is also one which underperforms in the sense that it accounts for a significantly smaller share of the local economy than applies at the national level.

The DTI (1997), amongst others, has argued that this sector is now a multi-skilled computed-based manufacturing industry rather than a craft-based industry. This movement to computerisation has seen a number of the traditional trades disappearing and the *pre-press* relying on digitalisation rather than hand skills. In the *press* area a typical printers now has an AppleMac-based bureau with basic platemaking facilities and is progressively moving to a modern multi-skilled workforce capable of laying plates from film, machine-minding and basic finishing. These changes are based on the dual pressures of (1) technological change, and the opportunities it brings for 'value added', and (2) reduced margins because of intensified competition.

The industry as a whole is still coming to terms with many of these changes and is going through an unsettled period, with considerable uncertainty within the sector regarding the potential, and implications of, particular technological developments. Gennard *et al.* (1999) have predicated that the trend towards digitalisation will mean a major company restructuring and an industry based on two particular types of company: those that are large and operating on a multinational basis and small ones operating on a local basis.

The environment is thus one of increasing computerisation, company restructuring and potential employment loss. In this context there would appear to be two particular training needs:

- **Generic computer training** - will allow easier internal technological transitions for staff; when people need to find employment in the sector it will give them greater employability skills.

- **A basic understanding of print** - for the foreseeable future the sector will continue to rely on traditional printing outputs rather than desk-top laser or ink jet printers. This, and the increased digital integration of sales, and office based staff, means that there is a need for this type of training which will allow customer needs to be easily translated into final products.

3. Survey of North Tyneside employers⁵

3.1 Sample and methodology

The sample for the survey of North Tyneside printing firms was drawn from the 44 companies identified as constituting the North Tyneside printing sector (NTBC database). Of this total, four companies were found not to exist or to be incorrectly included. **From the remaining 40, a sample of 16 firms was identified for interview.** This sample was constructed through a basic method which disaggregated the sector in terms of three main areas whilst also taking account of company size:

- **Pre press:** only three (7.5%) companies were identified as being involved in the supply of design or platemaking services. Of these, two were interviewed (one by telephone). The telephone interview was only useful in underlining the changing nature of the pre-press as the interviewee was originally an apprenticed typesetter. He was also a sole trader and had no training needs and was not heavily involved in the market. His data was not used for the survey research.
- **Printed products:** the overwhelming majority (36 or 90%) of companies were involved in this area with 13 being interviewed. Of these eight (22%) provided publishing services (one interviewed); six (17%) were involved in screen printing (two interviewed); one provided print management services (interviewed); and the remaining 21 (42%) businesses were involved in other types of printing, predominately off-set litho (nine interviewed).
- **Finishing:** only one firm was specifically involved in this service (interviewed).

Views were also sought from three other organisations directly involved in the printing sector. Two of these are involved in the provision of direct print

⁵ Appendix one provides an Interviewee Identification Key (e.g. [1] reprographics firm).

training and one interviewee had recently been the main print buyer for an American multinational with plants in North Tyneside.

A two-page questionnaire was developed for interview purposes which covered basic details of the firm (employment, technology, etc), its competitive processes and training needs. Interviews were conducted with key personnel (senior managers or managing directors) on a semi-structured basis and ranged from 25-40 minutes in length. All but three of the above interviews were conducted in the workplace. The overall response of people and their organisations was very positive; only one firm declined to participate.

3.2 Research findings⁶

3.2.1 Competition

Increasing competition has been a common theme throughout the survey, although some employers said that the industry has, in fact, always been competitive:

I think it's always been competitive and that's the reason we have done so well, because we are used to being competitive. [8]

I don't think the industry is more competitive now, as it has always been competitive with lots of printers. Although, the margins are certainly tighter now. [7]

The employers that did identify increased competition said that this has been evident: 'In the last five to six years but it is happening all the time, it's changing. As a result of this, sadly, people are going to go out of business' [13]. This increased competition was perceived as affecting sales margins: 'The prices now in the print industry have been slashed, probably ten years ago we could get away

⁶ The survey included a newspaper publishing/printing company which had a North Tyneside site, where the 14 staff were principally engaged in journalist activities (linked to a printing operation in Sunderland). Apart from footnotes in sections 3.2.3.1 and 4. these research findings do not include data from that interview.

with a lot more. The margins have gone, so you have to stay ahead of the game. There will be a lot of traditional small printers going shortly' [11].

This is consistent with the latest BPIF (2001a) indications and for many employers is caused by a combination of the pace of technology and the changing nature of customer relationships. **The pace of technology has led to a revolution in the nature and process of printing**, such that: 'People are now doing a lot of the traditional stuff, like fax sheets and letterheads off their desktop through the PC' [11]. This is leading to a reduction in the available work, as well as, greater accessibility to the lower ends of the market. For the industry itself it has meant waves of re-capitalisation, with the introduction of new machinery. For particular areas of the pre-press this has occurred on a fairly regular basis. For example in the reprographics firm the interviewee noted that: 'We are going to have to re-invest (£250,000) even though a major injection of capital was made four years ago' [1]. Two of the large employers (over 140 staff) saw these investments as critical to their continued success:

I think we have invested wisely in technology, some people have struggled because they haven't. So we've always been competitive and it's stayed the same. [8]

There is not a lot of work to go around at the moment and the better companies are surviving, those that have invested in new technology. [14]

Whilst two of the smaller firms (under 40 staff) saw technology in a more negative light:

We've had to buy work to keep the new machines turning. Clients are going for cheaper prices because the technology is so much faster [4]

People have invested in new machinery and they are doing work they normally wouldn't touch to pay for it. Some are teetering on the brink and putting in any price to get the work. There's at least two firms doing that at the moment and we're just waiting until they go. [5]

Technological innovation has combined with customer requirements to produce shorter lead times and lower prices. Over half the small firms (under 40 staff) had strong opinions on this:

Yes the margins that were there 10 years ago are not there any more. This is because of the speed, and turn around, of work. Jobs do not take as long, so therefore jobs are getting turned around quicker. [1]

The presses now do things so much better and so much faster. But the only problem is there isn't any more work around'. [5]

The industry is now horrendously competitive compared to what it was. This is led by the print-buyers who have no loyalty now. [6]

There used to be a gentleman's agreement in the print but that's gone now. I think that people used to have their hard core of customers but now those customers are playing one against the other. Now you've got to attack other peoples customers or they will be after yours. It's defiantly a business now! [11]

Whilst a number of the medium to large companies (over 40 staff) were developing new marketing strategies to adapt to change. These businesses had a more positive view towards competition: 'I think every industry is more competitive now and print is no different' [13].

