



Skills and Workforce Development Mapping Study in Knowledge Based Industries in York

**Prepared for the Learning and Skills Council North Yorkshire
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Executive Summary

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1 Executive Summary

Research objective

The scope of this project covers each of the three fast-growing science and technology clusters promoted vigorously by Science City York:

- Bioscience and healthcare: Bioscience York
- E-science York: Information and Communication Technology (ICT)
- Heritage and arts technology York (referred to henceforth as HAT)

The objective of the research was to produce an in-depth audit of Science City York cluster skills and workforce development needs, highlighting short, medium and long-term priorities with the aim of:

- 1) Increasing the competitiveness and growth of York's science and technology related businesses through increased skills development at all levels.
- 2) Encouraging the local community to access new skills and employment opportunities in knowledge related businesses in the York area.

Science City York Business and Workforce Coverage

Science City York clusters comprise 280 businesses across three sectors. The bioscience cluster comprises over 70 businesses employing an estimated 3,749 people as at March 2003. The E-science cluster comprises nearly 150 Information Communications Technology-based firms employing an estimated 2,692 people. The heritage and arts technology cluster comprises over 60 businesses employing an estimated 1,965 people. An estimated 8,406 people work across the clusters.

Profile of respondents

This research study has engaged representatives from 56 of these businesses in February and March 2003 (20% of the cluster). The businesses in the sample employ 3,249 people, or 39% of the entire workforce. 68 employees (in 20 companies across the clusters) completed a survey about their skills, qualifications, training and their careers. 1,741 York residents (weighted to the equivalent of 2,158 residents) provided opinion and perceptions about the cluster. A wide range of interviews and consultations with cluster champions, key agencies and intermediaries were also carried out.

Workforce Characteristics

The employer survey shows that men make up 54% of the workforce, but are under-represented in e-sciences accounting for 30% of employees. In the employee survey, 55% of respondents were male.

People recruited from the York area make up 50% of the workforce across the Science City York clusters. The bioscience cluster employs fewer local people, as do large companies employing more than 50 staff. The main problem employers identify when trying to recruit locally is the high level of employment in York and the lack of a broad enough labour pool from which to recruit specialists, typically recruited from around the UK or even internationally. This is supported by evidence from the employee survey which shows a stable workforce (41% of employees have lived in York for more than 10 years), but also

movement into the area for employment (38% moved to York because of their current job and 9% had moved to York because of a previous job).

Qualifications of the workforce

Employers estimated that 43% of the workforce are graduates or postgraduates. Given the existing size of the clusters and forecast growth (described below) this represents a high demand for suitably qualified people. It may also naturally inhibit opportunities for local people who are not graduates. The employee survey found 75% holding the equivalent of an NVQ level 4 or 5 qualification (e.g. graduate/post-graduate qualification). This apparent discrepancy may reflect employer's lack of awareness of qualification levels of their employees, but probably reflects the self-selecting nature of the employee sample. Discussion groups and depth interviews highlighted a major issue with the migration of York graduates away from the city once qualified, and a potential mismatch between the academic excellence being developed and the jobs on offer in York.

The residents survey found a very well qualified labour pool in the York area with 42% holding a NVQ level 4 or 5. However, data from North Yorkshire LSC's household survey shows 24% of York residents with a qualification equivalent to NVQ 4 or 5 suggesting over-sampling of highly qualified people in the residents survey. 35% of residents have a relevant qualification in science, information technology, computer science, media, heritage or arts including 79% of those in full-time education. A high proportion of relevantly qualified people have a NVQ level 4 qualification (38%) or a NVQ level 5 (19%). Despite sampling issues, the resident survey suggests a good supply of suitably qualified people to meet the needs of an expanding cluster.

Forecasts

The York and North Yorkshire Sub-regional Action Plan notes job growth of 25% p.a. has been achieved in the first 3 years of the project across the clusters. An increased level and pace of activity in key areas of the project will contribute to the 20-year target of an additional 15,000 jobs in science-based sectors. In the short-term, companies predict an increase of 1,082 jobs across the clusters (37% of employment in the sector) in the next 3 years. This is a much higher rate of growth than the 7.1% expected in all sectors in North Yorkshire in the next eight years¹. E-science / ICT companies expect their workforce will more than double. Supplying this demand will present a significant challenge, particularly with regard to the high level of graduates likely to be required.

