

# Higher Apprenticeship for IT Professionals

A guide to developing work-based progression routes to higher education for Advanced Apprentices and other IT professionals

Produced by the University Vocational Awards Council  
Written by Adrian Anderson and David Hemsworth

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Leading learning and skills

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## Foreword

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This is one of a series of guides we are publishing simultaneously on Apprenticeship progression to higher education, sponsored by the Learning and Skills Council. There are two other sector-specific guides for those involved in provision for the Active Leisure and Hairdressing and Beauty industries, complemented by an overarching generic guide applicable to all disciplines.

The fact that we have been able to develop a guide specifically relating to progression in IT is an indication of the existence of a body of very good practice in the sector. This guide is based largely on the achievements of the LSC-sponsored progression 'compacts' relating to IT. The institutions, employers, the Sector Skills Council e-skills UK and other partners involved are to be congratulated on their innovation, enthusiasm and hard work to develop the work-based route to HE.

Opening up higher education to Apprentices is important. Enabling such progression will provide new learning and career opportunities for vocational learners at level 3. It will help to deliver the higher level knowledge and vocational skills employers increasingly require in our advanced, post-industrial economy. It will enrich and expand significantly the market for higher education in Britain. Indeed, it will be very difficult to achieve the 50 per cent participation target and attendant objectives to make higher education accessible to all who can benefit from it if we fail to unblock the work-based route. Apprentices and other work-based learners are an important and growing group of potential HE learners.

For some time the government and its advisors have been advocating progression from Advanced Apprenticeship to higher education, particularly via Foundation Degrees. UVAC, as a higher education representative body championing vocational learning through its membership of over 100 higher education institutions, further education colleges and corporate bodies, fully supports this policy.

To date, however, numbers of Apprentices enrolling on HE programmes appear to have been tiny. Our own newly-published research - a companion volume to the guides, detailed below - calls for better progression data and highlights the barriers that are blocking the work-based route to HE.

Excellent examples of good practice nevertheless exist. Detailed case studies from the IT progression compacts form the backbone of this guide, which is aimed at all those involved in the development and delivery of HE programmes for Apprentices and other work-based learners – institutions, employers and other bodies supporting work-based learning. Dissemination of this experience will ease the way for others in this challenging but critically important area of work.

We are very grateful to the Learning and Skills Council for funding this and related projects on Apprenticeship progression carried out by UVAC in 2005. All the guides are available as downloads on our website, [www.uvac.ac.uk](http://www.uvac.ac.uk), with the generic guide, Active Leisure guide and this IT guide also available in print – the latter available from e-skills UK, who have kindly funded the printing of the guide. In addition, as mentioned, we are publishing in both hard and soft copy *An Analysis of the Progression of Advanced Apprentices to Higher Education in England*. Together we believe these publications will make an important contribution to the work-based progression agenda, to the benefit of individuals, institutions, employers and the wider national interest.



Professor Simon Roodhouse  
Chief Executive  
University Vocational Awards Council

## Summary

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### Introduction

This section sets the guide in context by explaining the rationale and policy background, and introduces the progression compacts on which the guide is largely based. It explains the role of UVAC who produced the guide, acknowledges the sources and defines the guide's scope.

### The sector case for work-based progression to HE

This section explains how Higher Apprenticeship partnerships can articulate the case for work-based progression to HE by:

- consulting the *IT Insights* skills research and analysis published by the Sector Skills Council, e-skills UK
- drawing on the rationale in the Foundation Degree Sectoral Framework for IT Professionals
- drawing on other evidence, including the case studies in this guide.

### Target learners

This section explains the range of training, qualifications and experience the target group brings to higher education. It provides a guide to the features of:

- the Advanced Apprenticeship framework for IT Professionals
- technical certificates within the Advanced Apprenticeship
- NVQs, particularly at level 3.

### Developing HE programmes for work-based learners

This section provides detailed information and guidance on programme development based on experience in the sector to date. It provides:

- models of progression through 'Higher Apprenticeship'
- guidance on curriculum design and contact, including supporting sector frameworks
- guidance on how ensure provision is fit for purpose, including how to engage employers in the process.

### Recruiting work-based learners onto HE programmes

This section identifies the target audiences for the marketing and promotion of Higher Apprenticeship programmes, and examines admissions procedures. It provides examples of marketing and promotional methods and sets out key messages to underpin publicity, tailored to each audience and type of programme.

### Delivering HE programmes to work-based learners

This section highlights the central role of the workplace in delivering and assessing Higher Apprenticeship programmes. It provides guidance on:

- programme duration and attendance modes
- learning agreements
- the support work-based learners are likely to need, including study skills support, tutorial support and workplace mentors
- methods of assessment, including the accreditation of prior experiential learning (APEL).

### Funding HE programmes aimed at work-based learners

This section provides guidance on the plurality of funding available to support Higher Apprenticeship. In addition to HEFCE, potential funding sources include the LSC, the European Social Fund and, not least, employers.

### Case studies

This section contains detailed examples of Higher Apprenticeship programmes. There are four case studies:

- Integrated Apprenticeship and Foundation Degree in Computing and Internet Technology, Yeovil College
- An employer perspective on the Yeovil programme from Aerosystems International
- Foundation Degree in Computer Networking Management, Manchester College of Arts and Technology
- Foundation Degree in ICT Support, Gateshead College.

# 1. Introduction

## Tapping new potential

This guide has been produced by the University Vocational Awards Council (UVAC) for the Learning and Skills Council (LSC). It aims to enable higher education institutions (HEIs), further education colleges (FECs), training providers, Sector Skills Councils (SSCs), employers, industry bodies, public agencies and partnerships to learn from the experience of others in opening up work-based progression routes to higher education (HE).

The guide’s focus is on the progression of Advanced Apprentices and other employees with level 3 vocational qualifications and experience. As the demand for higher level skills relentlessly grows, these employees, whose numbers are increasing year on year through the drive to increase the volume and quality of Apprenticeships, represent a new market for HE.

Currently the market is largely untapped. Yet the potential benefits of opening up progression routes to HE for these work-based learners are considerable:

- **Employers** can gain – and, crucially, retain a lot better – the high level skills they need to survive and grow, at relatively low cost and with minimum disruption to the business. Because of the focus on flexible, work-based learning, projects carried out during the course are designed with close employer involvement so that they directly benefit the organisation.
- **Apprentices and other employees** can realise their potential by ‘learning and earning’ their way to career progression and personal development through higher education that been inaccessible to them in the past.
- **For universities and other HE providers** these new work-based progression routes not only provide doorways to widening HE participation to non-traditional HE learners; they also provide ways of engaging employers in higher education, enabling HE to tap into the potentially huge – and again largely untapped – market for workforce development currently dominated by private training courses.

Drawing on a range of good practice examples, this guide aims to show how these benefits can be realised.

## Background

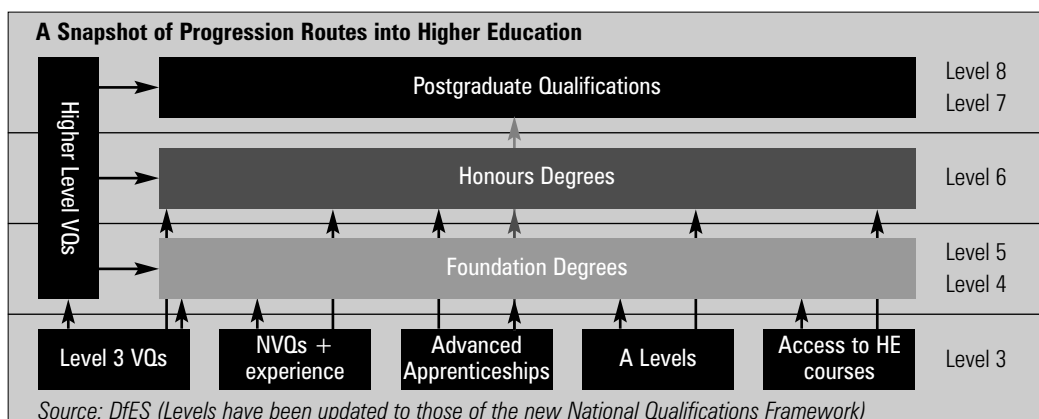
In the late 1990s the National Skills Task Force highlighted the growing need for intermediate technician and associate professional skills, fuelled by the ‘knowledge economy’. The new millennium saw the launch of flexible, vocational Foundation Degrees (FDs) to meet this need, provide a ladder to further learning, including Honours Degrees, and make higher education more accessible to under-represented groups. In its Foundation Degree Prospectus the Higher Education Funding Council for England (HEFCE) identified Advanced Apprentices as a key target group for the new qualification.

The potential of apprentice progression to higher education (HE), was reinforced in *The Way to Work*, the report of the Modern Apprenticeship Advisory Committee chaired by Sir John Cassels in 2001. The report’s recommendations included the incorporation of level 3 technical certificates in all Advanced Apprenticeship frameworks – a measure subsequently implemented as a mandatory component of Apprenticeships from 2004.

*“Technical certificates offer the prospect both of significantly upgrading apprenticeships and of forming a basis for able apprentices to progress to higher education.”*

*The Way to Work*. Report of the Modern Apprenticeship Advisory Committee, DfES 2004

Increasingly linked national agendas for skills and higher education emerging from reviews and government White Papers in recent years further support the case for Apprenticeship progression. The Higher Education White Paper of 2003, *The Future of Higher Education*, was an important milestone in taking forward policies for increasing and widening participation in HE. The of 50 per cent participation target of 18 to 30-year-olds by 2010 would be achieved mainly through the expansion of Foundation Degrees. Working with employers and Sector Skills Councils, links between further and higher education would be strengthened, creating better pathways for progression and a sharper focus on employability skills. The White Paper also encouraged the development of more flexible HE provision to meet the needs of a more diverse student body, with more support for those doing part-time degrees.



The Skills Strategy White Papers of 2003 and 2005<sup>1</sup>, meanwhile, put forward a national skills strategy to address the deficit of vocational skills by putting employer needs centre-stage. Apprenticeships would be significantly expanded and developed. Sector skills agreements developed by the new employer-led Sector Skills Councils (SSCs) would have powerful leverage over the funding of learning through Regional Skills Partnerships which would include HE providers. Equally importantly, HE would be partners in a new network of sector-based Skills Academies which would lead the drive to improve vocational education and training.

Inextricably linked to these developments is the 14 to 19 agenda. The 14-19 Education and Skills White Paper of 2005 announced the establishment of new specialist Diplomas in 14 vocational areas to enhance the standing of vocational learning and qualifications. Crucially, Apprenticeships would be brought into the Diploma framework. This would be aided by the unitised national Framework for Achievement being developed by the Qualifications and Curriculum Authority to support credit accumulation and progression through to HE.

### Progression compacts

In taking forward the drive on Apprenticeships the Learning and Skills Council (LSC) is working with a range of partners including HEFCE, SSCs, Aimhigher and the new Lifelong Learning Networks (LLNs)<sup>2</sup>. With Sector Skills Councils and other sector bodies, the LSC established a range of sector-based compacts in 2003 to develop Apprenticeship progression routes. One compact is focused on IT Professionals, led by the SSC, e-skills UK. The other sectors are Active Leisure (sport, recreation, health and fitness), Administration, Automotive, Early Years, Engineering and Hairdressing and Beauty.

This sector guide and three companion guides (two sector-based – Active Leisure and Hairdressing and Beauty – the other a generic guide for all sectors) are based largely on the experience of these compacts.

### About the guide

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'Higher Apprenticeship' is the brand name adopted by the IT progression compacts for programmes providing work-based progression to higher education.

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The 'Higher Apprenticeship' case studies on which the guide is largely based are drawn from the IT progression compacts funded by the LSC and led by the SSC, e-skills UK. Publications and correspondence with other bodies, particularly Aimhigher and Action for Access<sup>3</sup>, have also informed the development of the guidance offered.

Most of the examples cited show ways that Apprentices and other employees with level 3 vocational qualifications and experience can progress and achieve through higher education, particularly Foundation Degrees. However, innovative Higher Apprenticeship models of progression developed by some of the compacts significantly broaden the scope. These integrated progression programmes combine Apprenticeship training with higher education, so have different points of entry, including entry straight from school or college. For these learners the programmes offer an alternative and potentially more attractive route to higher education than traditional full-time university study. For Apprentices and other employees, by contrast, progression programmes offer an opportunity to undertake higher education that was not previously accessible to them as employees with non-traditional entry qualifications. So while the guide's emphasis is on progression from Apprenticeship and vocational level 3, it also covers other entry points as part of an integrated process of work-based progression to HE.

The binding theme of all the Higher Apprenticeship programmes is the application of learning to the workplace. The programmes are thus tools for workforce development, with employers as key partners, as they are with Apprenticeships. Herein lies the opportunity – and challenge – for higher education, which has traditionally been a contract between learner and institution. Significant parts of this guide focus on the engagement of employers as partners in the development and delivery of these programmes, and on the key messages and methods that have effective in 'selling' the concept to employers. As one course leader put it: "We are a business, selling a product. To lock ourselves away in our institutions and expect people to come to us just doesn't work. We need to go out and be part of the commercial world."

<sup>1</sup> *21st Century Skills: Realising Our Potential*, 2003, and *Skills: Getting on in Business, Getting on at Work*, 2005.