3.2.1.2 Restructuring of the market

With an increasingly competitive market employers were asked about the geographical source of their work. Only one firm now relies on the local market; four firms undertook work on a regional basis; with the remaining nine going beyond the region to find work. Of these nine, three indicated that they undertook work for overseas markets and another stated that: 'We do not directly export, but I will be looking at it. The time is not right now, with the disparity surrounding the pound and Euro. So we are too expensive, even though we are quite efficient' [13].

These responses derive from a number of competitive strategies which are being used to varying degrees. A number of businesses had adopted a niche market strategy:

We don't have many competitors in the region as packaging work is very specialised. We do this type of work rather than the more commercial stuff because I think a lot more of the commercial work will go to digital presses. [1]

We are trying to grow in niche markets because we can't do the short runs of £40 business cards anymore. [10]

We tend to aim at specialised markets rather than going for the folding or stitching, although we can do it. We aim at markets where unless you are a massive printer you wouldn't buy a perfect binder or your own wiro-binding kit. So we target areas which are not commonly done in-house to try and retain some margin and some business. [13]

A small silk screen printers also identified the positive effects of new technology, 'New markets are being opened-up by the introduction of digital machinery where large ink jet printers are able to produce large banners [4]. A printers that had recently made a major investment with the introduction of a direct imaging digital press stated that: 'We went out to sell the digital concept. We approached mainly agencies who undertake all the artwork, which saves us an awful lot on film and plates. We carved a niche in the market place for ourselves [11].

Whilst others had tried to secure their position by making in-roads into a number of differing markets, for example a medium-sized commercial printers undertook work for agencies (no artwork required); commercial work for businesses (where a one-stop-shop is provided of design, print and finishing); and health care work (simple black and white stationery). 'That way if one area dries-up the others are normally busy' [2].

However, the most interesting findings of this part of the survey were the extent to which the sector is changing the way it markets itself:

We have been very pro-active in getting our business, because I came from a sales and marketing background. Other printers have seen that and copied our sales leaflets word for word. We use direct mail which costs a lot of money and are constantly changing our marketing mix. [10]

We're marketing ourselves as more of a business now rather than a printers. In the past you went and got your work off your customer and they knew you could do it. Now the skills are gone so everyone can do it, it's a lot more of a level footing. [11]

In the larger companies, this has involved developing closer relationships with customers, a trend identified in section 2.5 (DTI, 1997):

We tend to deal on a European scale now, we have a clientele based in the UK, Europe and even in South and Central America. We have grown with our clients like Procter and Gamble and 3M. They said that if we wanted to carry on with them we would have to change and we did it. We invested heavily and we've grown with them. Price does come into it but you have to be at a level as a quality supplier. So there are only about six of us in the country and then it's about price. They could try and go into Europe but are those companies at the same level? [9]

The print broker had developed this closer relationship by winning tenders and then introducing their own staff onto blue chip clients' sites to manage the contract: 'You need people on-site because of the volumes and so forth. But it's an added service as well as the print as companies are looking for people who can offer them a one-stop-shop for all their needs' [12]. Two of the largest commercial printers were adopting the same type of approach:

We do go in at low prices but the alternative is to give the customer something extra. For example, we will take from a customer all of his print problems and deal with them, any of our managers will visit clients to sort out their problems. We actually do have an accounts executive who works a lot of the year in Belgium at a customer's office. This is one of the extra things you do to get work and we are looking now to tie into a customer and produce all of their needs, that is the way ahead. [14]

We are not just a printers, we pretty much have a solution to everything, logistics, storage, management information, IT. Otherwise we are just a printers defined by cost but with other services we can add a bit of a premium. So we can be more competitive and other printers will not offer that whole solution. It is relationships with customers, that is the key. What problems has the customer got, what can we do as a company to solve those problems. I've seen some massive changes in certain customers that we work for when we have offered these services and still kept the prices competitive. And we've seen a lot more work come through that way, at the end of the day it ties yourself in with the customer. For certain customers if they wanted to go away from us it would be very difficult for them to do so. Another printer could not offer that same service. [15]

This approach has fed into the change to a manufacturing based industry with some of the larger companies stating that the market was moving towards just-in-time: 'Everyone is working just-in-time now, they don't want big stock holdings'

[12]. The two largest commercial printers discussed above [14 and 15] were also working just-in-time with clients.

3.2.2 Sub-contract relationships

One of the most straight forward strategies concerning competition was for businesses to move work in-house. All the survey companies had used this strategy and apart from specialised work, or that too large to fit the smaller presses, very little work was now subcontracted in the traditional sense discussed in section 2.3.

In the pre-press this change in sub-contract relationships has clearly followed the escalating trend to digitalisation. This has allowed printers to bring in-house areas of their work that previously had to be sub-contracted. All the printers interviewed, and the print broker, had some form of bureau for pre-press. With many now having a simple computer to film set-up, which meant that the vast majority of their plate making needs are undertaken in-house.

The print broker was the obvious exception to this, although they had reduced their approved suppliers from 2500 to 250. These suppliers are located on a national and international basis and were used according: 'To the type of contract and lead time available' [12]. They were developing closer supplier relationships similar to those identified for customers above. The object of this was to achieve a system of on-line ordering which would allow efficient progress chasing: 'That's the way the industry is going, our suppliers are already doing it. It's just that we need to plug-in to this' [12]. A trend identified in section 2.5 in the DTI (1997) Benchmarking report.

These changes mean that the old style community ties built on a web of sub-contract relations and craft principles is clearly dying. Although one printer did note that: 'The industry still has a good camaraderie but with people 30 miles away' [5]. There, is a distinct move away from the traditional close local contact:

The old relationships have died. We used to send out all our typesetting and film and now it's done in-house because the margins are cut. With the finishing I do everything in-house apart from the laminating. [11]

Basically people don't trust each other anymore, you would sell your own granny.
[4]

There's only a certain amount of printers I would approach with work. Only people you've known for a certain amount of time. [7]

We established ourselves by taking a lot of work from a number of printers in the area. There are a lot of printers that don't like us but I couldn't give a monkey's about them! [10]

Interviewees were also asked about the development of cluster type relationships. The vast majority said that they would not consider sharing either work or technology:

I would not share technology, the game has become more competitive now, so people are more willing to poach customers. [4]

I would never share work or technology. [5]

No we have never thought about that and I don't think we ever would. I am not a trusting person. I would be very suspicious about sharing with anybody else. [6]

I probably wouldn't consider that. [7]

No, we wouldn't consider that. We are very competitive with our close rivals and I don't think we would want to talk about some things. We wouldn't allow another competitor inside to look at our equipment, maybe if it was somebody from the continent but not somebody from Britain. [8]

We tend to keep ourselves to ourselves. [10]

No, I would never agree to share technology, if they wanted it they would have to put their hands in their pockets like I did. [11]

I think locally we have tended to stay away from each other because we are competitors. If people run out of inks or plates then we would help them, but when it comes to the inter-changability of ideas the line tends to get drawn. There are printers around here who would not allow us through the door and we feel the same way. [14]

The reprographics firm were positive about sharing technology: 'With agreements over the buying of time' [1]. This was probably related to their particular sector in which the pace of technology was constant. However the finishing company were more interested in doing so, as they already networked with businesses outside of the printing sector on a regional basis: 'Northumberland is very strong but also Tyneside, Teeside and Durham are involved' [13]. A senior director involved himself through the 'Manufacturing Challenge' initiative, which he felt was:

A good introduction to TEC talk and allowed businesses to combine in clusters. But the problem is trying to get companies involved in it. You can give them money, you can give them advice, you can send them memos, you can put web sites up. But you can not get their response for long enough. [13]

The general conclusion here is that the old sub-contract relationships are dying and are being replaced by highly competitive market relationships rather than any pooling of knowledge through partnerships. The partnerships that are taking place are mainly on a customer basis at the larger companies.

