



Review commissioned by the
Scottish Qualifications Authority (SQA)

Report to Stakeholders
March 2010

Undertaken by: Sero Consulting Ltd

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Executive Summary

The Scottish Qualifications Authority (SQA) set up the Digital media and ICT Vendor Alliance (DIVA) Programme in 2004 to expand and enrich Information and Communications Technology (ICT) and digital media qualifications in Scotland, in particular the Higher National qualifications, by fostering collaboration with the global ICT and digital media industry.

The aim of DIVA was to give Scottish learners access within mainstream curriculum to industry-led vocational qualifications aligned to the needs of the workplace, in order to support employability. A subsidiary aim was to benefit from the substantial investment by vendors in high-quality curriculum and associated resources for both teaching and learning.

By February 2007, 13 global industry vendors had been selected through a screening process which included an objective scoring system and a consultation process with SQA centres.

A Memorandum of Understanding and a Non Disclosure Agreement were developed as the basis for collaboration, covering objectives, expectations and approximate resource allocations. These instruments became models for subsequent projects in SQA.

For some of the vendors, a 'Lead Centre' was recruited, typically a College of Further Education, to act as a champion and 'cascade' DIVA products throughout the education sector in Scotland. The Lead Centres were recruited by an open tender process.

DIVA activities and benefits covered:

- Liaison with vendors giving early insight into up-and-coming developments
- Mapping of vendor curriculum and certifications to SQA units
- New qualification development
- Provision of expert training in Scotland for teachers and lecturers
- Opportunities for Scottish staff to attend key conferences
- Free or discounted industry curriculum materials for both learners and teaching staff
- Added value support and communications about vendor activities for teaching staff

SQA attracted international recognition for its partnership work in DIVA, culminating in a request by The World Economic Forum and UNESCO 'Partnerships for Education' initiative to feature in their database of world-leading examples of multi-stakeholder partnerships.

An evaluation exercise was commissioned in the summer of 2007 from BiGGAR Economics in order to learn lessons from the first three years and to inform decisions about the future management and operation of DIVA. It highlighted achievements as follows:

Outputs of the DIVA model are principally the significant number of qualifications that have been developed and/or enhanced by the partnerships – DIVA's performance in this respect has been extremely good. These include national certificates, higher national qualifications and professional development awards. Because of DIVA, Scottish learners now have access to national ICT qualifications that have been enriched by industry and are mapped to the standard prevalent among ICT industry leaders.

In October 2009, the SQA initiated a review of fresh opportunities for DIVA in terms of industry courseware and certifications. Specific objectives were to:

- Summarise current DIVA activities and plans
- Assess emerging opportunities with existing vendors
- Identify relevant opportunities with vendors outside the current DIVA framework
- Reflect on DIVA in the broader context of key technology trends and policy developments
- Outline a series of options for DIVA development encompassing vendor-related opportunities and new ways of working

The review was conducted within a short timescale from October 2009 to December 2009. The approach undertaken involved:

- Desk-based research – a review of industry, employer and policy developments
- Semi-structured interviews with several groups of DIVA stakeholders including:
 - SQA's Head of New Ventures and members of the Qualifications teams
 - DIVA vendor partners
 - DIVA Lead Centres
 - Vendors outside the DIVA programme
 - Colleges and universities who work with vendors but are not DIVA lead centres
- A survey of practitioners across Computing, Audio Visual and Engineering disciplines

The review started by assessing whether the DIVA approach still fitted with the vision and objectives set out in SQA's new Corporate Plan 2009-12. It found that DIVA primarily delivers against SQA's Strategic Goal 1 to: develop, deliver and maintain a portfolio of qualifications and services to support the needs and aspirations of Scotland and its people. The specific objectives of Strategic Goal 1 were examined and DIVA was found to contribute at a number of levels set out in the report.