<sup>2</sup> Aimhigher is the national campaign supported by DfES and HEFCE to widen participation in HE. LLNs, announced in late 2004, are HEFCE-supported partnerships "to make a step change in vocational progression." See [www.aimhigher.ac.uk](http://www.aimhigher.ac.uk) and [www.hefce.ac.uk/widen/lln](http://www.hefce.ac.uk/widen/lln) for details.

<sup>3</sup> The national co-ordination team appointed by HEFCE and the LSC to support their widening participation strategies for England. For details see [www.actiononaccess.org](http://www.actiononaccess.org).

## About UVAC

The University Vocational Awards Council (UVAC) was established in 1999 to champion and influence the development of higher vocational learning. The Council is a membership organisation made up largely of HEIs and FECs. Its objectives and work are supported by corporate members who include the LSC, the Qualifications and Curriculum Authority (QCA), UCAS, employers and Sector Skills Councils. It also works closely with strategic awarding body partners.

UVAC's mission is to champion vocational learning. It does this by advocating, lobbying and representing the interests of its members and by providing practical support through products and services. These services include conferences, good practice guides, a research programme on topics such as the accreditation of prior experiential learning (APEL) and vocational progression; and a range of accreditation services covering Foundation Degrees, professional development programmes and initiatives to support progression from apprenticeship and vocational qualifications to higher education. UVAC publications relevant to this guide (on apprenticeship, APEL and the use of National Occupational Standards in HE – many produced with support from the LSC) are listed in the Bibliography.

## Acknowledgements

We are grateful for the time generously given by the many people interviewed in gathering material for this guide – the staff of e-skills UK, higher education institutions, further education colleges, training providers and employers. They not only provided a wealth of information and advice on how progression can work (without shirking the issues), but also kindly commented on the draft material. This guide would not have been possible without their help.

We are also grateful the chief executive and staff of UVAC for their comments and assistance.

## Scope and limitations

This booklet provides guidance; it does not provide detailed operating procedures. While every effort has been made to ensure that the information and advice given are based on sound research, good practice and expertise in the fields covered, it is the responsibility of institutions and partnerships developing vocational progression routes to ensure that practice conforms to the relevant regulations, codes of practice, validation requirements and operating procedures. The authors cannot accept responsibility for any inaccuracies, or for any failure of provision related to the content of this guide.

## 2. The sector case for work-based progression to HE

Employers of IT professionals are increasingly demanding higher level skills to fill skills gaps at associate professional, technician and middle management levels. These gaps are apparent among Advanced Apprentices and other 'level 3' IT professionals already performing some of these roles. There is an opportunity, as yet largely untapped, for higher education to develop these employees beyond Apprenticeship and NVQ level 3 to fill these critical skills gaps in the sector.

e-skills UK is the Sector Skills Council (SSC) for information technology, telecommunications and contact centres. SSCs – collectively known as Skills for Business – are employer-led bodies licensed by government to tackle the skills and productivity needs of their respective sectors throughout the UK. The role of e-skills UK is described further on page 13.

The case for work-based progression to HE can be drawn from the labour market and skills reports produced by the Sector Skills Council, e-skills UK, notably the *IT Insights* suite of publications published in 2004.<sup>4</sup> The research reveals that:

- IT industry employment will grow at between 2.2 and 3.5 per cent over the next decade. Between 156,000 and 179,000 entrants will be required a year to meet this growth and fill vacancies created by those leaving the workforce
- a third of companies with IT professional vacancies are finding them hard to fill. Of these companies, 76 per cent had to delay the launch of new products and services. IT skills shortages continue to threaten both revenue and customer service
- nearly 60 per cent of the IT workforce has completed some form of higher education. The focus on levels 2 and 3 is therefore increasingly less appropriate in addressing the higher skills needs of IT professionals.

- *Higher education may wish to work with employers to help develop better defined pathways that span school, FE and HE...*
- *Building on the New Technology Institute (NTI) concept and the Tomlinson reform agenda, and bringing in Apprenticeships and Foundation Degrees, FE colleges can play a key role in working with employers to create an integrated development route for technology-related academic and vocational work-based learning...*
- *Ongoing skills development needs require new delivery methods that integrate work-based, vocational and academic learning and take into account the impracticality of releasing employees from work, particularly in smaller companies*
- *The private training industry alone will be unable to deliver the necessary IT skills development needed in the UK. Unprecedented government-enabled collaboration is required, with educators and employers working together in new models of partnership.*

Extracts from *IT Insights: Trends and UK Skills Implications* (e-skills UK/Gartner Consulting 2004)

These themes are reflected in the case studies that form the basis of this guide, through partnerships, a flexible, demand-led approach and integrated models of delivery. The HE programmes in the case studies are Foundation Degrees, with the opportunity for further progression to Honours. The Foundation Degree frameworks being developed by e-skills UK<sup>5</sup> reinforce the case for development at this level.

*Over the past decade, growth in the IT industry has been rapid... This growth will lead to an increase in the requirement for IT Professionals, including the associate professional and technician level, to enable businesses to maximise their productivity through effective and efficient use of their IT infrastructure. Foundation degrees have a key role in developing these associate professional and technician level skills and to provide a path for people in these roles to move into higher level skills development.*

Foundation Degree Sectoral Framework for IT Professionals, e-skills UK

The case studies in this guide further articulate the case for progression. More guidance on understanding skills needs is given later (page 13).

*"Advanced Apprentices typically undertake systems management or PC maintenance at the threshold of the technician role. The Foundation Degree will develop graduate technicians who can manage large systems and deliver the very high professional skills employers need."*  
Manchester College of Arts and Technology (MANCAT)

*"I decided to progress from the Advanced Apprenticeship to a Foundation Degree as the IT Industry seem to employ people with degrees and experience. I thought that this was a great opportunity for me to gain both."*

Sam Smails, Higher Apprenticeship student, Gateshead College

The wider case for progression through benefits to employers and learners is developed in the section on promoting progression programmes (page 15).

<sup>4</sup> Available at [www.e-skills.com/itinsights](http://www.e-skills.com/itinsights)

<sup>5</sup> Available at [www.e-skills.com/cgi-bin/wms.pl/912](http://www.e-skills.com/cgi-bin/wms.pl/912).

### 3. Target learners

The call in the IT Insights reports for collaborative approaches and integrated models of delivery is being heeded through the work-based progression compacts.<sup>6</sup> We describe later the variety of progression models already being tested by the compacts. The different points of entry provided by these models make for a wide range of target learners, from school and college leavers with GCSE and A Levels to experienced employees with work-based training and qualifications. The first group conform largely to higher education's traditional entry profile. The latter group are our focus here because they are non-traditional HE learners – employees with training and qualifications that may be unfamiliar to HE providers, including Apprenticeship and NVQs.

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*"Starting the Higher Apprenticeship was one of the best choices I have ever made. The skills I have learnt are extremely useful in the workplace and have aided me in becoming a valued employee."*

John Baldock, Advanced Apprentice, REDNET

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#### Advanced Apprenticeship

All Advanced Apprenticeships conform to a framework comprising four components – an NVQ level 3, key skills at specified levels, a technical certificate of underpinning knowledge, and an awareness of employment rights and responsibilities. Apprenticeship frameworks are developed in each sector by the respective Sector Skills Council and, although not time-based, typically take two to three years to complete. The Advanced Apprentices relevant here are those who have completed the framework for IT Services and Development, developed by e-skills UK.

#### The Advanced Apprenticeship framework for IT Services and Development, England and Wales, comprises:

- Induction covering workplace employment rights and responsibilities
- NVQ level 3, IT Professional
- Key Skills:
  - Communication level 2
  - Application of Number level 2
- Technical Certificate level 3, IT Practitioner (Software Development or ICT Systems Support), offered by:
  - OCR (iPro)
  - Edexcel (BTEC National Certificate or Diploma)
  - City and Guilds (e-Quals).

Advanced Apprentice job roles include:

- Business Analyst
- IT Trainer
- Technical Author
- Web Designer
- Help Desk Operator
- Software Developer
- System Support Technician/Engineer
- IT Architecture and System Security Technician/Engineer.

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*"Some [Foundation Degree students] are already performing the role of IT technician within their company and seeking to qualify themselves at level 4. For all the expectation is that they will progress to supervisory and management positions."*

Gateshead College

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#### Technical certificates

Technical certificates, whose size and range vary across Apprenticeship frameworks, are a relatively new component of Apprenticeships and provide an important bridge to higher education. The technical certificate of the framework for IT Services and Development is a level 3 qualification offered by OCR, Edexcel and City and Guilds. e-skills UK consulted widely with the awarding bodies to agree course outlines. The suggested combinations of components were closely related to the structure of the related NVQs. Course designers were at liberty to combine the identified course components in any appropriate manner so that it met the overall framework requirements. They were advised that courses based on the outlines provided should have a minimum duration approximately equivalent to 200 contact hours, with an additional similar time allocation for personal research and/or coursework.

The technical certificate offered by each awarding body has been developed following these guidelines, each with their own particular style, format, delivery guidelines and assessment strategy. The technical certificate develops the learner's knowledge, understanding and skills in the full range of functions involved in system support. There are significant links to vendor qualifications. Importantly the technical certificates are designed to provide a broad platform from which the learner can progress to further qualifications such as a degree.

#### National Vocational Qualifications (NVQs)

NVQs are based on National Occupational Standards (NOS) developed by Sector Skills Councils. NOS are designed around the skills and knowledge people use in their jobs, defining all-round competence at work. They set out not only what people in particular occupations should know, but also how they need to apply that knowledge to perform their jobs well.

National Occupational Standards form the building blocks of all NVQs, which are accredited by the Qualifications and Curriculum Authority (QCA). NVQs comprise a number of units which set out the national standards that must be reached to demonstrate competent performance in the workplace. Assessment methods can include observation of work being done, examination of finished products and statements from work supervisors, as well as tests of underpinning knowledge.

<sup>6</sup> Progression models, page 11.

NVQs are an integral part of the Qualifications and Curriculum Authority's national framework of qualifications. There are five levels of NVQ, ranging from level 1 covering basic work activities to level 5 for senior management. NVQ level 3, the typical entry level to HE, is defined by the Qualifications and Curriculum Authority as: *"Competence which involves the application of knowledge in a broad range of varied work activities, performed in a wide variety of contexts, most of which are complex and non-routine. There is considerable responsibility and autonomy, and control or guidance of others is often required."*

### IT Professional NVQs – a radical new approach

The Sector Skills Council, e-skills UK, has adopted a radical approach to the new IT Professional NVQs to reflect the range and depth of competence that different people need in their work roles. The value-based approach allows a flexible qualifications structure while ensuring that all qualifications based on the new standards are of a similar 'weight' or amount of content. This means that a candidate can choose units across all levels to reflect the reality that, for example, an overall level 3 role often includes some higher or lower activities.

In order to achieve an NVQ level 3, candidates must achieve a minimum of 180 Unit Values, of which 110 should be at level 3 (**Mandatory units are shown in bold type**). The units and their respective values are shown in the table opposite:

### Other work-based learners

Employees with potential to benefit from higher education are a disparate group and include those who may not possess accredited qualifications. The experience of the progression compacts suggests that the recruitment net should be cast widely. This is partly on practical grounds, in that a programme limited to Advanced Apprentices may not attract enough candidates to be viable. Equally important is the potential of other employees to benefit from higher education as part of their career development. Appropriate experience and a high level of motivation are valid entry criteria which may enable requirements for formal qualifications to be waived. Indeed, candidates may be able to claim credit and advanced standing for relevant experience in the industry, as discussed further in a later section.<sup>8</sup> Attracting such learners also helps institutions to meet their objectives for widening participation.

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MANCAT's Foundation Degree in Computer Networking Management aims "to enable locally based students to undertake higher-level qualifications in a supportive college environment, who otherwise might not have seen higher education as a realistic option."

The part-time degree is aimed particularly at work-based learners, including Advanced Apprentices. According to the prospectus, "offers will normally be made to applicants with appropriate networking experience and the desire and motivation to complete the course." Any qualifications achieved must be accompanied by workplace experience.

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Unit Title	Unit Values					
	Levels →	1	2	3	4	5
Customer care		10	20	30	40	50
Data analysis and data structure design			15	25		
<b>Develop personal and organisational effectiveness</b>		<b>5</b>	<b>15</b>	<b>25</b>	<b>35</b>	
<b>Health and safety in ICT and Contact Centres</b>		<b>5</b>		30	40	50
Interpersonal and written communication		5	15	30	40	
Investigating and defining requirements			20	30	40	
Managing software development				30	40	50
Quality management of ICT products and services				30	40	50
Remote support for products or services		10	20	30	40	50
Security of ICT systems		5		30	40	50
Software development – component creation			20	30		
Software development – design			25	35	45	
Software installation and upgrade		10	20	30	40	
System management			15	30	40	55
System operation		10	20	30	40	
Technical advice and guidance		5	15	30	40	55
Technical fault diagnosis		10	20	30	40	
Technical fault remedy selection		5	15	25	35	
Testing ICT systems		10	20	30	40	
User profile administration			15	25	35	
Working with ICT hardware and equipment		10	20	30	40	
<b>Restricted option units:</b>						
Sector specific unit <sup>7</sup>		10	20	30	40	
Managing people and resources (Import)				30	40	50
Project management (Import)					20	25
Supporting learning and development (Import)				30	40	
Internets and intranets		5	15	25		
E-mail		5	15	25		
Word processing software		10	20	30		
Spreadsheet software		10	20	35		
Database software		10	20	35		
Website software		10	20	35		
Artwork and imaging software		10	20	35		
Presentation software		10	20	30		

<sup>7</sup> This can be an accredited unit from any suite of S/NVQs which is relevant to the candidate's job role. Availability of these units is at the discretion of the Awarding Bodies. In this context 'sector' means an occupational sector as defined by the Skills for Business Network. For example, Administration, Management and Customer Service cannot be included.

