

# Diva Project - State of the Nation Report

Commissioned by the  
Scottish Qualifications Authority



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**JAMES  
WATT  
COLLEGE**  
OF FURTHER &  
HIGHER EDUCATION



SCOTTISH  
QUALIFICATIONS  
AUTHORITY



**sce**  
stevenson college edinburgh

## **Scope**

- **Objective** – To review the practice, issues and opportunities relating to the delivery of Cisco® Networking Academy® Program courses within SQA Qualifications, providing both vision and internal validation for the programme.
- **Output** – A report of around 20 pages that will inform the annual partnership planning between the SQA and Cisco Systems Inc©.
- **Perspective** – A view from the field, combining vision with the informed perspective of expert practitioners, active learning providers and their clients.
- **Underlying Requirement** – To provide feedback on the current and ongoing ‘readiness’ of FE providers for delivering Networking Academy program curriculum appropriately and effectively embedded in SQA awards

## **Approach**

- **Sources** – The primary sources for this report are Scottish FE institutions who are part of the Networking Academy program; insight should also be sought from the Regional Academies
- **Survey Instruments** – This report should be informed by a supply side survey; Bob McGonigle and David Kay can provide support in the design of this element
- **Performance Data** – Whilst qualifications data is available through the SQA, a focused review of take up, retention and achievement will be helpful in identifying key issues
- **The Parties**
  - Authority - Commissioned by Cisco Systems Inc. & the SQA
  - Authors – James Watt & Stevenson Colleges
  - Guidance – Contact Bob McGonigle, Consultant to the SQA
- **The Timetable**
  - Draft for mid-January 2006
  - Finalised for mid-Feb 2006 ready for Annual Review cycle

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- Appendix 1 and 2 co authored with Willie McCabe, both assert the moral right to be recognised as author of this element.

# DIVA Annual State of Nation Report

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## **Forward**

I thank the authors for this report which provides much detail and analysis. In taking forward their recommendations in the Executive Summary, I will:

- Consult with my colleagues within the SQA and with Learning and Teaching Scotland to discuss how the introductory levels of the Cisco programmes could contribute to the vocational agenda in secondary schools
- Request my Qualification Managers to include the recommendations on Professional Development Awards within the current effort being taken to increase uptake
- Draw the attention of Qualification Development & Support Teams to the recommendations on units and awards, and request they meet with the authors to gain a level of detail
- Discuss with my colleagues in learndirect scotland how these programmes may aid in their work with economically inactive citizens
- Investigate how we may take forward the aspiration of Scotland more fully participating in UK Skills competitions
- Discuss overall findings of report with CISCO our DIVA partner.

This report is especially valuable as it is from practitioners within the College sector and I would hope that it would encourage others to look at other areas of the curriculum to support us in ensuring that needs of learners and industry are met through our qualifications framework in Scotland.



Joe Wilson  
Business Manager HN/VQ Business and IT  
Scottish Qualifications Authority

## **Introduction**

The DIVA project arose out of a need by the Scottish Qualifications Authority to maintain a portfolio of up to date relevant industrial orientated vocational qualifications. The new computing frameworks for HNC Computing, HNC Computer Networking, HND Technical Support and HND Computer Networking and Internet Technology all included vendor based qualifications. Using these qualifications as a base the DIVA project sought to ensure the SQA qualifications did not become outdated by the rapid advance of technology. A corollary element was to ensure the vendors themselves became fully involved with the qualifications development process ensuring the SQA were a world leading examining body.

In June 2006 a survey of Cisco® Networking Academies in Scotland was undertaken<sup>1</sup>. Of the 30 Academies participating, the survey concentrated upon SQA centres (some 23 institutions predominately FE Colleges). A high return rate of nearly 35% provided statistically significant information relevant to the entire population surveyed. The results are presented<sup>2</sup> and form the basis of future activity for the DIVA team.

The survey of current Network Academy program training activity by SQA centres provides the basis to review the focus of the delivery in Scotland. Information has been gathered concerning who delivers the Networking Academy program, how it is delivered, how it is assessed, marketed, and how it is integrated into SQA awards (both HN and PDA). A comparative analysis is presented comparing official Scottish Executive statistics<sup>3</sup> by administrative area (local authority) to determine whether a correlation exists between deployment of high value network training and unemployment rates, rates of economic inactivity, levels of individuals in employment, education or training and population size. Figures from SQA Statistics unit have been used to provide detailed information of uptake of awards. This has been included to provide an overview of vendor certifications within the SQA sphere of influence.

The DIVA project has sought to build upon this information and reflect upon the current delivery of Networking Academy program by recommending improvements to the current frameworks for HN and NC level, offering module outline for new emerging technologies as well offering guidance to centres delivering vendor qualifications. The Survey results provides justification for a new HN Framework ensuring the SQA offers vendor qualifications relevant for the next five years<sup>4</sup>.

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<sup>1</sup> Appendix 1 for Original Questionnaire, Appendix 2 for a copy of the online questionnaire.

<sup>2</sup> See Report on Survey, page 21 below.

<sup>3</sup> Appendix 6 contains numerous tables of official statistics compared with numbers of Academies

<sup>4</sup> See Appendix 5 for a break down of a new proposed award.

## **Executive summary report:**

The Diva project represents a unique opportunity within further education in Scotland to influence practice and delivery of vendor units. This enables SQA qualifications to be maintained fully inline with vendor certifications even as the vendor certifications change. The current status of the market place can be summarised as:

- Numbers of candidates undertaking SQA modules in vendor units is growing slowing reaching a plateau by 2010 (assuming a steady decline in growth rates as projected)
- The HND Networking, embedding Networking Academy program courses, represent less than 20% of the total candidates in the SQA Computer Support and Network qualification area.
- There is no correlation between Academies and levels of unemployment, economic inactivity or levels of individuals engaged in employment , training or education.
- Little Activity in the PDA sector with none for Networking Academy program or CompTIA based awards
- Candidates are twice as likely to undertake MCSA or CompTIA based SQA units as Networking Academy program derived SQA units
- Demand for employees in the User Support and Networking area has declined for the fourth quarter in a row.
- Quarterly increases in employment for ICT professionals have only been observed in Software or IT Strategy and Planning areas.
- Only one School has indicated training activity at CCNA level

Whilst the full DIVA survey result is included, some of the more important findings are:

- The market place for Networking Academy program is mature with little scope for expansion in the FE/HE Sector
- There is no evidence to suggest student demand had led to the adoption of the Networking Academy program by an Institution.
- Scotland has an over abundance of Regional Academies. By enlarge, these centre around the central belt.
- All Academies offer CCNA. Few offer additional curriculum. The most popular additional curriculum has been ITE 1. There is a significant drop in the number of centres actually enrolling candidates for this program (42%). Newer curriculum such as PANDUIT, VOIP and security have no uptake as yet.
- Most Academies (75%) offer training courses as a full cost recovery commercial course for evening candidates. Few offer the program commercially at weekends or as distance learning.

- For both day and evening delivery 56% of Academies deliver to classes of 15 students or less. This seems to provide the right balance between economic class sizes and effective instruction.
- A quarter of all Academies deliver the program with less than the recommended minimum 70 hours.
- The majority of Academies place emphasis on passing the test (theory or practical) spending 6 hours or more on preparing candidates.
- Some (14%) offer 5-8 hours per week engaged in lecture activities. Since the ethos of the program is to concentrate upon instruction and not lectures, this is a significant departure from the delivery model proposed by Cisco for the Networking Academy program.
- The reasons for non completion of a course once a candidate has enrolled are wide and vary considerably. Academies may wish to review their pricing structure or payment methods as half of all candidates not completing is apportioned to financial pressures. A surprisingly high number (48%) of candidates enrol upon the wrong choice of course
- Most Academies currently do not have a marketing pack but would like one
- Most Academies (85%) are unaware of the UK Skills competition for Cisco. Nearly two thirds of Academies would be interested in participating in a Scottish Regional heat for the UK Skills Competition.

From the good practice case studies several elements can be gleaned which impacts directly on the future direction of the Networking Academy program and DIVA.

- Success can be achieved by small class sizes with extensive access to equipment
- Candidates can achieve within the Networking Academy program through Academy joint delivery ventures
- Regional Academies can offer Netlab access to supplement Local Academy hardware in order to increase student to equipment ratios.
- Regional Academies can offer a wide variety of training within the confines of the existing contractual model.

It is therefore proposed DIVA consider adopting a strategy aimed at:

1. Expansion into Schools at ITE 1, CCNA 1 and CCNA 2 levels for S5 and S6 candidates.
2. Increased uptake of PDA's in the evening class/professional training market via marketing to both SQA Centres and Academies.
3. Expansion into areas of large numbers of economically inactive individuals, high unemployment, or high levels of persons engaged in education, employment or training via community development projects (such as Govan and Edinburgh) or via Regional Academy Netlab solutions.

4. Development of Unit Descriptors, enhanced marketing of PDA elements to SQA Centres
5. Development of new HN framework based on market demand
6. Managing UK Skills Competition events in Scotland

## Market Demands

The IT and Telecoms sector represents 2% of the total Scottish workforce or about 48,700 employees<sup>5</sup>. Just under half of all jobs in the sector were associate professionals, managers or senior managers<sup>6</sup>. Employment growth is strongest in areas requiring higher levels of skills and qualifications. Managerial, professional, associate professional and technical occupations accounted for 27% of the employment market in 1981, 39% in 2004 and is estimated to grow up to 41% by 2009<sup>7</sup>.

Demand has increased for contract network controllers and administrators<sup>8</sup>. ICT Management is the top paying functional management role in the UK during the first Quarter of 2006<sup>9</sup>. The Fourth Quarterly fall for the number of persons employed in the User Support and Operations area was reported recently. Increases in employment were observed in Software Professions<sup>10</sup>.

UK Statistics show contract Tech Support Staff offered some of the highest pay<sup>11</sup>.

The level of growth for permanent and contract IT staff has grown over the last 11 Quarters (nearly 3 years)<sup>12</sup>.

Employers within the sector are more likely to recruit from University graduates. They are three times more likely to recruit from university graduates than from the FE sector<sup>13</sup>.

Since the HNC/D Networking embedding vendor based qualifications is regarded by some as a flagship award of the SQA, employers may be unaware of the program. The range of vendor qualifications within this award would make it highly attractive to employers. A recent comparison between the vendor certification embedded within the SQA and the cost of undertaking a similar training programme at a commercial training centre between July and December 2006 reveals the HNC Networking has a relative worth of **£10,195** whilst the HNC Networking is worth **£5,300**. The total award, if comparable courses are undertaken, would cost a candidate some **£15,495**. This is based on using the corresponding Microsoft IT Academy, Cisco Networking Academy program and CompTIA courses as being comparable to those offered at commercial training centres<sup>14</sup>.

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<sup>5</sup> IT and Telecoms sector Profile 2006, p3

<sup>6</sup> Ibid., p4

<sup>7</sup> Scottish Labour Market 2006, p34, 41 and 48.

<sup>8</sup> E-skills UK quarterly Review of ICT Labour Market 2006, p1

<sup>9</sup> Ibid., p2

<sup>10</sup> Ibid, p6

<sup>11</sup> Ibid., p7

<sup>12</sup> Ibid., p8

<sup>13</sup> Ibid., p5

<sup>14</sup> See Appendix 7 for a comprehensive breakdown of comparative training costs.

The financial benefits of recruiting a candidates with the award ought to make candidates attractive to employers. It would appear employers are unaware of the benefits of new course offerings by the SQA. If they were, it is logical to assume employers would be more willing to recruit candidates given the reasons cited above.

**Table 1 :Cost of Undertaking Vendor Courses at a Commercial Training Centre (July-December 2006 Prices)**

Course	Cost
HNC Networking Block 1	£6500
HNC Networking Block 2	£3695
HND Networking Block 1	£1450
HND Networking Block 2	£3850

The IT and Telecoms Sectors have more hard to fill vacancies caused by skills shortages (54%) than other sectors of the economy (25%)<sup>15</sup>. Weakness in Advanced IT or Software skills shortages are reported by 47% of workplaces in the sector. This is more than double the average reported by other sectors<sup>16</sup>. Further training was provided by 96% of workplaces reporting a skills gap. The incidence of skills shortages reported by recruiters rose to 24%<sup>17</sup>.

Clearly there is a demand in the market place for individuals possessing vendor certifications. This is evidenced by world wide studies such as Workforce Development and by Governmental, Scottish Executive and Funding Council initiatives. Within the FE sector, market demand can be translated into classes being offered in an area of perceived need.

There is a demand for evening class provision and this is being met by FE Institutions. Similarly there is a demand for full time students to be up skilled with vendor qualifications. Current enrolments of candidates in HN Awards incorporating vendor elements throughout Scotland are indicative of a market demand being met. If candidates did not appreciate the benefits of vendor certification they would enrol on other courses. Therefore it is safe to conclude actual delivery of programmes involving vendor certifications is evidence of demand for these courses.

Surprisingly there is demand for entry level Networking Academy program qualifications (ITE1 and ITE2) by candidates in Scotland this is not as strong as demand for the CCNA curriculum. Given the FE sector normally equips candidates with entry level qualifications the lower demand for entry level computing qualifications offered by Academies is surprising.

<sup>15</sup> E-skills UK quarterly Review of ICT Labour Market 2006, p6

<sup>16</sup> Ibid., p7

<sup>17</sup> Ibid., p8

There is no delivery of weekend training for Academy offered curriculum. There is little blended or distance learning currently being offered. This need not reflect market demand but may be indicative of delivery problems within the FE sector (opening up buildings at weekends, staffing courses, scheduling of assessment without interfering with normal classroom delivery or providing time for supervision of distance or blended learning candidates).

At present there is no appreciable market demand for new emerging technologies such as PANDUIT, VOIP, Security or WLAN. Whilst it may be argued if demand for these courses exist, centres would offer and deliver classes to meet this need, it may also be argued sufficient demand in these areas has not achieved a critical mass to enable economically viable classes to be achieved. There may be demand to satisfy an economic class size throughout the entirety of Scotland but this may not be concentrated in sufficient areas to form an economically viable class.

The new technologies may themselves be too innovative and too new for candidates and employers to demand the FE sector provide training in these areas. An alternative explanation for lack of courses being delivered may be poor marketing by centres. The more complex emerging technologies are often dependent upon candidates already being in possession of CCNA qualifications and this itself may limit the pool of potential students.

Early in the DIVA project a request was made to Cisco Systems at their UK Headquarters to provide access to information gathered at the end of every Academy course. The feedback forms include details of candidates future training aspirations. Thus Cisco are already in possession of statistics indicating what training candidates are likely to enrol in within one year of completing their Networking Academy program. This information may be useful to help identify future training strategies throughout the Academies in Scotland and ensure the FE sector are ready to meet the demand. Given this information is likely to be treated as commercially sensitive it is doubtful whether the DIVA team will be given access to this data.

Since the Networking Academy program was instigated to address some of these areas it is a natural vehicle through which the SQA can attempt to address deficiencies indicated by employers. The DIVA team held telephone discussions with Regional Academies to determine the number of Local Academies and the nature of the support provided. During one such conversation a Regional Academy indicated they were currently supporting a School, Keith Grammar in Aberdeenshire. It emerged only CCNA 1 and 2 were offered due to time constraints, limited qualified staff, and restricted resources. Most importantly schools were unwilling to burden pupils with additional curriculum during the crucial fifth year. Since this is the year candidates undertake their university entrance qualifications (Highers) and schools performance indicators are produced based on candidate achievement in these exams.

Given this discussion implications may be drawn of national significance. Schools can participate in the program by offering CCNA 1 and 2. This presents limited resource implications on the School. In comparison to resources needed for the full program it represents a cost effective training scheme. The implications for Regional Academies is clear: where regional Academies offer Netlab remote access solutions, schools need invest as much resources in the program as would otherwise be expected. This may provide additional a significant potential local Academy market to a regional offering blended learning or distance support models.

## **Supply Side Trends**

There were 224,400 students attending HEI in Scotland during session 04/05 this represents an annual increase by 3.8%. China was the source of the greatest number of overseas students studying at Scottish Institutions<sup>18</sup>.

Within the Networking Academy program, CCNA 1 through 4, is offered in Chinese as well as a number of other languages. The SQA has links with the Peoples Republic of China and provided a non vendor specific variant of the HNC/D Networking for this market. It is clear both the SQA and Cisco can support learners from this country and may wish to explore this avenue further.

The DIVA survey has produced some startling results in terms of supply side trends within the Scottish FE Sector. The sector is stable and mature with most Academies being a member of the program for 5 years or more. There is little opportunity to expand the number of Local Academies. A plateau has been reached. The majority of Cisco training providers in the education sector are FE Institutions. Thus SQA developments in this area can have a significant impact upon the market.

Only 2/3rds of Institutions surveyed offer Networking Academy program curricula as part of a full time HN Award. Most (75%) offer a full cost recovery commercial training course as part of their evening class provision. At present no SQA centre delivers the PDA in Cisco Networking.

All offer the program as 100% in person mode, but most offer distance or blended learning models. Few however actually deliver the program via distance or blended learning methods.

Supply of Cisco based training within the FE sector is concentrated upon a core business of CCNA with all Academies surveyed offering this programme. There is little activity in delivering other Cisco developed or sponsored courses. The most popular alternative course is ITE1 (equivalent to CompTIA A+) with 42% of Academies delivering this. There is no current delivery of any specialist courses such as PANDUIT, VOIP or Security.

However a large percentage of centres currently offer additional curriculum (ITE1, ITE2, VOIP, PANDUIT, Security, WLAN) or alternative delivery methods (distance learning, blended learning). However few actually deliver these courses.

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<sup>18</sup> Scottish Labour Market 2006, Supply of Labour, p 26

## **Activity Status**

### **IT Sector Profile in Scotland**

The Scottish Executive and various other bodies have funded research into the labour market in Scotland. The most comprehensive study is carried out as part of the Census every ten years with some further analysis being conducted in between. A broad picture of the labour market in Scotland is included to enable useful comparisons between Academies and the training they offer with the broader Scottish Executive aim of life long learning and the SQA's aim of providing relevant training meeting the needs of a modern economy.

The IT and Telecoms sector represents 2% of the total Scottish workforce or about 48, 700 employees<sup>19</sup>. Since 2002 the Scottish Labour Market survey has interviewed 19,000 employers. Of these 2/3<sup>rds</sup> provide training for their staff. Around 90% are satisfied with training provided by the FE/HE sector. It should be noted growing businesses or small firms face problems with retention and recruitment<sup>20</sup>.

### **Colleges Involved**

At the beginning of the Diva project a list of participating institutions was provided to the team. This list contained regional, local and potential Academies. A list of 45 contacts was provided this included repeating data. Often this arose as different departments expressed an interest in the program at its inception but in reality only one Academy per institution was registered. An analysis of this is included below.

**Table 2: Academy Status**

Type of Academy	Number
Regional	7
Local	23
Potential	7

The Regional Academies involved in the program are either government funded training agencies or newer universities created in the 1980's<sup>21</sup>. No older traditional ancient universities have adopted the program in Scotland. This is indicative of the nature and role of the newer Universities: to provide vocational training aimed at employment. The ratio of Regional Academies to Local is in the order of 1: 3.285. This is significantly less than the original 1:10 ratio proposed by Cisco. Scotland is better served with Regional Academy support than that recommended by Cisco.

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<sup>19</sup> IT and Telecoms sector Profile, p 3

<sup>20</sup> Scottish Labour Market 2006, p 7

<sup>21</sup> See Appendix 9 Regional Academy Servicing

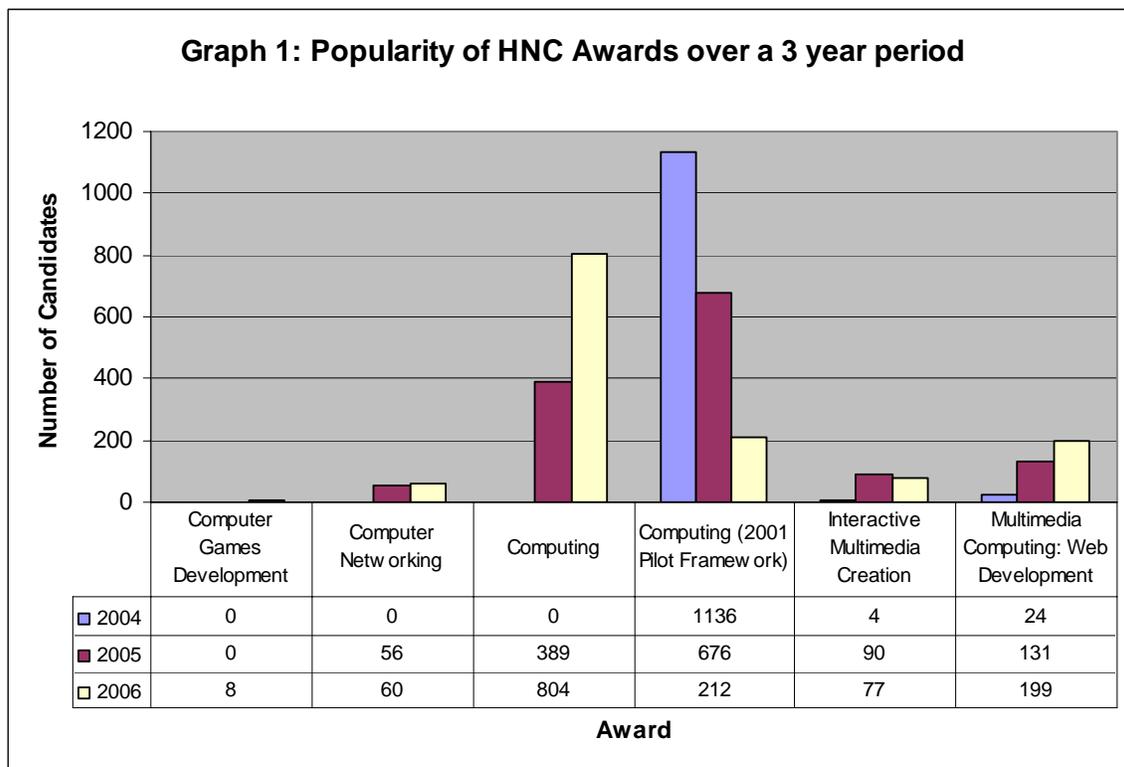
By reviewing the institutions involved, there is little community education or school involvement in the program<sup>22</sup>. The vast majority of participants are Further Education Institutions. This implies Colleges are supplying a vocational training throughout the sector including providing their local communities with retraining courses.

**Table 3: Type of Institution**

Institution	Number
Universities	5
Colleges	21
Schools	1
Training Agencies	2
Community Training	1

**SQA Activity in this Sector**

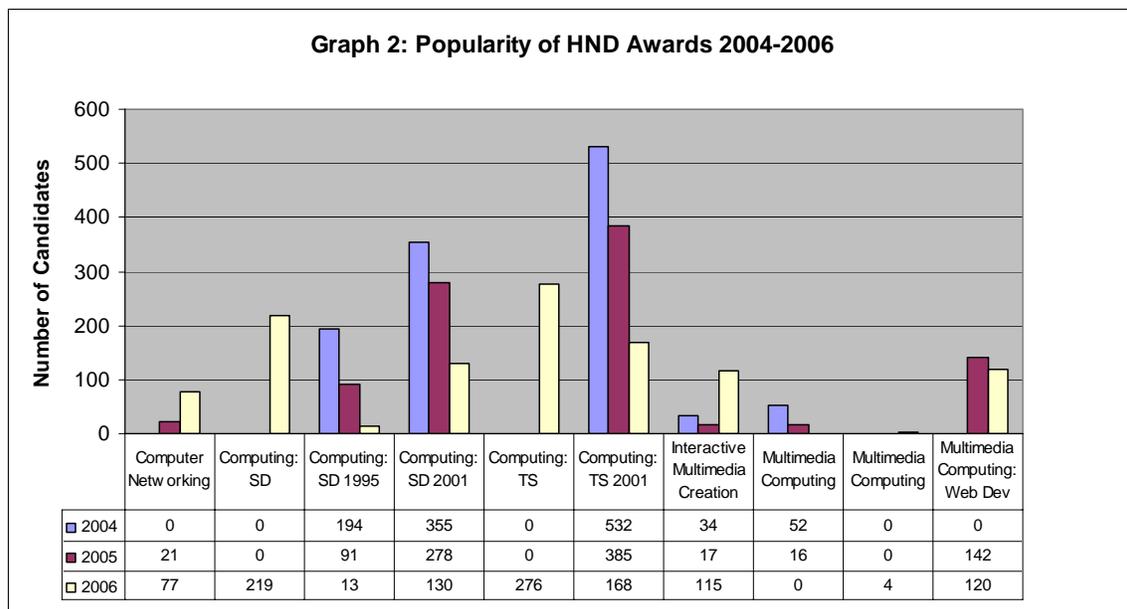
Within the Computing Qualification area there are a number awards offered by the SQA. The main qualifications being: Computing, Networking, Software Development, Technical Support, and Multi Media. There are variations within the awards as a result of framework changes from 1995 through to the present day.