3.2.3 Technology

All businesses, except the print finishers, now have some form of digitalisation at the pre-press stage which is produced through AppleMacs in what is commonly termed a 'bureau'. Apart from the particular process of digital printing (discussed in the section 3.2.3.1), all small and medium-sized businesses have this digital work flow produced onto film and then laid to plate:

Computer to plate (CTP) is not cost effective. If we produce one plate wrong then all four are wrong. The potential problems of this and an investment of £300,000 to £400,000 weighed against employing two people makes it not worth while. I think it will be computer to press next in the next four to seven years, so we will just skip that one. We go to all the big print exhibitions to keep up with all the print technology and it's just how many stages you can get away with missing. What we've always tried to do is invest at the right time in the pukka kit, rather than jumping at the wrong time and getting stuck with the wrong kit. [2]

It is not cost effective for us to go CTP, there is a problem with the variety of printing techniques we use. If we did it we would have a bigger origination department than the whole of the factory! [9]

However, the larger printers were operating or considering CTP:

We receive most of our work digitally and 85% of this now goes direct to plate. There is a de-skilling but *responsibility has increased* on the presses because of the increasing run speeds and because they now print double-sided. [14]

A lot of our work now comes digitally and we are looking to go CTP. [15]

For the reprographics firm digitalisation has meant a rapidly shrinking market and a revolution in the way their work is handled:

The job is now all computerised, all jobs come in digitally and the only hand work is if an amendment is made to an existing film. Work is received dependent on the size of the files (i.e. email; CD; DVD); through a courier; or if a meeting is needed it is picked up by hand. When we have our new equipment a disk will be introduced at one end and a plate produced at the other. [1]

For the print finisher new technology has had a different effect. They now have a mixture of manual, semi-automatic and automatic machines, with the technology undertaking the movement and feeding of jobs into machines:

The machines are becoming more sophisticated with pre-set programmes for certain jobs. But you can spend an awful lot of money on technology with no return, so we keep an eye on it and wait to see if we need to change. We have invested £600,000 in new machinery because you have to stay ahead and some of the smaller and larger companies are falling behind because they have not done this. [13]

In the press rooms the medium to large printers now have sophisticated presses which allow computerised control of ink flows and imaging. This allows consistent quality control of these faster running presses. Nobody had a fully digitalised system as identified in section 2.2, apart from those that had partial systems through digital printing (see section 2.4). The typical demarcations of pre-press, press and finishing were evident in-house at an equipment level, but **many businesses are now managing flexible workforces capable of filling gaps as required.**

An employer at a screen printing firm summed up the overall reasons for introducing a digital work-flow:

The reasons for going digital are (1) Cost: It cuts down the amount of space needed for machinery dramatically taking away the need for pre-press film and platemaking facilities and large screen print machines. It allows manpower to be reduced as, for example, a machine can be set-up at night and then run throughout the night. (2) Flexibility: The computerised machinery can be operated over the internet from a distant location, for example, a design can be sent from a lap-top to the ink jet for output. [4]

3.2.3.1 Digital printing

The survey found mixed views on digital printing. As discussed in section 2.4 its limitations are those of; cost, quality, and inability to perform certain functions (perfining, folding, etc.). However, **half the survey businesses (seven⁷ – this excludes the reprographics firm) were involved in some form of digital printing.** Both the screen printing businesses used digital printing techniques:

I think that's the future, it will almost be like an office with everybody having their own printers to output work. It has changed the market with 20% of our work now being directly output through an ink jet printer. [4]

Digital printing has made a lot of in-roads into our markets, so obviously we've taken it on board. It's almost like using a big photo-copier, there's no film, no repro, no set-up. It just misses out two departments straight away! [8]

At the other three printers using digital printing techniques there were different processes used and output results:

We have what's jokingly called a digital press, you could call it a photo-copier. It's linked to our AppleMacs. It is a small but growing market and we use it at the moment as a proofing press. It's OK on small runs because of the cost and the quality is very good. [5]

Yes we use digital printing but only with single colour, short run work. But we are looking at a digital web offset press. [14]

⁷ The newspaper is included here as it has, in common with other newspapers, a fully integrated digital system with final print production in Sunderland.

We have a Heidelberg DI A3 press which is used on runs up to 10,000. After this the work is best suited to an A2 press. We felt that too many people were sitting on the fence and so we put our money in and went for it, to get ahead of the game. We're building the market up all the time and the machine is paying for itself. [11]

The print broker, also used digital printing, but had a cautious response:

The market is changing increasingly towards digital technology but it still hasn't kicked off in the way that people anticipated. There are companies offering digital printing but litho can still offer a cheaper price. We use it on small runs but the quality is not at the standard that you can get off litho. You can also get different levels of quality which means that you get one job that is Ok and another that is absolutely rubbish. It is limited and I'm very cautious about our corporate clients who want to match their corporate colours which you cannot do on digital. [12]

The other six printers had a cautious response to the technology and had not yet invested in it:

It's a virgin technology and everyone's a guinea pig who's using it, I've heard the horror stories. It's not competitive because it's a colour copier, so it costs around 50p a sheet. We know about digital presses, we know the capabilities but we are not going to go until it is right for us. [2]

Digital presses are not competitive, as we tend to do medium to long run work. [6]

Digital printing is progressing but it still has its limitations with regard to; thickness of sheet, it can't do NCR, or numbering, or perfining. It is not competitive on longer runs and the quality is not as good. I think there could also be limitations with it's use of colour as it only uses the four colour process. [7]

It's in its very early days and you are limited to what you can achieve, invariably most of the work we print is six or seven colours with specials. So it can't cope with that. [9]

It is too expensive at the moment. I have only lost one client in the direct mail business who has gone to digital. I suppose we could try to move into the shorter run market but a lot of the agencies we work with are rejecting digital for quality reasons. [10]

Digital will happen, it's happening now, but certain customers will be excited by it and others will not. It's just making sure that it's the right time to develop it with the customers that we currently have. [15]

3.2.4 The methods of recruitment

The majority of companies (60%) were involved in or affected by poaching - through losing staff to other companies or making use of it as a method of recruitment. As the interviewee from the reprographics firm noted:

There's an awful lot of poaching goes on, but you have to get involved. We have spent £2,500 on training on a certain package and within the year they have moved on to a bigger company. For a company the size of ours that's quite an investment we've put into the lads. [1]

According to one of the printing firms, this situation was perpetuated because 'some people just won't take kids on and teach them' [5]. He further stated that if he sent staff to a full-time college they would learn skills above what his company needed (see above discussion) making it 'so much easier for them to move on. I know that's not the right way to look at things but in the real world it's the only way to look at things'.