<sup>8</sup> APEL, page 20.

## 4. Developing HE programmes for work-based learners

### Progression models

The IT sector has been innovative in developing a range of progression models, branded 'Higher Apprenticeship', through the eight LSC-funded progression 'compacts' led by e-skills UK.<sup>9</sup> The models range from progression from completed Advanced Apprenticeship to a Foundation Degree programme and beyond to programmes integrating Apprenticeship and HE into a condensed, fast-track package.

The emerging Higher Apprenticeship models are as below.

There is significant variety within the models, reflecting employer needs, institutional strengths and local circumstances. A Foundation Degree might include an additional NVQ to that of the Advanced Apprenticeship – the Gateshead College/University of Northumbria Higher Apprenticeship includes the NVQ level 4 for IT Professionals. Independently of the compacts EDS has developed a 'Degrees for Apprentices' programme with Thames Valley University which uses the Foundation Degree as a stepping stone to an Honours degree which is the principal objective of the programme.<sup>10</sup> The integrated model of University College Northampton/Milton Keynes College, meanwhile, provides the option of progression to either a Foundation Degree or HNC.

The extent to which Advanced Apprenticeship is the entry point of 'end-to-end' models also varies. Most compacts have widened the net beyond Advanced Apprentices to provide progression opportunities to other employees who have the potential to benefit from higher education.<sup>11</sup> In some cases delivery is integrated with that of other learners, rather than through separate provision.

Despite these variations, the progression models share fundamentally important features. The programmes provide innovative 'learn and earn' pathways which bring significant new groups of learners into higher education. They build on the skills these learners bring to higher education, while addressing any shortfalls that may disadvantage them as non-traditional HE students. They have a sharp focus on the

needs of employment in the sector and target areas, being the product of partnership and extensive consultation. Above all, they are models of work-based learning, to enable these new learners to participate and achieve through higher education.

### Curriculum design and content

The Higher Apprenticeship curricula developed through the progression compacts have focused on the IT Professional strand as the area of greatest skills shortage. Different emphases within that strand reflect the needs of the local market. A Foundation Degree curriculum in the South West, for instance, is biased towards programming to meet the needs of the aerospace industry clustered in the area.

### Higher Apprenticeship framework

e-skills UK are developing a framework for Higher Apprenticeships which will embrace both the IT Professional and IT User strands (the latter focusing on managing of information through applications such as databases and spreadsheets). There are also plans to include Communication Technology Professionals within this framework.

The framework will require those new to the industry to complete a relevant NVQ level 3. This will be complemented by level 4 units (National Occupational Standards) which match learning outcomes of the Foundation Degree, particularly in relation to the work-based project. A proposal to award points for each NVQ unit achieved – two points for a level 3 unit and three points for a level 4, with a minimum requirement of 15 points in total – is being considered. Key Skills requirements focus on customer-facing skills – Problem Solving and Working with Others, both at level 3.

The Foundation Degree will be positioned within the draft framework as the Higher Apprenticeship's technical certificate. HNC/D may be an alternative, provided it is supplemented by a work-based project consistent with that of the Foundation Degree and of equal rigour.

### HIGHER APPRENTICESHIP

#### 1. 'END-TO-END' MODELS:

- Advanced Apprenticeship → Foundation Degree (→ Honours)
- Advanced Apprenticeship → NVQ4/Foundation Degree (→ Honours)
- Advanced Apprenticeship → Bachelors Degree

#### 2. INTEGRATED MODELS:

- Technical Certificate → NVQ3/Key Skills/  
→ Foundation Degree/HNC (→ Honours)
- (Relevant A Level entry) → NVQ3/Key Skills/Foundation Degree (→ Honours)

#### Examples: (★ = case-studied in this guide):

- ★ Manchester College of Arts and Technology (MANCAT)
- ★ Gateshead College/University of Northumbria  
Aylesbury Training Group/Bucks Chilterns University College
- ★ Yeovil College/University of Bournemouth
- ★ University College Northampton/Milton Keynes College  
University of Coventry/City College Coventry

<sup>9</sup> See [www.e-skills.com/HMA](http://www.e-skills.com/HMA) for additional information

<sup>10</sup> See [www.eds.com/news/news.aspx?news\\_id=1573](http://www.eds.com/news/news.aspx?news_id=1573)

<sup>11</sup> Target learners, page 10.

### Integrated versus entry from level 3

As we have seen, there are two distinct progression models – programmes which integrate components of Advanced Apprenticeship with an HE level 5 qualification, with entry direct from school or college; and ‘end-to-end’ programmes providing progression routes direct to HE for experienced employees, including Advanced Apprentices.<sup>12</sup> The model adopted will reflect employer needs, the local employment market and institutional strengths. Where there is an ample supply of Apprentices and other work-based learners at level 3, the end-to-end model will have strong appeal. Employers seeking to develop their Apprentices through HE may be attracted by the advantages of a fully integrated programme, where partnerships exist to support such provision.

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*“Running the Apprenticeship in conjunction with the Foundation Degree seems like the ideal route for us... It is fantastic to be able to take 16 to 17-year-olds with good grades into the organisation, then in four years’ time have them graduate and still working for us, having developed so much. Compare that with graduates straight from university. They will probably have a three-year head start.”*

Aerosystems International

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### Foundation Degree sectoral frameworks

Importantly, the development of Foundation Degrees is also now supported by Foundation Degree sectoral frameworks developed by e-skills UK.<sup>13</sup> Institutions can map an existing or draft programme to the framework by completing an Alignment Document and submitting it to e-skills UK for scrutiny.

The framework for IT Professionals provides information and guidance for curriculum developers, from the business case for this provision, through design and delivery to progression, quality assurance, promotion and evaluation.

### Curriculum flexibility and innovation

The progression compacts have shown there is considerable scope for flexibility and innovation within the Foundation Degree and Higher Apprenticeship frameworks. The sectoral framework provides detailed guidance on curriculum design, including a list of topics identified by employers and grouped under three headings:

- Technical tasks and skills
- IT planning and project management skills
- Interpersonal skills.

The guidance stresses that this is not a set of prescriptive learning outcomes and that curriculum designers have considerable latitude to tailor provision within the parameters of the framework.

The compacts have typically structured their Foundation Degree around three curriculum areas:

1. vocational competencies – developing the capability, knowledge and understanding

2. professional competency – being able to work at and develop the skills appropriate for a level 4 post or role
3. work-based projects – focusing on procedures and processes which are of benefit to the employer.

The core professional skills are transferable across all employers, whereas the vocational projects will be very different, reflecting the different needs of the organisations. A bigger points weighting may be given to the work-based project(s), highlighting the importance of work-based learning and playing to the strengths of work-based learners. Key Skills can be delivered as self-standing modules but are almost invariably now mapped and embedded across the curriculum.

Innovative features can include mapping in vendor qualifications to Foundation Degree modules.

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The Foundation Degree curriculum within Manchester College of Arts and Technology’s (MANCAT) Higher Apprenticeship consists of 12 units, developed in consultation with the industry, including Cisco and Microsoft. The corporations’ most popular vendor qualifications, CCNA and MCSA, both level 3 qualifications, were mapped to seven of the 12 Foundation Degree modules. For example, the Internet Technology module conforms to Cisco CCNA Semester 2, while the Network Software module corresponds to the Microsoft MCSA modules 2272 and 2273. The curriculum is also mapped to the relevant National Occupational Standards within the new suite of IT User and IT Professional NVQs.

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### Incorporating National Occupational Standards

National Occupational Standards (NOS), the building blocks of NVQs and stand-alone standards of workplace competence, are particularly apt in the context of work-based progression. All Advanced Apprentices and many other work-based learners with potential to progress will have achieved an NVQ level 3. Incorporating relevant National Occupational Standards into HE programmes both ensures industry currency and provides a ladder of progression for work-based learners.

The standards selected can be drawn from the relevant Sector Skills Council’s suite of industry-specific NOS and from cross-sector standards such as those for management and IT. They can be readily converted to learning outcomes and mapped to Foundation Degree modules. Assessment does not have to involve NVQ achievement, although some HE programmes have successfully incorporated full NVQ achievement at level 4.<sup>14</sup>

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A special feature of Gateshead College’s Higher Apprenticeship is that it incorporates the new NVQ level 4 for IT Professionals awarded by Edexcel. The NVQ units are mapped across the Foundation Degree modules, so that all the knowledge relating the NVQ is embedded in the delivery of the degree.

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<sup>12</sup> Progression models, page 11.

<sup>13</sup> available at [www.e-skills.com/cgi-bin/wms.pl/912](http://www.e-skills.com/cgi-bin/wms.pl/912)

<sup>14</sup> See Assessment, page 20. A guide to the use of National Occupational Standards in HE, *Fit for Purpose*, is available from UVAC and downloadable at [www.uvac.ac.uk](http://www.uvac.ac.uk)

### Bridging/study skills

Despite the focus on work-based learning, higher education programmes can pose daunting challenges for learners entering HE for the first time via the vocational route. The written requirements are often particularly challenging. Later sections cover the crucial role of tutors, mentors and others in supporting non-traditional learners<sup>15</sup>, and provision to aid progression to an honours top-up (below). Here we point up the role of curriculum developers in smoothing the transition to HE of Apprentices and other work-based learners.

Provision for study skills development can be made as a pre-requisite of entry, as a contextualised 'pre-module' taken before the start of the course. This moves away from the concept of remedial bridging provision, where candidates are identified as having learning shortfalls that must be addressed separately before they are allowed onto the course. Another approach, which can be complementary to a pre-module, is to build study skills into an introductory module focused on personal development.

With integrated Higher Apprenticeship programmes, the transition should be less of an issue. By definition these programmes should be structured to provide seamless progression. Admission is also likely to be very selective, attracting young people who might otherwise have gone to university in the conventional way.

The progression compacts have been very aware of the need for study skills provision. In some cases time constraints have limited development in this area. Longer development time than one year is likely to be a message emerging from evaluation of the compacts. Some have stressed the benefits of building on existing curricula, taking existing modules and adapting them as necessary, rather than starting from scratch.

### Provision for further progression

A further 'bridge' is that smoothing progression to an Honours Degree. Foundation Degree graduates, awarded an FdA or FdSc, may cease study at this point. However, many choose to continue to an Honours programme. All Foundation Degrees must provide a platform for progression to an Honours Degree or range of Honours Degree options. This most often takes the form of a 'top-up' year to HE level 3, which may be bespoke provision for Foundation Degree graduates or the final year of an existing honours programme.

The step up from HE level 2 to 3 can be a hurdle for work-based learners, so it is important to make provision for it. Preparation for rigour of HE level 3 can be incorporated into the later stage of a Foundation Degree through the demands of a dissertation, or addressed through additional modules for those wishing to do the top-up.

### Meeting the needs of employment

A pre-requisite of HE programmes aimed at Apprentices and other work-based learners is that they meet the needs of employment. Employers supporting their staff on these programmes must be confident that the course has industry credibility and will develop employees who can make a significant contribution to the business. Employees need be satisfied that the programme will provide substantial personal development and career advancement. Programmes therefore have a sharp focus on 'fitness for purpose'.

### Understanding sector skills

The Sector Skills Council, e-skills UK, has a central role in ensuring that learning provision meets the needs of employment in the sector. As the government-licensed skills body representing the sector UK-wide, the SSC is the voice of employers on skills and productivity. As we have seen e-skills UK has the lead role in articulating the sector's current and future skills needs and the learning required to meet that demand.<sup>16</sup> Its *IT Insights* reports are informing the development of the Sector Skills Agreement – the national plan the SSC is developing and brokering between government, employers and learning providers to take forward the sector's skills agenda.<sup>17</sup> These strategic documents provide an authoritative overview and enable HE curriculum developers to position their courses within the national skills strategy for the sector.

As the official standards-setting bodies for the sector, e-skills UK is responsible for developing and updating their sectors' National Occupational Standards (NOS) and Apprenticeship frameworks. As we have seen, NOS are key tools for curriculum developers seeking to meet the needs of employment.<sup>18</sup> Being integral to the sector's Apprenticeship frameworks through the NVQs/SVQs, they can also provide the 'common currency' of work-based learning at all levels, from Apprenticeship through progression to higher education and continuing professional development.

Another useful tool linked to NOS is the Skills Framework for the Information Age (SFIA)<sup>19</sup>. Developed by e-skills UK and partners, SFIA provides a common reference model for identifying through a simple two-dimensional framework consisting of areas of work on one axis and levels of responsibility on the other. HE curricula can be readily mapped to the framework.

Direct contact with the SSC at an early stage is strongly recommended. e-skills UK is committed to supporting HE curriculum development and, building in its experience with the progression hubs, will meet with institutions to discuss, advise and support. Good practice in developing vocational programmes shows that college and university departments that are closely involved with their SSC reap considerable benefits. They not only gain a better understanding of the employer perspective on skills; they are also able to contribute their HE perspective and expertise to a debate where their voice has been little heard in the past.