<sup>22</sup> See Appendix 8 for a more comprehensive list of Local Academies in the area of interest to DIVA

By reviewing the total numbers of candidates under taking the awards a picture emerges of activity in the HNC sector. Prior to the launch of the new framework in session 03/04, the most popular award was Technical Support, this had almost a third more candidates than software development. Uptake of multimedia of all flavours was less a sixth that of Technical Support. A movement has emerged out of Technical Support and out of the older frameworks in general into other areas. This is consistent with the SQA offering more awards under the new frameworks. The most popular award in 2006 was Computing. This is expected as it is a general level qualification. Progression to HND sees a slight change in the emphasis, with a movement towards the newer.

In terms of student Activity, a large number of students were enrolled upon the HND Technical Support course during session 05-06. Uptake of HND Networking is almost a third of this figure with uptake of HNC Networking being almost 25%. It is clear technical support attract far more candidates to the award than either the HNC or HND Networking combined<sup>23</sup>. This may be down to cost of joining the program, difficulty of training staff, cost of releasing staff or equipment overheads.



Since the HND Technical Support course does not contain as many vendor based units, nor requires vendor certified staff and can be based upon text books or Scholar/College curriculum material delivery of this qualification is easier and more cost effective to Computing Departments. A similar statement can be made concerning uptake of Software Development. Is the large number of candidates undertaking this qualification due to student demand, availability of jobs or merely that this is offered as staff in centres have skills in this area? However before any

<sup>23</sup> See Appendix 3 uptake of awards and Appendix 12 Popularity of SQA Awards

definitive conclusions can be drawn as to why non vendor based courses are more popular, further investigation is needed. A questionnaire or telephone interview with heads of Computing may illuminate this anomaly.

**Table 4: Uptake of SQA Computer Support and Networking Awards**

Award	Session 05-06
HND Technical Support	256
HND Computer Networking and Internet Technology	77
HNC Computer Networking	60

By comparing vendor uptake of SQA units a surprising picture emerges<sup>24</sup>. The popularity of vendor based units has seen an almost doubling of numbers every year since the inception of the HNC Networking in session 2003-04. There is no reason to suggest this growth rate will not continue to rise for session 2006-07 and beyond.

Entry level qualifications mapping to CompTIA awards are not the most popular vendor units. Since the FE sector provides vocational training aimed at employment it is logical to assume individuals would seek entry level IT training in this sector rather than in the HE University area. Of the vendor units undertaken in session 2005-06, just over 600 individuals undertook CompTIA based units for A+. A further 186 individuals undertook Net+ within the SQA framework.

**Table 5: Uptake of Professional Units from 03/04 to 06-07 (projected)**

Yr	Entry Level			Professional			Total	% Growth
	A+	Net+	Total CompTIA	MCDST	MCP/MCSA	CCNA		
03/04	263	70	333	0	247	89	669	
04/05	340	116	456	0	756	339	1551	132
05/06	603	186	789	672	801	428	2690	73
06/07	814	251	1065	907	1082	578	3632	35

Note: The MCP/MCSA units are related to Microsoft exams 70-270, 70-290, 70-293 and 70-294

It should be noted the table is based upon statistics provided by the SQA. There may be a far greater level of training being undertaken across the sector where centres deliver official courses aimed at vendor certification programmes and do not register candidates for the corresponding SQA unit. Comparing the uptake of SQA vendor based units for CCNA to the survey results, a surprising picture emerges. Networking Academies report delivering three to four Cisco classes per block. If this is examined based on the number of classes per block (3-4) and an average of two blocks per Academic year we can conclude Cisco activity is in the region of 6-8 classes per Academic session<sup>25</sup>. If this is multiplied by the number

<sup>24</sup> See Appendix 3 Uptake of SQA Vendor Units for more comprehensive figures

<sup>25</sup> See page 26

of Cisco Academies in the FE sector in Scotland (21) a greater level of activity maybe occurring in the sector than is reported in the SQA statistics.

By far the most popular vendor certification route is the MCP/MCSA route with MCDST closely following behind. Networking Academy program related units are some of the least popular SQA vendor units. This is not a criticism of either the units nor is it a criticism of the Cisco Networking Academy program as a whole. As CompTIA and Microsoft units are predominately mapped to HNC year one awards and Networking Academy program derived units maps to HND year two, there is naturally a smaller pool of candidates eligible to enrol for these units. The ratio of popularity of CCNA units to MCDST is 2:3, of CCNA to MCSA the ratio is 1:2. Double the number of candidates undertakes MCSA units in comparison to CCNA. In comparison to CompTIA the ratio is almost 1:2. Again almost double the number of candidates undertakes CompTIA units as CCNA based units.

The projected figures for 06/07 have been derived at from determining the growth rate for the sessions 03/04 to 05/06 and applying the emergent trend to session 06/07. It should be noted an explosion in candidate numbers of 132% growth was experienced in between sessions 03/04 and 04/05. This can be related to professional vendor units being first introduced with a number of centres offering these. Following on from this the market has experienced less growth showing a downward trend with growth rates almost halving each session. The reasons for this may be simple. The market has reached saturation with no new centres coming on stream. Indeed it would appear the number of candidates undertaking these subjects is slowing reaching a plateau towards session 09/10, assuming growth rates continue to follow the trend.

It should be noted, Cisco has failed to provide statistical information concerning uptake of the Networking Academy program curriculum. This would provide a useful comparison between activity in vendor training which is not directly related to SQA qualifications. Further analysis is needed to determine whether a potential market exists for CCNA and candidates undertaking other Networking Academy program derived units to be provided with credit transfer towards SQA qualifications.

Centres may wish to capture market share from existing introductory units such as CompTIA A+ by offering alternative replacements such as ITE1. This transference from CompTIA to its Networking Academy program equivalent is a natural progression.

The SQA may increase market share in professional vendor units by offering Professional Development Awards as alternatives to the full HNC or HND. Uptake for these awards has been extremely poor throughout Scotland. In session 05/06 a total of 12 candidates undertook PDA's, all of whom were related to Microsoft vendor units. The questionnaire provides some investigation of why

PDA's in general have a low uptake, but more importantly explores awareness of and uptake of the Cisco PDA.

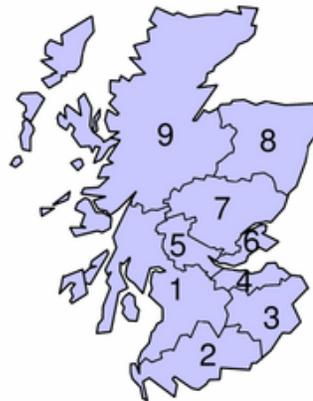
Further analysis is necessary to determine whether the market for Networking Academy program based training is saturated or whether SQA Centres do not offer high level network training due to resource, staff training or other reasons.

The geographical dispersal of training is significant. Since the vast majority of the Scottish population is resident in the central belt, it is expected a concentration of IT Training providers will be found in this area. This is supported by the analysis with 13 Academies in Strathclyde region. Other areas have between 2 to 4 Academies. The less populated and more geographically diverse areas have a lower level of Academy provision.

**Table 6: Geographic Dispersal of Academies Currently delivering courses**

Region	Name	Total
1	Strathclyde	13
2	Dumfries and Galloway	1
3	Borders	0
4	Lothian	3
5	Central	0
6	Fife	2
7	Tayside	2
8	Grampian	4
9	Highland	3
10	Western Isles	1
11	Shetland and Orkney	1

**Map 1: Regions of Scotland**



Note: Areas 10 and 11 are not shown on the Map above

An attempt has been made to compare the location of Academies with Economic, Training and Population in Administrative Areas of Scotland as detailed in statistics published by the Scottish Executive<sup>26</sup>. Several conclusions can be drawn from this:

- Academies are largely located in dense population areas
- The largest concentrations of Academies are in the main cities of Glasgow, Edinburgh and Aberdeen.
- There is a proportional increase in the number of Academies in these cities based on the size of population
- Some areas of high unemployment do not have an Academy in their immediate vicinity but fall within travelling distance of at least one other

<sup>26</sup> See Appendix 6 for a full comparison of Academies in each Administrative Area.

centre. This is seen in West Lothian, North and South Ayrshire. The later two may be serviced by a campus of James Watt College.

- West Lothian, with a high level of economically inactive persons does not have an Academy near by. However given the position of this area between two major cities with an abundance of Networking Academies, the training needs may be met by Institutions outside the local authority.
- Some areas of the country with over 100,000 persons engaged in employment, education or training are not serviced by an Academy. This may be due to the geographical dispersion of population throughout the region or given the rural nature of the area, little demand may exist for this form of training.
- There does not appear to be a correlation between the unemployment rate of an administrative area and the presence of an Academy. A conclusion may be drawn from this: Networking Academy program training has little impact upon offering individuals IT Skills as a mechanism to attain employment.
- There does not appear to be a statistically significant correlation between the levels of economically inactive individuals and the deployment of Academies.
- There is no correlation between the numbers of persons engaged in education, employment or training and the number of Academies in the local authority region.
- Surprisingly, Local Authority Areas which have the highest participation in Adult Learning (ages 16-69) during Academic Session 04/05 have one or no Academies offering IT Training.
- Local Authority Areas having the highest employment rate for Adults have one or no Academy. This is surprising as businesses normally require new technology or staff to be trained in this area.

The comparative analysis between Academies and statistics published by the Scottish Executive has produced some extraordinary results. One of the main policies espoused by the Scottish Executive is for Lifelong learning and continuous training for adults to engage effectively within the job market. The Networking Academy program was instituted to meet the IT skills shortage. It would appear in certain areas of the country there is no provision of high level network training. Where there is a high participation in education there does not appear to be the demand for the training offered by Academies.

A number of explanations can be put forward to explain why no Academies exist in areas of high economic inactivity, high participation in education, or high levels of unemployment.:

- Since the Academy program is mature, being some five years old, a reassessment of training provision may be necessary to ensure demand for courses are actually met by Academies.

- Better marketing may need to be offered in these areas to ensure a better uptake of training courses
- There may be cost and training implications for local FE Institutions, Schools or Training Bodies prohibiting the adoption or expansion of Academies to meet training needs in these areas.
- Deployment of Networking Academy program courses into Schools may offer an opportunity to expand the program into these areas.

It should be noted three Academies described by Cisco as potential members of the program are located in areas where there are large numbers of economically inactive, unemployed or individuals participating in education.

### **Rural Areas**

From the comparisons between Academies and various official statistics this area is of interest as there is little training coverage yet this represents the bulk of Scotland. The term Rural Area is defined as Council Area, covering some 90% of the land area and 30% of the population, rural areas form a significant part of Scotland<sup>27</sup>. Between 2002 and 2016 the population in rural areas is expected to fall by three percent<sup>28</sup>. It is projected by 2016, 50.1% of the population will reside in rural Scotland<sup>29</sup>.

At the last Census, 51% of those employed in rural Scotland were aged between 30 and 49<sup>30</sup>. No specific projection of employment in IT and related industry up to 2007 exists<sup>31</sup>. Although this may form an element in more than one of the 17 industries listed.

Technical, practical, team working and problem solving skills were more likely to be lacking in applicants in rural areas than in the rest of Scotland<sup>32</sup>.

A more significant skills gap in the associate professional and other technical occupations exists than in the rest of Scotland. In fact it is nearly double that of Scotland as a whole<sup>33</sup>. However, the most popular subject studies at FE Institutes in Rural Scotland is IT, accounting for nearly 30% of all students<sup>34</sup>.

Further in depth analysis of Rural Areas is extremely difficult as official statistics do not include breakdowns of labour market into sectors in each administrative area. A report commissioned in 2006 provides an insight into one rural area. The industry in the Highlands and Islands is worth £400 million. The sector has grown

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<sup>27</sup> The labour market in Rural Scotland – an Introduction, p14

<sup>28</sup> Ibid., p 52

<sup>29</sup> Ibid., p 60

<sup>30</sup> Ibid., p 23

<sup>31</sup> Ibid., p33

<sup>32</sup> Ibid., p 45

<sup>33</sup> Ibid, p 47

<sup>34</sup> Ibid, p 85

in recent years driven market growth in computing services. Wages in this sector are 35% higher than in the rest of Scotland. 62% of vacancies in the sector were hard to fill<sup>35</sup>.

Given these figures there exists a large market contributing to the Scottish Economy requiring skilled staff. The remoteness and dispersal of population centres would provide an ideal environment for Regional Academies to offer full distance or blended learning models to Schools, Community Groups or other institutions in rural areas. Clearly students are interested in undertaking IT training courses.

Argyll College currently offers a delivery mechanism where mobile racks can be moved between the Island centres addressing demand for network training once viable class sizes are formed. This represents an opportunity for training and supporting institutions and organisations delivering elements of Networking Academy program curriculum. Whilst this occurs as a 100% in person instructor led delivery mode, there is scope to offer full remote distance learning models. Geographical dispersion may necessitate candidates travelling to Academies to undertake assessment. Cisco and the SQA should collaborate over developing support models further to sustain a skilled workforce in this sector<sup>36</sup>.

Further more serious consideration should be given to seeking ESF funding to retrain economically inactive adults in these areas using a complete remote learning model. For assessment purposes, local schools could be used to supervise remote skills and end of unit theory tests where funding has been obtained for this.

### **School Leavers**

Employers have indicated typically, school leavers had difficulties communicating, were unreliable, could not organise themselves and had difficulty working with others<sup>37</sup>. The curriculum produced as part of Networking Academy program can help to address these important areas. Candidates undertaking the course must communicate with others, organise their time to cope with the rigorous demands of the curriculum and develop proficiency in problem solving in order to complete the end of unit skills test. The Networking Academy program can therefore address concerns of employers whilst improving the employability of School Leavers.

During telephone discussions with Regional Academies, the DIVA team discovered several attempts have been made in various parts of Scotland to integrate Networking Academy program into the normal School Curriculum. It

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<sup>35</sup> Engineering Technology and Science in the Highlands and Islands 2006

<sup>36</sup> A possible collaborative venture is proposed in Appendix 10 to address training needs in rural areas.

<sup>37</sup> Scottish School Leavers and their understanding of Work 2005, p 27

should be noted none of these attempts have been co-ordinated nor does a central advisory body exist to provide advice to schools interested in such integration of subjects. These are:

- Govan Initiative, supporting 6 schools at present with expected inclusion of a further 7 schools.
- Abertay University, supporting Keith Grammar School
- Peebles High (unknown Regional Academy)

The longest running schools project in Scotland has been the Govan Initiative. However at present only ITE 1, equivalent to CompTIA A+ is being offered to the school sector. Abertay University provide support for the delivery of CCNA 1 and 2 into the curriculum at Keith Grammar School in Aberdeenshire.

One of the biggest factors preventing uptake of Networking Academy program into the School sector has been the organisation of education in Scotland. Most Schools Performance Indicators are based around exam success. This is measured from S4 through to S6. One group of indicators are the results of SQA Higher exams. Since this forms the bulk of the timetable for S5 pupils it is likely schools would present candidates for these qualifications in preference to the Networking Academy curriculum.

One school has realised this limitation, as a consequence they offer sixth year pupils the opportunity of undertaking CCNA 1 and CCNA 2 as an addition to their timetable. No credit transfer to SQA units are offered. Since the Networking Academy program for CCNA is designed for a two year school program it is highly unlikely schools in the UK will adopt this model. The model proffered by Keith Grammer is more realistic given the current focus of performance indicators on traditional SQA results. Thus Abertay support CCNA 1 and CCNA 2 on a one year program. As this can lead to Cisco INTRO qualification in addition to SQA units, it is an attractive program to fill timetables of sixth year pupils. Articulation arrangements with the Regional Academy ensure candidates from this program are offered continued study at University level.

A brief discussion with Abertay University revealed candidates undertaking the program at school are those likely to progress to university level studies upon leaving school.

Thus Cisco within a School context would appear to:

- Aimed at pupils likely to progress to University anyway
- Offer CCNA 1 and CCNA 2 aimed at Cisco INTRO
- Use less equipment CCNA 1 and CCNA 2 do not require switches or WAN equipment
- Require support for the member of staff qualified in this area
- Concentrate upon ITE 1

### **Schools and Community Partnership**

Recently a proposal for a Cisco Community Academy was proposed by a collaboration of The City of Edinburgh Council, Edinburgh Chamber of Commerce, Capital City Partnership, Job Centre Plus and a private training organisation Net Resources. The project was instigated at the behest of the Business Development Manager of Cisco Systems, Mr Paul Wingate and aims to build upon the success of the Govan Initiative with direct input from their CEO, Mr Damien Yeates.

Since the Govan Initiative supports schools in their deployment of ITE1 with little activity in the core Networking Academy program CCNA elements, the Edinburgh proposal intends to offer similar products. This corresponds to the training for unemployed ran successfully in the West of Scotland for the past 6 years. The Edinburgh project will include the introduction of vocational courses in Schools.

Both the Govan and Edinburgh models propose a central location with 3 to 6 schools being provisioned from this hub. Subcontractors would be used to deliver the training on behalf of the project using a 2 or three classroom model.

Whilst the Edinburgh project is admirable in its aims, it is based upon several flawed assumptions.

- Equipment ratios unrealistic
- Costs are absurd
- Little thought has been given to the reality of staff training schemes.
- Sharing equipment between Academies is unrealistic and not feasible
- Full time Networking Academy program CCNA delivered within 6 months breaches Academy contract.

Given these flaws it is recommended the DIVA team be involved with this project since this can potentially compete in the same market as FE/HE institutions and undermine course provision at HNC/D level. Given courses are intended to be offered in less than the recommended 9 month minimum, intervention by Cisco is necessary. This implies an Academy can deliver the program in a timescale less than the normal prescribed to all other Academies. This has implications for Cisco Resellers offering approved CCSI commercial courses.

Clearly guidance is necessary as courses have been apportioned the wrong SCQF level. SQA-DIVA intervention is deemed necessary to ensure candidates undertaking either schools or unemployed retraining courses are accepted onto the correct course at the correct level. More importantly, they can achieve the course for which they have been enrolled upon.

Indeed given the analysis of Networking Academies and statistics produced from the Scottish Executive, the emphasis on Schools should be used as a prototype

to be rolled out in rural areas or areas where there large umbers of economically inactive individuals, high unemployment, or high levels of persons engaged in education, employment. It should not be deployed in areas where an over subscription of Academies exist.

## Report on Survey

### Market

There are no new academies in the market place. Half of the Academies have been a member of the program for 5 or more years. The market place is therefore mature with little scope for expansion in the FE/HE Sector. Academies have developed reputations during their time of membership and appear to successfully attract students for their courses.

The main factors influencing an institutions decision to join the program has been setup cost, annual fee, perceived level of demand in the market place, the ability to release staff to undertake training and the level of ICT support available. The view of students did not effect the decision to join. There is no evidence to suggest student demand had led to the adoption of Cisco Networking Academy by an Institution.

**Table 7: Factors influencing the decision to join Networking Academy program**

Factor	Main Factor	Minor Factor	Did not effect decision
Cost of joining program	100	0	0
Cost of annual fees	100	0	0
Difficulty of finding staff willing to under go training	0	100	0
Difficulty of releasing staff to undertake training over a long time period	100	0	0
Difficulty of traveling to regional academy	0	0	100
Poor Support from IT section in organization	100	0	0
Level of market demand in local are for this type of program	100	0	0
Students uninterested in program	0	0	100
Other	0	0	0

Most Colleges are LA (75%) with some being RA (25%). The correct ratio for the program ought to have been 10:1. The implication is Scotland has an over abundance of RA. By enlarge, these centre around the central belt.

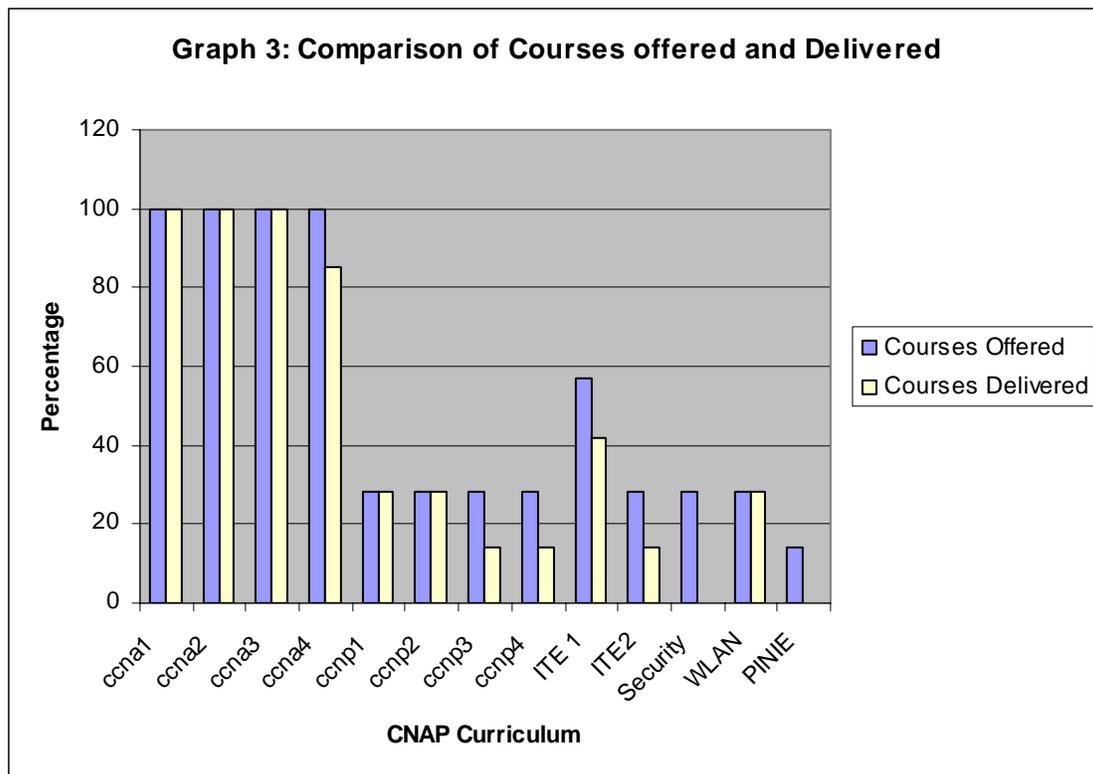
A break down of the market place reveals: 5 universities, predominantly “newer universities” (Abertay, Paisley, Caladonia, RGIT, Napier), 2 government training bodies (LTS and Govan Initiative), 1 community training agency (FWTC) and 1 School (Keith Grammer). The largest grouping however is the FE sector with 21 Colleges participating in the programme. There are 7 Colleges identified as potential members of the Networking Academy program, only one of whom is now a member. None of the potential Academies choose to participate in the survey. Further analysis may be necessary to establish why they do not participate in the program.