The other main avenues for recruitment included newspaper advertising, which bought a mixed response from the firms:

We find that applicants who respond to advertisements are good because either they have the initiative to apply for a job or that they have a job already. [8]

When you advertise in the local press you cannot get the staff who can do the job from day one. [1]

We have used the *Chronicle*, but you get swamped with the response and you still might not get the right person. [10]

If we advertise a job I know that we will have to add £50-£100 a week to get them here. [10]

Recruitment via word-of-mouth and CVs sent in to the company are also a common method: 'We tend to use CVs or word of mouth before going to the

Chronicle or Employment Service. It depends how quickly we need the person' [10]. **The Employment Service**, as is commonly found by employers in all sectors, is often used, but with mixed results. While some firms reported that it was a good source of recruits, others were more critical:

We tried the JobCentres, but the type of people they were sending us were people who had been out of work for a long term. They were just looking to get the New Deal people in. We also found that that they were putting a capping system on the number of people applying. We knew that the people we were getting didn't want a job and they were wasting our time because they only stayed for one or two days. It's got to the point that if I see an application and it's got JobCentre on it I put it to one side. [8]

4. Skill needs and training

4.1 Introduction

The wider sector analysis contained in section 2 and the survey data in section 3 provide a picture of not only a competitive industry with falling margins (BPIF, 2001a). But also an increasingly computerised, manufacturing, based industry. A number of the survey businesses recognised this and were moving towards a multi-skilled, flexible, workforce:

We have to have our machines crewed-up and if there is a skills gap we have to address it. We are trying to create a flexible workforce, a multi-skilled workforce.
[13]

I would say we have moved from a craft based to a manufacturing based company.
[14]

This is a distinct transition for an industry based on the demarcations of craft, although to an extent small printers have always worked towards task flexibility. **With the introduction of digitalisation, certain skills are disappearing** from the workplace and the interviews identified that loose demarcations are a common feature in businesses.

However, **employers still indicated the need for a wider understanding of the nature of print.** In the industry as a whole prevailing opinion is that there are much deeper problems, with a current and looming skills crisis (*Brazier, 2001*). The head of the National Training Organisation (NTO) for print has recently argued that around 75% of the industry were unwilling to pay for training (*Printing World, 2001*). This was a theme echoed by a printing lecturer interviewee from Cleveland College of Art and Design, the only college now offering print-based training in the North East.

Even though the research indicates a need for a wider knowledge of printing it was not apparent that a deeper skills crises existed. In fact our research findings are somewhat at variance with this view; all but one of the 15 sample companies were providing some form of training. Seven of these companies were undertaking structured external training with providers through the NVQ system.

However, this is not to underestimate the problems with the provision available. At present, the nearest college is in Cleveland and that has been under threat of closure (Bannon, 1999) and is at present only established through medium term funding provisions.

Some four years ago the British Printing Industries Federation (BPIF) and the Graphical, Paper and Media Union (GPMU) began to develop a partnership to support the industry with its training needs. The research has found that five of the case study companies were involved with the BPIF in training provision. At least one other North Tyneside printing company (not included in the survey) also has an organised system of BPIF NVQ provision (BPIF, 2001). The research has also provided the opportunity to introduce the BPIF training to the print brokers.

The following discusses the training research finding in more detail and then provides a draft list of external providers that deal with the stated employer requirements.

4.2 Training provision

4.2.1 Current workforce skills

All of the businesses interviewed reported that their current workforce skill levels were adequate. Comments ranged from 'our present skill levels are excellent' [6], to 'as long as we organise what they are doing and they know what they are doing, our people are OK. On the whole our staff can work on their own initiative' [10]. However, these views conceal a number of skills and staff training issues which are investigated in the following sections.

4.2.2 Extent of training activity among sample

Virtually all interviewees said they engaged in some form of training. The exception was a commercial printers (employing 16 people) which was one of the most advanced in terms of digital printing – an area they clearly saw as one with future growth potential. 'We used to train people up', said a senior director, 'But because [printing is] so much in demand you don't feel you have time to train

people. So we don't train, and I wouldn't consider training people at this moment in time' [11].

This comment echoes a recurrent theme from the survey: the **pressure on firms from falling profit margins resulting from the increasing competition and pace of technological change impacts on their willingness to devote time and resources to training**. As a medium-sized employer (60 workers) commented: 'a lot of employers are put off training because of the costs, even with the grants' [9]. A respondent in a general printers (ten staff) was more explicit: 'everybody that's here has to produce every hour of the day. We've got to earn money, so when it comes to spending money on training then, in my eyes, it's not on' [6]. This particular firm did, however, find resources to undertake some training internally.

The importance that training has a clear value-added component was widely stressed. A sentiment reflected in the comments of a partner in a screen printing company, employing five people: 'people say you have to give people opportunities but you give them an opportunity when you give them a job. You are taking the risks, you're the one taking the chance, so you want to see something back from it' [4].

However, the survey indicates a substantial commitment to training in North Tyneside right across the printing sector. Firms are generally not relying upon being able to find the skills they need from outside their firm. The findings conflict with comments by the BPIF Chief Executive regarding training in the industry: He wrote: 'in reality, many employers do not train, but poach people from other companies forcing up the wages' (Hill, 2001). Three employers in particular (employing nearly 40% of the 840 employees in the sample of North Tyneside businesses) differ sharply from this outlook:

How it used to be was that if somebody lost a printer the company would go and poach another one. Wages went up, so you had this vicious spiral, so what we decided to do five or six years ago was to invest in some apprenticeships. [15]

I think the industry has come a long way in the last few years and it certainly needed to do that. This was because previously there were so many skilled people who had been made redundant that firms steered away from training. [14]

It is worth taking somebody and spending six months training them because you will then have somebody who in some cases is earning half of what you had to pay somebody to entice them away from a rival firm. [10]

2.2.3 In-house training

All the businesses in the survey which undertook staff training carried out some or all of it in-house. This activity, at its simplest, is exemplified by a reprographics firm (employing nine people) which 'tried to train people in-house [by passing on] skills and a couple of the directors sitting down with them and showing them how to do it' [1]. This amounted to a process of adding to or modifying the skills of existing staff. At the other end of the training scale, the finishing house in North Tyneside, which is an approved training provider in its own right, 'trains all the time. We have very good training records out there and everybody is graded according to skills, experience and knowledge. So, for example, to get into an up-graded band they may need to go to a totally different department and learn machines, and the processes, of that department' [13].