Overall the review drew the following conclusions:

- There is still strong interest by both vendors and practitioners in the aims and objectives of the DIVA partnership
- The SQA initiative in this area delivers against key policy objectives in Scotland to increase the amount of high quality industry-led vocational qualifications
- There are a number of relevant and timely vendor opportunities in relation to industry trends that the DIVA programme could exploit
- A broader collaborative approach and more responsive communications would help to strengthen the DIVA partnership and address the challenges of keeping up to date with industry developments

These points are briefly expanded on below.

Vendor interviews indicated a positive response to the DIVA programme and its continued potential, whilst flagging up concerns about current lack of strategic dialogue on forward plans to enable greater mutual benefit on linking awards and developing progression opportunities.

Practitioner feedback showed that education providers continue to value incorporation of vendor courseware and awards into the curriculum to enhance their offer and help their students to gain

employment. Against this backdrop, the survey indicated a diverse range of views but a number of themes as follows:

- Practitioners do not think that links to the SQA units and awards should be left to vendors and individual learning providers and value the role of DIVA as a focus for collaboration
- A partnership of Lead Centres is preferred moving forward, as opposed to one Lead Centre per vendor relationship
- Mapping vendor awards to SQA awards is preferable to building vendor specific units
- Practitioners would like more timely award updates to reflect major vendor curriculum developments
- Mapping vendor awards to the SCQF and more APEL routes would be valuable
- The biggest barrier to expansion of vendor offerings in the curriculum is the cost of software/hardware and training – could DIVA help to address this issue?
- DIVA communications should support networking, peer interaction and roadshow events to raise awareness of vendor related opportunities

A review of key learning and skills policy in Scotland and the UK looked at whether DIVA is relevant and has a specific role to play in meeting policy objectives. It identified a good fit in a number of areas, notably:

Skills for Scotland – A Lifelong Skills Strategy, published in 2007, references the Scottish Government's commitment to the Lisbon Agenda and in particular the European Commission's e-Skills Strategy to grow highly skilled ICT practitioners and users in order to develop a more competitive ICT sector. Much of the strategy resonates with the principles that lie at the heart of the DIVA programme, in terms of high quality vocational learning opportunities that will better equip learners for employment.

Qualifying the Information Age, The Sector Qualifications and Learning Strategy for IT and Telecoms, published by e-Skills in 2008, affirms the value placed on vendor awards by employers and therefore the importance of formally recognising them in the awards system. Addressing this issue is one of the target areas for action in the e-skills Strategic Plan for Scotland 2009-2014, which emphasises development of qualifications and units that enable recognition of IT vendor awards within the SCQF. The DIVA partnership is referenced in the Strategic Plan as a contributor.

The Sector Skills Agreement for the Creative Media Industries Scotland Update 2008-11, published by Skillset, likewise emphasises accreditation of industry training and recognition through the SCQF. In the associated Sector Qualifications Strategy Action Plan for Scotland, Skillset states that it would like to explore with SQA the means of accrediting industry training programmes valued by the sector and credit rating them on the SCQF.

Digital Inspiration: Strategy for Scotland's Digital Media Industry, published by The Scottish Digital Media Industry Advisory Group, calls for greater ambition and highlights the importance of international partnerships and collaborative networks to fuel innovation. The DIVA alliance of global industry vendors and associated network has potential to support this step change in sector development, in collaboration with the Skillset Academies.

The HMLe Aspect Report on Computing, published in the autumn of 2009, covers vendor related awards in the IT and interactive media areas and comments favourably on SQA's collaboration with vendors through DIVA to add value to HN awards and benefit learners.

Creative Britain: New Talents for the New Economy, published February 2008, calls on industry and academia, 'to build ever-stronger links in the interests of bridging gaps in skills provision.' The DIVA alliance already embodies these links.