<sup>15</sup> Learner support, page 18.

<sup>16</sup> The sector case for work-based progression to HE, page 8.

<sup>17</sup> The draft agreement is downloadable at [www.e-skills.com/cgi-bin/wms.pl/734](http://www.e-skills.com/cgi-bin/wms.pl/734).

<sup>18</sup> Incorporating National Occupational Standards, page 12.

<sup>19</sup> Downloadable at [www.e-skills.com/sfia](http://www.e-skills.com/sfia)

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Manchester College of Arts and Technology's Foundation Degree curriculum will be mapped to the new SSC framework for Foundation Degrees. Overt mapping of units to the relevant National Occupational Standards is another priority. These measures will further enhance the degree's standing and fitness for purpose.

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### **Understanding the regional and local employment market**

e-skills UK's suite of skills reports includes regional data and analysis. More 'drilling down' can be done through other published labour market information and skills surveys. These include the Framework for Regional Employment and Skills Action (FRESA) produced by every Regional Development Agency and skills reports produced by the national and local Learning and Skills Councils. Where IT is a local LSC priority for workforce development, detailed local analysis of the sector may be available. Institutions can complement this with their own research of local employers. Feedback from existing students can be revealing and informative in the development of future provision.

An intimate qualitative understanding of the local market for sector skills is achieved through networking – with employers, primarily, and with colleges, training providers, local LSCs, local authorities and others. Local and regional partnerships, including Foundation Degree consortia, can be effective ways of exchanging information and encouraging collaboration between organisations that might otherwise feel competitively constrained. The network of New Technology Institutes (NTIs) benefit from substantial employer involvement and have been effective in generating innovative solutions to meet the IT skills needs of business.

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Manchester has a good reputation for innovation through multi-agency partnerships. Manchester College of Arts and Technology (MANCAT) and training provider IT Base/Skills Solution are among the lead partners of Manchester New Technology Institute (NTI), one of the national network of NTIs established to meet the IT skills needs of business. The development of MANCAT's new part-time Foundation Degree in Computer Network Management, validated by the Open University, was spurred by that partnership.

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### **Engaging employers in development**

Clearly it is important to have employer input to programmes which are intended to meet employer needs and which are crucially dependent on employer support. However effective employer engagement in the skills agenda is difficult to achieve. The quest to engage the host of small businesses in a sector is particularly challenging. Happily there is a body of good practice that can help point the way.

Most progression compacts have successfully formed industry groups to help steer the initiatives and provide employer input, particularly to the Foundation Degree curricula. These groups can flourish and be highly effective, especially where they build on existing strong links with employers, such as those forged through Graduate Apprenticeship schemes. It is important to bring in new blood by attracting more than the 'usual suspects', and, as far as possible, to achieve a balance of industry interests and size of employer. An initial

impetus might be provided by an awareness-raising event for employers, followed up by invitations to join the group.

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*"A lot of institutions start from the wrong end, devising a Foundation Degree and then find some supportive employers. You've got to start with the need and then develop a course to meet that need. It's about listening and responding, rather than dictating the provision on a take-it-or-leave-it basis."*

Manchester College of Arts and Technology (MANCAT)

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Such employer participation can be insightful and stimulating, with very direct influence on provision. However, managing diverse employer interests can be challenging. Institutions must identify common needs and avoid pandering to the special-needs of one employer that may have no currency elsewhere.

Employers, particularly SMEs, may be 'turned off' or simply baffled by the jargon of learning and skills. Despite the many links that exist between employers and education institutions, they may still perceive each other as inhabiting different worlds. Institutions whose staff have recent or concurrent industry experience have a clear advantage in bridging the gap that gap.

An experienced senior figure in the role of forum chair can productively draw together different perspectives. But industry forums alone do not necessarily reflect the spectrum of employer views. To achieve that, programme developers also need to 'go to them'. This requires a very proactive approach to employer engagement, which in this and other ways is a hallmark of good practice. It is an approach that institutions are increasingly adopting in promoting their vocational courses.<sup>20</sup> In a demand-led system, it also needs to apply to curriculum development. Investing time in individual visits to employers can generate a very positive response and input to the programme. Although the approach is time-consuming, it can be highly effective in engaging employers and ensuring a programme's fitness for purpose.

Some employers may need little persuading. An HE provider may find itself in the fortunate position of 'pushing at an open door' with a major employer who is actively in the market for work-based learning and able to provide a whole cohort of learners. A pilot programme led by a single employer has obvious advantages, and potential pitfalls. While such an employer can expect to have considerable influence on the curriculum, a publicly-funded programme must also serve wider interests. Compromises may need to be struck to ensure the programme's wider fitness for purpose.

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Aerosystems International teamed up with Yeovil College to develop a trainee programme spanning Advanced Apprenticeship and a Foundation Degree, with the prospect of further progression to Honours. The company had reservations about an internet module because it had no use for website development skills. A compromise was agreed whereby the module was adapted to accommodate the use of web-based technology, which the company uses in an asset-tracking system.

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<sup>20</sup> Promotion to employers, page 16.

## 5. Recruiting work-based learners onto HE programmes

### Marketing

#### A dual market

Unlike most HE programmes which are aimed solely at individuals, work-based learning HE programmes serve a dual market – individuals and employers. The potential students at whom a programme is aimed depends on the progression model adopted. Integrated programmes are aimed at school and college leavers, whereas ‘end-to-end’ programmes are seeking to recruit Apprentices and other experienced employees. This latter group, being mature students with vocational qualifications and experience rather than the traditional HE entry profile, are significantly different to the first group, which is more like the large mass of traditional HE applicants.

Whichever model is adopted, the programmes are essentially workforce development products, dependent on the support of employers as much as on the motivation and achievement of the students for their success. Marketing and promotion of these programmes therefore needs to be based on key messages appropriate to each target audience.

Because Foundation Degrees are new qualifications they are not yet widely known among employers and staff. Marketing materials could usefully signpost general information on FDs at Foundation Degree Forward’s site at [www.foundationdegree.org.uk](http://www.foundationdegree.org.uk), which includes bespoke promotional material for employers and for individuals. Sector-specific information on FDs can be found on e-skills UK’s website at [www.e-skills.com/FD](http://www.e-skills.com/FD).

#### Promoting the integrated Higher Apprenticeship to school and college leavers

*“Young people can see that this is a programme with a degree at the end of it. That is a powerful counter to prejudice against work-based learning.”* Yeovil College

HE recruitment is traditionally aimed at school and college leavers, so institutions already have well-developed methods of publicising their provision to young people through UCAS, course prospectuses and their websites. Schools, colleges and information, advice and guidance (IAG) centres are key targets for course information, supported by open days enabling potential students to see for themselves. Local media may be used to advertise vocational courses. Further education colleges delivering these programmes have the added advantage of having potential recruits within their student body.

Being very familiar with this younger target group, institutions will be aware of the influence of parents in students’ HE decisions. ‘Learn and earn’ is a powerful selling point for families deterred by the rising costs of higher education and resultant debts. A raft of other key messages (listed below) present Higher Apprenticeship as an attractive alternative to full-time higher education away from home. One company saw great advantage in being able to focus its recruitment on a particular course.

*“In many ways the programme provides more challenge and opportunity for able young people than full-time university study.”*

Aerosystems International

However, despite the benefits and attractive features of the offer, the integrated Higher Apprenticeship, like any new product, will take time to become established. The experience of the progression compact suggests that candidates may be initially slow to come forward. Participating institutions and employers need start their recruitment early, allowing ample lead time for promotional activities to take effect.

#### Promotion to Apprentices and other work-based learners

This group, being non-traditional HE learners, presents other challenges. Course details should be written with employees in mind, conveying key messages (below) appropriate to this audience. It is particularly important to identify Apprentices in the entry requirements. These are obvious points, but many prospectuses fall short on these fundamentals. Too often, work-based learners are presented as an after-thought, relegated to the bottom of a list of entry criteria with “Applicants with relevant vocational experience will be considered on their merits...” or similar uninspiring statement. NVQ level 3 may be listed but Apprenticeship is rarely mentioned.

The flyer is titled "want to be unique? do you work in ICT?" and is for "Foundation Degree ICT Support". It lists several benefits:

- For you:** Gain a degree, earn money, gain work experience, and get a job.
- For your employer:** Gain a skilled employee, reduce recruitment costs, and improve productivity.
- For the program:** Gain a degree, earn money, gain work experience, and get a job.

At the bottom, it says "Build a foundation for a better future" and provides the contact number "call 01971 490 2246 now".

Because Higher Apprenticeship is a new progression route, providers need to create demand among employers and employees. This requires a highly proactive, targeted approach is required to attract candidates. One progression compact has produced a flyer aimed at target learners. Another advertised in local newspapers. Colleges delivering Apprenticeship and other vocational programmes are well placed to raise awareness among work-based learners of HE opportunities. They can also take the message directly into workplaces and make presentations to employees. Some compacts stressed the need to promote progression to Apprentices in training.

The success of one progression programme has been due largely to an employer actively taking the lead in recruiting learners and piloting the Higher Apprenticeship. This relieved the college of responsibility for initial recruitment and has enabled the college to plan future phases of the programme, when it will be extended to other companies. In another cases training providers have agreed to source

Advanced Apprentices for the programme. Although few Apprentices have joined via this route to date, numbers are expected to increase in future years.

### Promotion to employers

Employers are the other primary audience for promotion, being at least as much the customer for these HE programmes as the individual. The key messages will vary in emphasis according to the type of Higher Apprenticeship being promoted.

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To promote its integrated Higher Apprenticeship, Yeovil College is highlighting the relatively low risk and low cost involved, and the ability to develop a young person within the company, rather than the invest in the long learning curve of a new graduate, which has often deterred SMEs from expansion.

A key selling point in recruitment to MANCAT's Higher Apprenticeship is that the Foundation Degree will develop graduate technicians who can manage large systems and deliver the very high professional skills employers need.

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Employers, perceiving a course's potential benefits to their business, may take the initiative in promoting it to their employees. Conversely, individual employees interested in Higher Apprenticeship have an important role in 'selling' it to their employer. Either way, HE providers are central to the process and need to be proactive in stimulating demand. Only exceptionally, until demand has grown, will institutions have the luxury of employers 'coming to them'.

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*"If we provide good quality, it will grow by word of mouth, which is always the most effective way of marketing."*

Manchester College of Arts and Technology

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Awareness-raising events for employers can be very effective, provided they are vigorously followed up by telephone and through meetings. Institutions that successfully build client relationships with employers have cited having enthusiastic staff with industry experience as an important factor, one commending this activity as good staff development.

Those that are building on existing good links with employers and training providers delivering Apprenticeships are at a considerable advantage. Colleges with their own Apprenticeship units and links to managing agents are particularly well placed to raise awareness of progression opportunities among both Apprentices and their employers.

Institutions wishing to tap into the potentially large market for workforce development are increasingly adopting the sales and marketing techniques of business. This raises the issue of resources. Although many institutions have central marketing teams, these will not be able to provide sustained support for a single course or school. The long lead-time from first stimulating an employer's interest to fully engaging them in a Higher Apprenticeship programme requires sustained marketing effort.

Progression compacts have benefited from modest development funding. Looking to the longer term, institutions are developing bids to the European Social Fund and their local Learning and Skills Councils for support for their work with employers.

## Integrated Higher Apprenticeship

### Key promotional messages

#### For school and college leavers

- Learn and earn
- Blend of practical and academic learning
- A degree at the end
- Fast-track, challenging programme, providing head start on other graduates
- Skills and qualification in shortage area
- Do not need to move out of the area
- Will not incur student debt
- Support at college and in the workplace
- Permanent employed status from year 2
- Employment in a dynamic industry
- Excellent career prospects in technical and management roles
- Springboard to further achievement, including progression to an Honours Degree.

#### For employers

- Develops software engineers quicker
- 'Catches them early', enabling you infuse students with your culture and mould them to your needs
- Significant cost savings on traditional graduate recruitment
- Relatively low risk
- Motivated, highly skilled employees
- Higher retention of locally sourced employees
- Meets skills gaps, technical and managerial
- Work-based learning – minimum time off the job
- Projects directly related to your business
- You are closely involved in delivery
- Mentor and assessment support from the provider
- Enables you to focus on and influence a particular programme
- Built-in opportunity for further learning through progression to Honours.

#### For work-based learners

- Higher education – you can do it
- Continue to learn and earn
- Advanced Apprenticeship (and NVQ level 3 and other vocational experience) provides entry to HE
- Work-based higher learning – both practical and academically rigorous
- Tailored to your needs
- Support at college and in the workplace
- Current experience and qualifications may provide credit towards a degree
- Hard work but worth it
- Personal development
- Career development
- Nationally recognised, portable qualification
- Springboard to further achievement, including progression to an Honours Degree.

Others by contrast see marketing to employers as an opportunity to develop provision which is self-financing, rather than a drain on resources. Those that are members of active partnerships are best placed to tap into the market for workforce development. Partnerships which are effective in bringing together HEIs, FECs employers and the relevant agencies can greatly aid the process. New Technology Institutes (NTIs) have proved particularly effective in linking employer demand for skills to HE supply.

### **Application and admission procedures**

With 'end-to-end' progression models, where institutions are recruiting directly on to a work-based Foundation Degree, the progression compacts have generally cast the recruitment net wide, rather than restrict entry to Apprentices or others with level 3 vocational qualifications. Entry requirements are flexible enough to accommodate applications from learners with experience but not level 3 qualifications. Essential requirements are relevant experience, employed status, and a desire and motivation to complete the course.