### Courses Offered

The bulk of delivery of the Networking Academy program in Scotland is aimed at CCNA level. All Academies offer CCNA. Few offer additional curriculum. The most popular additional curriculum has been ITE 1. A quarter of Academies offer CCNP. This may be related to their status as RA. From the participating Academies, most RA are Universities.

All Academies offering CCNA actually have students enrolled on the program. Half of Academies delivering CCNP do not have students enrolled on CCNP 3 and 4. This may be due to the two year nature of the program. Centres may offer CCNP programmes once every two years, as such during one two year cycle there will always be part of the CCNP program not being delivered.

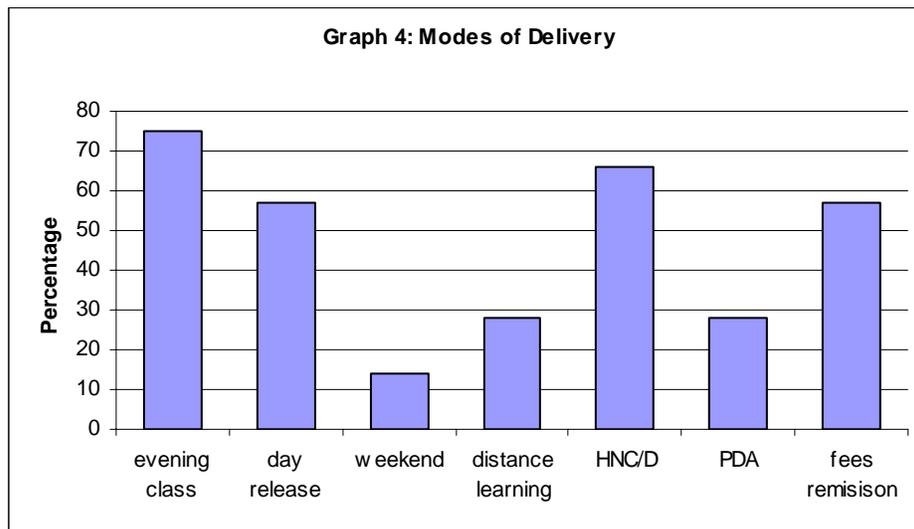
ITE 1 appears to be the most popular additional curriculum followed by WLAN. Whilst over half the Academies surveyed offer ITE1 (57%) there is a significant drop in the number of centres actually enrolling candidates for this program (42%). Newer curriculum such as PANDUIT, VOIP and security have no uptake as yet.



### Delivery Vehicles

Most Academies (75%) offer training courses as a full cost recovery commercial course for evening candidates. Just over half offer such training as a commercial day time course. Few offer the program commercially at weekends or as distance learning.

There is no evidence to explain the lack of weekend or distance learning courses. Further analysis may reveal market demand for this niche delivery or external factors mitigating against such delivery modes, staff unwilling or unable to work weekends or even institutions unwilling to pay for such staff time.



Worryingly only 2/3<sup>rd</sup> of Academies offer the curriculum as part of the HN courses. Less than a 1/3<sup>rd</sup> offer the PDA. Half of all Academies offer the program for candidates on a fees waiver basis.

Given the bulk of the market comprise FE Colleges it is reasonable to conclude respondents to the survey included non FE Colleges which offer degree programmes, training organisations delivering Networking Academy program only or Colleges offering courses but not via the corresponding HN Units.

### Methods of Delivery

All Academies delivering the courses do so in the 100% in person model Whilst all Academies delivering courses do so via the 100% in person model, these figures should be compared to the number of classes actually being delivered. This reveals a lower number of Academies actually delivering the course than indicated above. They all may offer courses in this method but not actually deliver courses.

A significant number of Academies offer CCNA as a distance learning model

(50%). A small number offer additional curriculum via a distance learning option. The more complex additional curricula are not offered as a distance learning model.

Most Academies (75%) offered CCNA via BDL. Few Academies offered BDL models for any other curricula. The more complex additional curricula were not offered via BDL models.

**Table 8: How Networking Academy program courses are Delivered**

Courses	100% in person	BDL	Remotely
CCNA	87	50	75
CCNP	28	14	14
IT Essentials I	57	14	14
IT Essentials II	28	14	14
Fundamentals of Wireless LAN	14	0	0
Fundamentals of Security	14	0	0
PNIE	14	0	0
Other. If other course are being offered please specify method of delivery	0	0	0

All Academies offer Cisco as a 100% in person Model as the main delivery method. Most offer a Blended Distance Learning (BDL) option with half offering a complete distance learning solution for CCNA. A small number offer alternative delivery methods such as distance or blended learning. No one offered to deliver the complex additional curricula of WLAN or Security in anything other than 100% in person.

#### Frequency of Delivery

The number of Cisco classes delivered per block has a median point between 3 and 4. Some Academies are very busy running multiple classes for Cisco at all levels.

#### Class Sizes

Nearly half of daytime classes are comparable with standard class size in the further education System (16-20 students). However 28% of CCNA daytime classes are very small being 10 or less students. This is not an economic class size within the further education system.

**Table 9: Class Sizes based on mode of delivery**

Class	<10	11 to 15	16 to 20	>21
Evening	28	28	14	14
Daytime	28	28	42	0
Weekend	0	0	0	0
Blended Learning	42	0	0	14

Note: All figures in percentages

For both day and evening delivery 56% of Academies deliver to classes of 15 students or less. This seems to provide the right balance between economic class sizes and effective instruction. It is more common to have larger day time classes (greater than 15) than it is in the evening provision. The largest class size tends to be blended learning models where economies of scale can be achieved for lower class contact hours. No weekend delivery takes place.

### Length of Cisco Courses

All Academies offer the courses as a 100% in person Model as the main delivery method. If we compare this to the actual hours delivered for one course of any Networking Academy program curriculum, we can conclude a quarter of all Academies deliver the program with less than the recommended minimum. Three quarters of all Academies do offer the program with the minimum duration of 70 hours or more.

### Delivering the Program

Within the timescale used to deliver the average course (70 hours), most Academies spend time preparing candidates for the Professional exam. Furthermore the majority of Academies place emphasis on passing the test (theory or practical) spending 6 hours or more on preparing candidates. Most Academies deliver the final theory test and final skills test within the normal test duration. A small number of Academies provide multiple attempts for the final theory exam or provide a longer duration for the skills test. This is significant as no uniform standard appears to be followed for theory or skills test duration. This may lead to unfairness with some Academies offering additional time whereas others offer a stricter regime.

**Table 10: Duration spent on Assessment and Revision per course**

Item	<5	6-10hrs	11-20hrs	21 – 30 hrs	31-40 hrs	>40 hrs
Revision for Professional exam	85	0	0	0	0	14
Practice for final skills test	14	42	28	14	0	0
Practice for theory test	28	57	0	14	0	0
Final Theory test	71	28	0	0	0	0
Final Skills Test	71	28	0	0	0	0

Note: All figures in percentages. The recommended duration for each course is 80 hours.

### What do Academies deliver each week

Most Academies spend 4 hours or less per week on delivering practical activities. This is significant. Some (28%) offer 5-8 hours per week engaged in practical activities.

Most Academies spend 4 hours or less per week on delivering mini lectures. Some (14%) offer 5-8 hours per week engaged in lecture activities. Since the ethos of the program is to concentrate upon

instruction and not lectures, this is a significant departure from the delivery model proposed by Cisco for the Networking Academy program. Some do not engage in this activity at all. This is also significant as these Academies (14%) do not avail themselves of the full range of pedagogic aids developed by Cisco to foster understanding and aid learner success.

A significant strong number of Academies (85%) spend four hours or less on reviewing chapter exams with candidates. This is fully within the remit of the program and encourages individual learner support. A small number of Academies (14%) spend more than average (9 hours or more) reviewing chapter exams with candidates. This represents a significant level of support for candidates.

A significant strong number of Academies (85%) spend four hours or less on final exam revision with candidates. This is fully within the remit of the program. A small number of Academies (14%) do not engage in this activity.

Some 70% of Academies devote 4 hours or less per week to the case study. Some (14%) spend up to 8 hours on this activity. Significantly a small number of Academies do not offer the case study in their weekly delivery of Cisco Academy. This is highly significant as the case study is a mandatory element and must be completed on the grade book before candidates can be graduated from one semester to another.

Each week a large number of Academies (70%) require students to conduct presentations. A large number do not engage in this activity (28%).

**Table 11: Duration of activity each week**

Class Activity	<4	5 to 8	9 or more	Do not engage in this activity
Practical activities	71	28	0	0
Mini Lectures	71	14	0	14
Chapter exam review	85	0	14	0
Final exam revision	85	0	0	14
Case study	71	14	0	14
Student presentations	71	0	0	28

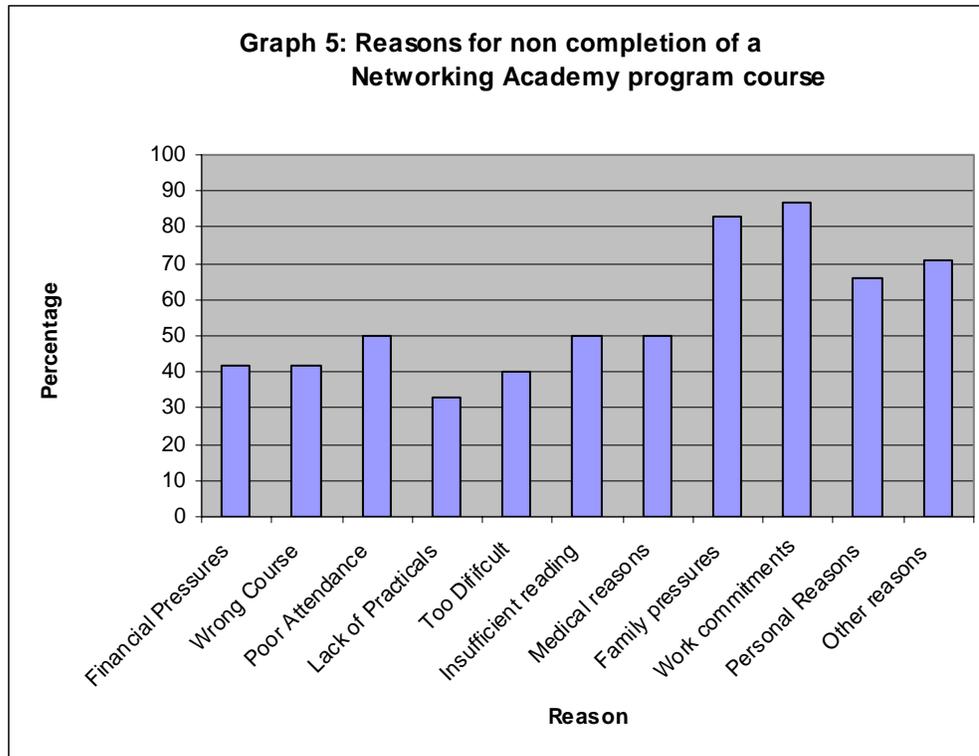
Note: All figures in percentages. The recommended duration for each course is 80 hours.

Academies spend some of their weekly activities involved in practical sessions, mini lectures, reviewing chapter exams, final exam revision and are involved in the case study. A small number of Academies do not use the case study nor do they engage students in presentation activities. Some Academies spend a significant proportion of their time (9 hours or more) reviewing chapter exams with candidates. This is a significant support mechanism.

The student experience of Networking Academy program is to be prepared for class by reading ahead. Most Academies prefer candidates to read material out with class. All support candidates learning experience through mini lectures and preparing for chapter exams. It is significant that all Academies offer individualised support to learners to clarify areas of weakness. Instructors emphasise the importance of utilising class time for practical activities.

#### Why candidates do not complete the course

The reasons for non completion of a course once a candidate has enrolled are wide and vary considerably. Academies may wish to review their pricing structure or payment methods as half of all candidates not completing is apportioned to financial pressures. A surprisingly high number (48%) of candidates enrol upon the wrong choice of course. The programme content does not appear to be an overriding factor in not completing the program (length of course, practical sessions, ability to read ahead or the complexity of concepts). Since family pressures and external work commitments are the most common reason for non completion, Academies may consider stressing good time management and study periods to potential candidates in an attempt to mitigate the effects of these two sources of pressure.



### Examining Candidates

The core of exams delivered in the Networking Academy program in Scotland is CCNA. As such a large number of Academies encourage candidates to complete the exam shortly after the course is completed. When this is compared to IT Essentials, as this course contains two small exams, an equal split based on candidate confidence, course completion and completion of exams during the course emerges. For the more specialist and difficult courses centres encourage candidates to sit professional exams when the students feel confident enough to do so.

**Table 12: When do candidates sit the Professional Exams**

Exam	During Course	Shortly after completion of course	Whenever student feels confident enough
CCNA	28	71	0
CCNP Exams (1-4)	50	0	50
CompTIA A+ (ITE1)	33	33	33
CompTIA Net+ (ITE2)	0	0	100
Cisco Wireless LAN exams	0	0	100
Cisco Security exams	0	0	100
PNIE	0	0	100

Note: ALL figures in percentages

### Graduating Candidates

Some Academies adhere to the recommended Cisco guidelines of passing candidates who achieve 70% or more in the end of semester theory exam. There is a wide spread of pass marks used for Cisco elements delivered as part of the HN Framework ranging from 40 to over 70%. Clearer guidance needs to be drafted to ensure consistency across SQA and Cisco elements in the sector.

**Table 13: Average Pass mark**

Item	Full time day classes	Evening class	Blended Learning	Remote	HN Classes
<40%	0	0	0	0	0
41 to 50 %	0	0	0	0	12
51 to 60%	0	0	0	0	12
61 to 70%	50	0	0	0	24
>70%	50	37	0	0	12
Do not offer classes in this method	0	33	33	33	0

Note: All figures in percentages

This differs from non HN Framework Cisco courses delivered during the day or in evenings. Day time classes require above 60%. Whilst evening classes require above 70%. Surprisingly nearly 2/3rds of evening classes did not pass candidates at the recommended level of 70% or did not express the pass mark used.

There is evidence of a clear need for consistent pass marks across the SQA deliveries. For non SQA deliveries pass marks are broadly in line with recommended guidelines from Cisco.

It should be noted graduating an individual is a combination of attendance, passing case study, passing theory and practical skills tests.

The threaded case study is an integral part of the Networking Academy program and is a required element completed either individually or in groups. Most Academies would like to see localised versions. However a small number (12%) do not deliver the case study. This is significant as this is a required element to graduate a student at the end of CCNA 1 through 4.

### Marketing the Cisco Courses

Commonly used marketing materials are Prospectus, Web site, leaflets, posters, letters to employers or newspaper adverts. Other forms of marketing are less commonly used such as radio and marketing stands. Few Academies use School visits or a dedicated web site to market their courses. These would appear to be under utilised marketing methods.

**Table 14: Types of Advertising Utilised by Academies**

Method of Advertising	Used regularly	Occasionally used	Never used	Don't know
College Prospectus	87	0	12	0
College web site	100	0	0	0
Letter to employers	25	0	25	0
Dedicated Academy website	16	0	83	0
Marketing stand at shopping centre	16	16	66	0
Posters	62	25	0	12
Leaflets	50	25	12	12
Flyers handed out	25	37	25	12
School visits	0	42	0	57
Radio	16	16		66
Newspaper Adverts	37	50	12	0
other	40	0	20	40

Note: All figures in Percentages

Most Academies currently do not have a marketing pack but would like one. All Academies would like a base level of materials to be included such as course leaflets, course summaries, posters, employment statistics, employment opportunities, brochure templates, flyer templates or other Cisco course information. The majority of Academies would like other items such as local academy information, lab setup, case studies, student success stories, or web page templates. This should influence the content of any marketing pack produced for Academies in Scotland.

**Table 15: Expected Contents of Marketing Pack**

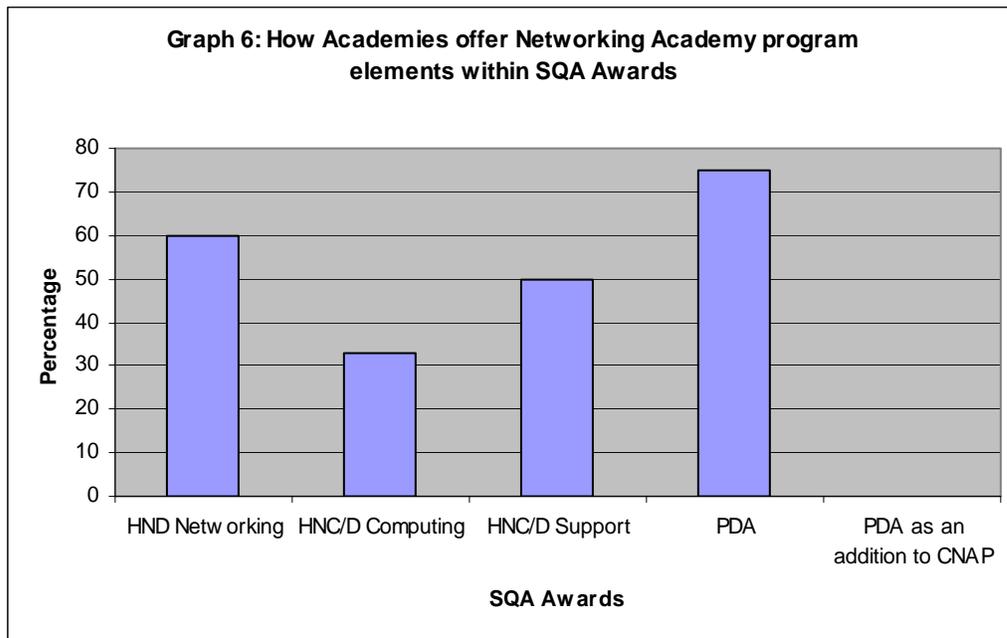
Method of Advertising	Yes	No
Cisco course Leaflet	100	0
Course Summary	100	0
Local Academy Information	87	12
Lab Setup	71	28
Poster	100	0
Case Study	71	28
Student Success stories	87	12
Employment statistics	100	0
Employment opportunities	100	0
Other Cisco courses	100	0
Web page templates	85	14
Brochure templates	100	0
Flyer Templates	100	0
other	75	25

Note: All figures in percentages.

## SQA and Cisco

Most Academies surveyed in Scotland are also SQA exam centres offering a wide range of SQA courses. A significant number of Academies (40%) do not offer the SQA PDA in Cisco Networking. The SQA-DIVA project may help to increase the uptake as candidates completing Networking Academy program for CCNA would only need to register for this additional award.

The majority of Academies surveyed in Scotland offer Cisco via HN programmes. The most popular being HNC/D Networking and Technical Support. It is not widely offered as part of the generally broad based HNC/D Computing award.



Whilst the majority of Academies are aware of PDA awards, none are delivering these at present although three quarters would like to do so in the future. Most would like guidance on offering this award. Additional support documentation is requested for blended and remote delivery options.

### Supporting the Learner

In terms of supporting candidates undertaking the program Academies offer varied but strong mechanisms to facilitate success. Telephone support is one of the lesser used mechanisms.

**Table 16: Types of Support Offered**

Item	Yes	No
Tutorial	100	0
Mini lectures	85	14
Presentations	85	14
Demonstrations of labs	75	25
Telephone support	66	33
Email Support	87	12
Exam Booking sessions	80	20
Revision sessions before certification	71	28

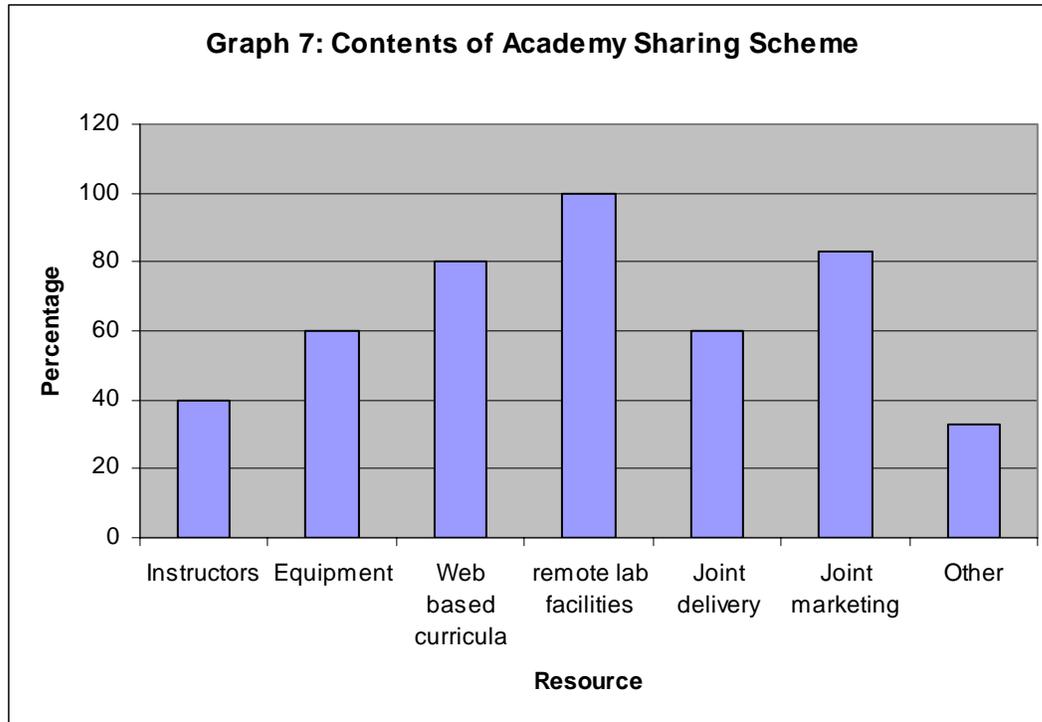
All Academies use the instructor elements of the Netacad website for the expected items, curriculum, slides, and additional exercises. However some Academies do not use either the Powerpoint slides or the PASS document.

**Table 17: Instructor use of Cisco Support Materials**

Item	Yes	No
PowerPoint slides	83	16
Additional exercises	100	0
Additional Explanatory material	100	0
PASS Document	85	14
Download curriculum	100	0

### Supporting the Academy

Academies would like to see more localised events including seminars, peer guidance and good practice days. Cisco events should be held in Scotland. Furthermore they would like to see common standards for examining the case study, theory and skills tests.



All Academies are interested in sharing resources. They would not be interested in sharing instructors but the sharing of equipment, web based material and remote facilities would be a priority. This should be explored with Cisco particularly whether regional Academies can provide remote lab facilities for local Academies.

### Administering the Academy

Most Academies thought the legal main contact required more time and better or additional training.

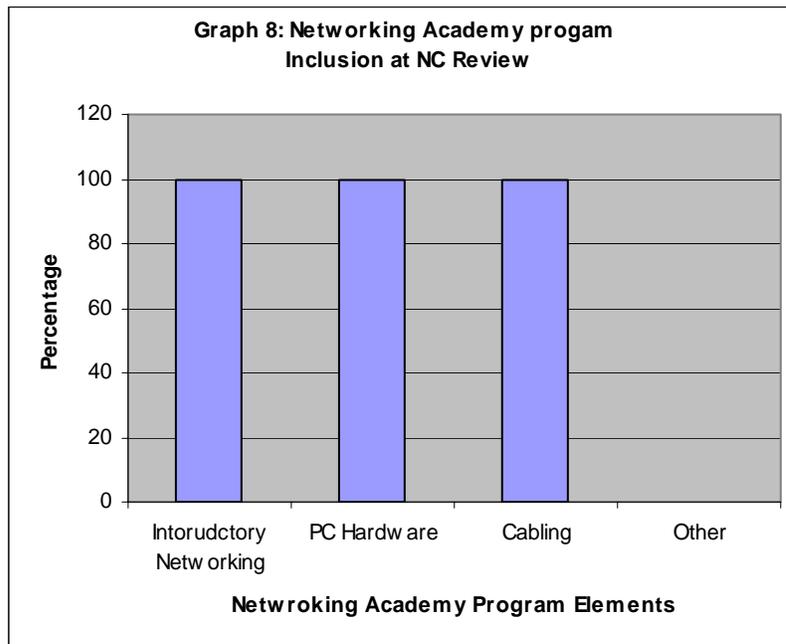
Over a third of Academies (37%) have not received a quality Assurance check from CATC or their Regional Academy. This is significant as Regional Academies are recommended to carry out this task at least once per year.