Digital Britain followed in 2009, along with the associated skills gap analysis by e-Skills and Skillset reported separately in: Digital Britain: creating the Skills for the Digital Economy. There is no explicit mention of vendor qualifications, but there is a strong emphasis on meeting industry requirements including reform of the school curriculum. The range of vendor-linked awards developed through DIVA includes some exciting developments in the school curriculum with potential for delivering new Curriculum for Excellence objectives.

The DBIS report New Industry, New Jobs, published in April 2009, specifically mentions technology as a driver that will determine skills investment. This corroborates the SQA DIVA strategy of collaborating with global vendors to benefit from their investment in new curriculum and certifications to support advances in technology.

Two options for DIVA developments came out of the policy review.

SCQF: The importance of mapping vendor offerings onto the SCQF is referenced in various key policy documents and was also supported by practitioners in both the survey and interviews as a step that would help to facilitate more vendor links.

Curriculum for Excellence (CfE): One priority of the current CfE review is to relate the school curriculum more closely to the world of work. Vendor curriculum not only addresses employer requirements but often includes broader-based projects related to the workplace. The DIVA programme embraces vendor courses and resources designed for school-age learners as well as teachers and could therefore help to enrich the CfE development.

Recent and emerging vendor opportunities for the next stage of DIVA development were identified in parallel with the policy review, through desk research, vendor interviews and discussion with education and training providers, taking account of:

- Courses linked to certifications
- Curriculum Resources
- CPD opportunities

A set of 12 industry trends was researched as a reference point for mapping and prioritising vendor developments. The list of trends was compiled by consolidating inputs from well-respected industry sources, working on the assumption that DIVA should not be concerned with speculative long-range developments but with clearly visible trends that are already entering the mainstream:

1. Business & IT Convergence (demand for business-oriented technologists and vice versa)
2. Sustainable Computing ('Green IT')
3. Security Monitoring and Analysis

4. Cloud Computing
5. Virtualisation
6. Advanced Analytics
7. Social Computing
8. Growth of Open Source Software (in the public sector and especially in Education)
9. Spread of OS approaches (free tools that allow learning & innovation in non-formal settings)
10. Mobile Apps
11. Cross-platform Content
12. Spread of Digital Media (across Business-to-Business and Public Services)

A simple framework was used to summarise different types of vendor opportunities (certificated courseware, curriculum resources or CPD) categorised against different sectors (schools, FE or HE) and mapped onto the 12 trends where possible. This was used to expose and prioritise the recent and emerging offerings of existing DIVA partners which could bring benefit to the Scottish education and training offer. A good range of relevant options were highlighted for consideration by the SQA's Qualification Managers in collaboration with education colleagues.

In addition, the list of 12 industry trends was used to identify requirements for additional alliances with vendors or industry bodies. A number of strong opportunities were identified for further exploration by SQA through the prescribed DIVA review and partnership process. Initial contact with some of the vendors indicated interest in joining the DIVA industry partnership.

Although not a mainstream industry trend as such, RFID (Radio-frequency identification) was also identified as a valuable niche option to explore with a national industry body.

The review exercise led to a set of 10 recommendations as follows:

1. Re-affirm and re-invigorate **the role of DIVA** as a strong vehicle for delivering SQA Corporate Business Plan 2009-2012 objectives and broader policy objectives.
2. Raise **the profile of DIVA** within SQA, in particular assign responsibility as an internal DIVA Champion to a senior level post within SQA with a cross-departmental remit.
3. Create a process for regular strategic level **dialogue with DIVA vendor partners**.
4. Review **the Lead Centre model** to encompass cross-sector and cross-regional Lead Centre Partnerships, leveraging the benefits of existing vendor/education sector relationships.
5. Expand **the range of DIVA partners** but review the **selection criteria** for which vendor developments to engage with, placing more emphasis on mapping to key industry trends and existing/predicted demand to ensure take up by learners and relevance to employers.
6. Focus on **mapping vendor certifications to awards** rather than creation of vendor specific units, but take into account good practice in relevant vendor developments when building new units.
7. Encourage vendors to submit their courseware and certifications for **SCQF credit rating**.
8. Explore how DIVA can help to deliver the objectives of the **Curriculum for Excellence** development work.
9. Address the sector requirements for stronger DIVA **communications, showcasing and peer-to-peer networking opportunities**.
10. Use greater **collaboration** to achieve DIVA goals and leverage the potential benefits of DIVA.