Applicants with such potentially diverse backgrounds are almost invariably called for interview. Explanation of what the course entails is particularly important with these 'non-traditional' applicants, both to ensure they understand the commitment involved and to provide reassurance that work-based learners can succeed in higher education. Gauging an applicant's desire and motivation to undertake the programme is another vital function of the interview.

Diagnostic tests may be used, often as part of standard admissions procedures. Applicants may be admitted subject to completing a programme of pre-course learning. This may be a course to fill a gap identified through the interview or diagnostic, or a bridging course required of all candidates.

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MANCAT stressed that admissions procedures to its new work-based Foundation Degree do not deviate from those used with all other students. It also commented on the relatively high incidence of dyslexia among Apprentices.

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Qualifications are more important with integrated progression programmes aimed at school and college leavers. These condensed programmes require a relatively high level of general education achievement, coupled with an aptitude for the subject and desire to pursue this work-based route as an alternative to full-time further and higher education. With this route application will usually be made to the participating employer or programme agent, not UCAS or the HEI, because initial progression is to the FE part of the programme. Applicants are applying for employment as well as a learning programme, so employers have the leading role in selecting candidates with their FE/HE partners.

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Aerosystems International's selection process for the integrated Trainee Software Development programme includes the same computer aptitude test used on its graduate recruitment programme. Some school applicants have performed better in the test than IT graduates.

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## 6. Delivering HE programmes to work-based learners

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### Delivery modes

#### Duration, attendance and timetabling

Higher Apprenticeship programmes are usually delivered part-time. A part-time Foundation Degree will typically be a three-year course, but may be delivered more intensively over two years through a longer academic year, such as three semesters of 15 weeks.

Attendance times vary – typically one day a week or equivalent, such as an afternoon and an evening. Employer pressure to minimise time ‘off the job’ is a common issue and the subject of frequent dialogue with employers. Institutions should be flexible as far as possible but there are limits. The issue highlights the importance of learning agreements (described further below) setting out the responsibilities of each partner, including the employer’s responsibility for allowing time off for study.

Integrated Higher Apprenticeship programmes typically take four years, with mixed delivery modes. Trainees entering without a technical certificate or proxy normally do that first on a full-time basis, then study a day a week in college when they embark on the Foundation Degree modules.

Work-based learners may be timetabled together with other students for some or all of their college sessions. One college cited ‘in-filling’ as a significant success factor in delivering the programme by ensuring its viability, maximising the use of existing resources and enabling the programme to be launched more quickly than might otherwise have been possible. For the learners there are benefits to mixing with students on related programmes or modes of study, providing their different needs are accommodated. Mature learners, for example, may have a much more focused, work-centred view of their learning than younger students.

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*“We have tried very hard to make it work-based learning in concept. It is not a re-badged HNC but an attempt to deliver in the workplace and provide real progression.”*

Manchester College of Arts and Technology (MANCAT)

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#### Work-based learning

Unsurprisingly there is a strong emphasis on work-based learning. HE modules, especially when mapped to relevant National Occupational Standards, can be closely related to workplace practice. Employers have an important responsibility to ensure that students are provided with a range of experience to support their studies, and access to the organisation’s activity and information commensurate with their assignments. In return, students’ work-based projects, particularly the extended projects that typically round off the final year, can provide a valuable consultancy service to the employer.

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*“We are keen to develop the work-based assignments with the students and enable them to work with people in the organisation on these modules. They should be able to fly though the course because of the sort of work they will be exposed to here.”* Aerosystems International

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#### Distance learning

In many institutions e-learning through Virtual Learning Environments (VLEs) is playing an increasingly important role in delivery. VLEs are particularly useful in supporting the learning of work-based students. They provide course materials and can provide course notes for sessions a student may have missed because of work commitments. In addition they are a useful communication channel between institutions and learners. We shall see below that they also have an important role in providing wider learner support to help non-traditional learners succeed in higher education.

#### Learning agreements

Delivery can be underpinned by a learning agreement signed at the outset by the student, employer and course leader. The agreement, in setting out their respective responsibilities, makes a transparent commitment to the programme’s success from all sides. It is useful in setting the ground rules for the work-based programme, and in raising the profile of the programme in the workplace. A model agreement is offered opposite.

#### Learner support

##### The needs of work-based learners

Students entering higher education through the work-based route have support needs that are likely to be different in many respects to those of traditional full-time students. Their work commitments raise issues of work/study balance, and many have family responsibilities that create additional pressures. Their learning backgrounds may well leave shortfalls in study skills; the rigours of academic writing can be particularly challenging for this group, whose confidence at work may not carry over into the unfamiliar world of higher education.

The limited time they are able to spend on campus produces additional pressure and demands for quick access to support when problems arise. Distance learning poses particular challenges concerning access to tutorial support. Dedicated workplace support is also critical to the success of these programmes. It is important therefore to anticipate these needs and make provision for them.

##### Providing study support

The need for ‘academic’ support can be addressed at the planning stage and built in to the design of HE programmes aimed at work-based learners. We have seen that bridging provision, including study skills, can be integral to the curriculum of a Foundation Degree through personal and professional development modules.<sup>21</sup> Access to study support materials and self-study tutorials on the intranet also help to minimise the issues work-based students may experience. A clear, tailored and sympathetic course information pack provided to students at the outset and signposting the services available to them will further help to smooth their transition to higher education.

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Gateshead College plans to add study skills modules onto its VLE blackboard. Tutorials will identify at-risk learners who would need to go through this programme.

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<sup>21</sup> Bridging/study skills, page 13.

## Model Learning Agreement

### 1. The student will:

- Take responsibility for ensuring they know and understand what is required for successful completion of the course.
- Make their workplace mentor aware of the particular nature, subjects, and demands of the course.
- Apply them self to their studies and assessment, by attending University at the allocated times and to carry out all other self-directed learning/studying on the allocated Reading/Tasks Days and as required.
- Respect the possible need for confidentiality regarding information gained in the workplace in support of their studies.
- Keep their work place mentor and the course leader informed of any relevant problems while doing the course.
- Take responsibility for their own learning and development.

### 2. The employer will:

- Be aware of the particular nature of the course which the student is following and communicate this information to all staff who will be associated with the learning of the student during work time.
- Identify and allocate a workplace mentor responsible for the student for the length of the course.
- Ensure that the student is able to attend University or to study on the allocated day as per programme and ensure that any reasonable additional study time is available as required.
- Support the student with his/her work based learning and to allow him/her reasonable access to areas of the organisation's activity or information to fulfil his/her work based learning, studies and assessment commitments.
- Endeavour to provide as wide a range of experience as possible in support of their studies
- Facilitate the use of a PC if necessary.
- Allow the course leader to visit the student if required to discuss aspects of his/her work-based learning.

### 3. The Course Leader will:

- Provide the student with guidance and support throughout the length of the course.
- Monitor the progress of the student throughout the course.
- Ensure that the student's work mentor is aware of the course requirements and their responsibilities.
- Liaise with the work mentor regarding aspects of the course and the progress of the student.
- Organise work visits as and when required.
- Organise the induction week liaising with other members of the course team.
- Ensure that all aspects of the course programme are delivered effectively and meet the expectations of the student and employer.

*With thanks to Buckinghamshire Chilterns University College*

## Tutorial support

Access to personal support is essential. A traditional system of tutorial support designed for full-time students may not be adequate, given the different needs of work-based learners. Colleges with a track record in delivering to FE and HE work-based learners may be better geared to supporting these students than HEIs.

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MANCAT's tutorial support has drawn praise from QAA and the OU, the awarding body its work-based Foundation Degree in Computer Networking. The college feels that inducting work-based learners to HE is less of a problem in colleges than universities because its tutors are attuned to the needs of these students and monitor them closely. Support might include varying the timescales for assignments or building in extra support. A further asset is the college's experience in delivering NVQs. Work-based learning is a familiar way of working, aided by having a departmental team with relevant industry experience.

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The quality and accessibility of this support are recognised as critical to the successful retention of non-traditional students. The course leader or development manager may choose to take on a very pastoral role with the first cohorts to ensure that issues arising are addressed at an early stage and lessons learned for future development.

As work-based learning provision develops, another solution is to provide a dedicated learning support officer to complement the support of personal and course tutors. A support officer can provide, above all, the accessibility that work-based learners need. The role can be wide-ranging, referring students on to appropriate services for non-academic issues, while providing direct support on study issues such as time management, writing and academic referencing. The approach takes some of the tutorial pressure off academic staff and has been shown to be highly valued by work-based students and effective in increasing retention. Cost, however, is a significant factor and the role needs to be underpinned by high quality support materials to which the officer can refer the students or use himself in group and one-to-one sessions.

### The role of mentors

Workplace mentors also have a critical role in supporting the students' learning at work. They need to ensure that students' learning status is recognised in the organisation and that the learning in the HE modules is effectively applied in the workplace. They help to facilitate and monitor the work-based projects, and ensure they are providing a useful service to the employer. They should also ensure the student is allowed sufficient time to attend college, and liaise with the college on progress and issues.

It is important that institutions provide mentors with appropriate training to perform the role. In the short term, until a programme is established and mentors are identified and trained, the course leader or other designated member of staff may need to take on a mentoring role. Some institutions have a permanent college-based mentor to support workplace liaison. Where employers have an active role in assessment, assessors will often 'double' as mentors.

### Supporting distance learning

Courses delivered largely by distance learning pose particular challenges in supporting learners. However the experience of the

Open University, among others, shows that these are not insurmountable. Much rides on the quality of the learning materials and clarity of the tasks and projects. Tutors must be accessible by email and telephone. Online discussions can be facilitated. Residentials provide valuable opportunities for students and tutors to meet and for issues to be discussed face to face.

Remote delivery places a particular responsibility on workplace mentors (who may be called 'facilitators' to reflect their wider role in distance learning programmes). As with other programmes, the course leader or development manager may need to be very active in providing support to both learners and mentors in the early stage of the programme. With a distance learning programme this can only be a temporary measure, pending the establishment of sustainable support arrangements. These might be partnership arrangements with a network of colleges to provide local support for the programme. Another solution used successfully in one sector is to develop a nationwide team of trained telephone mentors.<sup>22</sup>

## Assessment

### Enabling work-based learners to achieve

An important message in encouraging work-based learners into higher education is that HE does not have to involve a series of gruelling written examinations. Assessment strategies for work-based learning HE programmes should inevitably place emphasis on evidence gathered in the workplace. This should then be assessed in ways which enable work-based learners to achieve.

Higher Apprenticeship programmes typically use a variety of assessment methods – reflective exercises, practical exercises, portfolios, report-writing, case studies, role-plays, presentations, written tests. It is this variety and relevance to the workplace, rather than the traditional reliance on examinations, that helps to distinguish these programmes as effective work-based progression routes.<sup>23</sup>

### Employer involvement in assessment

One of the benefits of work-based learning programmes for institutions is that delivery, including assessment, can be shared to some extent with employers. Institutions generally undertake all the assessments themselves in the first instance. Employers can be involved gradually over time as designated staff are trained to be assessors.

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Initially MANCAT tutors will assess the work-based learning of Higher Apprenticeship programme, with the aim of transferring at least some of the assessment to mentors in the workplace, when mentors are trained and accredited to the standards of the OU, the validating university. Development funding targeted particularly at smaller companies will support this training.

Aerosystems International intend to undertake all work-based assessment for its trainees when the trainees' mentors have completed assessor training from Yeovil College.

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## NOS and NVQs

We have seen that mapping HE modules to the relevant National Occupational Standards (NOS) links the underpinning knowledge in the modules to the recognised industry standards of workplace competence.<sup>24</sup> Although workplace assessment may not be against the standards in a formal way, as they are when used in NVQs, the standards provide useful reference points, particularly for Apprentices and other NVQ achievers who will be very familiar with NOS.

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*"Although HE, being largely knowledge-based, is a new experience for these learners, there is a lot of synergy with competence-based assessment."* MANCAT

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The incorporation of a level 4 NVQ within a programme adds a significant dimension to the assessment. Company staff will need to be trained to assess at that level if they are to carry out the assessments in the workplace, while the institution assesses the HE modules. However, mapping the NOS within the NVQ to the modules can streamline the assessment process, so that the evidence produced for the Foundation Degree can be used to meet the requirements of the NVQ. The potential of this approach, which is being adopted in other sectors, is considerable, providing work-based learners with progression that combines the rigour of higher learning with proven high level workplace competence.

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The Foundation Degree delivered by Gateshead College incorporates an NVQ level 4 for IT Professionals. The college is currently examining the evidence for the Foundation Degree and marrying it to that required for the NVQ, with a view to gradually integrating the two assessment requirements. The expectation is that, when they achieve the right assessment mix, much of the NVQ portfolio development will be done through the tutorial programme within the Foundation Degree. The college is confident the model is feasible, and that they will be able to streamline the assessment process over time.

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## AP(E)L

Work-based learners will often come to the programme with qualifications for which credit can be given towards the degree and exemption from relevant parts of the course. 'Advanced standing' through the accreditation of prior certificated learning is well established in HE, with the considerable advantage to learners of reducing completion times. A relevant HNC, for example, could slash the time taken to complete the Higher Apprenticeship to one year.