One of the main objectives of training is the achievement of greater flexibility, particularly for the smaller companies. New technology and greater competition have contributed to the breaking down of demarcation and emphasis upon flexible manufacturing techniques, and training activity has tended to reflect this. Within the largest employer in the sample (180 staff), where training was departmentally-based, the management purposely moved staff around to give them wider experience [8]. The second-largest employer (166 staff), in a similar vein, commented: "our people are flexible, they are not just "a printer" and we have been like this from day one. So if they have no work on in the print room they will do some work in finishing' [15]. Another of the larger companies conforms to this general pattern, but only within limits: 'we have done a reasonable amount of training in-house to make people more flexible. This, though, is departmentally-based - pre-press, press, and finishing. We need people to be doing their jobs day in and day out so they don't forget how to do them properly' [14].

In general, the smaller businesses (those with less than 40 staff, or around half of the firms surveyed) did not make use of external providers of print training. A typical response of these smaller firms was that they had instituted

their own systems of training and were unable, or unwilling, to fund provision by outside suppliers.

For the printing firms more generally, the demise of colleges that catered for the printing sector was acknowledged to have prompted a large proportion of the sample businesses to develop their own in-house training. As one interviewee reluctantly concluded, 'You have to help yourself and that's what we are doing' [2]. The practical issue was clearly stated by one interviewee:

On the job training is the way to do it really, in the past we sent people to Newcastle. To do that now you have to send them to Watford or Leeds *and* it's a night away. The machine is standing there idle, and historically the wages for a trainee are quite high, so now they have to earn their keep. [9]

The only print brokers in the study had different reasons for developing their in-house training programme:

...finding someone who fits our requirements that is really quite hard. So we either do it internally with the staff we've got or we send them out to suppliers and they actually look at the printing processes at their plant; there isn't anything we've seen [externally] that can offer the wide range of training needs. [12]

Reliance on in-house training raises questions about the form and quality of the training provided. The main type of such provision is delivered through a qualified operator who trains staff to a level suitable for production requirements. This ranged from what people described as 'the old type of apprenticeship system' through to a situation where a qualified printer delivers elements of in-house training as and when they are required. **Whilst all the larger firms (over 40 staff) now have (or are developing) an external verification system alongside varying forms of internal provision, the smaller businesses were found relying on *ad-hoc* systems that were dependent on individuals.**

For the smaller firms in particular, in-house training activity, it was found, tends to be devoted to creating firm-specific (rather than generic) skills in the workforce. It is effective in developing skills which are relevant to the individual firm's plant/equipment and focus of work. For example, one employer admitted that his system 'might not be to the advantage of the staff, for he may not be able to go

to other parts of the industry and run multi-colour presses. We don't sign any papers and it's run primarily for the companies benefit' [5]. The interviewee did recognise, however, that some of the skills were transferable to similar firms and that, were the business to close, 'there would still be people looking for our lads'.

As noted above **external verification has increasingly been used by the larger companies, and there is a more significant generic element in the training as a result.** A number of the larger companies have acknowledged the problem arising from not using external training providers: 'training has not been documented very well because there has not been the need. But now standards are going up and we're talking about quality systems IIP, so obviously there is a big need to record training' [8] This is the result of pressure from on the one hand the BPIF, and on the other, large clients, who increasingly require verification of internal systems of operation before companies become preferred suppliers. As an employer of 70 staff noted, 'previously we trained on the job but did not have formal assessment. Training over two years ago was a little *ad-hoc* and not structured. So there was a lot of 'sit by Nelly' out there. Now we are beginning formal assessment. So someone will come in and learn a lot of the generic skills that are needed like paper handling' [13].

4.2.4 External training provision

All the larger companies (those with 40 and above staff) had or were organising NVQ-based external training. In the words of one HRM: 'the NVQ is *the* qualification because it backs-up internal training' [15]. (Among the smaller firms, it would appear that only one had any experience with the NVQ system.) Of the seven bigger firms surveyed⁸, five were currently using the BPIF as external verifiers; one other acted as an approved assessor in its own right, whilst the other was negotiating to introduce an external approved assessor. **This clearly indicates the success of the joint BPIF/GPMU campaign on training, ratified**

⁸ The journalists at the newspaper publishing/printing company are trained traditionally, initially though the National Council of Creative Journalists accredited courses which are delivered at eight colleges around the country, and then in-house on-the-job.

under its Training and Development Charter. The largest employer also noted that they were undertaking NVQs with North Tyneside college; as well as organising Computer Literacy and Information Technology (CLAIT) courses for their office staff, which they have now opened up to the factory. The interviewee noted that 50 members of staff had taken up this offer, which he described as an 'astonishing figure' [8].

The print broker who was setting-up an NVQ system has also developed a partnership system of supplier-based training to meet its needs. Staff undertake training - one or two days with their main suppliers - who put a training package together which covers 'the whole process from pre-press to out-the-door' [12]. It is also interesting to note that the print finishers [13] are involved in networking with businesses outside the sector for purposes of training. The interviewee from the firm pointed out that Merck, Sharp and Dome provided training events which were open to those outside the company and were a useful source of training provision.

Some of the employers that were providing this NVQ 'on-the-job training' felt it was more acceptable than college provision:

Being in the classroom is a lot different than being on the shop-floor, we have a 58 year old printer who is training someone now and he does not allow him to walk away. And in six months he can operate a press himself. So from this we get a young lad who has been taught the correct way. Not the quick way, not the short way, the bad way, the bad habits way. [2]

The problem is that apart from sending someone out to a college which has our equipment, as we run an eight colour press, which college is going to have that? So the NVQ system does in the main meet our needs. [14]

In spite of this, the issue of the demise of printing courses at local colleges is regarded by many of the medium and large employers as a significant loss, since such courses play an important role within their overall programme of training:

We contacted the TEC, North Tyneside college, Gateshead college and in the end we used the BPIF. Nobody had specific printing training and we struggled for a long

time. We said we would give people day-release but there's nothing out there, the nearest ones down in Leeds. [8]

Again, as with training overall, shrinking profit margins play an important part in the choice of training provision; as one interviewee summed it up, 'funding is definitely an issue, and having the right courses as well. [15]

The other main avenue of external provision is provided by suppliers (including sometimes manufacturers) of printing-related equipment. For example, in the pre-press areas they provide initial re-training on new software packages. In the press room, too, this is an important element: as one employer noted, 'If we got new kit it would be manufacturer training, so they would teach the operator and his immediate superior' [5]. This, of course, means that the training is normally only available on purchase of the machinery, and that there is still a training requirement to be met where new staff are concerned.