Introduction

Background

The Scottish Qualifications Authority (SQA) set up the Digital media and ICT Vendor Alliance (DIVA) Programme in 2004 to expand and enrich Information and Communications Technology (ICT) and digital media qualifications in Scotland, in particular the Higher National qualifications, by fostering collaboration with the global ICT and digital media industry. The aim of DIVA was to give Scottish learners access within mainstream curriculum to industry-led vocational qualifications aligned to the needs of the workplace, in order to support employability. A subsidiary aim was to benefit from the substantial investment by vendors in high-quality curriculum and associated resources for both teaching and learning.

By the end of 2005, seven vendors had been selected through a screening process which included an objective scoring system and a consultation process with SQA centres. By February 2007 this had expanded to 13 vendors, covering areas such as software development, networking, web authoring, 2D design, and film and music production. Engagement had by now been extended beyond the Computing and Audio Visual subject areas to encompass Engineering and also to include smaller vendors with potential to add value.

A Memorandum of Understanding and a Non Disclosure Agreement were developed as the basis for collaboration, covering objectives, expectations and approximate resource allocations. These instruments became models for subsequent projects in SQA.

For some of the vendors, a 'Lead Centre' was recruited, typically a College of Further Education, to act as a champion and 'cascade' DIVA products throughout the education sector in Scotland. The Lead Centres were recruited by an open tender process.

DIVA activities and benefits covered:

- Liaison with vendors giving early insight into up-and-coming developments
- Mapping of vendor curriculum and certifications to SQA units
- New qualification development
- Provision of expert training in Scotland for teachers and lecturers
- Opportunities for Scottish staff to attend key conferences
- Free or discounted industry curriculum materials for both learners and teaching staff
- Added value support and communications about vendor activities for teaching staff

SQA attracted international recognition for its partnership work in DIVA, including requests to speak at the Cisco Global Services Public Summit (December 2005) and the Microsoft Global Schools for the Future Conference (November 2006), culminating in a request by The World Economic Forum and UNESCO 'Partnerships for Education' initiative to feature in their database of world-leading examples of multi-stakeholder partnerships.

DIVA was resourced by financial, staff and in-kind contributions from SQA and from vendors. The programme was set up with consultancy support from 2004-2007 and then became part of the

SQA's mainstream activities. It is now managed by Qualification teams within SQA and continues to develop qualifications with mappings to vendor courses and certifications.

DIVA 2007 Evaluation

An evaluation exercise was commissioned in the summer of 2007 from BiGGAR Economics in order to learn lessons from the first three years and to inform decisions about the future management and operation of DIVA. It concluded that, overall:

...DIVA is a strong project which has contributed significantly to Scotland's portfolio of qualifications. From the perspective of some of its stakeholders, including commercial ICT vendors, DIVA is an example of "global best practice" in collaboration between the education sector and industry.

The report highlighted the significant financial value to Scottish education, in terms of vendor investment, by taking into account not only the specific financial contributions of vendors to the project, but also the value of their staff time and contributed courseware. On this basis, BiGGAR estimated that vendors had contributed £3.7m investment and pointed up the following outputs:

Outputs of the DIVA model are principally the significant number of qualifications that have been developed and/or enhanced by the partnerships – DIVA's performance in this respect has been extremely good. These include national certificates, higher national qualifications and professional development awards. Because of DIVA, Scottish learners now have access to national ICT qualifications that have been enriched by industry and are mapped to the standard prevalent among ICT industry leaders.