### National Skills Test for Cisco

Most Academies (85%) are unaware of the UK Skills competition for Cisco. Nearly two thirds of Academies would be interested in participating in a Scottish Regional heat for the UK Skills Competition. Most Academies (87%) would like details about the UK Skills competition for Cisco. The DIVA project could be used as a vehicle to select Scottish Candidates for a UK Skills event as most Academies were unaware of this but would be interested in participating. DIVA could be used to offer local events before hosting a national competition.

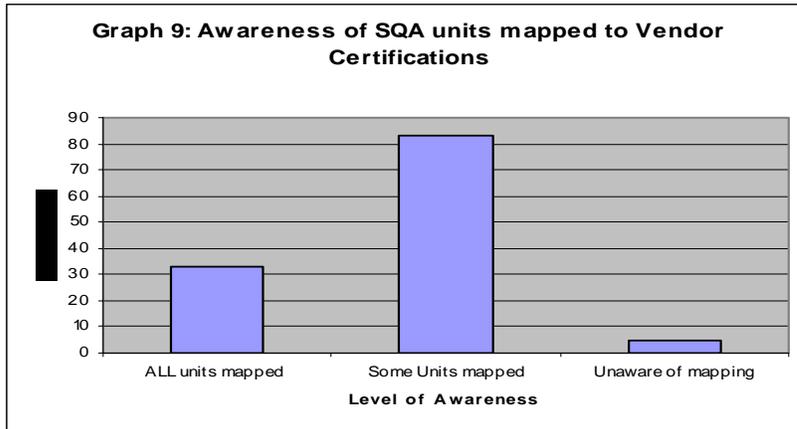
### SQA Course Development and Review

In Terms of the recent review of the NC framework proposed by the SQA 100% of Academies surveyed would like to see the inclusion of Networking Academy program practical and basic theory elements. However only 62% of Academies are aware of this review.

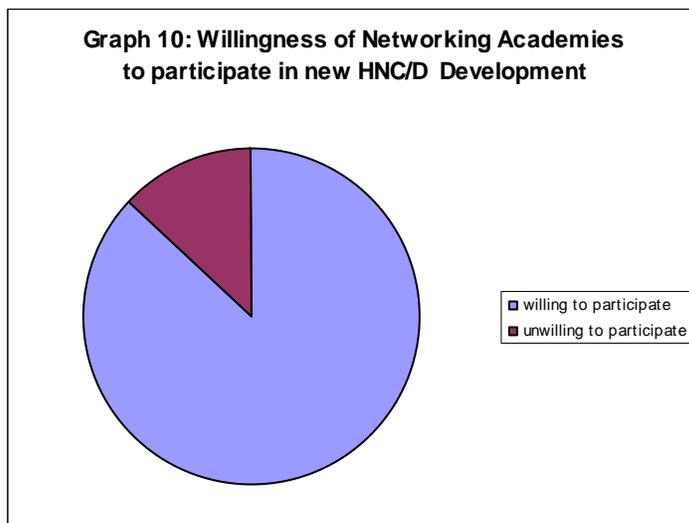


All Academies surveyed have expressed a strong interest that elements should be included at NC level as a feed into the official Networking Academy program curricula. Surprisingly this is dispersed equally over Introductory Hardware, Networking and Cabling.

Similarly ALL academies felt a need to develop a unit based around SOHO Networking. This is inline with Cisco's product lines in this area (LinkSys). The awareness Academies had of SQA work in mapping vendor certifications to units is poor. A large percentage were aware of some units mapped (83%) but only 33% were aware of the entire mappings available.



All Academies indicated there was a need for the SQA to develop a specialised award in Desktop and Network Administration. Indeed 87% of Academies indicated they would be willing to participate in the development process for this qualification.



## **Good Practice Case Study: Fife Women's Technology Centre**

The Centre has been in existence for nearly 16 years in an economically depressed area. The centre receives 55% of its funding for the Regional Council with 45% from European Social Fund. Most candidates undertaking study within the centre are in receipt of benefits, on low income, have a poor educational history. Some are single parents. Core skills of NC Maths, Communications and City and Guilds IT Practitioner Level 2 are taught throughout the centre.

### ***Delivery***

The centre offers the Networking Academy program for CCNA. This is split into 11 weeks for CCNA 1 and 4 with slightly longer (13 weeks) for the more practical elements CCNA 2 and 3. Generally tuition is either on a one to one basis or in small groups. Classes are restricted to no more than ten persons. Breakout sessions occur for more difficult topics such as IP Sub netting and VLSM where mini lectures and worked examples are used.

Since the centre is used as a community education resource, delivery is not confined to rigid timetabling for theory or practical sessions. Candidates are encouraged to spend at least 6 hours per week engaged in practical activities. Instructors follow a unique delivery mechanism – the lab is staffed for three days per week with candidates able to drop in and utilise the full 18 hours if they choose to do so. The lab is well equipped with donations from the local Council, one of the main sponsors behind the project.

Given instructors are not tied to fixed class sizes or times, they act as facilitators helping candidates progress through both theory and practical sessions alike. Exam feedback is given on a one to one basis. Small group work prevails at the centre.

Another unique feature of delivery is the close links with local employers maintained by staff at the centre. All candidates complete a voluntary unpaid work placement with companies through out the South Fife area. As such employers are guaranteed candidates have successfully completed part of the Cisco training course (CCNA 3 or 4) and have a basic level of understanding to support small networks.

One key factor in facilitating learner achievement at the centre is the extensive support facilities available to students. Whilst large institutions may have economies of scale they often cannot provide adequate support facilities to candidates. At the FWTC student support is one of the major strategies to success. Three Counsellors are present at all times in the building. A continuous review for dyslexia, dyspraxia or other learning disabilities occurs throughout a candidate's time within the FWTC. As such any difficulty be it personal, financial, emotional or educational can be identified and the right support mechanisms provided to ensure success.

### **Proven Success**

The Centre has achieved a 100% success rate for candidates undertaking Cisco Networking Academy program. Broadly, 88% of trainees at the centre progress into either further education or employment. This is slightly better than the average (85%) over the preceding 15 years the centre has been in existence. The Women into Networking project is split with 2/3<sup>rd</sup> of candidates enrolling in Networking Academy program the remaining 1/3<sup>rd</sup> in the Microsoft IT Academy. Of the current intake, 42% have secured employment in this field already. The centre won the Best Practice Award for ICT for ESF funded projects in Scotland.

### **Learner Comments:**

- Student A    Staff are very approachable. Given the open access approach to practical it is easier to learn. Small class sizes do help.
- Student B    For the Cisco Case study we redesigned a network for a local company. This reinforced elements of CCNA 1 and 2. As there is no restriction on the amount of practical sessions the course is more aimed at providing practical skills employers want. I spend 1-2 hour per night at home studying with my families support.
- Student C    I have spent the whole day practicing for the skills tests. This is good. I will probably attempt the CCNA in August once the course has finished.
- Student D    I have undertaken a case study I can actually apply in industry. We have better equipment, it is more personal, more approachable with more 1:1 help than other places. I feel I can really achieve something here.

## ***SCE and ETC: Joint Delivery of Programme***

### ***Background***

For the past two years Stevenson College Edinburgh and Edinburgh's Telford College have cooperated to deliver an evening class Networking Academy program. The reason for this was purely economic within the Edinburgh area there are four Academies (Stevenson, Telford, Napier and Fife), all competing for a limited number of candidates. Since most courses cost in the region of £1,000 to £1,400 for the full CCNA evening program there is naturally a limited number of individuals willing to spend this significant sum of money on further training.

For a number of years both colleges experienced barely economically viable class sizes. Since this situation was damaging to both institutions it was felt a joint venture should be attempted. This ensured both colleges marketed one program as well as sharing resources in order to ensure a quality of delivery was maintained and the training needs could be satisfied within the Edinburgh area.

### ***Joint Venture***

The joint venture comprised each College advertising the course with staff at both Colleges directing candidates to a common induction session. This enabled the marketing strategy to be effective penetrating over a larger area. Traditionally candidates for further education courses come from within a three-mile catchment area. Instructors from both institutions ensured all potential candidates were informed of the joint delivery of the program.

Since the course is split into four separate elements it was felt appropriate for Edinburgh's Telford College to deliver the early introductory elements with Stevenson College Edinburgh to delivering the latter more practical elements. This decision was taken as SCE had fully embedded Networking Academy program into their full time HND provision for a number of years and as such had invested heavily in equipment in support of this.

### ***Shared Resources***

A joint induction evening was held where candidates had the opportunity of reviewing the course and meeting the instructors. A coursework CD containing some software and items of use to candidates was made available to all applicants enrolling. The online curriculum was hosted locally at SCE with passwords being provided to all candidates. This provided 24 hour access to candidates via the EastMAN link and ensured candidates did not consume bandwidth on the US server.

When candidates reached CCNA 2 additional routers were supplied for the evening program to ETC. Candidates then progressed on to CAN 3 and 4 at SCE. A WAN emulator was borrowed to help in the delivery of CCNA 4 at SCE.

### ***Success***

Candidates from this delivery found the experience of learning at two institutions worthwhile. Given two instructors were used in each institution, one for each of the evenings the course was delivered, candidates appreciated differences in approach from each instructor. A useful by product was candidates had a greater number of instructors to whom they could to explain areas of difficulty. Most candidates went on to complete the CCNA shortly after finishing the program.

### ***Learner Comments***

Student A: The sharing of resources was very good. This enabled us to complete CCNA 1 and 2 easily. Its good to know there is enough kit to go around. Since we were using the same devices at both Academies moving from one to the other was easy.

Student B: Having a common marketing and induction evening was great. We got to meet all the instructors. Since there was co-ordination between Academies the transition from one place to another was smooth. We were well prepared for the ICND after completing INTRO.

## **The University of Paisley :Best Practice in Supporting Locals**

University of Paisley is a modern university with a strong commitment to vendor certifications. The University was one of the first to become certified to deliver Cisco, Microsoft and Adobe professional certifications into their undergraduate and postgraduate programme. Cisco courses are embedded into return to work training schemes, such as Training for Work.

Currently the University offers training and support to 8 Local Academies. These stretch from Argyll College to Cumbernauld College. Whilst the main support offered is for CCNA, as other sponsored and specialist curricula are offered at the University, this training has been made available to Local Academies as well.

### ***Support Model***

The manager of the Cisco program at Paisley is proactive in seeking Local Academies to support. In doing so four main elements of support are offered:

- Annual Training.
- Information Sessions for actual and Local Academies
- Technical support for Lab Setup and equipment purchases
- Remote Access facilities for Local Academies
- Resource and Equipment Sharing Scheme

### ***Value for Training***

As part of the annual fee structure proposed by Cisco, currently £3,000, the University recognises not every Academy can spare staff for training every year and small departments may train all available staff in a short period leaving a training gap. This gap is typically the payment for training during one academic year where a department may not actually have staff to train. In such circumstances the Regional Academy benefits from revenues without having to offer the corresponding training.

At Paisley, this situation has been recognised. Rather than exploit this situation Local Academies can be offered other training from All courses offered within Networking academy program. Typically a Local will receive initial training for two instructors. Thereafter, the Annual fee may go toward up-skilling these instructors with CCNP or specialist curricula such as Wireless if they have not used their up their training allowance. More commonly, Paisley has seen Local Academies requesting training in IT Essentials I as well as the Fundamentals of Wireless LANS. Furthermore there has been noted interest around the possibility of VOIP and Network Security training being made available at a later date. This offers real value for money and benefits the Networking Academy program as a whole.

An innovative pricing structure is not the only support model offered by Paisley. Informal Information sessions have been offered to engage Local Academies in the support role. This helps to identify training and support needs for both Local

and regional academies as well as help to attract other Locals to sign up to the "Paisley Model."

The excellent lab setup has given Paisley instructors experience of purchasing, installing and configuring equipment. This experience is available to any Local Academy who may intend to purchase additional equipment such as remote access. Indeed a non affiliated Local Academy was provided with invaluable guidance for setting up a remote lab from staff at Paisley.

### ***Scalable Remote Access***

The university recognises not all Local Academies are equal partners in the program. Some have the basic lab kit and may struggle to offer sufficient practical sessions to students in the program. To remove this barrier to success, Paisley have offered Local Academies access to their Remote Access lab Pods for all CCNA curricula. This enables additional equipment to be available for some of the more difficult labs in CCNA 4 requiring an Adtran WAN emulator for example. Currently the University is reviewing a pricing structure to expand this service to all students in the Academy program in Scotland. It is envisaged students can purchase sessions, one hour at a time, from the NETLAB server. It is envisaged scaling up such a solution can offset the costs of initial purchase of the equipment.

### ***Sharing Resources***

Paisley has suggested their Local Academies may even use their lab equipment when it is not being used by their own students. This is a radical departure from the support model. At present since Paisley host the online curricula, Local Academies connecting in via JANET can use this as a resource rather than consume bandwidth from the American Servers.

### ***Success***

The support model offered by Paisley is highly successful. Whilst Scotland as a whole is over represented with Regional Academies, Paisley continues to attract interest from Local Academies from other Regionals.

Academy Instructor A: I phoned Paisley for an informal chat as we were intending to purchase NETLAB servers. Rather than turn me away I was invited over to see the setup, discuss configurations with staff and given a list of equipment and suppliers contact details. I couldn't ask for a better service.

Academy Instructor B: We were with our Regional Academy for a number of years. Once our initial staff had been trained we were not offered any new training. Paisley offered us the option of choosing anything from their large remit of courses. This is what all Regional Academies should be doing.

## Relevance of Case Studies

In terms of improving overall learner success FWTC obtained 100% success rate by incorporating three factors:

1. Access to labs for up to 24 hours per week with a Cisco Instructor Present
2. Industrial Placement for all candidates undertaking the program
3. Effective learner support and guidance mechanisms throughout delivery of Networking Academy program

The joint delivery of a Cisco evening class at Stevenson and Telford Colleges achieved success through:

1. Provisioning of online curriculum to Telford College via secure web site.
2. Multiple language loaded onto server to support Arabic, Spanish, German, French and Polish students
3. Accessible curriculum installed for candidates with learning or reading difficulties.
4. Extra Lab Pods provided to Telford College for practical sessions
5. Joint marketing, induction and enrolment providing a common Cisco welcome pack to all candidates.
6. Use of additional equipment pods for assessment of skills tests at end of CCNA2

The regional Academy has achieved a high level of satisfaction from its locals due to:

1. Providing a cost effective training package offering a range of Cisco courses for development of instructors.
2. Offering help with designing, selecting, purchasing equipment for labs as well as advice on maintaining the lab
3. Offering remote access facilities to students enrolled at their local academies.

Individually these key factors can contribute to learner success within both the SQA and Cisco Academy courses. However, where these are offered as a single package to candidates the combination of good lab and infrastructure, instructor support, maximised hands on practical sessions, real life placement and remote access to pods outside normal classroom hours should enhance the success rate of any Academy.

## **Opportunities**

### **New and Emerging Qualifications**

The Diva project represents a unique opportunity within further education in Scotland to influence practice and delivery of vendor units. This enables SQA qualifications to be maintained fully inline with vendor certifications even as the vendor certifications change.

Within the Networking Academy program the core of delivery is based upon CCNA, however a wide range of additional curricula is in existence. Currently the HND Networking includes units mapped onto CCNA 1 through 4, a Graded Unit mapped to the threaded case study and Wireless mapped on to Certified Wireless LAN Support Engineer framework.

From the Diva survey, demand exists in Scotland for new units to be included in the SQA Catalogue. There is strong demand for new courses such as Panduit Data Cabling, Security and Voice Over IP. At present the bulk of delivery occurs over CCNA with the next popular Cisco course being IT Essentials I mapping to A+.

Whilst no delivery of the more advanced Cisco elements occur in Scotland at present, there is evidence suggesting Centres are keen to offer the newer courses if a qualification framework exists in which to deliver such units.

The new course offerings comprise three main subjects:

- Panduit Fundamentals of Voice and Data Cabling
- IP Telephony (Voice over IP)<sup>38</sup>
- Fundamentals of Security

In order to meet the identified demand in Scotland it is recommended Diva staff undertake training in these areas to ensure units descriptors are written with guidance based on attendance at instructor programs. This ensures best practice in delivery is ensured as well as providing a correct and feasible timescale to ensure learner success.

The new course offerings can be placed together to offer attractive Professional Development Awards to centres. It is the recommendation of the Diva team that serious consideration be given to new frameworks:

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<sup>38</sup> See Appendix 14 for a proposed HN Unit in VOIP

### **PDA Introductory Network Technician**

- Ethos “To provide candidates with basic entry level technician skills to support hardware and network systems.”
- Content IT Essentials I (mapped to new A+ syllabus) 80 hours  
Panduit Cabling 80 hours
- Entry Prerequisite familiarity with Windows OS

### **PDA Network Technician**

- Ethos “To provide candidates with a thorough grounding in networking based on CCNA course.”
- Content CCNA 1 – 4 mapped to existing SQA Technology units  
DDF9X35 Networking Technology  
DDF9Y35 Routing Technology  
DDG0935 Switching Technology  
DDG0A35 Internetworking Technology
- Entry Prerequisite familiarity with Windows OS

### **PDA Advanced Network Technician**

- Ethos “To provide a mechanism to deliver high level specialist Cisco qualifications beyond CCNA.”
- Content Wireless LAN (mapped to CFWSE) 80 hours  
Security (mapped to Cisco FSE) 80 hours  
VOIP (Mapped to Cisco Voice) 80 hours
- Entry Possession of CCNA or completion of Networking Academy program for CCNA

### **Qualifications Development : Future work for DIVA team**

As a result of new qualification development at Cisco the Diva team should complete production of Descriptors. These should be based around published content of Networking Academy program courses in this area. Guidance material should be included covering teaching schedules, equipment, lab layout and any delivery advice obtained from Instructors at CATC.

The CATC has indicated version 4.0 of the CCNA curriculum will be rolled out in January 2007. Since course outlines are not available at present there will be pressure on both the DIVA team and SQA to produce updated course descriptors for session 2007/08. In previous curriculum updates Cisco has allowed currently enrolled candidates to complete the older version until the end of the Academic Session. As there is no indication this process will be different with version 4.0, it is safe to assume ALL Academies in Scotland will complete delivery of the current version at the end of June 2006.

The current descriptors will not be valid for session 2007/08. A development window exists from January 2007 until June 2007 (6 months). It is recommended the period from January until March be used to produce descriptors covering the new version 4.0 curriculum. Such a timescale permits a three month period in which SQA can subject the descriptors to the quality approval process.

At present initial descriptor outlines should cover: Panduit and VOIP new curriculum courses. Given attendance at the VOIP instructor course it is envisaged this unit can be developed into a descriptor before the Christmas vacation. As no training has been offered for the PANDUIT it may be more suitable to schedule the development of this descriptor to a later date.

### **Corollary Development**

A corollary element arising out of the Diva project has been an ability to effect the content of NC Review units. Whilst the DIVA project is involved in developing materials at HN Level for inclusion in HNC,HND and PDA qualifications, consideration should be given to the incorporation of some practical elements from Cisco Curriculum into the NC. Simply, if the SQA wish to offer upto date vendor qualifications it is logical to assume candidates wishing to enter these qualifications should be exposed to vendor style elements as early in their IT career as possible. This should increase candidate interest and confidence leading to greater retention and ultimately progression onto the vendor awards themselves.

One of the main issues facing Computing departments is to address the national downward trend in applicants to computing courses at all levels. Diva can help address this problem. By engaging candidates at NC level with predominately practical exercises it is hoped to foster an interest in the subject areas. This can be achieved by reviewing current vendor course offerings and producing NC units which provide a subset of areas covered by the vendor awards<sup>39</sup> ..

Cisco CCNA: CCNA 1 is predominately an introduction to networking and is aimed at providing the grounding to progress to practical routing in CCNA 2. The most difficult concept of subnet masking is introduced. This provides core skills in arithmetic and problem solving. Practical elements include cable making, basic troubleshooting and building workgroup LAN's

Cisco ITE 1 This subject is aimed at CompTIA A+ certification. This involves practical sessions in building upgrading and PC hardware. In addition the installation of operating systems from 95 through to XP is also included. It is envisaged in the new A+ exam format to reduce this to a single OS Windows XP and introduce Customer Support.

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<sup>39</sup> See Appendix 13 for suggested outlines of NC units in this area.

Cisco WLAN            This involves massive theoretical underpinning of RF and IR Communications including contention mechanisms. Practical exercises range from the installation of clients to configuring Access Points and Bridges.

From these three core elements four possible practical NC units could be created. It should be noted Cisco and other Vendors will permit SQA centres use of their curriculum under strict conditions. Normally this is instructors are trained and certified in the area. Guidance on delivery of the curricula PROHIBITS elements of the courses being taught in isolation.

It is not the intention to offer elements of the existing curricula as small learning items to NC level candidates. Rather the ethos behind development of units in this area is to enable candidates to be exposed to practical sessions which will aid in their transition from NC to HNC and vendor certifications.

Centres will be instructed NOT to offer elements of Cisco curricula in isolation but to offer some simple theoretical and practical elements as underpinning knowledge to PREPARE candidates for more complex HN and Vendor certifications.

## **Mapping**

Thus it is envisaged to provide in the guidance section of any NC descriptor a map to both the Vendor course showing instructors what elements candidates are being prepared for. In addition a map to recommended text books may also prove useful.

### ***Introduction to LAN's***

CCNA 1            Some basic theory of LANs and Media  
Practical cable making, testing and troubleshooting  
Installing a NIC and basic configuration of a network  
Configuration of IP address in a small workgroup

Additions        Security and user accounts  
Installation of Printers  
Sharing files, folders and printers

### ***Introduction to Hardware***

ITE 1            Some basic introduction to PC components  
Current market for PC parts (RAM, CPU, HDD,M/B)  
Reasons for Selecting various component parts

Building and troubleshooting a PC  
Upgrading and maintaining a PC

### ***Introduction to OS***

ITE 1            Basic theory of function of OS  
                    Comparison between OS  
                    Determining specification for OS and PC hardware  
                    Installation of OS  
                    Basic configuration of desktop, firewall, accounts  
                    Installing a printer

### ***Introduction to WLAN***

WLAN            Basic theory of WLAN topology  
                    Installation of WLAN card  
                    Configuration of Adhoc (peer to peer) WLAN  
                    Sharing files on an Adhoc WLAN  
                    Configuring an AP  
                    Building a Basic Service Set  
                    Configuring and Securing WLAN

### **Guidance Days**

The basic survey carried out in June highlighted the need for Guidance days in Scotland. Since the HND Networking is a large qualification with 10 credits devoted to Cisco derived units, centres may require further guidance on implementing this into their classroom.

It is envisaged the Diva project will hold one guidance session before the Christmas Vacation, preferably late November. This event can act as a catalyst to distribute the routers to the winner of the Diva survey draw. It can also be a vehicle to disseminate the findings of the DIVA survey and provide a discussion forum for progressing the project.

A useful feature of such a day would be to invite representatives from UK Skills Competition to talk to the Scottish community as a whole of the importance of participation in such events.

A proposed programme could be:

- Introduction : What DIVA has done to date
- Presentation of Routers to prize draw winners
- New Units NC, HN and PDA
- Delivering the Graded Unit
- Exam standards
- UK Skills Competition
- Distribution of CD-Rom

The benefits of such an event could be to focus Academies upon the support DIVA can bring in terms of classroom delivery and additional projects for GU.

### **UK Skills**

The survey result has shown most Scottish Academies are unaware of the UK Skills Competition for Cisco Networking. Most Academies have expressed an interest in participating in a regional skills test.