Learners may lack advanced qualifications but nevertheless have experience that may qualify them for credit. Accrediting prior *experiential* learning (APEL) is more complex and less well developed than procedures for accrediting certificated learning. Practice varies between institutions. Candidates making an APEL claim may be asked to develop a portfolio evidencing their experience, and a charge may be made for this. In the future the promised development of a unitised qualifications system should greatly aid the development of APEL processes.

<sup>22</sup> In a companion to this guide, Anderson, A. and Hemsworth D. (2005) *Higher Education for Active Leisure Sector Professionals. A guide to developing work-based progression routes to higher education for Advanced Apprentices and other experienced Active Leisure sector staff and managers*, UVAC.

<sup>23</sup> A recently published guide examines the recognition and accreditation of work-based learning in detail: Brennan, L. (2005) *Integrating Work-Based Learning into Higher Education: A Guide to Good Practice*, UVAC.

<sup>24</sup> Incorporating National Occupational Standards, page 12.

## 7. Funding Higher Apprenticeships

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### FE and HE funding streams

The Foundation Degree component of Higher Apprenticeship programmes is funded by HEFCE grants in the usual way through bids for Foundation Degree development and places. The separate funding regimes for FE and HE, however, mean that integrated Higher Apprenticeship programmes do not have integrated funding. Separate funding bids need to be made – to the local LSC for the NVQ and other Apprenticeship components, and to HEFCE for the Foundation Degree. LSCs will not normally fund beyond NVQ level 3, though discretionary funds may be available if a strong case is made. Particular care needs to be taken in LSC bids involving integrated programmes to make it clear that HEFCE funding covers only the HE components, in order to avoid concern over potential double-funding.

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Gateshead College and the University of Northumbria have achieved a full funding package for the Foundation Degree in ICT Support and NVQ level 4 through HEFCE and the local Learning and Skills Council respectively. The New Technology Institute is funding the tuition fee that would otherwise be charged to employers. The college felt this was an important incentive to offer employers pioneering the programme because of the work involved in establishing it.

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### Other funding sources

Progression compact funding support from the LSC national office has enabled participating institutions to focus on the progression of work-based learners and identify the good practice that forms the basis of this guide. This and other development funding from sources such as New Technology Institute (NTI) partnerships have provided essential ‘pump-priming’ for the programmes by, for example, enabling relatively high levels of resource to be allocated to marketing and promotion. Several institutions have successfully bid to the ESF for funds to cover tuition fees for at least the first year of the programme. These additional funds have provided important support in establishing programmes in a short timeframe and enabled the first cohort of employers and learners to be subsidised for leading the way.

Sustainability beyond the development phase may be a concern. New programmes, especially those aimed at non-traditional HE learners, take time to establish. Apprentices and other work-based learners often need higher levels of support than traditional full-time students, and this is not reflected in the HEFCE grant. When tuition fees have to be charged, this may be a burden for students. As we have seen above, charges may be levied for APEL claims and NVQ assessment.

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*“Cost is not an issue. We do not pay fees because we are the first cohort. We regard the tuition fee that will be charged from 2005 as modest and excellent value for money.”*

Aerosystems International

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However, there are positive signs to counter these concerns. A key message for employers is that HE tuition fees, even at the higher levels being introduced, represent excellent value for money compared to the high cost of vendor training. Employers who are Investors in People may be entitled to a substantial discount on these courses.

Some institutions are bullish about the marketability of these programmes and aim to be highly proactive and businesslike in ‘selling’ them as very effective workforce development products.

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*“We believe that the integration of vendor qualifications into the Foundation Degree offers a significant opportunity to tap into the vendor training market. By adjusting the delivery to meet the needs of companies, we could deliver vendor qualifications very cost-effectively, with the substantial added value of the Foundation Degree. Such provision could be entirely self-financing.”* MANCAT

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## 8. Case studies

### Case study 1

#### Integrated Apprenticeship and Foundation Degree in Computing and Internet Technology, Yeovil College

Contact: David Bernard

*This innovative Higher Apprenticeship programme provides fast-track progression through both Advanced Apprenticeship and Foundation Degree. Tailored to the needs of the thriving aerospace industry in the area, the pilot programme is the product of collaboration between Yeovil College and Aerosystems International, an employer of highly skilled software engineers.<sup>25</sup> The Higher Apprenticeship is opening up a new and cost-effective source of high quality recruits for the company, while giving able young people an attractive 'earn and learn' alternative to full-time college and university study.*

#### Background

In 2004, Yeovil College's development of a Foundation Degree in Computing and Internet Technology coincided with Aerosystems International's exploration of Advanced Apprenticeship to complement its graduate software engineer recruitment programme. The college was seeking to develop progression routes to the Foundation Degree validated by Bournemouth University as part of an initiative by the HEFCE-funded New Technology Institute (NTI), a partnership of universities and colleges established to meet the ICT needs of businesses in the area. Among the national partners involved was the Sector Skills Council, e-skills UK, which engaged Yeovil College in the LSC-funded 'compact' programme to develop work-based learning progression routes to higher education which meet the needs of the sector.

Aerosystems International, meanwhile, was seeking to expand on its existing channels of recruitment. Technical recruitment across the organisation has always been successful. However most of these candidates relocate into the area. These incurred additional costs as well as the risk that the candidates would move on. There was a clear opportunity for Aerosystems to tap into the local market and complement its existing graduate recruitment which until this point has been the lowest level of entry.

#### The Higher Apprenticeship programme

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*"The 'secret' has been linking existing programmes, plus having Aerosystems International taking the initiative. It is demand-led."*

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Working together, Yeovil College and Aerosystems International have developed an innovative solution that is more than the sum of its component parts by integrating Apprenticeship and the Foundation Degree in one condensed programme. The college brands the programme Higher Apprenticeship. For Aerosystems International,

whose six recruits make up the first cohort, it is their Trainee Software Developer Programme.

The programme starts with the Advanced Apprenticeship's technical certificate, the BTEC National Certificate (IT Practitioner, Software Development), which provides the essential knowledge element of the Apprenticeship framework and, crucially, a bridge to higher study. Geared to the high ability of trainees enrolled on the programme, it is an intensive one-year course that is normally delivered over two years. A key principle of delivery is that the trainees 'in-fill' existing BTEC provision. The same will apply to the Foundation Degree.

Placements during college holidays develop key skills in the workplace and provide an initial induction into the sponsoring company. After Easter the trainees spend more time in the workplace, providing them with a context for their BTEC projects. By the end of year 1 they may also have embarked on units of the NVQ level 3, another key component of the Apprenticeship framework.

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*"The BTEC projects towards the end of the first year enable the trainees to blend their studies gently across into work."*

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Having achieved the BTEC certificate, the trainees embark on the Foundation Degree through study one day a week at the college. The modules cover computer systems, programming, database systems, computational methods, web development, network design and internet applications. The curriculum shares a number of units with a related Foundation Degree in Business Information Technology, giving trainees the potential to take on a management role.

Skills needs research and employer consultations informed the development of the Foundation Degree by Bournemouth University. The curriculum has been mapped to e-skills UK's sector framework for Foundation Degrees.<sup>26</sup> It has a bias towards the aerospace industry, reflecting the importance of that industry in the South West.

The new Apprenticeship framework offers more flexibility and should allow for additional industry areas to be included. The structure adopted for the Apprenticeship means that NVQ units can be selected when the new framework is introduced. This will help ensure the programme meets employer needs.

The college will be training assessors at Aerosystems International to do workplace assessment. Assessors are likely to double as workplace mentors.

The BTEC and NVQ elements are fully funded, with no financial contribution required by the employer. The Foundation Degree carries the standard part-time tuition fee, which will be paid by the employer. Aerosystems International regard this as good value for money.

<sup>25</sup> Profiled in more detail in Case Study 2.

<sup>26</sup> Available at [www.e-skills.com/cgi-bin/orad.pl/36/fd\\_it\\_frame\\_270704.pdf](http://www.e-skills.com/cgi-bin/orad.pl/36/fd_it_frame_270704.pdf).

## Recruitment

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*"The Higher Apprenticeship programme gives an opportunity to bright young people who might otherwise drift into an unsuitable qualification."*

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Because the development of the programme was a partnership between Yeovil College and Aerosystems International, who supplied all the first year 'pilot' cohort, initial recruitment was led by the employer. The first cohort, ranging from 16 to 20 years of age, are a mixed group in terms of experience with two having done Arts A Levels. Aerosystems International already had links with local schools through a work experience programme. The company's selection process includes the same computer aptitude test used on the graduate recruitment programme. Interestingly, some school students performed better in the test than IT graduates.

The college is planning to extend the programme to other aerospace companies in the area. In this second phase it is focusing on the bigger employers, key selling points being its engineering expertise and active links with the industry, including Westland Helicopters, as well as the success of the pilot programme. The employers will then recruit trainees through publicity and their links with schools.

The college is promoting the opportunity to both its A Level and vocational students, who include Apprentices. It is also working with Connexions to help raise awareness of the opportunity in schools.

## Success factors

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*"Young people can see that this is a programme with a degree at the end of it. That is a powerful counter to prejudice against work-based learning."*

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The initiative taken by Aerosystems International in embracing the programme has been a major factor in its establishment and success to date. This arose not simply by good fortune, but also through the college's long track record of working with allied companies on the delivery of engineering Apprenticeships.

The college feels that building on existing provision, particularly the existing Foundation Degree, rather than developing a new curriculum from scratch, has been a very successful approach. A similarly pragmatic approach has been taken to delivery, with Higher Apprenticeship trainees 'in-filling' existing BTEC and Foundation Degree courses. This is ensuring the viability of the programme, maximising the use of existing resources and is enabling the initiative to be implemented more quickly than might otherwise have been possible.

The integrated progression model has many advantages. Targeting an able, younger age group with the prospect of fast-track progression through Apprenticeship to a degree while earning and without leaving the area are strong selling points. Furthermore, 'catching them early' enables participating employers to develop their software engineers and managers quicker, at significantly lower cost and with higher retention rates than traditional graduate recruitment.

## Issues

Internally, introducing work-based learning to the computing department has been demanding because Apprenticeships for installation and support services were previously delivered by the engineering department. The college is anticipating funding issues when the programme moves into delivery of the NVQ alongside the Foundation Degree, funded respectively by the LSC and HEFCE.

Externally, a Foundation Degree curriculum issue has highlighted the challenge of balancing specific employer requirements with those of wider interests. Negotiations on an internet applications module revolve around Aerosystems International's lack of any significant need for web development skills (which are however in demand from other employers). The company is hoping to re-configure the module so that its trainees have the option of focusing on the use of web-based technology, rather than website development.

## Future development

The college aims to recruit 12 Higher Apprentices in the second phase by engaging at least two more major employers in the programme. In the third phase the college plans to engage smaller companies, optimistic that the programme will have appeal to this large group of traditionally difficult-to-reach employers. They will be highlighting the relatively low risk involved, low cost and the ability to develop a young person within the company, rather than investing in the long learning curve of a new graduate, which has often deterred SMEs from expansion.

A future challenge is likely to be accrediting the prior achievements of the able school-leavers they aim to attract, for example those with A Levels in IT or Maths. The college hopes that sector skills frameworks and the national development of the Framework for Achievement will provide a credit structure framework that will facilitate APPEL procedures and enable trainees to fast-track through the programme, particularly the Apprenticeship technical certificate.

The department also aims to revive the Advanced Apprenticeship programme in its own right, with the opportunity to progress to the Foundation Degree through bridging provision.

## Case study 2

### An employer perspective on work-based progression to HE

Contact: Andy Margrett, HR Manager, Aerosystems International

*Aerosystems International, a significant employer in the Yeovil area, have teamed up with Yeovil College to develop a trainee programme spanning Advanced Apprenticeship and a Foundation Degree<sup>27</sup>, with the prospect of further progression to Honours. The first cohort of six Trainee Software Developers started in September 2004.*

#### Background

As an aerospace software company developing control systems for military aircraft, Aerosystems in Yeovil employs highly skilled people and has a need for all round software engineering skills. Traditionally the key software development and allied management roles have been filled through graduate recruitment.

While the company continues to recruit new graduates, it has also been attracted by the benefits of Advanced Apprenticeship. Its approach to Yeovil College in 2004 to develop an Apprenticeship scheme coincided with the college's development of a relevant Foundation Degree as a progression route for work-based learners. A proposal to integrate the two in a fast-track programme incorporating both the Apprenticeship framework and the Foundation Degree was welcomed by the company. The first cohort of six Trainee Software Developers sponsored by Aerosystems International started the programme (described in more detail in Case Study 1) in September 2004.

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*"Running the Apprenticeship in conjunction with the Foundation Degree seems like the ideal route for us."*

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#### Positioning the programme within the company

During the first year, when they study for the BTEC National Certificate (a two-year course condensed into one), the trainees receive a termly allowance and pay for work with the company during half-terms and vacations. After achieving that qualification, which is the Apprenticeship technical certificate, the trainees become permanent members of staff, working four days in the company and one in college.

After the first year the trainees go straight on to work-based projects, doing the core activities of a software engineer, albeit with lesser skills. They work in a testing environment initially, "working things backwards", before widening their experience to coding and developing.

The company currently brands the scheme the Trainee Software Developer programme, in preference to a variation of the Apprenticeship brand. It wanted to make a distinction between this programme and the "shop-floor" Apprenticeships of another major employer in the area.