5. Skill gaps

5.1 Hard-to-fill vacancies

Over half of the firms reported they have experienced no problems with hard-to-fill (HTF) vacancies over the recent period. Five of these firms noted that they have developed systems of internal and external training provision which clearly played a significant role in replacing skills lost when staff left (or to deal with skill requirements resulting from technological and market changes): ‘Five years ago we invested in modern apprenticeships, so that we had people coming through all the time. So primarily we’re printers and if we lose two of our top printers we have a level beneath them who can jump straight in’ [15]. Other firms with few problems of HTF vacancies were in this position because they had long-established workforces with very low turnover or, in one or two cases, rely upon poaching from other firms.

Among the other companies, shortages identified related to skilled printers, finishers and print broking skills (especially knowledge of the industry). Such unfilled vacancies appear to have a larger impact upon smaller firms. Some of the needs are very particular indeed – e.g. the print broker and print finisher, of which there are few in the area. While the print broker initially resorted to headhunting, both have now responded to the situation by developing systems of training. A medium-sized commercial printer experiencing problems in filling both printing and finishing vacancies, received word through the trade that a printer was moving from Manchester and was able to solve the problem by engaging this man - illustrating the importance of the network within the industry. Finally, a reprographics firm reported great difficulty in recruiting people with a combination of printing reprographic and computer skills [1].

5.2 Skill needs

As discussed extensively in the interim report there has been a blurring of the traditional demarcation based on craft skills between the pre-press, press and finishing areas. This development is related to the fact that **there has been a steady process of de-skilling in the printing industry linked to the**

introduction of new technology. This view was frequently expressed by firms during the interviews: 'Because of the pace of new technology developments a lot of the skill has gone out of printing' [9]; 'The skill's going out the printing world because of the new machinery' [11].

This blurring has facilitated increased flexibility in the industry, allowing temporary skill shortages to be overcome by moving staff around. As one of the medium-sized firms with a strong union presence noted:

There is more flexibility in the print industry than ever before, it used to be that you were in the finishing department so that was what you did. Now, as long as you pay the rate you have got flexibility, so there are more and more people capable of doing each others jobs. [9]

However, companies did still note a number of skill shortages in each of these areas of the industry. These are identified for each area of printing in the following sections.

5.2.1 Pre-press

A large number of companies stated that they were having problems with regard to the highly computerised world of the pre-press. The problem is identified by the companies as the result of a mis-match between how colleges and universities teach graduates design and graphics, on the one hand, and the needs of the industry on the other. **The main needs of the industry in respect of pre-press are that new staff understand the functioning and limitations of printing presses and the way the latter relate to computer graphics.** Some quotations from interviews illustrate the nature of the problem and the sorts of skills which employers need:

The problem is that people are too artistic and not quick enough. We have had a lot of people from the colleges who had been on computer courses but they could not do it. [1]

The designers are not good at the printing side of it, because you can do wonderful things with a computer but you can't output them on a job. [16]

The problem on the pre-press side is that they leave college and all want to be are fancy dan designers. They are not taught enough at college about printing. [11]

There are Mac operators now who haven't got the background to print and the understanding of the print processes. I defiantly see a need to have a basic introduction to printing. It's no good having somebody at the front end of this technology with an idea in his head putting that onto a Mac. Then sending it and saying 'there print it', without the knowledge of how you're going to print that and develop that across a range of products a range of print processes. [9]

5.2.2 Press room

The issue of the shortage of skilled printers has been referred to above. A number of the larger employers had found this an issue several years ago, but have since rectified this with the introduction of their own systems of training provision. **A number of the firms stated that there were problems with finding skilled printers.** The main consequence of the shortage of such skills has been the effect upon wages. 'They are commanding salaries of £15,000 to £20,000 a year', complained one employer [2], while another reported that his firm was 'paying over the odds for people at the moment because anybody any good is working somewhere and you have to encourage them to leave that post to come and work for you' [10].

This may, it was observed by one employer, be a reflection of the North East being 'a small printing area' [14]. None of the people interviewed felt that the shortage amounted to a skill crisis in this area, although a college printing lecturer implied that it might develop into one: 'companies are not at the moment taking on apprentices which reinforces concerns over printers retiring in the next five to ten years' [19].

The survey suggests that some employers are cautious in taking on young recruits as apprentices. As the survey's largest employer commented:

We used to continually employ younger people, but for some reason in the last two to three years the younger people haven't been quite up to the standard we are used to. They seem to not need the work as much now and they haven't got the

right attitude. We are now taking on older people who do a good day's work. They are here on time and they don't take time off. [8]

However, a third of the surveyed firms were positive in their attitude towards young recruits, with one detailing the need for:

A modern apprenticeship for the print industry where you could take in two or three school leavers in the summer and train them. You might then find that out of every two or three one decides the print industry is for him. The problem at the moment is that by the time young people reach us at 18 and 19 they are hardened in the wrong attitudes and become a problem. [10]

5.2.3 Finishing

A number of the printing firms contacted for this study reported a shortage of finishing staff. The problems here, as identified by the print finishing company, is the lack of a pool of such workers which can be readily drawn upon: 'You do not have local companies that have trained people. Yes, printers have finishing lines and you may pick up the odd person' [13]. The print finisher has, though, instituted an in-house training system to overcome this problem.

5.3 Demand for training: identification of employers' needs

This section discusses the training needs identified by employers and current situation with training providers. **All but one employer expressed some training needs, although none of the interviewees indicated that training deficiencies constituted a significant problem in terms of maintaining their competitive edge.**

The main area in which employers (two-thirds of the sample) expressed a training need was in relation to the lack of understanding of basic printing.

In the pre-press this related to the mis-match between what is being taught on design and graphics courses and industry needs:

We need people to be trained on the printing side, separations, grippers, etc. Although if the colleges gave people a better print grounding. So a basic introduction to printing. [1]

There has certainly been a lack of understanding of the relationship between printing and its link to IT. [14]

It was generally agreed that some form of basic introduction to printing would help to alleviate this problem, although, it should be emphasised, potential providers are a major problem here. One employer summed up the situation as follows: 'I think if it were possible to link something with the BPIF, that will be a good thing to do. But we need a place on the doorstep where they can learn the theory' [9].

The central need is for a training provision which explains the theory and new developments: 'The technology is not that important because we have that. What we need is somebody who both knows the print game and keeps up-to-date with the technology: that's what you need' [8].

Although day-release training for staff is usually met with mixed enthusiasm, even some of the smaller firms did not dismiss the idea entirely out of hand: 'I don't particularly want day release, but I might change my mind if the person had the right type of attitude and the course was right' [4].

It is also important to note that firms are starting to acknowledge the need for 'Introduction to Printing' training courses for their sales and customer support staff. The value of this is illustrated by the fact that a director in one of the larger companies delivers a one day basic introduction to print seminar for the firm's sales and office-based staff.