During the period from November until December, it is hoped the DIVA team will invite the UK Skills Competition organiser, Jen Bell (Northumberland College) for a meeting to discuss establishing a regional event for Scottish Academies. A preliminary discussion amongst the DIVA team has concluded the best approach to be:

February 2007	East and West Coast Skills Tests assessing CCNA 2 elements in particular sub netting and ACL. Selection of Candidates for Scottish Final
April 2007	Practice Scottish Final including VLISM
May 2007	Scottish Final Skills Test assessing CCNA 1,2 and 3.
June 2007	UK Skills Test Selection

Currently, Stevenson College Edinburgh can accommodate 4 simultaneous skills tests at any one time. A similar number can be catered for by James Watt College. Given these resources, if Local Academies enter one candidate each for the local events each centre should comfortably cope with demand for the competition.

From previous experience of a skills competition it would be preferable if the selection criteria was rigorously applied to ensure candidates currently undertaking CCNA or having recently passed this (within last academic year) be selected. At a UK Skills event a gold medal winner completed CCNA as well as Security and Wireless Specialisms, and had completed half of the CCNP program. This is unfair on CCNA candidates.

If such events are scheduled in advance, email and letters notifying all Academies in Scotland of the events can be produced in advance to enable proper planning of the event. Involvement with SQA and College marketing staff can generate publicity for the event, vendor and SQA themselves.

### **Marketing Materials**

One recommendation arising out of the DIVA project and Survey is a guidance day should be held in Scotland to promote good practice in delivering Cisco. Such an event will provide the team with the ability to distribute the survey, issue the two router prize to the winning Academy, and issue a CD-Rom of support materials.

From an early stage in the DIVA process one centre had developed some pedagogic aids for classroom delivery. It is envisaged a marketing pack of posters, case study materials, additional learning resources be distributed to Academies.

Formal permission would need to be obtained from Cisco prior to distributing a CD with any Cisco Copyright material to other centres. This would not be used to alter in any way Cisco material but merely as a repository of useful items gathered from [www.cisco.com](http://www.cisco.com). No changes to the documents will be made, but it may be useful to offer such a service to other Academies.

### **Incorporation at School Level**

There is only one School in Scotland currently offering Networking Academy program. This is surprising since the program was originally developed as a two year high school course in North America. Most colleges currently have a schools college partnership to deliver subjects not normally available in School.

Since NC and School level candidates attract greater funding than HN students this is a large potentially untapped market for Academies. Thus it is proposed the DIVA team visit Keith Grammer School in Aberdeenshire to review the current delivery, support and funding mechanisms available to the school with a view to incorporating this into the FE Sector.

Given the visit would involve discussing items with teachers, support staff and students, it would be preferable if a senior SQA manager approached the Head Teacher to authorise this important study.

It is envisaged local Academies can offer elements of CCNA to schools in their locality by enabling individual CCNA elements to be offered (CCNA 1) with candidates undertaking assessment. Credit transfer should provide candidates with both the SQA unit and Cisco Completion Certificate.

An alternative may be to offer a whole one year program. However based upon current success rates and previous delivery within the FE sector this may prove too taxing for fifth or sixth year pupils.

A more realistic approach is to offer a two year course as an extra onto fifth and sixth year timetables. CCNA 1 and 2 can be delivered in fifth year with CCNA 3 and 4 being a sixth year option. This approach may meet hostility from head teachers since fifth year candidates are often concentrating upon Higher's rather than professional vocational training. A visit should clarify the most suitable duration and delivery mechanism to attract candidates from local Schools.

### **Maintaining Currency: HNC Networking Framework**

There are two primary functions involved in maintaining currency:

- Ensuring units represent current vendor qualifications
- Ensuring framework is adaptable to include current vendor qualifications

With regard to the first element, maintaining currency of units, the proposed development of units at NC and HN level should permit incorporation of the latest vendor courses into the current NC review process. The existing SQA Quality and Validation Processes should ensure new qualifications can be embedded into the existing NC and HN frameworks.

However the more arduous task is to ensure the entire framework is flexible enough to meet changing demands from the vendors. Whilst the DIVA project is based upon Cisco it is the impression of the team if the HNC (Microsoft and CompTIA) does not enable vendor exams to be embedded in a realistic and achievable format this will impact upon retention and success rate of HND (Cisco) elements.

Thus an evaluation of the current HNC Networking has been carried out with some major flaws being revealed. This is not intended as a criticism of the authorship of the qualification nor of the SQA Award, indeed one DIVA partner was actively involved in the development of the award. The HNC Networking was a brilliant and visionary qualification when proposed. The fully embedding of vendor qualifications within a framework offering credit transfer and consistency of assessment throughout the award has to be praised. Given the three main vendors (Microsoft, CompTIA and Cisco) have all changed or are in the process of changing their qualifications, this may be an opportune moment to review the award.

It is proposed to offer a new HNC based upon MCDST with options for studying CompTIA elements or completing upgrade exams for the new IT Professional or IT Technician qualifications. Further options towards MCSA and its upgrade are also included. Given an overlap of curriculum areas there is ample opportunity for

integrated delivery providing candidates with a realistic timeframe in which they can realistically achieve an award.

The full proposal is included as an appendix to the main state of nation report<sup>40</sup>.

### **Delivery and Pedagogy**

The survey has highlighted opportunities for development of guidance sessions in Scotland. Academies would like to see more localised events including seminars, peer guidance and good practice days. Cisco events should be held in Scotland. Furthermore they would like to see common standards for examining the case study, theory and skills tests.

All Academies are interested in sharing resources. They would not be interested in sharing instructors but the sharing of equipment, web based material and remote facilities would be a priority. This should be explored with Cisco particularly whether regional Academies can provide remote lab facilities for local Academies.

The DIVA project can fulfil this need by providing the ability to bring instructors together to highlight good practice. Indeed some items of good practice have been included within the State of Nation Report

Indeed the Cisco Community Academy presents an opportunity to influence practice for various client groups – long term unemployed, s3/4 with little hope of achievement at school and s5/6 candidates who intend to progress to University.

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<sup>40</sup> See Appendix 5 for a proposed framework incorporating the latest Certification developments

## **Issues arising out of DIVA project**

Some of the main problems restricting the development and scope of the project are beyond the scope of the DIVA team. Thus the main issues are not concerned with the survey itself but with absorption of the DIVA project into other developments in the field.

1. Lack of Statistics from Cisco. This has prohibited further comparative analysis between the survey results and the end of module feedback each candidate submits to Cisco. These figures would be useful to assess the impact of the course on candidates as well as to plan future developments for the program.
2. Management of the Program. This has severely curtailed the project. The DIVA team is funded jointly between Cisco and the SQA. Part of this agreement is the releasing of two members of staff one day per week to work on the project. The reality of working in the FE sector has necessitated the last three weeks of term and the first five week to be devoted to assessment, recruitment, interviewing, programme leading, quality assessment, lab preparation, equipment ordering, and timetabling. Consequently the project has been delayed by some seven weeks. The DIVA team have worked hard to reduce this delay to some three weeks. The full report was due for submission to the senior consultant Mr Bob McGonigle, at the beginning of November. This issue of college commitments impinging upon DIVA time should be explored by the funding partners.
3. The Joint Qualification Support Teams in the SQA have no input from the DIVA team. This should be changed to ensure recommendations made by the DIVA team, supported by research findings, is included in future qualification development. At present a meeting has been scheduled for January with Mr Janetta to explore the proposed new HN Framework.
4. To encourage participation in the survey, the CATC in Birmingham promised two free routers. All Academies participating in the survey would be entered into a draw for the equipment. Since no equipment has been provided it is impossible to reward participating Academies.
5. It has not been possible at the time of writing the report for the DIVA team to participate in training for the PANDUIT cabling course. This should be encouraged to ensure new frameworks, descriptors and guidance are appropriate and achievable by candidates.
6. The recent Heads of Computing meeting the SQA distributed a CD-Rom containing statistics of uptake of units and awards. This would be an extremely useful item of information. However this has not been provided to either any delegate at the meeting nor to the DIVA team.

## SWOT Analysis

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Nationally recognised program</li> <li>• Nationally recognised development</li> <li>• Recognised professional program</li> <li>• Commitment from SQA – Cisco</li> <li>• Experienced development team</li> <li>• Experienced technical team</li> <li>• Clear Direction from Consultant</li> <li>• Good management support from Consultant</li> <li>• Access to CATC Birmingham</li> <li>• Sufficient funding for project</li> <li>• Good practice case study</li> </ul>	<p><b>WEAKNESS</b></p> <ul style="list-style-type: none"> <li>• Lack of statistics from Cisco</li> <li>• Lack of information about CCNA 4.0 from Cisco</li> <li>• Poor information from SQA (PDA, retention, achievement)</li> <li>• Normal admission and assessment process encroaching into DIVA time during start and end of term</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Good dissemination vehicles via Liz/David</li> <li>• Niche market – schools development</li> <li>• New Market –VOIP, PANDUIT, Security, Wireless</li> <li>• Product Development – NC review</li> <li>• Product Development -HN Networking changes to framework to include new Microsoft Certifications</li> <li>• Press release for new developments at NC and HN level</li> <li>• Guidance Day</li> <li>• Regional Skills Competition</li> <li>• Cisco EMEA Conference in Normandy (Feb 2007) paper on Delivery of Cisco in Scotland</li> <li>• Distribution of CD with case study materials, lessons</li> <li>• Update units for CCNA 4.0</li> <li>• Dissemination of PDA information</li> <li>• Good Practice visit to Keith Grammar School</li> <li>• Review of assessment and graduation for Cisco courses</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Other exam bodies incorporate new Microsoft framework first</li> <li>• NC units developed by individuals with no vendor background</li> <li>• NC units do not reflect progression into vendor awards</li> <li>• Develop units for NC and HN without delivering emerging programs</li> <li>• Market perception of demand for new courses poor</li> <li>• Poor return rate from survey</li> </ul>

## **RECOMMENDATIONS**

It is therefore proposed the DIVA project consider adopting a strategy aimed at:

1. Expansion into Schools at ITE 1, CCNA 1 and CCNA 2 levels for S5 and S6 candidates.
2. Increased uptake of PDA's in the evening class/professional training market via marketing to both SQA Centres and Networking Academies.
3. Expansion into areas of large numbers of economically inactive individuals, high unemployment, or high levels of persons engaged in education, employment or training via community development projects (such as Govan and Edinburgh) or via Regional Academy Netlab solutions.
4. Undertake expansion of training in Software areas via Oracle Academy and IBM. This should help address market demands for Software skilled individuals. This can occur as apart of 1 above since Oracle already offer an incorporation at Higher level.
5. Development of Unit Descriptors, enhanced marketing of PDA elements to SQA Centres This could be extended to chambers of commerce, enterprise companies and professional bodies to expand awareness of SQA developments in vendor certification.
6. Development of new HN Framework based on market demand
7. Managing UK Skills Competition events in Scotland

Further more it is recommended the DIVA team seek approval of SQA and Cisco to submit ESF application under priority 1 to fund an expansion of the retraining model into areas not serviced by Academies to support these recommendations. Particular emphasis should be placed on supporting distance or blended learning models for entry level and advanced level IT courses. A central location offering Netlab remote access, moveable labs may support improving the skills of unemployed or economically inactive individuals in rural areas.

If such an application is developed support should be encouraged from the SQA, Cisco, University of Highlands and Islands and Enterprise organizations. This would offer blended learning solutions. Remote access to curriculum and equipment supported by shared equipment packages for ITE1, MCDST and CCNA. Local schools could be utilized to provide some of these courses or supervision for assessment purposes. This should be explored by the DIVA consultants.

### **Statistical References:**

Engineering, Technology and Science in the Highlands and Islands  
Future Skills Scotland Industry Profile, 2006

IT and Telecoms Scottish Sector Profile 2005  
Future Skills Scotland, 2005

The Scottish Labour Market 2006  
Future Skills Scotland, 2006

Quarterly Review of ICT Labour Market  
e-skills Bulletin Quarter 2, 2006  
e-skills UK,

The labour market for graduates in Scotland March 2006  
Future Skills Scotland, 2006

The labour market in rural Scotland – an introduction  
Future Skills Scotland, 2003

Scottish School Leavers and their understanding of the world of work  
Future Skills Scotland, May 2005

Annual Population Survey in Scotland 2005, Scottish Executive, 2005

## Appendices

Survey Instrument : Questionnaire

Survey Instrument: Electronic Questionnaire

Initial Analysis of Electronic Questionnaire

Uptake of SQA Awards (CISCO)

Uptake of SQA Vendor based Units

Proposed HN Framework

Proposed HN unit : VOIP

Proposed NC units

Scottish Executive Statistics:	Administrative Area and Population
	Administrative Area and Unemployment rates
	Administrative Area and Economically Inactive
	Administrative Area and Education, Employment or Training
	Administrative Area and Adult Learning
	Administrative Area and Employed

Previous DIVA Project Activity

# Appendix 1 : Survey Instrument

## **DIVA Questionnaire**

The purpose of this questionnaire is to perform an information gathering exercise concerning the use of Cisco Networking Academy curricula within SQA centers in Scotland. Please note all information provided is anonymous and will not be used to identify any individual or academy. It is the intention of the DIVA team to use the results to influence the deployment and uptake of Cisco curriculum within SQA centers. As such preliminary results will be published in March at Cisco conference and Training events.

Please complete the questionnaire and return to the DIVA team before 7<sup>th</sup> February 2006. Please note Academies completing the questionnaire will be entered into a draw to win equipment donated by Cisco for use in your Academy.

The areas for consideration are:

- Section 1      About your Academy**
- Section 2      How you deliver Cisco Curricula**
- Section 3      SQA and Cisco**
- Section 4      Support and Guidance**
- Section 5      Future developments**

**Section 1 About your Academy**

1. How long have you been a member of the Cisco Networking Academy program?
  - a. Less than 1 year
  - b. More than 1 year but less than 2
  - c. More than 2 years but less than 5
  - d. Five years or more
  - e. Not currently a member of Cisco Networking Academy program
  - f. Do you intend to become a member Cisco Networking Academy program (Please answer Yes or No)
    - i. No
    - ii. Yes (if yes please state when you intend to join)
      1. Current Academic Year
      2. Next Academic Year
      3. Other
  
2. If you are not currently a member of the Cisco Networking Academy program please list the factors influencing your decision:

Factor	Main Factor	Minor Factor	Did not effect decision
Cost of joining program			
Cost of annual fees			
Difficulty of finding staff willing to under go training			
Difficulty of releasing staff to undertake training over a long time period			
Difficulty of traveling to regional academy			
Poor Support from IT section in organization			
No market demand in local are for this type of program			
Students uninterested in program			
Other			

If other please specify:

3. Please detail your academy status and courses offered.

Courses	Local	Regional	Instructor courses
CCNA			
CCNP			
IT Essentials I			
IT Essentials II			
Fundamentals of Wireless LAN			
Fundamentals of Security			
Other. If other course are being offered please specify			

4. What Cisco Academy Curriculum do you currently deliver and have students enrolled for :

CCNA 1	CCNP 1
CCNA 2	CCNP 2
CCNA 3	CCNP 3
CCNA 4	CCNP 4
IT Essentials I	Fundamentals of Security
IT Essentials II	Fundamentals of Wireless LAN

5. What Cisco Academy curriculum WOULD you like to offer?

CCNA 1	CCNP 1
CCNA 2	CCNP 2
CCNA 3	CCNP 3
CCNA 4	CCNP 4
IT Essentials I	Fundamentals of Security
IT Essentials II	Fundamentals of Wireless LAN
Fundamentals of Cabling	Voice over IP
SOHO Networking	Other (please specify):

6. Do you offer Cisco based courses as:

(Please circle ALL that Apply)

- a. Full cost recovery commercial training course – evening
- b. Full cost recovery commercial training course –day release
- c. Full cost recovery commercial training course – weekend
- d. Full cost recovery commercial training course – distance learning
- e. As part of SQA Higher National Provision
- f. As Part of SQA Professional Development Award
- g. Fees remission
  - a. Government supported training program
  - b. EU/EC supported training program
  - c. Infill training for unemployed under 16 hour rule
  - d. Infill training for individuals in receipt of benefit

7. Do you offer Cisco training (tick All that Apply)

Courses	100% in person	Blended Learning	Remotely
CCNA			
CCNP			
IT Essentials I			
IT Essentials II			
Fundamentals of Wireless LAN			
Fundamentals of Security			
Other. If other course are being offered please specify method of delivery			

**This is the end of Section 1 please continue to Section 2.**

**Section 2 : How you deliver Cisco Curricula**

8. How many Cisco classes do you run per block
- a. <2
  - b. 3-4
  - c. 5-6
  - d. 7 or more

9. What is the average size of CCNA classes

Class	<10	10 to 15	15 to 20	>20
Evening				
Daytime				
Weekend				
Blended Learning				

10. For an instructor led, 100% in person class, what is the average timetabled length of a single delivery of any one Cisco Curriculum offering (e.g. CCNA1, CCNP1, IT Essentials).
- a. <40 hours
  - b. 40 – 50 hours
  - c. 50 -60 hours
  - d. 60-70 hours
  - e. 70-80 hours
  - f. 80 - 90 hours
  - g. >90 hours

11. In a single delivery of any one Cisco Curriculum offering (e.g. CCNA1, CCNP1, IT Essentials) how many hours do you spend on:

Item	<5	5-10hrs	11-20hrs	21 – 30 hrs	30-40 hrs	>40 hrs
Revision for Professional exam						
Practice for final skills test						
Practice for theory test						
Final Theory test						
Final Skills Test						

12. How many hours per week do you spend on each of the following activities

Class	<4	5 to 8	9 or more	Do not engage in this activity
Practical activities				
Mini Lectures				
Chapter exam review				
Final exam revision				
Case study				
Student presentations				

13. Do you encourage students to read ahead before delivering a particular chapter to them?

- a. Yes  
b. No

14. Do you encourage students to complete all reading at home rather than in the class room

- a. Yes – Please complete the following table:

Item	Yes	No
Do you spend class time presenting mini lectures for areas of difficulty		
Do you spend class time reviewing chapter exams		
Do you spend time with individual students to clarify areas of difficulty		
Do you encourage students to use class time for practical activities		

- b. No

15. To the best of your knowledge, of the candidates who complete Cisco training courses with you how many complete the professional exam?

Courses	ALL	>75%	50 to 75%	25 to 50%	< 25%	Unknown
Full Time (HN)						
Full Time (non HN)						
Evening						
Week end						
Remote						
Blended Learning						

16. For each method of delivering Cisco classes what percentage of students enroll but do not complete the course?

Courses	ALL	>75%	50 to 75%	25 to 50%	< 25%	Unknown
Full Time (HN)						
Full Time (non HN)						
Evening						
Week end						
Remote						
Blended Learning						

17. To the best of your knowledge students who enroll for a Cisco course but do not complete the program do so due to

Please select ALL that apply

- a. Financial Pressures
- b. Inappropriate choice of course
- c. Poor Attendance
- d. Failure to complete sufficient practical activities
- e. Failure to grasp fundamental topics such as sub net masking
- f. Failure to read curriculum material prior to class
- g. Medical reasons
- h. Family pressures
- i. Work commitments
- j. Personal Reasons
- k. Other reasons

18. Do you encourage students to sit the following professional exams either during the course or shortly after its completion

Exam	During Course	Shortly after completion of course	Whenever student feels confident enough
Intro			
ICND			
CCNA			
CCNP Exams (1-4)			
CompTIA A+			
CompTIA Net+			
Cisco Wireless LAN exams			
Cisco Security exams			

19. What is the average mark you use to graduate a student from one semester to another?

Item	Full time day classes	Evening class	Blended Learning	Remote	HN Classes
<40%					
41 to 50 %					
51 to 60%					
61 to 70%					
>70%					
Do not offer classes in this method					

20. Do you encourage candidates to complete the threaded case study
- yes
  - no
21. If yes, is the case study completed
- individually
  - in groups
22. Would you like localized case studies to be available to each centre
- Yes
  - No

**23. How do you market your Cisco Courses?**

Method of Advertising	Used regularly	Occasionally used	Never used	Don't know
College Prospectus				
College web site				
Letter to employers				
Dedicated Academy website				
Marketing stand at shopping centre				
Posters				
Leaflets				
Flyers handed out				
School visits				
Radio				
Newspaper Adverts				
other				

If other please specify:

24. Do you have a Cisco marketing pack?
- Yes
  - No

25. What would you like to see included in a marketing pack (please select ALL that apply)

<b>Method of Advertising</b>	<b>Yes</b>	<b>No</b>
<b>Cisco course Leaflet</b>		
<b>Course Summary</b>		
<b>Local Academy Information</b>		
<b>Lab Setup</b>		
<b>Poster</b>		
<b>Case Study</b>		
<b>Student Success stories</b>		
<b>Employment statistics</b>		
<b>Other Cisco courses</b>		
<b>Web page templates</b>		
<b>Brochure templates</b>		
<b>other</b>		

**This is the end of Section 2 please continue to Section 3.**

### **Section 3 SQA and Cisco**

26. Are you an SQA exam centre (if not please go to Q5)?
- Yes
  - No
27. If you are an SQA exam Centre, at which level do you offer SQA awards
- NC
  - HNC
  - HND
  - PDA
28. Do you intend to offer Cisco training as part of your normal HN Provision
- Yes Please go to Question 8
  - No Please go to Question 9
29. Do you offer Cisco courses as part of :
- HNC/D program  
If Yes which Program do you use to deliver Cisco Training
    - HND Networking core units
    - HNC/D Computing optional unit
    - HNC/D Support optional unit
    - Other (please specify)
  - Professional Development Award
30. Are you aware of the existence of Professional Development Awards from the SQA for CCNA training courses?
- Yes
  - No, Please goto Q.7
31. Do you offer the PDA to candidates as an addition to the course completion certificates?
- Yes
  - No
32. Would you like guidance for centers on offering SQA Professional Development Awards to Cisco Candidates?
- Yes
  - No

**This is the end of Section 3 please continue to Section 4.**

**Section 4 – Support and Guidance**

33. Would you like to see guidance on:
- a. Offering CCNA entirely remotely with candidate attendance for assessments only  
YES/NO
  - b. Offering CCNA in a blended learning environment with candidate attendance for assessments, some lab practice and reinforcement of theory elements  
YES/NO
  - c. Offering CCNA in a blended learning environment with candidate attendance for assessments, some lab practice and reinforcement of theory elements with email and telephone support  
YES/NO

34. What support do you give your students?
- a. Tutorial sessions
  - b. Mini lectures
  - c. Presentations
  - d. Demonstration of labs
  - e. Telephone support
  - f. Email support
  - g. Exam booking information session
  - h. Revision session before candidates undertake professional exam

35. On the cisco.netacad.net site, do you use instructor downloads to obtain:

Item	Yes	No
PowerPoint slides		
Additional exercises		
Additional Explanatory material		
PASS Document		
Download curriculum		

36. Are you happy with the level of support from Regional Academies
- a. Yes
  - b. No
  - c. If no, what could you suggest be made to improve the level of support offered

37. Would you like to see support in the form (select All that apply):
- a. seminars
  - b. peer guidance day
  - c. demonstrations of good practice
  - d. Scottish events
38. Would you like guidance on a common exam standard for theory test, skills test, case study.
- a. Yes
  - b. No
39. Do you feel you would like to see an academy sharing scheme to facilitate Cisco Training to help other academies via the sharing of
- (Select ALL that Apply)
- a. Instructors
  - b. Equipment
  - c. Web based Curricula
  - d. Remote lab facilities
  - e. Joint delivery with other Academies
  - f. Join Marketing exercises
40. What Continued Professional Development would you feel necessary for your instructors:
- 
41. Do you feel the legal main contact for the Academy requires
- a. Better training
  - b. More time to carry out administrative functions
  - c. No additional training
42. Have you been the subject of a Cisco Quality Assurance Check?
- a. Yes
  - b. No

43. Are you aware of the UK Skills Competition for ICT Hardware (Cisco) and Software (Microsoft)?
  - a. Yes (please go to Q.46)
  - b. No
  
44. Would you be interested in participating in a Scottish heat of the UK Skills Competition?
  - a. Yes
  - b. No
  
45. Do you require more details about the UK Skills competition for ICT Hardware (Cisco)?

**This is the end of Section 4 please continue to Section 5.**

**Section 5 : Future developments**

46. Would you like a series of PDA's to be offered –

(Please select ALL that Apply)

Item	Entry Level (NC)	General Level (HNC/D)	Advanced Level (post HND)	Specialist Practitioner
IT Essentials I				
IT Essentials II				
Panduit Cabling				
CCNA				
CCNP				
Wireless				
Security				
VOIP				
SOHO				

47. Would you like to see some practical and basic theory elements to be offered at NC level

- a. Yes
- b. No

48. What would you like to see being included at NC level –

- a. Intro to Networking
- b. PC Hardware
- c. Cabling basics
- d. Other

49. Would you like to see a unit developed around SOHO networking?

- a. Yes
- b. No

50. Are you aware SQA provides HN units covering Cisco Curricula in Wireless, CCNA, Case Study (HN Graded Unit) A+ and Net+ ?