The company's web page advertising the Trainee Software Developer programme is at [www.aeroint.com/aboutus/trainee.html](http://www.aeroint.com/aboutus/trainee.html). It includes the opportunity to progress from the Foundation Degree to an Honours degree top-up.

#### Delivering the programme

The company expects to be a very fertile environment for the trainees' FD assignments. This is because the nature of work they will be exposed to – safety-critical software – is very structured and well-documented.

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*"We are keen to develop the work-based assignments with the students and enable them to work with people in the organisation on these modules. They should be able to fly through the course because of the sort of work they will be exposed to here."*

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The NVQ will be assessed in the company, initially with college support. The plan is that the company will eventually have its own assessors. They will use college assessors until company people are trained to perform that role.

#### Benefits to the business

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*"It is fantastic for us to be able to take 16 to 17-year-olds with good grades into the organisation, then in four years' time have them graduate and still working for us, having developed so much. Compare that with graduates straight from university. They will probably have a three-year head start."*

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Although the programme is still in its first year, the company can already point to tangible benefits. Skills shortages are a serious issue for high-tech businesses. The Trainee Software Developer programme is enabling the company to meet shortfalls in its traditional recruitment by tapping into a new, younger age group. Whereas the vast majority of new recruits, both new graduate and experienced, are from outside the area, the company is now able to recruit locally. Given the high cost of engineering recruitment at £5 -6,000 per appointment, and the high retention rate of local employees, local recruitment is very cost-effective. An added bonus has been the recruitment of a female Trainee Software Developer as part of the first cohort. In an industry that is male dominated this has been an excellent development, suggesting that local recruitment will also help to deliver a more diverse workforce.

Costs are particularly low with the first cohort because, as a pilot programme, it is fully funded. The company regards the HE tuition fee that will be charged from 2005 as modest and excellent value for money.

Another major benefit for Aerosystems International is the focus on work-based learning. This will ensure that the trainees are infused with the company's culture from the start and moulded to its way of working. They expect retention to be high. Graduates from the programme will be able to pursue technical or management routes, depending on where their strengths lie.

<sup>27</sup> Profiled from the HEI perspective in Case Study 1.

### Recruitment

The programme has enabled the company to focus attention for the first time on a particular course. It values this as an important recruitment tool.

The company approached the local colleges and schools to promote the new career opportunity, and advertised in the local press. They are active in supporting work experience and are currently working to develop relationships with the schools that will allow them to promote the programme to students in Year 10. In the future they see no change in the numbers of trainees they will need to recruit.

### Issues

Despite the attractions of the scheme, recruitment of the first cohort was challenging. To recruit the second cohort the company started publicising the scheme in schools much earlier, with the aim of generating more applications. They feel there is much to learn about promoting the opportunity to 16 and 17-year-olds.

Potential tension between the specific needs of the company and the broader remit of publicly-funded higher education is highlighted in a curriculum issue that has yet to be resolved. The company has reservations about the relevance of an internet module. They want the course to be software-biased, because internet applications focused on website design are not relevant to them. A module about the use of internet technology would be less of an issue, because the company uses web-based technology, for example in an asset-tracking system to log all parts of an aircraft. The college is in negotiation with the validating university.

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*"Sometimes the speed at which things are done is different – industry wants to work quicker. The college is trying to push the pace with the university."*

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### Conclusion

Aerosystems International are delighted with the programme to date. They judge a key success factor to be the application of high entry criteria and selection of trainees who are "all high-flyers with merits and distinctions." They are young people with the ability to go to university but for whom debt is a major issue. 'Learning and earning' is a big attraction, not least to their parents, who are a major influence.

The company stresses the rigour and academic challenge of the programme, the condensed one-year BTEC National course leading straight into the NVQ level 3 and Foundation Degree. In many ways it provides more challenge and opportunity for able young people than full-time university study.

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*"The trainees are doing incredibly well and the concept is fantastic. It is an interesting relationship we have with the college, who are keen to try and tap into industry."*

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### Case study 3

## Progression to Foundation Degree in Computer Networking Management, Manchester College of Arts and Technology

Course contact: Allan Southworth

*This Foundation Degree delivered by Manchester College of Arts and Technology (MANCAT) is specifically designed around work-based learning and National Occupational Standards, with a sharp focus on flexibly meeting the needs of the industry. Advanced Apprentices are a key target group. A notably innovative feature of the curriculum is the incorporation of Cisco and Microsoft vendor qualifications.*

### Background

MANCAT wished to complement its 'conventional' full-time Foundation Degree in Enterprise Computing, validated by Manchester Metropolitan University, with a degree aimed at experienced work-based learners, including Advanced Apprentices. The college has considerable experience of delivering Apprenticeships in partnership with the training provider IT Base/Skills Solution, a subsidiary of the economic development agency Manchester Enterprises.

Manchester has a good reputation for innovation through multi-agency partnerships. MANCAT and IT Base/Skills Solution are among the lead partners of Manchester New Technology Institute (NTI), one of the national network of NTIs established to meet the IT skills needs of business. The development of MANCAT's new part-time Foundation Degree in Computer Network Management, validated by the Open University, was spurred by that partnership.

### Target learners

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*"We have deliberately taken an unconventional approach with this degree. Nothing will ever change if we take only people with A Levels."*

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The programme's specification includes as one of its aims "to enable locally based students to undertake higher-level qualifications in a supportive college environment, who otherwise might not have seen higher education as a realistic option." The part-time degree is aimed particularly at work-based learners, including Advanced Apprentices. According to the prospectus, "offers will normally be made to applicants with appropriate networking experience and the desire and motivation to complete the course." Any qualifications achieved must be accompanied by workplace experience.

Although the course is not designed exclusively for Advanced Apprentices, the college has an agreement with IT Base/Skills Solution, a large provider of Apprenticeship training, that the Foundation Degree is a recognised progression route for those Apprentices wishing to progress to HE. Skills Solution are marketing the initiative as the Enhanced 18 Plus Programme. Although the number of Apprentices coming through this route is currently low, the college expects the volume to grow as the route becomes known and established.

## The curriculum

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*"We have tried very hard to make it work-based learning in concept. It is not a re-badged HNC but an attempt to deliver in the workplace and provide real progression."*

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Progression for work-based learners is aided by the programme's strong practical dimension and emphasis on producing skilled, work-ready graduates through these aims:

- to develop practical skills in network installation, design, implementation and testing, and in the use of network operating systems and software;
- to produce graduates who are highly relevant to the needs of industry by maintaining an ongoing employer involvement in the design and delivery of the course
- to enable students to make an immediate contribution in employment by combining academic and vocational practical skills<sup>28</sup>.

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*"Both Cisco and Microsoft recognise the Foundation Degree as meeting the requirements of their CCNA and MCSA vendor qualifications."*

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The curriculum consists of 12 units, developed in consultation with the industry. Research published by e-skills UK provided base information on the skills gaps the degree might fill. Other consultation included Cisco and Microsoft, whose most popular vendor qualifications, CCNA and MCSA, both level 3 qualifications, were mapped and built into the Foundation Degree curriculum. Seven of the 12 units map against either Cisco or Microsoft modules. For example, the Internet Technology module conforms to Cisco CCNA Semester 2, while the Network Software module corresponds to the Microsoft MCSA modules 2272 & 2273. The curriculum was also mapped to the relevant National Occupational Standards within the new suite of IT User and IT Professional NVQs.

The draft curriculum was then put out for further consultation – initially mainly to the larger companies, but SMEs increasingly showed interest. Collectively the industry rejected only two proposed units, on Visual Basic and databases. In their place they wanted more 'soft' skills, including communication and working with others. These were duly incorporated into the curriculum, whose units and correspondence to the vendor qualifications are summarised in Appendix 1.

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*"A lot of institutions start from the wrong end, devising a Foundation Degree and then find some supportive employers. You've got to start with the need and then develop a course to meet that need. It's about listening and responding, rather than dictating the provision on a take-it-or-leave-it basis."*

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## Delivery

The part-time degree is delivered over three years. Accreditation of Prior Experiential Learning (APEL), however, should enable the college to reduce that for candidates relevant experience or qualifications. To avoid the burden to employers of day release, learners attend the college one afternoon and evening week.

The college continues to seek ways of delivering the course to employees with minimum absence from work. E-learning through a Virtual Learning Environment (VLE) helps to achieve this. A critical component of this provision is the supporting study material. Development funding is enabling the college to develop these materials and lighten the tutors' workload.

MANCAT's tutorial support for students has drawn praise from QAA and the OU, the awarding body. The college feels that inducting work-based learners to HE is less of a problem in colleges than universities because its tutors are attuned to the needs of these students and monitor them closely. Support might include varying the timescales for assignments or building in extra support. A further asset is the college's experience in delivering NVQs. Work-based learning is a familiar way of working, aided by having a departmental team with relevant industry experience.

Initially the tutors will assess work-based learning, with the aim of transferring at least some of the assessment to mentors in the workplace, when mentors are trained and accredited to the standards of the OU, the validating university. Development funding targeted particularly at smaller companies will support this training.

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*"Although HE, being largely knowledge-based, is a new experience for these learners, there is a lot of synergy with competence-based assessment. We have designed the Foundation Degree to ensure they don't fall off."*

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APEL will apply in a focused way. Students who have already achieved a relevant vendor qualification, for example, will have probably already covered a substantial amount of the unit content. Such candidates will be easy to accredit because of the close mapping of units to the Cisco and Microsoft vendor qualifications.

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*"APEL saves them from going over old ground."*

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## Recruitment

Promotion targets both employers and individuals. Despite the speed with which it was done in the first year, with reliance on conventional marketing techniques – brochures, advertisements etc. – the college recruited well from a diverse pool of candidates.

However, given the current difficult recruitment market in IT, the college does not underestimate the challenge ahead. Its marketing department has limited resources and cannot be expected to focus on this one programme. The department has therefore determined to spearhead its own drive to engage more effectively with employers. It is training tutors to embrace this marketing role by regularly visiting companies, working with them and assisting them. This was also good development for the staff.

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*"If we provide good quality, it will grow by word of mouth, which is always the most effective way of marketing."*

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<sup>28</sup> Programme Specification for Foundation Degree in Computer Network Management, MANCAT, April 2004.

The college also targets individuals, such as students on computing courses or access courses, but emphasis is on employers experiencing skills gaps. Advanced Apprentices typically undertake systems management or PC maintenance at the threshold of the technician role. The Foundation Degree will develop graduate technicians who can manage large systems and deliver the very high professional skills employers need. This will be a key selling point in future recruitment.

All admissions processes are standard. In 2004 they carried out an initial assessment for the first time of basic numeracy and literacy. This revealed major weaknesses, including dyslexia, among Apprentices.

### Issues

Minimising time spent off the job was a challenge, with some employers reluctant to release employees for an afternoon. The college is considering other options but it is a difficult issue. They are in constant dialogue with employers. Employer engagement generally is challenging.

Developing the Foundation Degree and recruiting in one year has been both stimulating and exhausting. The college would have liked to have started engaging the companies much earlier.

While it is accepted good practice that institutions should not 'push' companies from the academic perspective but rather 'pull', stimulating as much demand as possible, this is not necessarily borne out in practice. Many employers are not clear about what they want. Despite the popularity of vendor qualifications, some employers were initially hostile to the links with Cisco and Microsoft. Reassurance that the curriculum was not biased towards any vendor addressed the objections and underlined the importance of communicating effectively.

On the dyslexia issue, while additional LSC funds were available to support level 3 students with this learning difficulty, this was not the case with HE. This mitigated against the progression of these learners, a significant number of whom, new college data shows, are Apprentices.

### Future development

The curriculum will be mapped to the new SSC framework for Foundation Degrees. Overt mapping of units to the relevant National Occupational Standards is another priority. These measures will further enhance the degree's standing and fitness for purpose.

Although the course attracts normal HEFCE funding, with the prospect of very limited LSC funding, the college is proactive in seeking additional and alternative funding from the private sector. They believe that the integration of vendor qualifications into the Foundation Degree offers a significant opportunity to tap into the vendor training market. By adjusting the delivery to meet the needs of companies, the college could deliver vendor qualifications very cost-effectively, with the substantial added value of the Foundation Degree. Such provision could be entirely self-financing

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*"Companies pay more to send their employees on the vendor courses because the mode of delivery suits them. We have to ensure our delivery is flexible enough to match the companies' needs in a demand-led way."*

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## Case study 4

### Progression to Foundation Degree in ICT Support, Gateshead College

Contacts: Mick Brophy, Mary Lindsay

*An outstanding feature of this Higher Apprenticeship model is the incorporation of an NVQ level 4. A great deal of preparatory work, as yet untested, has gone into the assessment process with a view to achieving a streamlined assessment process which meets the requirements of both the Foundation Degree and the NVQ. A particularly notable achievement of the compact has been the funding obtained from the local LSC to support delivery of the NVQ.*

### Background

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*"We feel that in the fullness of time, if the government is serious about developing work-based routes to higher education, then the Higher Apprenticeship will become the natural progression route for graduating Apprentices."*

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Gateshead College is active in delivering Apprenticeships. An approach to the college's Apprenticeship unit by the Sector Skills Council, e-skills UK, in 2003 led to involvement in the progression compact, which included the University of Northumbria and the New Technology Institute (NTI). At an e-skills UK event the college considered different Higher Apprenticeship progression models. Taking account of workforce needs in the area, it was agreed with NTI partners to develop a Foundation Degree aimed at those who had already achieved at level 3, rather than adopt an integrated Apprenticeship/HE model.