Recruitment, Retention and Placement

The employer survey found an average of 5 people left each company in the last twelve months, equivalent to turnover of 8% of the workforce. This is relatively modest turnover and is supported by evidence from the employee survey showing that a quarter of employees have been with their organisation for over 10 years, whilst only 10% have been in their current employment for less than 1 year.

Over half the companies in the sample (51%) could identify an occupation that would be difficult to recruit. The most difficult occupations to recruit are senior managers, professionals and technicians. E-science and bioscience companies are most likely to

¹ Source: Progress in the Region – Yorkshire Forward

identify an occupation they find difficult to recruit. Businesses are disappointed in the service they generally receive from recruitment agencies and would welcome alternative solutions to be developed. Coupled with this, generally, is a poor placement culture between the institutions and businesses across the clusters.

Training Culture

Job-specific technical or vocational training and health and safety training are the most common types of training offered. Across eight of the largest businesses in the clusters, a total of £880,000 per year is spent on training alone. Respondents felt that training solutions needed to be devised for generic and technical training with a mixture of delivery formats available at both cross-cluster and cluster specific levels. Four companies out of fifty-one surveyed do not offer training to their staff.

This commitment to training is demonstrated by the two thirds of employees who had received training with the support of their current employer in the past 12 months. Almost 80% of all training received was felt to be a positive experience for those employees receiving it. However, 20% of training received was felt not to have improved employees' skills or job competence.

Skills intelligence

Interviews with cluster champions revealed a number of issues including:

- In biosciences, difficulties securing senior management, the lack of "quality" marketing staff, skills shortages in scientific/laboratory technicians, the need for multi-skilling, retention issues caused by competition with other areas.
- In ICT, lack of proficient sales and marketing staff, wage competition (with other areas) and retention issues, lack of placements and business skills.
- In HAT, difficulties securing senior management, issues attracting people to the York area, the potential demise of highly specialist conservation skills, and the skills and training needs of volunteers.

The employer survey showed key skill gap areas across the three clusters including:

- Advanced ICT (mentioned by 47% of respondents)
- People management (44%)
- Business and commercial development (41%).

Project management, communication and team-working are also important skills that some companies perceive to be lacking in their workforce. Technical skills gaps exist at different levels within the workforce, but on the whole, businesses know how to find technical training and are used to buying this in, or travelling away to obtain it. Very little in the way of technical training is secured from York or North Yorkshire providers, and a number of businesses would be keen to develop more local links with providers or institutions.

58% of companies with recruitment difficulties feel that the skills and qualifications of recruits are not good enough. They appear not to have the high level of skills required by the company and are lacking the hybrid/non-traditional skills that employers require. A range of qualities and skills is lacking amongst applicants generally, and the actual volume of York-based applicants appears to be diminishing each time companies try to recruit for new posts.

The demand for and use of high skilled people is reflected in the employee survey. 75% of employees feel that either all, or most, of their skills and qualifications are used in their current job.

Human Resources

41% of companies leave the owner/manager of the business to deal with human resources (HR), induction, training and recruitment issues. A fifth of respondents have a devoted human resource officer or team whilst a further 10% have a part-time human resource officer. 14% say they are either too small and that HR/training is unnecessary or that no-one really deals with HR other than in a very ad hoc fashion. 10% leave these issues for their line manager to tackle. Others, especially larger firms, manage HR in a mixture of the ways described. Interviews with larger firms (who account for 28% of people employed in the cluster) showed that they have a dedicated HR function and common issues leading to an interest in an HR or workforce development forum.

Career progression

There is a high degree of stability in the workforce in the clusters. The employee survey found that less than half (47%) have changed their job since being with their current employer. This reinforces the low level of turnover mentioned earlier. However, there are good opportunities for career progression in the clusters based on the profiles outlined by respondents. Our analysis suggests that 56% of all job changes made by this sample of employees were a result of promotion, 21% were a result of restructure and 23% were a result of some other circumstance, change or opportunity.