- a. Aware of all HN Units mapping to Cisco Curricula by SQA
- b. Aware of some HN Units mapping to Cisco Curricula by SQA
- c. Not Aware of SQA HN units mapping to Cisco Curricula by SQA

51. Are you aware of the NC review currently being led by Walter Patterson, former HMI, in this sector?

- a. Yes
- b. No

52. Would you like to see an HND Technical Support (Desktop) being offered covering general desktop technician courses such as MCDST, CCNA 1, Panduit Fundamentals of Cabling, SOHO networking?
- a. Yes
  - b. No

If yes, would you be interested in participating in developing such a qualification

**This is the end of the Questionnaire. Please return this to Dr Joe Wilson at the Scottish Qualifications Authority. All completed Questionnaires will be entered into a draw for some equipment supplied by Cisco.**

## Appendix 2: Online Questionnaire



#### DIVA Questionnaire

The purpose of this questionnaire is to perform an information gathering exercise concerning the use of Cisco Networking Academy curricula within SQA centers in Scotland. Please note all information provided is anonymous and will not be used to identify any individual or academy. It is the intention of the DIVA team to use the results to influence the deployment and uptake of Cisco curriculum within SQA centers. As such preliminary results will be published in March at Cisco conference and Training events.

Please complete the questionnaire and return to the DIVA team before 7th February 2006. Please note Academies completing the questionnaire will be entered into a draw to win equipment donated by Cisco for use in your Academy.

The areas for consideration are:

- About your Academy
- How you deliver Cisco Curricula
- SQA and Cisco
- Support and Guidance
- Future developments

Question : 1

How long have you been a member of the Cisco Networking Academy Program?

1 year or less  
 1-2 years  
 2-5 years  
 5 years or more  
 Not currently a member of Cisco Networking Academy Program

Question : 2

Do you intend to become a member of Cisco Networking Academy Program?

Already a member  
 No  
 Yes - Within Current Academic Year  
 Yes - Within Next Academic Year  
 Yes - Unsure when

Questions : 3 to 10

If you are not currently a member of the Cisco Networking Academy Program, please list the factors influencing your decision:

	Main Factor	Minor Factor	Did not affect decision
Cost of joining program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost of annual fees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty of finding staff willing to undergo training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty of releasing staff to undertake training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty of travelling to regional academy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Level of support from IT section within your organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Level of market demand within your area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students uninterested in program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question : 11

If you are not currently a member of the Cisco Networking Academy and have OTHER factors influencing your decision, please list them in the box below.

Questions : 12 to 13

Please detail your current academy status.

	Yes	No
Local Academy	<input type="radio"/>	<input type="radio"/>
Regional Academy	<input type="radio"/>	<input type="radio"/>

Questions : 14 to 26

Do you currently offer the following Cisco training courses.

	Yes	No
CCNA1	<input type="radio"/>	<input type="radio"/>
CCNA2	<input type="radio"/>	<input type="radio"/>
CCNA3	<input type="radio"/>	<input type="radio"/>
CCNA4	<input type="radio"/>	<input type="radio"/>
CCNP1	<input type="radio"/>	<input type="radio"/>
CCNP2	<input type="radio"/>	<input type="radio"/>
CCNP3	<input type="radio"/>	<input type="radio"/>
CCNP4	<input type="radio"/>	<input type="radio"/>
IT Essentials I	<input type="radio"/>	<input type="radio"/>
IT Essentials II	<input type="radio"/>	<input type="radio"/>
Fundamentals of Security	<input type="radio"/>	<input type="radio"/>
Fundamentals of Wireless LAN	<input type="radio"/>	<input type="radio"/>
PNIE	<input type="radio"/>	<input type="radio"/>

Questions : 27 to 39

Do you currently have students enrolled on the following Cisco courses

	Yes	No
CCNA1	<input type="radio"/>	<input type="radio"/>
CCNA2	<input type="radio"/>	<input type="radio"/>
CCNA3	<input type="radio"/>	<input type="radio"/>
CCNA4	<input type="radio"/>	<input type="radio"/>
CCNP1	<input type="radio"/>	<input type="radio"/>
CCNP2	<input type="radio"/>	<input type="radio"/>
CCNP3	<input type="radio"/>	<input type="radio"/>
CCNP4	<input type="radio"/>	<input type="radio"/>
IT Essentials I	<input type="radio"/>	<input type="radio"/>
IT Essentials II	<input type="radio"/>	<input type="radio"/>
Fundamentals of Security	<input type="radio"/>	<input type="radio"/>
Fundamentals of Wireless LAN	<input type="radio"/>	<input type="radio"/>
PNIE	<input type="radio"/>	<input type="radio"/>

Question : 40

With particular reference to the voice and data cabling course 'PNIE', what factors are preventing you from offering this course?

Question : 41

Are there any other Cisco courses you would like to offer?

Questions : 42 to 48

Do you currently offer Cisco training courses as :

	Yes	No
Full cost recovery commercial training course - evening.	<input type="radio"/>	<input type="radio"/>
Full cost recovery commercial training course - day release.	<input type="radio"/>	<input type="radio"/>
Full cost recovery commercial training course - weekend.	<input type="radio"/>	<input type="radio"/>
Full cost recovery commercial training course - distance.	<input type="radio"/>	<input type="radio"/>
As part of SQA HN provision.	<input type="radio"/>	<input type="radio"/>

As part of SQA PDA provision.	<input type="radio"/>	<input type="radio"/>
Fee remission	<input type="radio"/>	<input type="radio"/>

Questions : 49 to 56		
Do you offer the following courses using the 100% in person delivery method?		
	Yes	No
CCNA	<input type="radio"/>	<input type="radio"/>
CCNP	<input type="radio"/>	<input type="radio"/>
IT Essentials I	<input type="radio"/>	<input type="radio"/>
IT Essentials II	<input type="radio"/>	<input type="radio"/>
Fundamentals of Wireless LAN	<input type="radio"/>	<input type="radio"/>
Fundamentals of Security	<input type="radio"/>	<input type="radio"/>
PNIE	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Questions : 57 to 64		
Do you offer the following courses using the Distance Learning delivery method?		
	Yes	No
CCNA	<input type="radio"/>	<input type="radio"/>
CCNP	<input type="radio"/>	<input type="radio"/>
IT Essentials I	<input type="radio"/>	<input type="radio"/>
IT Essentials II	<input type="radio"/>	<input type="radio"/>
Fundamentals of Wireless LAN	<input type="radio"/>	<input type="radio"/>
Fundamentals of Security	<input type="radio"/>	<input type="radio"/>
PNIE	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Questions : 65 to 72		
Do you offer the following courses using the Blended Learning delivery method?		
	Yes	No
CCNA	<input type="radio"/>	<input type="radio"/>
CCNP	<input type="radio"/>	<input type="radio"/>

IT Essentials I	<input type="radio"/>	<input type="radio"/>
IT Essentials II	<input type="radio"/>	<input type="radio"/>
Fundamentals of Wireless LAN	<input type="radio"/>	<input type="radio"/>
Fundamentals of Security	<input type="radio"/>	<input type="radio"/>
PNIE	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Question : 73

If you offer Cisco courses in any other delivery method please detail below.

Question : 74

How many Cisco training classes do you run per block / semester?

- 2 or less
- 3-4
- 5-6
- 7 or more

Questions : 75 to 78

What is the average size of CCNA classes based on the following attendance modes?

	10 or less	11-15	16-20	21 or more	Do not offer mode of attendance
Evening	<input type="radio"/>				
Daytime	<input type="radio"/>				
Weekend	<input type="radio"/>				
Blended Learning	<input type="radio"/>				

Question : 79

For an Instructor led, 100% in person delivery of a Cisco curriculum offering such as CCNA1 or CCNP1 Cisco recommends 80 hours duration. What is your average number of timetabled hours for all classroom and lab activities?

- 40 hours or less
- 41-50 hours
- 51-60 hours

- 61-70 hours
- 71-80 hours
- 81-90 hours
- 90 hours or more

Questions : 80 to 84						
In a single delivery of any one Cisco curriculum offering (e.g CCNA1, CCNP1, IT Essentials) how many hours do you spend on :						
	5 hours or less	6-10 hours	11-20 hours	21-30 hours	31-40 hours	40 hours or more
Revision for professional exam	<input type="radio"/>					
Practice for final skills test	<input type="radio"/>					
Practice for theory test	<input type="radio"/>					
Final theory test	<input type="radio"/>					
Final skills test	<input type="radio"/>					

Questions : 85 to 90				
How many hours per week do you spend on each of the following activities?				
	4 hours or less	5-8 hours	9 hours or more	Do not engage in activity
Practical activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mini Lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chapter exam review	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Final exam revision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Case Study	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student presentations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question : 91
Do you encourage your students to read ahead before delivering a particular chapter to them?
<input type="radio"/> Yes
<input type="radio"/> No

Questions : 92 to 96
Please detail how you prefer to utilise the Cisco curriculum and delivery time :

	Yes	No
Do you encourage students to complete all reading at home?	<input type="radio"/>	<input type="radio"/>
Do you spend class time presenting mini lectures?	<input type="radio"/>	<input type="radio"/>
Do you spend class time preparing for chapter exams?	<input type="radio"/>	<input type="radio"/>
Do you spend time with Individual students to clarify areas?	<input type="radio"/>	<input type="radio"/>
Do you encourage students to use class time for practical?	<input type="radio"/>	<input type="radio"/>

Questions : 97 to 102							
To the best of your knowledge, of the candidates who complete a Cisco training course under the following delivery methods with you, how many complete the professional exam?							
	All	75% or more	50-75%	25-50%	10-25%	10% or less	Unknown
Full Time (HN)	<input type="radio"/>						
Full Time (non HN)	<input type="radio"/>						
Evening	<input type="radio"/>						
Weekend	<input type="radio"/>						
Remote	<input type="radio"/>						
Blended Learning	<input type="radio"/>						

Question : 103
For each of the following delivery methods what percentage % of students enroll but do not complete the course?
<input type="radio"/> All
<input type="radio"/> 75% or more
<input type="radio"/> 50-75%
<input type="radio"/> 25-50%
<input type="radio"/> 10-25%
<input type="radio"/> 10% or less
<input type="radio"/> Unknown

Questions : 104 to 114
To the best of your knowledge of those students who enrol for a Cisco course but do not complete do so due to :
Please select all that apply.
Yes No

Financial Pressures	<input type="radio"/>	<input type="radio"/>
Innapropriate choice of course	<input type="radio"/>	<input type="radio"/>
Poor Attandance	<input type="radio"/>	<input type="radio"/>
Failure to complete sufficient practical activities	<input type="radio"/>	<input type="radio"/>
Failure to grasp fundamental topics such as subnet masking	<input type="radio"/>	<input type="radio"/>
Failure to read curriculum material prior to class	<input type="radio"/>	<input type="radio"/>
Medical reasons	<input type="radio"/>	<input type="radio"/>
Family pressures	<input type="radio"/>	<input type="radio"/>
Work commitments	<input type="radio"/>	<input type="radio"/>
Personal reasons	<input type="radio"/>	<input type="radio"/>
Other reasons	<input type="radio"/>	<input type="radio"/>

Questions : 115 to 121

Do you encourage students to sit the following professional exams either during the course or shortly after completion?

	During Course	Shortly after completion of course	Whenever student feels confident enough
CCNA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CCNP Exams (1-4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IT Essentials I	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IT Essentials II	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fundamentals of Wireless LAN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fundamentals of Security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PNIE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question : 122

If students are not taking the industry certification exams, what in your opinion is the single biggest factor preventing them from doing this?

Questions : 123 to 128

What is the average mark you use to graduate a student from one semester to another?

Full time day class   Evening class   Blended Learning   Remote   HN Class

40% or less	<input type="radio"/>				
41-50%	<input type="radio"/>				
51-60%	<input type="radio"/>				
61-70%	<input type="radio"/>				
70% or more	<input type="radio"/>				
Do not offer mode of delivery	<input type="radio"/>				

Question : 129

Do you encourage candidates to complete the threaded case study?

- Yes  
 No

Question : 130

If yes, is the case study normally completed

- Individually  
 In groups  
 Not offered

Question : 131

Would you prefer a wider range of localised Case Studies rather than the american versions?

- Yes  
 No

Questions : 132 to 143

Which of the following methods do you use to market your Cisco courses?

	Used regularly	Used occasionally	Never used	Don't Know
College prospectus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
College web site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Letter to employers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dedicated Academy website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing stand at shopping centre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Posters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Leaflets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flyers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
School visits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newspaper Adverts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question : 144

If you market your Cisco courses using other methods please specify below.

Question : 145

Do you have a Cisco marketing pack for your centre?

- Yes  
 No

Question : 146

Would you like to have a Cisco marketing pack for your centre?

- Yes  
 No  
 Already have a marketing pack

Questions : 147 to 160

What content would you include in any marketing pack?

Please select all that apply.

	Yes	No
Cisco course leaflets	<input type="radio"/>	<input type="radio"/>
Course summaries	<input type="radio"/>	<input type="radio"/>
Local academy information	<input type="radio"/>	<input type="radio"/>
Lab setup	<input type="radio"/>	<input type="radio"/>
Posters	<input type="radio"/>	<input type="radio"/>
Case Studies	<input type="radio"/>	<input type="radio"/>

Student success stories	<input type="radio"/>	<input type="radio"/>
Employment statistics	<input type="radio"/>	<input type="radio"/>
Employment opportunities	<input type="radio"/>	<input type="radio"/>
Web page templates	<input type="radio"/>	<input type="radio"/>
Other Cisco course information	<input type="radio"/>	<input type="radio"/>
Brochure templates	<input type="radio"/>	<input type="radio"/>
Flyer templates	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Question : 161

If you would like to see other information included in the marketing pack please detail below.

Question : 162

Are you an SQA exam centre?

- Yes  
 No

Questions : 163 to 167

If you are currently an SQA exam centre, do you offer SQA awards at the following levels?

	Yes	No
NC	<input type="radio"/>	<input type="radio"/>
HNC	<input type="radio"/>	<input type="radio"/>
HND	<input type="radio"/>	<input type="radio"/>
PDA	<input type="radio"/>	<input type="radio"/>
Not an exam centre	<input type="radio"/>	<input type="radio"/>

Question : 168

Do you currently offer Cisco training as part of your normal HN Provision?

- Yes  
 No

Questions : 169 to 173

Do you offer Cisco courses as part of :

	Yes	No
HND Networking core units	<input type="radio"/>	<input type="radio"/>
HNC/D Computing optional units	<input type="radio"/>	<input type="radio"/>
HNC/D Computing Support optional units	<input type="radio"/>	<input type="radio"/>
Professional Development Awards	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Question : 174

If you offer Cisco courses as part of other courses please specify below.

Question : 175

Are you aware of the existence of Professional Development Awards offered by SQA for CCNA training courses?

Yes

No

Question : 176

Do you offer the PDA to candidates who complete CCNA training as an additional certificate?

Yes

No - but may in the future

No

Question : 177

Would you like guidance for centres on offering SQA Professional Development Awards to Cisco Candidates?

Yes

No

Questions : 178 to 179

Would you like guidance documents produced for the following.

Yes No

Offering CCNA as remote learning with assessment attendance	<input type="radio"/>	<input type="radio"/>
Offering CCNA as blended learning	<input type="radio"/>	<input type="radio"/>

Questions : 180 to 187		
Do you currently offer the following support to your Cisco students?		
	Yes	No
Tutorial Sessions	<input type="radio"/>	<input type="radio"/>
Mini Lectures	<input type="radio"/>	<input type="radio"/>
Presentations	<input type="radio"/>	<input type="radio"/>
Demonstarion of Labs	<input type="radio"/>	<input type="radio"/>
Telephone Support	<input type="radio"/>	<input type="radio"/>
Email Support	<input type="radio"/>	<input type="radio"/>
Exam booking information session	<input type="radio"/>	<input type="radio"/>
Revision session before professional exam	<input type="radio"/>	<input type="radio"/>

Questions : 188 to 192		
On the cisco.netacad.net site, do you use instructor downloads to obtain:		
	Yes	No
Powerpoint Slides	<input type="radio"/>	<input type="radio"/>
Additional Exercises	<input type="radio"/>	<input type="radio"/>
Additional Explanatory Material	<input type="radio"/>	<input type="radio"/>
PASS Document	<input type="radio"/>	<input type="radio"/>
Download Curriculum	<input type="radio"/>	<input type="radio"/>

Question : 193
Are you satisfied with the level of support from Regional Academies?
<input type="radio"/> Yes
<input type="radio"/> No

Questions : 194 to 198
As an indication of interest for future event planing by Cisco/DIVA, would you like to see the following event formats?
Select all that apply.

	Yes	No
Seminars	<input type="radio"/>	<input type="radio"/>
Peer guidance days	<input type="radio"/>	<input type="radio"/>
Demonstration of good practice	<input type="radio"/>	<input type="radio"/>
All Scottish Academy events	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Question : 199

If there is any other support you would like to see introduced please detail below.

Questions : 200 to 202

Would you like guidance on a common examination standard for the following?

	Yes	No
Case Study	<input type="radio"/>	<input type="radio"/>
Theory Tests	<input type="radio"/>	<input type="radio"/>
Skills Tests	<input type="radio"/>	<input type="radio"/>

Question : 203

Would you like to see an academy sharing scheme to facilitate Cisco training and assist other academies?

Yes

No

Questions : 204 to 210

If an academy sharing scheme was to be introduced which of the following would you like to be shared?

Select all that apply.

	Yes	No
Instructors	<input type="radio"/>	<input type="radio"/>
Equipment	<input type="radio"/>	<input type="radio"/>
Web based curricula	<input type="radio"/>	<input type="radio"/>
Remote lab facilities	<input type="radio"/>	<input type="radio"/>
Joint delivery between academies	<input type="radio"/>	<input type="radio"/>

Joint marketing exercises	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Question : 211

If you feel other resources could be shared please detail below.

Question : 212

What Continued Professional Development would you feel may be necessary for your instructors?

Questions : 213 to 215

Do you feel the legal main contact for the Academy requires.

	Yes	No
Better training	<input type="radio"/>	<input type="radio"/>
More time to carry out administrative functions	<input type="radio"/>	<input type="radio"/>
No additional training	<input type="radio"/>	<input type="radio"/>

Question : 216

Have you been the subject of a Cisco Quality Assurance Check?

Yes

No

Question : 217

Are you aware of the UK skills Competition for ICT Hardware (Cisco) and software (Microsoft)?

Yes

No

Question : 218

Would you be interested in participating in a Scottish heat of the UK Skills Competition?

Yes

No

Question : 219

Would you like more details about the UK Skills Competition for ICT Hardware (Cisco)?

Yes

No

Questions : 220 to 228

	Yes	No
IT Essentials I	<input type="radio"/>	<input type="radio"/>
IT Essentials II	<input type="radio"/>	<input type="radio"/>
PNIE	<input type="radio"/>	<input type="radio"/>
CCNA	<input type="radio"/>	<input type="radio"/>
CCNP	<input type="radio"/>	<input type="radio"/>
Wireless	<input type="radio"/>	<input type="radio"/>
Security	<input type="radio"/>	<input type="radio"/>
VOIP	<input type="radio"/>	<input type="radio"/>
SOHO	<input type="radio"/>	<input type="radio"/>

Question : 229

Would you like to see some practical and basic theory elements of networking to be offered within the new NC review?

Yes

No

Question : 230

Are you aware of the NC review currently being undertaken in the Computing/IT sector?

<http://www.smartgroups.com/groups/nccomputing>

Yes

No

Questions : 231 to 234

Which of the following content would you like to see being included at NC level?

Select all that apply.

	Yes	No
Introduction to Networking	<input type="radio"/>	<input type="radio"/>
PC Hardware	<input type="radio"/>	<input type="radio"/>
Cabling basics	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>

Question : 235

If you feel that other content could be included at NC level please detail below.

Question : 236

Would you like to see a unit developed around SOHO networking in line with Cisco's home/small office product range?

Yes

No

Questions : 237 to 239

Are you aware that SQA currently provides HN units covering Cisco curriculum in Wireless, CCNA, Case Study, A+ and Net+?

	Yes	No
Aware of all HN Units mapping to Cisco Curricula by SQA	<input type="radio"/>	<input type="radio"/>
Aware of some HN Units mapping to Cisco Curricula by SQA	<input type="radio"/>	<input type="radio"/>
Not aware of HN Units mapping to Cisco Curricula by SQA	<input type="radio"/>	<input type="radio"/>

Question : 240

Do you feel there is a market and course development opportunity for an HNC/D Technical Support (Desktop and Network) type course covering general desktop courses such as MCDST, CCNA 1, Panduit Fundamentals of Cabling, SOHO networking?

Yes

No

Question : 241

If yes, would you be interested in participating in the development of such a qualification?

Yes

No

Question : 242

If you wish to be included in the prize draw please leave your Name and Academy contact details below.

## Appendix 3: Uptake of SQA Awards

## **DIVA Project – Uptake of SQA Awards**

Number of Students undertaking Award

Award	Session 03-04	Session 04-05	Session 05-06
HND Technical Support	0	0	256
HND Computer Networking and Internet Technology	0	21	77
HNC Computer Networking	0	56	60

Number of Students enrolled in unit

Unit	Session 03-04	Session 04-05	Session 05-06
DDF9X35 Networking Technology	41	141	182
DDF9Y35 Routing Technology	48	110	158
DG0935 Switching Technology	0	44	44
DG0A35 Internetworking Technology	0	44	44

## Appendix 4: Uptake of SQA Vendor Units

## DIVA Project – Uptake of Vendor Units

### Number of Students undertaking Award

Award	Session 03-04	Session 04-05	Session 05-06
Professional Development Award: Certificate in Computer Support	0	0	0
Professional Development Award: Advanced Diploma in Network Technology	0	0	0
Professional Development Award : Microsoft Systems Administration	0	0	6
Professional Development Award: Microsoft Systems Engineer	0	0	6

### Number of Students enrolled in unit

Unit	Session 03-04	Session 04-05	Session 05-06
DF9L33 Operating Systems Concepts	135	171	306
DDG0K33 Hardware Concepts	128	169	297
DDF9P34 Network Concepts	70	116	186
DDF9M34 Client Operating Systems	96	318	414
DDF9N34 Network Operating Systems	97	290	387
DDF9R35 Network Infrastructure	39	127	166
DDG0135 Directory Services Infrastructure	15	21	36
DDM3434 Supporting Users and Troubleshooting Desktop Applications	0	0	358
DM3534 Supporting Users and Troubleshooting a Desktop Operating System	0	0	314
<b>Total</b>	<b>580</b>	<b>1212</b>	<b>2464</b>

### Uptake by Activity

CompTIA	603
MCDST	672
MCP	801
Cisco	428

## Appendix 5: Proposed HN Award

Problems with current delivery:

- Too much in framework. Current HNC is an amalgam of hardware, networking, Microsoft t MCSA and MCDST with a smattering of iNet+ thrown in.
- Does not reflect current course offerings from CompTIA or Microsoft
- Current 1.5 unit credits does not make unit replacement easy.
  - HW Concepts and SW Concepts 1.5 credit each
  - New CompTIA HW Essentials and Support units appears to be 2 credits each
  - Client OS and Network server OS 1.5 credit each
  - Microsoft Vista Client appears to be 2 credits
  - Microsoft Vista Enterprise Support appears to be 2 credits
- Delivery of Microsoft Exams at higher standard than SQA requiring extra time to be found
- Network Infrastructure is a 2 credit unit but would be better suited to three credits.
- Microsoft MCSA units have not been given correct credit weightings. Client (1.5), Server (1.5) and Network Infrastructure (2) credits would be better being revised to 2 and 3 credits respectively. This is very difficult and presents a major problem to the SQA catalogue as same units would have 2 different weightings in the catalogue (original HNC Networking credit value) and revised credit value)
- Current format of HNC Networking is outdated and has served as a first attempt at incorporating vendor exams into SQA awards. However due to credit values and selection of cores there is little scope for expanding the current framework to include new vendor qualifications.