### Target learners

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*"We aim to catch the Apprentices fresh while the impetus is still there."*

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The new Foundation Degree is aimed at employees, particularly, though not exclusively, at those who have recently completed the Advanced Apprenticeship. All applicants are interviewed. The focus on work-based learning makes experience and employed status important entry requirements. The first cohort is therefore a mixed group of employees – those who have just completed the Advanced Apprenticeship and more experienced employees with level 3 qualifications. Some are already performing the role IT technician within their company and seeking to qualify themselves at level 4. For all the expectation is that they will progress to supervisory and management positions.

### The curriculum

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*"The Foundation Degree acts as the technical certificate for the Higher Apprenticeship, allied to and mapped against an NVQ4 for IT Professionals."*

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The curriculum comprises six modules at level 4 (HE level 1) and five at level 5 (HE level 2), of which one module, the final Work Based Project, is double in size, earning 40 CATS points. It breaks down into

three key areas:

- vocational competencies – developing capability, knowledge and understanding
- professional competency – being able to work at and develop the skills appropriate for a level 4 post or role
- work-based projects – focusing on procedures and processes which would be of benefit to the employer.

A special feature of the curriculum is that it incorporates the new NVQ level 4 for IT Professionals awarded by OCR. The NVQ units are mapped across all Foundation Degree unit delivery, so that all the knowledge relating the NVQ is embedded in the delivery of the degree. They selected the modules based on the NVQ and mapped that in before deciding how to deliver it.

Vendor qualifications are not formally mapped in but there are elements of Cisco CCNA in the networking module, which is delivered by a CCNA training provider. This albeit informal link to professional certification is among the benefits highlighted in course publicity.

Key skills are not formally integrated but are developed in the Personal and Professional Development module delivered in the first semester.

### **Fitness for purpose**

The curriculum was developed with the University of Northumbria from existing module and new ones. They examined other Foundation Degree models and felt that the work-based element was often superficial, with features such as separate Key skills modules that they felt were inappropriate.

The core professional skills will be transferable across all employers, whereas the vocational projects will be very different, reflecting the different needs of the organisations.

Employers consulted in the process included Nissan, for whom the college ran a Apprenticeship programme. As the programme progresses they will be seeking feedback from employers and involving them in its development. The college sees this as a continuous process of improvement.

### **Delivery**

Being a two-year, part-time programme, it is more intensive than the normal three-year part-time Foundation Degree programme, in order to meet the needs of employers and learners. The fast pace is achieved through a 45-week academic year, which contrasts with the traditional academic year template determining programme delivery in many other institutions.

There are two attendance models – two evenings or one day a week over three 15-week semesters a year. They scheduled the work-based modules units to be delivered over the summer period for a project related to their employer, providing a timely integration of a relevant vocational element into the programme.

The work-based projects are key milestones in the programme. The two summer projects at the end of year one are small, enabling the students to begin developing project skills, procedures and a system for the workplace. The bigger project in the final year will then typically involve using that system to carry out the substantial final project.

The college stresses to employers the importance of supporting employees on the programme and giving them the scope to carry out projects and gather the relevant evidence.

Inevitably the course imposes a heavy workload on the students. Learning resources and support are provided on the VLE (Virtual Learning Environment). If students miss a session, for example, they can access the notes on the internet. The VLE is a support tool, rather than e-learning as such. Other support is available through the tutor system and college-based mentor for work-based learning. This is complemented by workplace mentors who help the students through their summer projects.

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*“Despite the pressures, learners are happy and well motivated.”*

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Because of the short lead time in the first year, study skills are not yet integrated into the programme. They plan to put study skills modules onto the VLE blackboard in due course. Tutorials will identify at-risk learners who would need to go through this programme.

### **Assessment**

College staff will be approved to assess at level 4, especially the NVQ, since even large companies do not necessarily have assessors trained to assess at this level. Workplace mentors will give guidance and support. If they can be engaged in the assessment, so much the better, but there will always be a need for guidance from the centre.

No assessments have yet taken place, but the college and university are keen to avoid over-burdening learners with assessment. They are currently examining the evidence for the Foundation Degree and marrying it to that required for the NVQ, with a view to gradually integrating the two assessment requirements. They have mapped in the NVQ in outline; the detail will be filled in when the evidence from the learners of knowledge and competency in the workplace. The expectation is that, when they achieve the right assessment mix, much of the NVQ portfolio development will be done through the tutorial programme within the Foundation Degree. The college is confident the model is feasible, and that they will be able to streamline the assessment process over time.

Mapping for APEL procedures is ongoing. Personal tutors log the learners' experience on entry. Many students have achievements such as HNC and vendor qualifications. According to course publicity, applicants with a current HNC in Computing or related IT discipline could complete the programme in one year.

### Funding

A full funding package for the Foundation Degree and NVQ assessment has been achieved through HEFCE and the local Learning and Skills Council respectively. The NTI is funding the tuition fee that would otherwise be charged to employers. The college felt this was an important incentive to offer employers pioneering the programme because of the work involved in establishing it.

### Promotion

Promotion was done through the college's Apprenticeship unit, supported by compact funding. It included the distribution of a flyer and placing of a newspaper advertisement<sup>29</sup>, backed up by a factsheet. Promotional material was aimed primarily at target learners, key messages including the opportunity for progression to an Honours top-up. The college used its network of Apprenticeship managing agents to disseminate the materials, as well as promoting the course to its own level 3 and HNC students.

Because the college has a range of Apprenticeship programmes, it was able to tap into its extensive employer contacts. Employee retention was an important driver for employers.

### Issues

An issue at the development stage was the university's lack of experience of the NVQ process and the evidence required for assessment. This highlighted the challenge of incorporating NVQ assessment into an HE programme.

Some learners have withdrawn for various reasons, including workload, level of difficulty and poor attendance due to work commitments. It remains to be seen whether this is acceptable wastage or a continuing issue.

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*"Some felt they had the skills but then found that on the programme they couldn't make the jump."*

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The college became involved in the project quite late so had to work quickly. Recruitment was particularly rushed. They would advise others to ensure there is adequate lead-in time. Recruitment took longer than expected, and success was helped by special funding for marketing which would not be available in future.

Marketing could not start until July because of a delay in obtaining NVQ funding. The local LSC was concerned about the possibility of double-funding. The college, meanwhile, was keen to offer the programme at no cost and was therefore unable to market the course until the matter was resolved. Happily the college was finally successful in making the case for funding on the ground that the NVQ and Foundation Degree are different programmes.

*Another case study on this programme, with a focus on individual learners, is available on e-skills UK's website at [www.e-skills.com/cgi-bin/wms.pl/956](http://www.e-skills.com/cgi-bin/wms.pl/956).*

<sup>29</sup> Included in Promotion to Apprentices and other work-based learners, page 15.

## APPENDIX: Unit summary, Foundation Degree in Computer Networking, Management Manchester College of Arts and Technology

No	Unit Title	Main Aim
1	Personal Effectiveness	To provide an understanding of how to be effective in the workplace by practicing, developing a range of key generic personal and interpersonal skills that are important in dealing with many situations in the workplace
2	Network Fundamentals	To provide an understanding of the software (operating systems) and hardware environments in which high level programs are executed, and how computers communicate with each other. (This module conforms to the CISCO CCNA Semester 1). Data Protection and Legal issues regarding corporate IT Policies
3	Information Systems for Organisations	To provide an understanding of relevant business / organisational contexts, the purpose of businesses and market supply & demand
4	Employment skills	To provide an understanding of the skills necessary to enter, remain and progress within the workplace environment, either as part of a team or on their own
5	Internet Technology	To provide an understanding of data transmission and networking concepts and to introduce internet protocols. (This conforms to the CISCO CCNA Semester 2)
6	Network Software	To plan, install, setup and troubleshoot a client operating system and a network operating system. (This module would correspond to the following MCSA Modules 2272 & 2273)
7	Project – incorporating Project Management	To expose students to produce work for real clients from a specified brief through to a working product. Students will need to produce a proper project management submission with Timescales, Objectives and Milestones
8	Network Security	To provide students with the knowledge and skills required by technicians who design, build and maintain network environments to protect them from external attack and manipulation. (This module would correspond to the following MCSA Module 2159)
9	Network Environment Management	This module is designed to give students an understanding of the network environment, how to establish and maintain network services and the security aspects of network management. (This module would correspond to the following MCSA Modules 2276, 2277)
10	Network Design & Implementation	Focusing on advanced routing and switching configurations, LAN switching, network management and advanced network design. (This module conforms the CISCO CCNA Semester 3)
11	Wide Area Network Design and Implementation	Focusing on project-based learning, including advanced network design projects and advanced management projects. (This module conforms to the CISCO CCNA Semester 4)
12	Work Experience	Students at the end of the unit the student should be able to demonstrate relevant computing and interpersonal skills required in the workplace. Achievement is evidenced by the student producing a portfolio of evidence indicating how the skills and key skills learned during their time on the foundation degree are relevant to their job role.

## Information sources

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### Apprenticeship

Apprenticeship (LSC mini-site)	<a href="http://www.apprenticeships.org.uk">www.apprenticeships.org.uk</a>
Apprentices Go Higher (Aimhigher Yorkshire and Humber mini-site)	<a href="http://www.apprenticesgohigher.org">www.apprenticesgohigher.org</a>

### Foundation Degrees

Foundation Degree Forward	<a href="http://www.foundationdegree.org.uk">www.foundationdegree.org.uk</a>
e-skills UK (FD page)	<a href="http://www.e-skills.com/FD">www.e-skills.com/FD</a>

### Funding

Higher Education Funding Council for England (HEFCE)	<a href="http://www.hefce.ac.uk">www.hefce.ac.uk</a>
Learning and Skills Council	<a href="http://www.lsc.gov.uk">www.lsc.gov.uk</a>
European Social Fund	<a href="http://www.esf.gov.uk/">www.esf.gov.uk/</a>

### Government Policy

Department for Education and Skills	<a href="http://www.dfes.gov.uk">www.dfes.gov.uk</a>
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### Quality and Regulation

Quality Assurance Agency for Higher Education (QAA)	<a href="http://www.qaa.ac.uk">www.qaa.ac.uk</a>
Qualifications and Curriculum Authority (QCA)	<a href="http://www.qca.org.ac">www.qca.org.ac</a>

### Research/Teaching and Learning

University Vocational Awards Council (UVAC)	<a href="http://www.uvac.ac.uk">www.uvac.ac.uk</a>
Learning and Skills Development Agency (LSDA)	<a href="http://www.lsda.org.uk">www.lsda.org.uk</a>
Higher Education Academy	<a href="http://www.heacademy.ac.uk">www.heacademy.ac.uk</a>
Council of Validating Universities (CVU)	<a href="http://www.cvu.ac.uk">www.cvu.ac.uk</a>

### Sector Skills and National Occupational Standards (NOS)

e-skills UK	<a href="http://www.e-skills.com">www.e-skills.com</a>
Sector Skills Development Agency (SSDA)	<a href="http://www.sdda.org.uk">www.sdda.org.uk</a>

### Widening Participation

Action on Access	<a href="http://www.actiononaccess.org">www.actiononaccess.org</a>
Aimhigher	<a href="http://www.aimhigher.ac.uk">www.aimhigher.ac.uk</a>
Lifelong Learning Networks	<a href="http://www.hefce.ac.uk/widen/lln">www.hefce.ac.uk/widen/lln</a>

## UVAC Publications

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All downloadable at [www.uvac.ac.uk](http://www.uvac.ac.uk).

**An Analysis of the Progression of Advanced Apprentices to Higher Education in England: An investigation into the purposes, intentions and opportunities facing Advanced Apprentices as perceived by learners, employers and providers of higher education**

by Vic Seddon, 2005.

**Integrating Work Based Learning into Higher Education: A Guide to Good Practice**

by Lyn Brennan, 2005.

**Learner Progression into Higher Education: Key issues concerning learner progression through the vocational qualifications system**

by Bob Faithorn, 2005.

**A higher education context for National Occupational Standards**

by Stephen Swales, 2004.

**Bridging rhetoric and reality: Accreditation of prior experiential learning (APEL) in the UK**

by Jonathan Garnett, Derek Portwood and Carol Costley, 2004.

**Fit for Purpose – The use of National Occupational Standards in higher education to meet the needs of employment: A generic guide for curriculum designer and deliverers**

by Simon Roodhouse and David Hemsworth, 2004.

**APEL National Forum, London: Recognising workplace learning and achievement as a tool to enhance the delivery of Foundation Degrees**

Summary of proceedings, 2004.

**APEL National Forum, Cardiff: Recognising workplace learning and achievement as a tool to enhance the delivery of Foundation Degrees**

Summary of proceedings, 2004.

**Apprenticeship: An historical re-invention for a post industrial world**

Proceedings of the conference held by UVAC, 2004.

**Responding to Government expectations: Vocational education and training**

UVAC Annual Conference Proceedings, 2003. Published 2004.

**Widening participation in the workplace: A new agenda for further and higher education**

UVAC Annual Conference Proceedings, 2002. Published 2004.

**Accreditation and recognition of Graduate Apprenticeships: Meeting National Industry and Education Standards, 2003.**

**Accreditation and recognition of Foundation degrees: Meeting National Industry and Education Standards, 2003.**

**Senior Awards – The basics with City & Guilds, 2003.**

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