The other area of training which was considered to be of value (by more than half the interviewees) related to IT skills. Two of the firms expressed a need for training on specific pre-press software like Quark Express. And a further two wanted basic introduction to Microsoft packages in the office. The other area which can be identified here is some form of generic IT training, which was seen as becoming increasingly important as technology gathers pace. This need was not seen as a major issue in the press rooms as yet, but as the wider industry analysis indicates (see section 2), and indeed particular companies within the study (see section 3) suggest, this may be an under-estimation of the pace of change.

Above the shopfloor level, firms considered there was a need for training in basic management skills aimed at supervisory staff. One employer argued that 'the flow of staff from the shop-floor to lower and then higher levels of management had dried up' [9]. He argued that this caused major problems for larger companies when work was taken which proved unprofitable because of re-work. The other area of training identified related to estimating.

The most frequently encountered comment of all was that any training provision should be backed up by some form of funding:

Any financial help we can get would be appreciated because training is as important to us as a new piece of kit. Any aid at all, matched-funding or whatever. [13]

We would like to develop NVQs in customer services, logistics, and finishing in the future but the cost is the problem. If you want to do this for the majority of your staff, if they are interested and wish to develop, it's an expensive business. [15]

6. Current provision of training

6.1 Introduction to printing courses

At present no course exists which would provide an introduction to printing. The BPIF do offer such a course at various locations, the nearest of which is Huddersfield. The survey suggests that this would not be well received. Ray Bannon (print lecturer) at Cleveland School of Art and Design has indicated that he would be prepared to travel to North Tyneside to undertake a series of classroom seminars on the subject. This could be run in conjunction with a local college. **There is clearly a void in provision for this type of course with regard to the pre-press and sales/customer service staff.** The BPIF can offer customised training for individual companies, but the obvious problem here is funding.

For general printing training – which is an area that needs addressing especially in small firms (less than 40 staff) - the BPIF is the main provider. They at present offer some NVQ training to businesses with as few as four staff. BPIF's North East commercial executive (Helen Sykes) pointed out that NVQ training for apprentices under 22 years old is free to employers, so this may be an area for potential growth as a third of the firms. At present the Springboard Sunderland Trust offer NVQ training with employers contributing £40 a week. This also involves a one day attendance at their location for Key Skills training. The problems here are (1) possible poor response to training involving day release for staff, (2) location and (3) provider recourses.

A number of employers were not positive regarding the principle of day release, although our impression is that the objection is principally finance-based and may be overcome with the right funding. The location is in Sunderland, which could be problematic for day-release. At present they only have one assessor and one of SST's officer (Dave Cawley) informs us that it would be difficult for them to service North Tyneside and more than one or two firms. He did, however, note that the introduction of Learning and Skills Councils should allow them to expand their operations. There is also the potential for a North Tyneside provider to be introduced. We were informed by Dave Cawley that his operation has a Newcastle office which might serve North Tyneside's requirements.

BRITISH PRINTING INDUSTRIES FEDERATION

North Eastern Business Centre
7 St John's Square
Wakefield
WF1 2QX

For information:
Helen Sykes
Tel:
(01924) 363 3813

Web page:
www.bpif.org.uk

E-mail:
ne@bpif.org.uk

Provision: Printing

(a number of courses are provided in printing - including an Introduction to Printing Technology, although the nearest location is Huddersfield)

A number of these courses are run at NVQ level 2 and 3 with City & Guilds provision

SPRINGBOARD SUNDERLAND TRUST

For information:

184 Roker Avenue
Sunderland
SR6 0BS

Dave Cawley
Tel:
(0191 564 0291) or (0191) 516 6366

Provision: Printing: (Foundation Modern Apprenticeship)

Full time, leading to NVQ qualifications; placements located in Wearside

(Advanced Modern Apprenticeship)

Full time, leading to NVQ qualifications; placements located in Wearside

Qualification:

NVQ level 2 in Machine Printing
NVQ level 3 in Machine Printing

Target:

Young people aged at least 16 who can complete a full Modern Apprenticeship by their 25th birthday

Timetable:

Full time. Hours dependent upon employer

Cost:

Information supplied indicates that trainees received £40.00 per week

Content:

Modern Apprenticeships offer young people the ability to gain the skills and qualifications required for employment in industry and business. Training is to industry standards and at Foundation level leads to nationally-recognised NVQs at Level 2. It may be possible to progress on to an Advanced Modern Apprenticeship where training is at NVQ Level 3. Training also covers Key Skills in communication, Information Technology, the ability to handle numbers, and working with others. The remainder of the training can be adapted to meet particular company requirements. Those undertaking Modern Apprenticeships are normally given employed status at the start of their training. Where employment is not possible the trainee will be clearly linked to an employer, or a group of employers, and paid an allowance. A training agreement is drawn up at the beginning of the Apprenticeship detailing the training to be offered to the young person and the qualifications to be gained

TEESIDE TERTIARY COLLEGE

Marton Campus
Middlesbrough
TS4 3BR

For information:

College Information Centre or Ray Bannon
Tel:
(01642) 296400

Provision:**Printing:**

(a number of print based courses on day-release)

Cost:

Wherever possible, the College makes an all-inclusive charge to students prior to the commencement of studies. Students eligible for fees remission need to be: full-time and under 19 on 31st August; in receipt of Job Seekers Allowance; in receipt of means tested benefits - income support, family credit, housing/council tax benefit, disability allowance or their unwaged dependants; or studying for qualification in adult basic education or English for speakers of other languages. There are exceptions where part-time students under the age of 19 on 31st August may qualify for remission. Students who are not eligible for remission of fees may qualify to have their fees waived. The College is prepared to waive course fees for specific groups of students for whom no additional sources of funding can be sought. Those eligible are full-time students over 19 on 31st August, students registered unemployed and not receiving benefit, and students over the age of 60 years. Any student who qualifies for either remission or waiving of tuition fees may also qualify for the waiving of examination entry fees subject to achieving satisfactory academic performance and attendance during the year. Course fees must be paid or arrangements made for payment prior to the commencement of studies. Facilities for payment of course fees are cash, cheque, credit card, debit card, letter/purchase order from employer of sponsor or instalments by direct debit.

6.2 IT skills

Basic IT skills are available through a number of providers. Three are identified here, based on location. CLAIT courses would be suitable for the expressed requirements; these can be short-term and are either free or involve a very small fee.