### Solution.

- MCDST (3 credits) and MCSA (5 credits) could form basis of new qualification without need to re assign credit ratings.
- As such no need to alter original HNC Networking. A new qualification based around existing units and **NEW ELEMENTS** would provide **DIFFERENT CORES AND OPTIONS** enabling the existing MCDST and MCSA qualifications to be delivered in a more realistic time frame. An additional 2 credit unit could be provided for Microsoft MCSA elements in the form of Microsoft Small Office Home Office networking (Microsoft SOHO) this being some elements of Client, server and Network infrastructure to free these elements up from existing units.
- A new GU could be provided where this has been mapped to specific labs within current MOAC exercises for MCSA units. By completing MOAC labs in a classroom environment candidates can complete part of graded unit as they progress through the MCSA units of client, server, network infrastructure.
- New qualification can be built around current Net+ or Vista , MCDST, MCSA and graded unit. Totalling 11 credits. Selected single and double credit from existing HNC Networking or HNC Computing units could bring this up to 12 credits. An alternative to net+ could be Vista client with same credit value.
- Could also use this 1 credit gap (bringing award upto 12 credits) or 4 credit gap (bringing award up to 15 credits) for inclusion of any new unit for upgrade MCDST to Microsoft IT Professional Certification. This would ensure the MCDST has currency and value for a number of years. The latest Microsoft certifications will go live with new MOAC titles (Microsoft Official Academic Curriculum) and labs from January 2007.
- An alternative would be for the core of the qualification to be built around MCDST (3 credits), GU (1 credit) and SOHO (2 credits). A six core HNC would be formed leaving 6 credits for MCSA units (currently 5) credits used. OR 9 credits where the full 15 credits are being delivered. These 9 credits could be used for existing MCSA (5 credits) to be delivered along with MCDST upgrade (2 credits) and Vista client).
- A further possibility is for the core of the qualification to be built around MCDST (3 credits), GU (1 credit) and VISTA (2 credits). A six core HNC would be formed leaving 6 credits for MCSA units (currently 5) credits used. OR 9 credits where the full 15 credits are being delivered. These 9 credits could be used for existing MCSA (5 credits) to be delivered along with MCDST upgrade (2 credits) and Vista Enterprise Support (2 credits).
- Whilst Microsoft have indicated in their current literature they do not intend to change the MCSA or MCSE structure it is envisaged the new Vista client will be offered as a replacement for XP. This can be catered for in the new award by ensuring Cores are elements such as MCDST that are upgradeable. Current MCSA units can be placed into a new award as options to be replaced with new Longhorn units (Microsoft's replacement for Server 2003). This is due out in full production 2008-2010. MCDST is fully upgradeable to include Vista elements. MCSA will include replacement Longhorn units as they are developed.

- The new client Vista can be included as an optional unit. Indeed the Enterprise Support element of Microsoft IT Professional Certification could be included in 6 credit gap between core MCDST-MCSA-GU elements and a full 15 credit award.
- If the full 15 credit HNC is offered centres can offer candidates an award of HNC Networking (System Administrations), two PDA elements (MCSA and MCDST) and IT Professional Certification Enterprise Support.
- The existing MCSA would remain current as the client XP would be offered alongside Vista in the 6 credit gap.
- Centres offering 12 credits could choose to provide FULL MCDST with upgrade to Microsoft IT Professional Certification OR VISTA client alongside existing MCSA.
- During academic session 2006-07 new development is restricted to descriptors for:
  - SOHO
  - GU Mapped to existing MOAC labs
  - Vista (MOAC Material and labs form January 2007)
  - Microsoft IT Professional Certification upgrade for MCDST as materials from Microsoft become available.
- Centres still wishing to deliver old 3 credit A+ hardware and Software can do so in the gap between current proposed 9 credits and full 12-15 credit award. Note the 9 credits would comprise CORE MCDST (3 credits), Net+ **OR** Vista (2 credits) and GU (1 credit).
- By necessity the new A+ units (ostensibly 2 double credits) could be incorporated into the existing HNC Networking or a new award if the titles and credit values are different from the existing units. A problem does indeed exist, since the current units for A+ total 3 credits replacing this with a double credit is not going to be easy.
- Replacing the current XP client with Vista will be equally as difficult for the same reason.
- A new award based on core of MCDST, Net+ and GU provides flexibility of offering current MCSA units, upgrade elements and new Vista client.
- Indeed by selecting other units such as MCDST upgrade, new A+, Panduit Cabling Essentials as a 12 credit s, an award can be built up with an emphasis on HNC Networking (technician). A full 15 credit could also include Vista client and building a network PC. This gives another flavour to the award for those less able to complete the more complicated server elements.
- For centres delivering this candidates can complete MCDST, Net+ and IT Professional Certification elements in first block Second block delivery can be more technician or system administration orientated depending upon candidate ability.
- Since Cisco have generally maintained their new versions to 80 hour elements (one double credit), there is no reason to suppose version 4 of CCNA will differ from the upgrade models followed from 1.1 through 2.1 to 3.12. There should be no structural change in HND element.
- HND element may need to alter options to include a wider range than is available at present.

## SUMMARY

### New award with existing credit value.

Different cores and options

Core can be either:

- |   |   |
|---|---|
| 1. MCDST (3 credit), GU (1 credit), Vista Client (2 credit) | 6 |
| 2. MCDST (3 credit), GU (1 credit), Net + (2 credit)        | 6 |
| 3. MCDST (3 credit), GU (1 credit), SOHO (2 credit)         | 6 |
| 4. New A+ (4 credits), GU (1 credit), Net+ (2 credit)       | 7 |
| 5. MCDST (3 credit) GU (1 credit), MCSA (5 credit)          | 9 |

Existing MCSA units 5 credits

IT Professional certifications

Vista client and Enterprise support (4 credits)

IT Professional certification

MCDST and upgrade ( 5 credits)

IT Professional certification

MCDST upgrade only ( 2 credits)

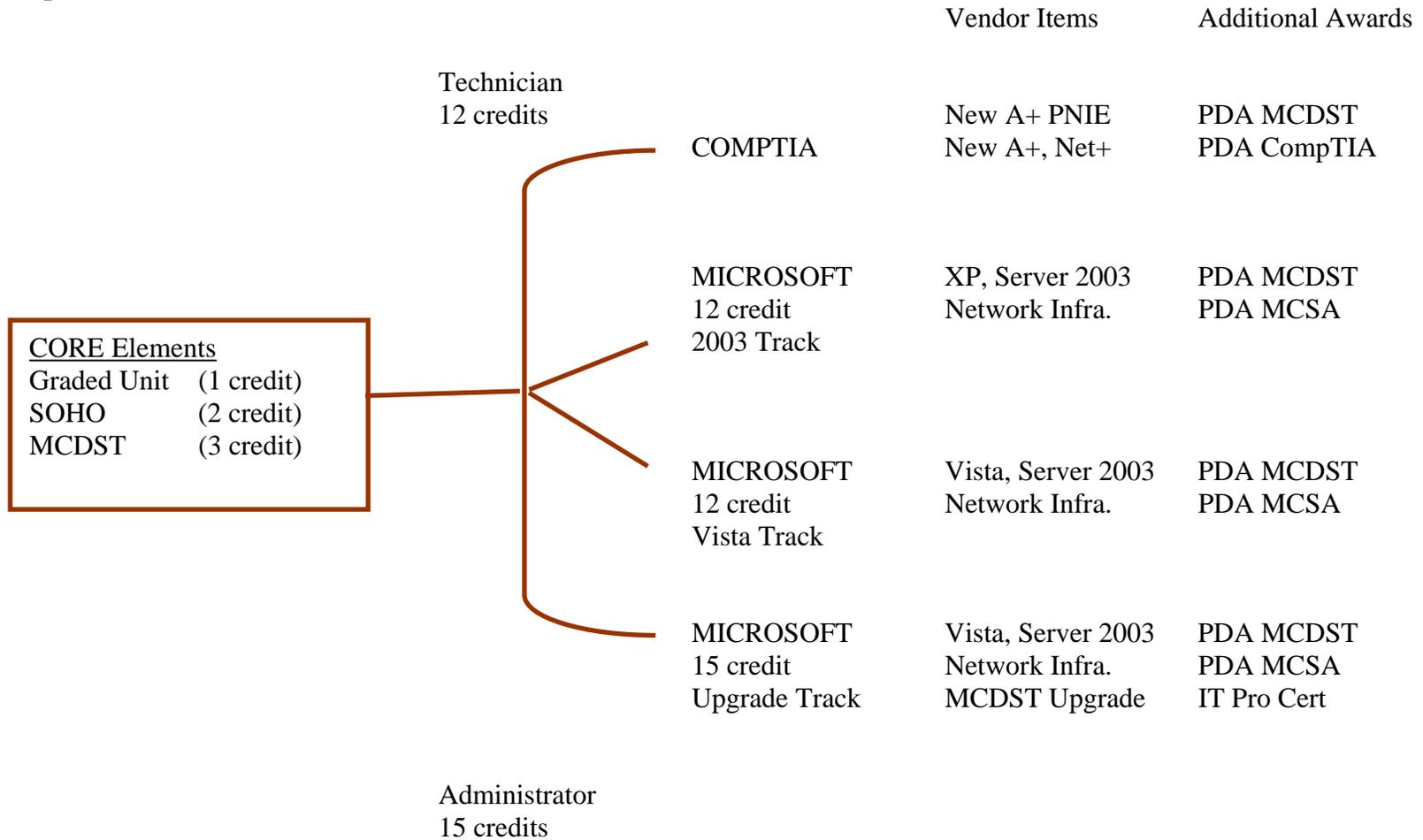
Stream	Core			Options					Additional Qualifications
Technician (12 credit)	MCDST 3	GU 1	SOHO 2	New A+ Essentials 2	New A+ Support 2	PNIE 2			PDA MCDST
Technician (12 credit)						Net+			PDA MCDST PDA CompTIA
Technician (15 credit) IT Pro Cert	3	1	2	New A+ Essentials 2	New A+ Support 2	PNIE 2	Build Net PC 1	MCDST Upgrade 2	PDA MCDST PDA CompTIA IT Pro Cert Support
MCSA (12 credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	Build Net PC 1		PDA MCDST PDA MCSA
MCSA (15 Credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	Active Dir 2	Vista Client 2	PDA MCDST PDA MCSA
MCSA IT Pro cert (15 Credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	MCDST Upgrade 2	Vista Client 2	PDA MCDST PDA MCSA IT Pro Cert Support
MCSA IT Pro cert (15 Credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	Vista Enterprise Support 2	Vista Client 2	PDA MCDST PDA MCSA IT Pro Cert Support
Longhorn	3	1	2	Vista Client 2	Longhorn Server 2	Longhorn networking 2	MCDST Upgrade 2	Other longhorn 1	

SOHO envisage as easier elements of server (groups, accounts permissions), net infra (IP addressing, DHCP, DNS) element of configuring a wireless client and AP, ICF, internet firewall. Designed to provide additional 2 credits for delivering MCSA elements or as basic introduction. Materials, assessment exemplars and question pools already exist for this.

Delivery: **BLOCK ONE**  
**BLOCK TWO**

Stream	Core			Options					Additional Qualifications
Technician (12 credit)	MCDST 3	GU 1	SOHO 2	New A+ Essentials 2	New A+ Support 2	PNIE 2			PDA MCDST PDA CompTIA
Technician (15 credit) IT Pro Cert	3	1	2	New A+ Essentials 2	New A+ Support 2	PNIE 2	Build Net PC 1	MCDST Upgrade 2	PDA MCDST PDA CompTIA IT Pro Cert Support
MCSA (12 credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	Build Net PC 1		PDA MCDST PDA MCSA
MCSA (15 Credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	Active Dir 2	Vista Client 2	PDA MCDST PDA MCSA
MCSA IT Pro cert (15 Credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	MCDST Upgrade 2	Vista Client 2	PDA MCDST PDA MCSA IT Pro Cert Support
MCSA IT Pro cert (15 Credit)	3	1	2	Client 1.5	Server 1.5	Net Infra 2	Vista Enterprise Support 2	Vista Client 2	PDA MCDST PDA MCSA IT Pro Cert Support
Longhorn (2010)	3	1	2	Vista Client 2	Longhorn Server 2	Longhorn networking 2	MCDST Upgrade 2	Other longhorn 1	

**Road Map to Success:**



**Appendix 6: Scottish Executive Statistics**  
**Comparative Analysis with Cisco Academy**

## Cisco Academy and Population in Administrative Areas

	Academies	Estimated population
		30 June 2005
<b>SCOTLAND</b>	<b>30</b>	<b>5,094,800</b>
<b>Council areas</b>		
Glasgow City	6	578,790
Edinburgh, City of	3	457,830
Fife	2	356,740
North Lanarkshire	1	323,420
South Lanarkshire	2	306,280
Aberdeenshire	2	235,440
Highland	2	213,590
Aberdeen City	2	202,370
Renfrewshire	2	170,000
West Lothian	0	163,780
Falkirk	0	149,150
Dumfries & Galloway	1	148,340
Dundee City	1	142,170
Perth & Kinross	1	138,400
North Ayrshire	0	135,830
East Ayrshire	0	119,400
South Ayrshire	0	111,780
Scottish Borders	0	109,730
Angus	0	109,170
East Dunbartonshire	0	105,960
East Lothian	0	91,800
West Dunbartonshire	1	91,400
Argyll & Bute	1	90,870
East Renfrewshire	0	89,600
Moray	1	88,120
Stirling	0	86,930
Inverclyde	1	82,130
Midlothian	0	79,190
Clackmannanshire	0	48,630
Eilean Siar	0	26,370
Shetland Islands	1	22,000
Orkney Islands	0	19,590

There appears to be no correlation to population and the numbers of Academies. North and South Lanarkshire have over 300,00 persons yet no consistent number of Academies. Some areas of over 100,000 persons have no Academy (Angus, Borders) yet some with 82,000 (Inverclyde) has one Academy.

## Cisco Academy and Land Area of Administrative Areas

	Academies	Area (sq km)
<b>SCOTLAND</b>	<b>30</b>	<b>77,925</b>
<b>Council areas</b>		
Highland	2	25,659
Argyll & Bute	1	6,909
Dumfries & Galloway	1	6,426
Aberdeenshire	2	6,313
Perth & Kinross	1	5,286
Scottish Borders	0	4,732
Eilean Siar	0	3,071
Moray	1	2,238
Stirling	0	2,187
Angus	0	2,182
South Lanarkshire	2	1,772
Shetland Islands	1	1,466
Fife	2	1,325
East Ayrshire	0	1,262
South Ayrshire	0	1,222
Orkney Islands	0	990
North Ayrshire	0	885
East Lothian	0	679
North Lanarkshire	1	470
West Lothian	0	427
Midlothian	0	354
Falkirk	0	297
Edinburgh, City of	3	264
Renfrewshire	2	261
Aberdeen City	2	186
East Dunbartonshire	0	175
Glasgow City	6	175
East Renfrewshire	0	174
Inverclyde	1	160
Clackmannanshire	0	159
West Dunbartonshire	1	159
Dundee City	1	60

There is no correlation between Land Area of an Administrative Area and the deployment of Academies.

## Cisco Academy and Population Density per Sq Km in Administrative Areas

	Academies	Persons <sup>2</sup> per sq km
<b>SCOTLAND</b>	<b>30</b>	<b>65</b>
<b>Council areas</b>		
Glasgow City	6	3,298
Edinburgh, City of	3	1,736
Aberdeen City	2	1,089
Aberdeenshire	2	37
Fife	2	269
Highland	2	8
Renfrewshire	2	651
South Lanarkshire	2	173
Argyll & Bute	1	13
Dumfries & Galloway	1	23
Dundee City	1	2,376
Inverclyde	1	512
Moray	1	39
North Lanarkshire	1	688
Perth & Kinross	1	26
Shetland Islands	1	15
West Dunbartonshire	1	575
Angus	0	50
Clackmannanshire	0	307
East Ayrshire	0	95
East Dunbartonshire	0	607
East Lothian	0	135
East Renfrewshire	0	516
Eilean Siar	0	9
Falkirk	0	502
Midlothian	0	224
North Ayrshire	0	153
Orkney Islands	0	20
Scottish Borders	0	23
South Ayrshire	0	91
Stirling	0	40
West Lothian	0	383

There appears to be no correlation between Academies and population Density. Dundee has more persons than Edinburgh or Aberdeen but has only one Academy.

### Academies and Unemployment Rates per Administrative Area

Local Authority Area	Number of Cisco Academies	Number of individuals Unemployed
Glasgow City	6	2,000
Edinburgh, City of	3	2,000
Aberdeen City	2	3,000
Aberdeenshire	2	1,000
Fife	2	4,000
Highland	2	3,000
Renfrewshire	2	3,000
South Lanarkshire	2	4,000
Argyll & Bute	1	2,000
Dumfries & Galloway	1	2,000
Dundee City	1	1,000
Inverclyde	1	4,000
Moray	1	2,000
North Lanarkshire	1	2,000
Perth & Kinross	1	8,000
Shetland Islands	1	5,000
West Dunbartonshire	1	12,000
Angus	0	4,000
Clackmannanshire	0	2,000
East Ayrshire	0	4,000
East Dunbartonshire	0	2,000
East Lothian	0	4,000
East Renfrewshire	0	*
Eilean Siar	0	3,000
Falkirk	0	2,000
Midlothian	0	2,000
North Ayrshire	0	11,000
Orkney Islands	0	*
Scottish Borders	0	6,000
South Ayrshire	0	9,000
Stirling	0	4,000
West Lothian	0	23,000

There does not appear to be a relationship between the numbers of unemployed in an administrative area and the deployment of Academies.

## Economic Activity and Academies in Administrative Areas

Local Authority Area	Number of Cisco Academies	Economically Inactive
Glasgow City	6	10,000
Edinburgh, City of	3	12,000
Aberdeen City	2	12,000
Aberdeenshire	2	6,000
Fife	2	22,000
Highland	2	15,000
Renfrewshire	2	13,000
South Lanarkshire	2	20,000
Argyll & Bute	1	11,000
Dumfries & Galloway	1	10,000
Dundee City	1	2,000
Inverclyde	1	20,000
Moray	1	10,000
North Lanarkshire	1	16,000
Perth & Kinross	1	41,000
Shetland Islands	1	23,000
West Dunbartonshire	1	56,000
Angus	0	18,000
Clackmannanshire	0	11,000
East Ayrshire	0	18,000
East Dunbartonshire	0	8,000
East Lothian	0	19,000
East Renfrewshire	0	2,000
Eilean Siar	0	14,000
Falkirk	0	11,000
Midlothian	0	12,000
North Ayrshire	0	47,000
Orkney Islands	0	2,000
Scottish Borders	0	22,000
South Ayrshire	0	42,000
Stirling	0	22,000
West Lothian	0	104,000

There appears to be no correlation between the numbers of individuals economically inactive and the deployment of Academies.

**Academies and number of Individuals currently engaged in either Employment, Education or Training in each Administrative Area**

Local Authority Area	Number of Cisco Academies	Currently in Education, Employment or Training
Glasgow City	6	42,000
Edinburgh, City of	3	52,000
Aberdeen City	2	51,000
Aberdeenshire	2	22,000
Fife	2	86,000
Highland	2	68,000
Renfrewshire	2	43,000
South Lanarkshire	2	103,000
Argyll & Bute	1	57,000
Dumfries & Galloway	1	48,000
Dundee City	1	12,000
Inverclyde	1	66,000
Moray	1	41,000
North Lanarkshire	1	65,000
Perth & Kinross	1	149,000
Shetland Islands	1	120,000
West Dunbartonshire	1	250,000
Angus	0	53,000
Clackmannanshire	0	46,000
East Ayrshire	0	71,000
East Dunbartonshire	0	42,000
East Lothian	0	63,000
East Renfrewshire	0	10,000
Eilean Siar	0	52,000
Falkirk	0	44,000
Midlothian	0	38,000
North Ayrshire	0	150,000
Orkney Islands	0	12,000
Scottish Borders	0	108,000
South Ayrshire	0	175,000
Stirling	0	82,000
West Lothian	0	269,000

There appears to be no correlation between the deployment of Academies and the numbers of individuals engaged in employment, education or training in each administrative area.

**Deployment of Cisco Academy and Participation in Adult Learning (session 04/05) by Administrative Area**

Local Authority Area	Number of Cisco Academies	Participation in Adult Learning (ages 16-69) Academic Session 04/05
Glasgow City	6	43,000
Edinburgh, City of	3	51,000
Aberdeen City	2	48,000
Aberdeenshire	2	21,000
Fife	2	75,000
Highland	2	69,000
Renfrewshire	2	39,000
South Lanarkshire	2	94,000
Argyll & Bute	1	52,000
Dumfries & Galloway	1	45,000
Dundee City	1	10,000
Inverclyde	1	59,000
Moray	1	42,000
North Lanarkshire	1	61,000
Perth & Kinross	1	132,000
Shetland Islands	1	113,000
West Dunbartonshire	1	231,000
Angus	0	48,000
Clackmannanshire	0	44,000
East Ayrshire	0	66,000
East Dunbartonshire	0	39,000
East Lothian	0	53,000
East Renfrewshire	0	9,000
Eilean Siar	0	48,000
Falkirk	0	42,000
Midlothian	0	33,000
North Ayrshire	0	114,000
Orkney Islands	0	11,000
Scottish Borders	0	98,000
South Ayrshire	0	151,000
Stirling	0	69,000
West Lothian	0	222,000

### Deployment of Cisco Academy and those currently employed (of working age) in each Administrative Area

Local Authority Area	Number of Cisco Academies	Working Age Employment Rate
Glasgow City	6	40,000
Edinburgh, City of	3	49,000
Aberdeen City	2	49,000
Aberdeenshire	2	21,000
Fife	2	82,000
Highland	2	66,000
Renfrewshire	2	40,000
South Lanarkshire	2	99,000
Argyll & Bute	1	53,000
Dumfries & Galloway	1	45,000
Dundee City	1	12,000
Inverclyde	1	60,000
Moray	1	39,000
North Lanarkshire	1	61,000
Perth & Kinross	1	141,000
Shetland Islands	1	114,000
West Dunbartonshire	1	227,000
Angus	0	50,000
Clackmannanshire	0	44,000
East Ayrshire	0	69,000
East Dunbartonshire	0	41,000
East Lothian	0	59,000
East Renfrewshire	0	10,000
Eilean Siar	0	48,000
Falkirk	0	41,000
Midlothian	0	35,000
North Ayrshire	0	142,000
Orkney Islands	0	11,000
Scottish Borders	0	102,000
South Ayrshire	0	167,000
Stirling	0	78,000
West Lothian	0	245,000

There is no correlation between the numbers of persons of working age and the numbers of Academies within the Local Authority Area. Some large populations have no academy such as West Lothian (245,000) whereas one Academy can service anywhere between 12,000 persons (Dundee) and 227,000 (West Dumbartonshire).