The employee survey suggests that just over half of the respondents (52%) will remain in York and in the same industry area (not necessarily with the same employer) and that they are quite or very confident of progressing their careers in this way. 16% are not very confident of such a progression route and are less certain about what is next for them – this could mean simply remaining static in their current job role. 10% feel that in order to progress their career, but stay in York, a change of employment sector might be necessary. A similar proportion of respondents, 12%, feel that to progress their career in their chosen industry, they might have to move out of York again suggesting perhaps a market shortage locally to fulfil career ambitions of these employees in their current sector of employment.

There seems to be a strong correlation (65%-80%) between an individual's previous sector of employment and their current sector of employment with the exception perhaps of the heritage and arts related cluster. The data from the employee survey also implies that few of these previous sector-related employment opportunities were in the York area.

Perceptions

85% of employees strongly agree or agree that it is quite difficult to get a job in one of the clusters if you do not have specific skills and qualifications. However, these skills or qualifications do not necessarily have to be sector or specialism-related. Common sense and a good attitude are unlikely, on their own, to be sufficient attributes in helping an individual gain employment in businesses of this nature. Although it is quite possible that individuals fall into specific, specialist areas of activity by accident or opportunity, it does appear to help if individuals know they want to work in that type of industry (once in it) if they wish to progress their careers further.

Residents were asked if they would consider applying for a job in the bioscience, IT or HAT clusters. A high proportion of residents (33%) would consider a job in the clusters (an encouraging figure when one considers that at present the clusters account for around 8% of total employment in York), but more than half of respondents would never consider a job in the clusters. 11% of residents are already working in the sector. Employment status significantly affects the response of people to the question. 61% of students and 43% of employed people would be interested in, or consider a job in, the clusters. 91% of economically inactive people would never consider a job in the cluster.

There are mixed perceptions of the size of the cluster in York. Residents were asked how many of the 110,00 people working in York they thought were working in the bioscience, IT or HAT clusters. Responses were evenly spread across a range of employment bands starting at 2,000 and including a band of more than 20,000. The actual estimate for the clusters is 8,406. Almost a quarter of the sample selected the correct employment band containing this employment level.

Recommendations (action plan themes)

It is recommended that partners orchestrate a small number of significant workforce development interventions between September 2003 and March 2005, in order to overcome the main barriers identified by the research as follows:

Barrier / Need / Demand	Solution	Outcomes
Need for co-ordinated information and intelligence	Formation of a dedicated skills challenge group for the clusters; Training Prospectus and information about grants or subsidies	Increased use of local training providers to meet business HR and skills needs; co-ordination of resources by local training providers.
Lack of dedicated HR and training knowledge especially within small and micro firms	Training needs analysis service and development of Key Worker initiative led by the Sector Skills Brokerage	Businesses completing TNAs, skills audits and committing to developing a key worker within their organisation
High proportion of skills gaps in all 3 clusters for advanced ICT application skills (47%), people management (44%) and business / commercial / marketing skills (41%)	Mixture of generic training solutions including new course / material design, modular training packages and cluster-specific training courses to meet needs	Learning opportunities developed with employees in the clusters across 3 main skill gaps, plus bespoke materials designed, piloted and accredited where necessary.
Employers having to recruit out of York for higher level positions and lack of poor placement culture to provide transition for students and / or interested residents with lower level qualifications	Placement initiative including work-tasters through to pilot internships; links to new Graduates Yorkshire initiative; feasibility study for cluster-specific recruitment service	Increased number of work placements secured and guaranteed job interview; increased confidence amongst lower level qualified residents taking up ECDL courses
Lack of quality careers material for purposes of advice and guidance limiting knowledge of employment opportunities in the clusters	Case studies, careers portfolio and supporting factsheets and workshops for intermediaries for use with their client groups	Develop intermediary Learning Champions, portfolio of accurate careers materials and take up at bespoke careers conference / workshops