The report raised a number of issues to address but concluded that the project had delivered on its objectives and, in doing so,

DIVA has a good strategic fit with SQA's corporate objectives, set out in its Corporate and Business Plan 2007-2010. It also delivers on the objectives of the sector skills agreement for IT (e-Skills UK).

The evaluation made six Recommendations, abbreviated as follows:

1. There was a strong rationale for continued investment by SQA.
2. There should be strategic recognition within SQA of the benefits of the project, its potential to be transferred to other areas, in order to drive the project forward.
3. Project management for DIVA should be strengthened.
4. Weaknesses in communications should be addressed.
5. A number of options should be considered to improve the cascading of DIVA's products throughout the Scottish education sector.
6. A system of clear monitoring and reporting should be developed and implemented, so that DIVA's success could be measured and communicated.

Scope and Purpose of the Current Report

The current research, commissioned by SQA, focused on fresh opportunities for DIVA going forward, rather than repeating the 2007 evaluation exercise. In particular, it focused on recent and emerging industry courseware and certifications, but it also addressed the wider context in which DIVA now operates.

Specific objectives were to:

- Summarise current DIVA activities and plans
- Assess emerging opportunities with existing vendors
- Identify relevant opportunities with vendors outside the current DIVA framework
- Reflect on DIVA in the broader context of key technology trends and policy developments
- Outline a series of options for DIVA development encompassing vendor-related opportunities and new ways of working

Approach & Methodology

The review was conducted within a short timescale from October 2009 to December 2009. The approach undertaken involved:

- Desk-based research – a review of industry, employer and policy developments
- Semi-structured interviews with several groups of DIVA stakeholders including:
 - SQA's Head of New Ventures and members of the Qualifications teams
 - DIVA vendor partners
 - DIVA Lead Centres
 - Vendors outside the DIVA programme
 - Colleges and universities who work with vendors but are not DIVA lead centres
- A survey of practitioners

A list of sources used in the desk-based research is included at Appendix A.

A list of those consulted in interviews is included at Appendix B.

The practitioner survey format is included at Appendix C.

DIVA 2009 Update

Current Vendor Partnerships

The list of vendor links to SQA awards that have been achieved to date or are in progress can be seen at Appendix D. They include Adobe, Cisco, CompTIA, CIW (ComputerPREP), IBM, ITIL (APMG), Microsoft and Oracle. This indicates a good level of achievement, which was commented on favourably in the DIVA 2007 Evaluation and the more recent HMIE Aspect Report on Computing in Colleges published October 2009 (see Policy Section below).

Vendors continue to be positive about the DIVA programme and its ongoing potential, whilst flagging up areas that they feel could be improved to realise the full potential of the DIVA opportunity:

- Vendors who were contacted for the current consultation process all responded quickly and positively and registered their ongoing interest in being involved in DIVA because of the benefits identified in the 2007 Evaluation
- Some vendors re-affirmed their view that DIVA has been a global best practice model for industry/education engagement and one that is still unique
- A majority of those contacted indicated that they would welcome more regular and strategic level dialogue with SQA, in particular on forward plans to enable greater alignment of vendor and SQA units/awards and also on progression opportunities where vendor links have been established in existing SQA awards
- Some expressed recognition of the differences in the SQA award development processes by comparison with the flexibility of the private sector, but understood the need for rigour and public accountability
- In some cases, vendors were found to be working more actively with their industry-accredited champion(s) based in Scotland or with other institutions than their DIVA Lead Centres due to other cross-cutting arrangements

A DIVA SQA Computing meeting in November 2009 also raised the issue of how challenging it was to keep SQA awards and vendor developments in step, a point that was highlighted in the October 2009 HMIE Aspect Report on Computing as follows:

- *When either SQA or a vendor refreshes or updates a qualification, this can lead to mismatch between units of HNC and HND programmes on the one hand and vendor qualifications on the other. SQA has recognised this issue and has work in hand to bring its qualifications into line with vendor qualifications, where appropriate.*

The points above are picked up in the Recommendations section which calls for greater strategic dialogue with vendors and broader collaboration on ways to make it easier to recognise vendor offerings in the SQA awards system, whilst retaining appropriate standards.