## Appendix 7: Cost of Comparative Course

## Cost of Undertaking Vendor Courses at a Commercial Training Centre

### **HNC Networking Block 1**

Unit Title	Vendor Exam	Cost
Hardware Concepts	A+	1200
Operating Systems Concepts	A+	1200
Network Concepts	Net+	1200
Client Operating System	Microsoft exam 70-270	1450
Network Server Operating System	Microsoft exam 70-290	1450
		<b>£6500</b>

### **HNC Networking Block 2**

Unit Title	Vendor Exam	Cost
HNC Graded Unit		N/A
Internetworking Concepts	INet+	N/O
Network Infrastructure 1	Microsoft exam 70-291	795 1450
Directory Services Administration	Microsoft exam 70-294	1450
SQL Programming	MCSE	N/A
		<b>£3695</b>

### **HND Networking Block 1**

Unit Title	Vendor Exam	Cost
Networking Technology	CCNA	N/O
Routing Technology	CCNA	N/O
Network Infrastructure 2	Microsoft exam 70-293	1450
HND Graded Unit		N/A
		<b>£1450</b>

### **HND Networking Block 2**

Unit Title	Vendor Exam	Cost
Switching Technology	CCNA	1450
Internetworking Technology	CCNA	
Designing Security for Microsoft Networks	Microsoft exam 70-299	1050
Network Design: Security	Security+	1350
HND Graded Unit		N/A
		<b>£3850</b>

Note: N/A not applicable as no commercial course exists for the SQA unit  
N/O not offered as a commercial course

All costs based on Training costs for comparable vendor courses at a UK Wide Training Establishment. Prices listed in Brochure for July-December 2006

## Appendix 8: Networking Academy Program Activity in Scotland

**NETWORKING ACADEMY PROGRAM Activity in Scotland (June 2006)**

Universities	Paisley, Robert Gordon, Abertay, Napier, Caledonian	5
Training	LTS, Govan Initiative	2
Community	FWTC	1
School	Keith Grammar	1
Colleges	North Highland, Shetland, Inverness, Telford, Stevenson, Aberdeen, Cardonald, Central, Cumbernauld, Cldyebank, Dumfries, Perth, Nautical, Ayr, James Watt, Langside, Banff, Moray, Bell, Argyll, Adam Smith	21
Potential	Motherwell, Anniesland, Angus, Glasgow North, Dundee, South Lanarkshire, Stow,	7

Regional	Paisley, Robert Gordon, Napier, Caledonian, LTS, Govan Initiative, Adam Smith	7
Local	FWTC, Keith Grammar, North Highland, Shetland, Inverness, Telford, Stevenson, Aberdeen, Cardonald, Central, Cumbernauld, Cldyebank, Dumfries, Perth, Nautical, Ayr, James Watt, Langside, Banff, Moray, Bell, Argyll, Abertay	23
Potential	Motherwell, Anniesland, Angus, Glasgow North, Dundee, South Lanarkshire, Stow,	7

No potential Academy was contacted. The Diva Team thought this required further analysis possibly with interviewing key strategic management staff to determine the reasons why they chose not to become a member of the program.

## Appendix 9: Regional Academy Servicing

### **Regional Academy Servicing**

Regional	Locals
Abertay	0
Paisley	7
Robert Gordon	1
Napier	2
Caledonian	Did not respond
LTS	Did not respond
Govan Initiative	7
Adam Smith	Did not repsond

## Appendix 10: Enhancing Cisco Delivery in Rural Areas

## Enhancing Employability in Rural Areas

### **Problem:**

Geographical dispersal of candidates  
Candidates do not form a cohesive viable class size at any one location  
Candidates do not have access to equipment  
Candidates do not have experienced tutor support

### **Solution:**

Netlab remote access for CCNA course  
Blade Server Cluster for MOAC MCSA courses  
Online training material for A+  
Support offered via SMART Groups and MS Chat sessions with instructors  
Blended Learning model for delivery  
Incorporation into Schools in rural areas ITE 1 with equipment racks  
Moveable rack mounted equipment moved to schools for assessment purposes  
Small clusters of equipment in schools throughout rural areas.  
Intensive practical sessions one a month in schools/community centres for candidates  
Class size limited to 8-10 individuals  
Candidates forming clusters within 30miles of a school invited for instructor led courses once a month

### **Implementation:**

Three Centers established with equipment and staff to offer support to rural candidates. Each containing Netlab solutions, Blade Server cluster for MOAC delivery. Hiring of School class room for intensive hands on sessions.

# Appendix 11: Previous DIVA Activity

## **Win some additional equipment for your lab!!!!**

### **Complete SQA (DIVA) Cisco questionnaire**

Dear Cisco Academy instructor

As part of the agreement between Cisco and the SQA, the DIVA centres of excellence for Cisco in Scotland have been busy designing a questionnaire. This is aimed to be the most comprehensive review of the Cisco Networking Academy program in the country.

Since the Networking Academy program was rolled out to Scottish institutions in 1999 there has been little analysis of the effectiveness or impact this has had on education. The questionnaire will be used to contact **ALL** Academies and is aimed to provide the SQA and Cisco with details of the extent of uptake in Scotland, how it is delivered and whether other Cisco courses can be incorporated into new SQA qualifications.

**What is in it for you?** If you complete the questionnaire (from 29<sup>th</sup> May to 2<sup>nd</sup> June) your Academy will be entered into a draw for **two additional routers for your lab**. The DIVA Centres of Excellence have contacted each Academy by telephone prior to releasing the questionnaire in online and paper based format. It should take about half an hour to complete the questionnaire. We have included contact details for this project overleaf.

A full comprehensive report will be completed and is due for distribution in the Autumn. Preliminary results will be provided to Jane Lewis (Cisco Networking Academy UK and Ireland Program Manager) in mid June.

The Diva team will be following up the initial email contact during the week of 29<sup>th</sup> May to 2<sup>nd</sup> June to ensure Academies are aware of the survey and are participating in this useful event. If you feel there are any issues within the delivery of Cisco curriculum in Scotland we would be happy to discuss these with you, the contact details are overleaf. Our aim is to influence good practice in throughout the country.

We look forward to your involvement in this exciting project.

Yours sincerely,

The DIVA Centres of Excellence



Project 2006



## Online Questionnaire:

[computing.jameswatt.ac.uk/diva](http://computing.jameswatt.ac.uk/diva)

Further questions or postal questionnaires can be obtained or returned to either SQA DIVA Centre:

James Watt College  
Mr William McCabe  
James Watt College of Further & Higher Education  
Lauchlan Way  
Kilwinning  
KA13 6DE

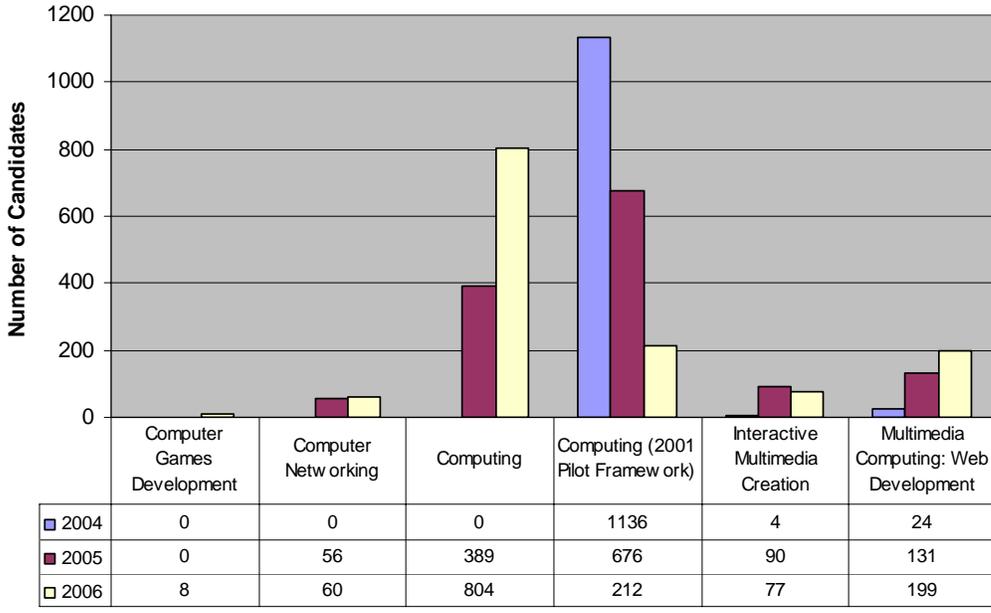
Tel: 01294 555336  
Email: [wmccabe@jameswatt.ac.uk](mailto:wmccabe@jameswatt.ac.uk)

Stevenson College Edinburgh  
Mr Michael W Smith  
Faculty of Business and Computing  
Stevenson College Edinburgh  
Bankhead Avenue  
Sighthill  
Edinburgh  
EH11 4DD

Tel: 0131 535 4600 x1353  
Email: [msmith@stevenson.ac.uk](mailto:msmith@stevenson.ac.uk)

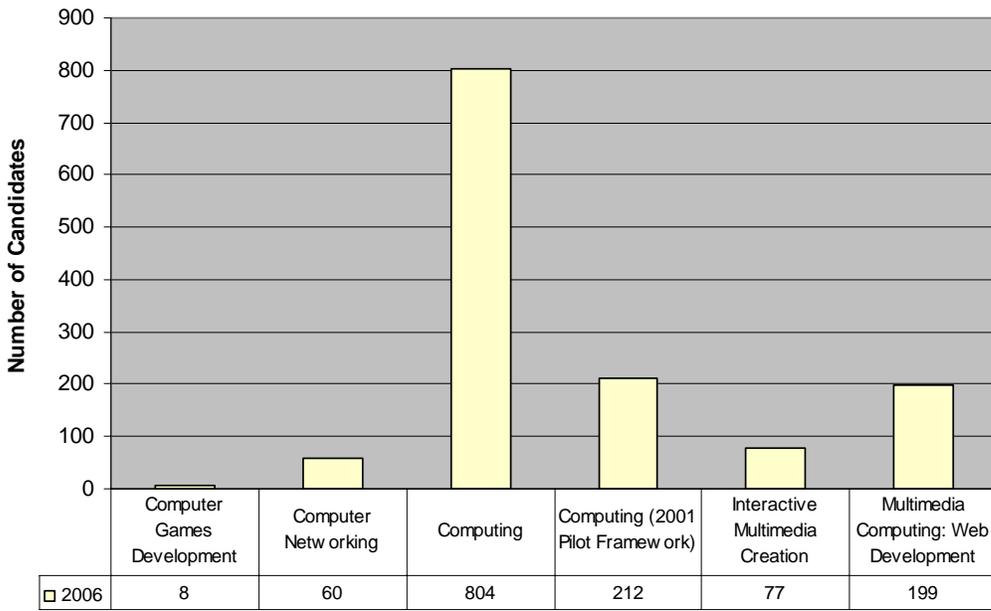
## Appendix 12: Popularity of HN Awards

**Popularity of HNC Awards over a 3 year period**



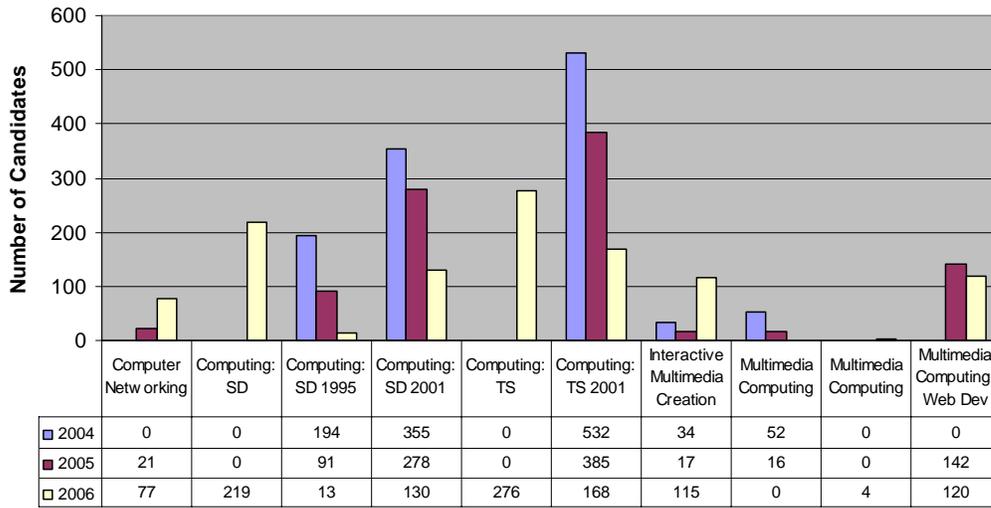
**Award**

**Popularity of HNC Awards 2006**

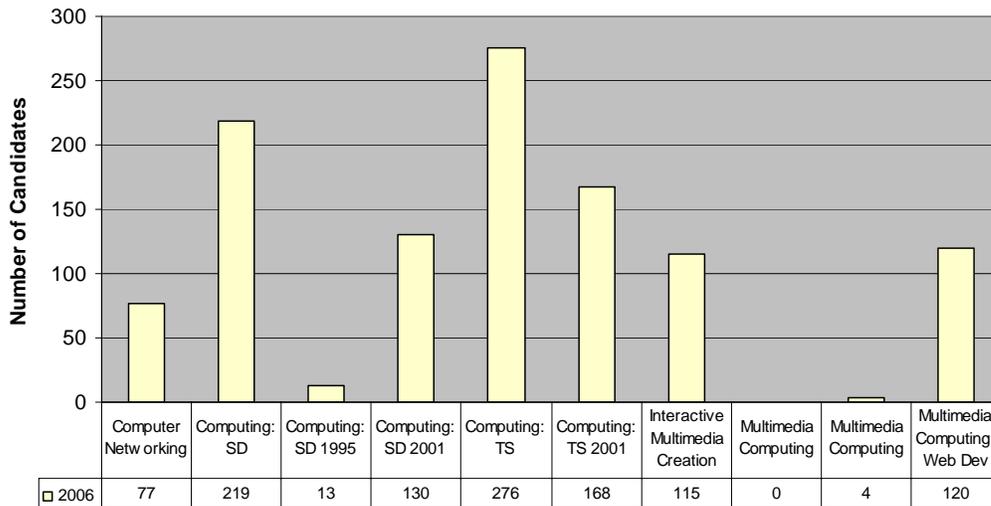


**Award**

**Popularity of HND Awards 2004-2006**



**Popularity of HND Awards 2006**



## Appendix 13: Suggested NC Units

## Outline of Content of NC Networking

- Purpose:** Provide an Introduction to Networking in as practical a manner as possible to engage the learners.
- Aim:** The course is designed to provide candidates as an introductory level networking programme with an emphasis on practical skills. These skills should allow candidates to build a simple network using TCP/IP in a Windows environment.
- Assessment:** Multiple choice test to assess underpinning theory and knowledge and observation of practical activities.
- Duration:** 2hours per week for 20 weeks
- Delivery:** The course is designed to be delivered 100% in person given the practical nature of the subject. It is envisaged this subject will be taught in conjunction with Introductory Hardware and Operating Systems. Together these three units provide candidates with the ability to perform basic PC maintenance, install an Operating System, create a network and perform simple network tasks such as sharing a printer and folders.
- Progression:** The course contains practical elements as an introduction to Cisco CCNA 1 and CompTIA Net+. The course also provides underpinning knowledge and skills for CompTIA A+ and MCDST elements.
- Admission:** Familiarity with MS-Windows

Week	Topic	Assessment
1	Concepts: Introduction to Networking	
2	Concepts: Networking Fundamentals	
3	Assessment	Lo1 Multiple Choice Test
4	Concepts: Media, Devices and Topology	
5	Practical: Electricity	
6	Practical: Making and Testing cables	
7	Practical: Installing a NIC	
8	Concepts: Segments and Devices	
9	Practical: Peer to Peer – X over cable	
10	Practical: Peer to Peer – Hubs	
11	Practical: Building a TCP/IP Network	
12	Assessment	Lo2 Practical Exercise
13	Concepts: Windows Network Features	
14	Practical: Printers and Folders	
15	Practical: Creating User Accounts	
16	Assessment	Lo3 Practical Exercise
17		Remediation
18		Remediation

# Appendix 13: Proposed HN Unit

## Outline of Content of HN VOIP

- Purpose:** To provide a basic introduction to VOIP
- Aim:** To enable candidates to configure Voice Telephony systems integrated into small to medium sized data networks.
- Assessment:** Multiple choice test to assess underpinning theory and knowledge and an end of unit practical skills test.
- Duration:** 4hours per week for 20 weeks
- Delivery:** It is recommended the bulk of the theoretical elements be contained within the first few weeks of the course. As there is no corresponding examination on the Cisco Academy Assessment server the exams is restricted to SQA assessment questions only. The emphasis in delivery is firmly upon practical sessions.
- Progression:** This unit forms part of an SQA Professional Development Award in Advanced Networking. Candidates can complete units in WLAN and Security to obtain this or undertake further study towards the VOIP certification.
- Admission:** Possession of CCNA or completion of NETWORKING ACADEMY PROGRAM CCNA 1-4

Week	Theory Elements	Assessment
1	Packet Voice Technologies	
2	Intro to VOIP	
3		
4	Call Manager Express	
5		
6	Voice Dial Plan	
7		
8	Configuring CME	
9		
10	VOIP Signalling and Control	
11		
12	Improving and Maintaining Voice Quality	
13		
14	Revision	
15	Revision	
16	End of Unit Test	Multiple Choice Test
17	Remediation	
18	Remediation	

## Practical Sessions

Week	Practical Sessions	Labs
1	Packet Voice Technologies	
2	Intro to VOIP	2.1.1a, 2.1.1b, 2.2.1
3		2.1.3, 2.1.4
4	Call Manager Express	3.1.1, 3.1.2, 3.1.3
5		
6	Voice Dial Plan	4.1.1, 4.1.2, 4.1.3
7		4.1.4, 4.1.5
8	Configuring CME	5.1.1, 5.1.2, 5.1.3
9		5.1.4, 5.1.5, 5.1.6
10		5.1.7, 5.1.8, 5.1.9
11	VOIP Signalling and Control	
12	Improving and Maintaining Voice Quality	7.1.1
13	Practice for Skills Test	
14	Practice for Skills Test	
15	Practice for Skills Test	
16	End of Unit Test	Skills Test
17	Remediation	
18	Remediation	

## Section G1 : Glossary

## Glossary

FE	Further education sector. Public funded education institutions offering a range of courses between school and university. Mainly NC, HNC and HND awards.
SQA	Scottish Qualifications Authority. The national examination awarding body for Scotland.
HNC	An award broadly equivalent to first year degree level containing a number of core mandatory units and options totaling 15 credits. In the context of the report HNC refers to awards in the Networking or Technical Support area.
HND	An award broadly equivalent to second year degree study. This is a two year program, the first year being HNC followed by study of mandatory core and options totaling 30 credits. In the context of the report HND refers to awards in the Networking or Technical Support areas.
HN	Higher National units. These may be offered as part of HNC or HND awards.
SQA Computer Support and Network Qualification Area	Refers to all awards at HNC or HND level in the curriculum areas of computing, technical support or networking.
CompTIA	An international organization producing exams for technicians in hardware, networking, internet and security. For further details visit <a href="http://www.comptia.org">www.comptia.org</a>
MCP	Microsoft Certified Professional Certification comprising a single exam SQA have mapped HN units to corresponding Microsoft courses. Credit transfer is available where candidates possess exam passes in the relevant Microsoft Exam and have completed an approved training program.
MCDST	Microsoft Certified Desktop Support Technician Certification comprising two exams designed around supporting a client desktop system. SQA have mapped HN units to corresponding Microsoft courses. Credit transfer is available where candidates possess exam passes in the relevant Microsoft Exam and have completed an approved training program.
MCSA	Microsoft Certified Systems Administrator. Certification comprising a client exam, server, network infrastructure and an option. SQA have mapped HN units to corresponding Microsoft courses. Credit transfer is available where candidates possess exam passes in the relevant Microsoft Exam and have completed an approved training program.

CCNA	Cisco Certified Networking Associate. Certification comprising INTRO (introductory networking and routing) and ICND (interconnecting Cisco Network devices together). SQA have mapped HN units to corresponding Cisco courses. Credit transfer is available where candidates possess relevant Cisco Exams and have completed an approved training program.
Cisco Networking Academy	An educational training program from Cisco for education establishments covering 4 elements, each being 80 hours. This was introduced in 1999 in Scotland and uses a combination of online curricula, continuous assessment exams, practicals and skills tests to assess candidates ability. Normally completion of the program for CCNA is 9 months, for CCNP it is 18 months.
CCNP	A Cisco certification more advanced than CCNA. Comprising four further 80 hour elements. In Scotland this often forms part of an M.Sc. degree program.
ITE1	IT Essentials 1. An 80 hour Cisco course equivalent to CompTIA A+ technician.
PANDUIT	A major manufacturer of structured cabling solutions. In the context of the report this refers to the Cabling and Data Network Infrastructure course offered as additional curricula to the Cisco Networking Academy Program.
VOIP	Voice Over IP. A new course offered by Cisco as additional curricula material to the Cisco Networking academy Program.
Regional Academy	Within the Cisco training model, Regional Academy instructors undertake training at the Cisco Authorised Training Centre for Europe Middle East and Africa. This is located in Birmingham. Regional Academy instructors provide local Academy instructor training and support to up to ten academies.
Local Academies	Offer training to candidates in a number of Networking Academy curricula. They are supported by Regional Academies.
Netlab Solutions	A remote access solution providing candidates access to Cisco equipment via a web interface. Equipment is provided in PODS which may be booked out for one hour at a time by candidates.

CCNA 1 and 2	The entry level Cisco Academy curricula each being 80 hours for Networking and Routing. SQA have created two double credit units mapping to this syllabus.
CCNA 3 and 4	The entry level Cisco Academy curricula each being 80 hours for Switching and Internetworking. SQA have created two double credit units mapping to this syllabus.
HNC/D Networking	HNC/D Computer Networking and Internet Technology. An award encompassing units corresponding to vendor programs for Microsoft, Cisco and CompTIA.
PDA	Professional Development Award provided by the SQA using units mapped to vendor certifications. Enables candidates undertaking vendor training programs within SQA centers to obtain recognition of their studies in addition to their professional certifications.
Scholar	A collection of educational resources on a virtual college platform for school, college and university courses.
ESF	European Social Fund providing financial support to projects aimed at reducing unemployment rates.
Cisco INTRO	The entry level Cisco Academy curricula each being 80 hours for Networking and Routing. SQA have created two double credit units mapping to this syllabus.
Cisco ICND	The entry level Cisco Academy curricula each being 80 hours for Switching and Internetworking. SQA have created two double credit units mapping to this syllabus.
Newer Universities	Former Colleges, Polytechnics or Technical Institutes who gained University status between after 1991.
Fee Waiver	Students in certain circumstances can apply to have all course fees waived. Usually this occurs under the 21 hour rule for candidates on benefits.
100% in person delivery	A delivery mechanism where candidates are required to attend for mini lectures, presentations, group exercises and practical sessions with a Cisco Certified Academic Instructor. Normally curriculum is available via the internet but all delivery is in a lab or classroom environment.
Remote delivery	A delivery mechanism where significant elements are delivered away from the Cisco Networking Academy via web and Netlab. This provided access to lab equipment, routers and switches, via internet for one hour periods. External moderation of exams and skills tests can be arranged.

BDL	Blended Distance Learning is a delivery mechanism where elements of a 100% in person delivery are provided via distance learning, remotely via internet or as a short intensive course with heavy reliance on self study supported by Cisco Academic Instructors via email, web or telephone. Often all theory elements and progress exams are undertaken via the web with candidates undertaking practical tests and examination in a supervised environment
CATC	Cisco Authorised Training Centre. A regional centre providing training for instructors in all Cisco Curriculum. Normally this provides all support and training to a theatre. For Europe Middle East and Africa the CATC is located in Birmingham.