N TYNESIDE COLLEGE	For information:	Web page:	E-mail:
Main Site Embleton Avenue Wallsend NE28 9NJ	Information Centre Tel: (0191) 229 5000	www.ntyneshire.ac.uk	infoцент@ntyneshire.ac.uk

Provision: CLAIT (also Introduction to Computers)

Courses run 10 weeks at 2/3 hours at night

TYNEMOUTH COLLEGE	For information:	Web page:	E-mail:
Main Site Hawkeys Lane North Shields NE29 9BZ	Information Centre Tel: (0191) 290 0700	www.tynecoll.ac.uk	enquires@tynecoll.ac.uk

Provision: CLAIT

Course runs 1 year

KENTON COLLEGE FOR CONTINUING EDUCATION	For information:
Drayton Road Newcastle upon Tyne NE3 3RU	Louise Hetherington/Helen Greaves Tel: (0191) 286 9001

Provision: CLAIT and Pre CLAIT courses

Courses run 18 weeks 2 hours a week. (These can be undertaken in the evening)

7. Specific recommendations

Discussed below are a set of basic recommendations on training provision for the North Tyneside printing sector:

(1) A short basic introduction to computing - This can be provided by either the CLAIT or pre-CLAIT courses identified in section 6. These would meet the basic needs of office staff and allow production workers to become accustomed to computer technology. It should be noted that the largest employer [8] in the survey has already offered this type of training to staff with a large up-take. These courses are available through local colleges and North Tyneside would be easily accessible.

(2) A basic introduction to printing - This would accommodate office and pre-press staff who need to have a basic understanding of printing outputs and their limitations. The problem here is accessibility, as the nearest potential provider of this is Teeside Tertiary college. The BPIF do provide a basic introduction but it is based in Huddersfield and would thus not meet employers' requirements. There is a strong need here for the development of links or partnerships between those organisations and individuals who have the required printing skills to lecture on this and providers of suitable accommodation. The latter requirements of accommodation would best be provided by a college as this would allow the potential for Key Skill provision to be built into the programme. More importantly, this would bolster the type of training recommended below.

(3) On the job print training - There is a clear need for the NVQ 'on the job' type training, already being provided by the larger companies, to be developed within the smaller firms, to guarantee a continuing skilled workforce. At present the BPIF provides this type of training in conjunction with a number of the surveyed employers. We recommend an extension of this training into other businesses within the sector but with an emphasis on Key Skills and with the opportunity for some form of day-release. Day-release is required so that staff develop more than just machine specific skills. Instead they can achieve a wider understanding of the printing process, providing a bolster to printing generic skills acquired under the NVQ programme. This type of provision might feed into the training requirements

in (2) above, giving rise to a cost effective component and the development of a recognised sector training programme.

The rider to the above is that training provision needs to be supported by some form of funding, particularly in the case of small firms. A very basic introduction to this is given in Appendix 2, but this needs to be developed by an appropriate party.

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Appendix 1

Interviewee Identification Key

A number of businesses found it difficult to give exact information on age, hours of work and skill, since the interviewees were not always primarily responsible for personnel matters. With respect to the skill categories, it is clear from the survey that a number of employers are increasingly viewing their workforces as flexible or multi-skilled.

[1] Reprographics firm (platemakers)

Staff 9 (2 female)

Age band 1 - 50+; 3 - 36-49; 2 - 26-35; 3 - under 25

Categories 6 skilled; 2 semi-skilled; 1 un-skilled

[2] Commercial Printers

Staff 40 (12 female)

Age band 10 - 36-65; 20 - 26-35; 10 under 25

Categories Hard to categorise as multi-skilled but around a half are skilled

[3] Newspaper Publishing/Printing Firm

Staff 14 (8 female)

Age band 3 - 36-55; 11 - under 25

Categories 12 skilled; 2 semi skilled

[4] Screen Printers

Staff 5 (no female)

Age band 3 – 50+; 1 - 26-35; 1 - under 25

Categories All skilled

[5] **Commercial Printers**

Staff 25 (6 female)

Age band Majority in the 20-30 are band

Categories Majority are skilled

[6] **General Printers**

Staff 10 (3 female)

Age band 3 - 36-49; 7 - under 25

Categories Multi skilled

[7] **Lithographic Printers**

Staff 6 (3 female)

Age band 1 - 36-49; 3 - 26-35; 2 under 25

Categories 5 skilled; 1 office

[8] **Screen Printers**

Staff 180 (approximately 53 female)

Age band Hard to categorise but shop floor age was 30+

Categories Hard to categorise

[9] **Commercial Printers**

Staff 60 (12 female)

Age band Hard to categorise

Categories Hard to categorise but the majority of the shop-floor are skilled

[10] **Lithographic Printers**

Staff 18 (3 female)

Age band 7 – 36-49; 6 - 26-35; 5 - under 25

Categories Hard to categorise but the majority are skilled

[11] **Lithographic Printers**

Staff 16 (5 female)

Age band Average age is 30-40; with 5 on the shop-floor - 26-35

Categories Hard to categorise

[12] **Print Brokers**

Staff 98 (n/a female)

Age band Average age is 26-33

Categories Hard to categorise

[13] **Print Finishers**

Staff 70 (28 female)

Age band Average age is 26-36

Categories Majority semi-skilled

[14] **Commercial Printers**

Staff 140 (19 female in production workforce of 100; n/a of other 40 staff)

Age band Average age is 30-40; with 5 on the shop-floor - 26-35

Categories Hard to categorise as some skilled; semi-skilled; and multi-skilled

[15] **Commercial Printers**

Staff 166 (22 female)

Age band 'We are very age diverse'

Categories Moving to flexible workforce

Appendix 2

Funding sources

There are three main funding avenues identified below which relate to individual staff members and employers through Learning North East. The trade union learning fund has been included because a number of the larger companies indicated that they had a unionised workforce.

Individual learning accounts

There are eligibility rules here - to eliminate non-vocational (mis-) use - but any print training or IT-related training would be eligible for these.

<http://www.dfes.gov.uk/ila/>

Support of up to £150 is available for over 18s – learners must contribute first £25

Accessed by the individual through the web; nationally, Tel: 0800 072 5678 (now no local contact through the TEC)

And then complete form with their particulars.

The Union Learning Fund

This fund is for bids that are trade union led, therefore it would initially be of use to those employers who already have a union presence (normally the GPMU). It could prove a useful avenue for employee development which also meet employer requirements.

We are informed by the fund Manager, Lynne Robinson, that the GPMU has a history of successful partnership bids with employers throughout the funds life time. She also indicated that the fund is being extended to 2004, so even though the forth year deadline for bids is April 30th 2001, there is future potential to feed into the funding. Further details can be found on-line at the web page link below or Lynne Robinson can be contacted directly at the address overleaf.

<http://www.dfes.gov.uk/ulf/index.shtml>

Lynne Robinson (ULF Manager)

Department for Education and Employment

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Moorfoot

Sheffield

S1 4PQ

Tel: 0114 259 1175

Fax: 0114 259 4694

Learning North East

For regular information on funding and courses Learning North East is an excellent starting point – one of the large successful companies [15] uses this regularly.

<http://www.learning.org.uk/>