Lead Centres

The current Lead Centres established for each vendor alliance are listed below. Some alliances did not have a Lead Centre appointed.

Vendor Partnership	Lead Centre
Adobe	Adam Smith College
Apple	Lapsed – to be reappointed
Autodesk	Motherwell College
Avid	Adam Smith College
Cisco	James Watt (& formerly Stevenson College)
CompTIA	Lapsed – to be reappointed
CIW (Computerprep)	University of West of Scotland
IBM	Not appointed
ITIL (APMG)	Not appointed
Microsoft	Cardonald College
Oracle	Not appointed – relied on the Academy network
PTC	Strathclyde University
Serif	Not appointed

As the original DIVA agreement frame of reference was three years, most if not all Lead Centre agreements need renewal.

The BiGGAR Economics Evaluation in 2007 raised a number of points about the effectiveness of some Lead Centre activity in ‘cascading’ of new qualifications to other colleges and to learners, noting that where the process was weaker,

...it is because of a lack of resources within the lead centre, or confusion about the role of the lead centre, vendor and SQA. In particular, there is a question from some partnerships about whether SQA should be directly involved in cascading the outputs of the programme to schools and colleges.

The Evaluation recommended:

- *using the memorandum of understanding model to provide resources to lead centres to undertake a clearly specified set of activities with regard to cascading; and*
- *developing a procedure for appointing lead centres which clearly communicates objectives, activities, outputs and performance measurement for the cascading process.*

The current consultation has raised similar issues. Conversations with vendors and Lead Centre representatives indicated that in some instances there is:

- Confusion over the role of the Lead Centre
- Lack of collaboration between Lead Centres and SQA
- Lack of resourcing of Lead centre activities and difficulties for particular staff in gaining allocated time for DIVA activities

- Issues of coverage in relation to sectors and geography
- Relationship between Lead Centres and existing informal or accredited vendor relationships with colleges, universities or individual champions

A survey to practitioners, mainly in the college sector, asked the question:

What do you think is the best model for working with vendors where 1 is "won't work" and 5 is "best model"?

A partnership of Lead Centres was the favoured model for moving forward, as opposed to leaving it to either colleges, vendors, or one Lead Centre.

It is therefore recommended that it may be more appropriate to have more than one Lead Centre for a vendor partnership, in which case:

- Existing vendor relationships or accreditations need to be factored in, e.g.
 - Accredited Training Centres
 - Academy Networks
 - Champions e.g. Adobe Education Lead, Apple Distinguished Educator
- In some cases, vendor offerings span sectors, covering schools or HEIs as well as colleges, therefore it may be appropriate to have a Lead Centre in each sector
- Geography can be an issue, making it difficult for one Lead Centre to cover the whole of Scotland, dependent on where the Lead Centre is located and where any existing vendor networks mentioned above are also located

Education Sector Commentary – Survey Results

An online survey was set up to gather wider feedback from sector practitioners. Invitations to respond were circulated to the SQA Computing, AV and Engineering contact lists focused primarily on colleges.

By close of year 2009, there were 38 responses from 19 colleges, two universities, one local authority and one school.

A copy of the survey format is included at Appendix D.

Some points of interest from the results are noted below, bearing in mind that most respondents were practitioners in computing-related subjects so the answers are biased in that direction.

Most important issues for incorporating vendor training into courses

- Highest scores – affordable vendor software/courses closely followed by timely availability of vendor updates and advance notice of vendor content changes
- Inclusion in SCQF was considered more important than embedding in SQA awards

Importance of incorporating more vendor certifications in Scottish qualifications

- Higher Nationals came out slightly ahead of PDAs

Main barriers to adopting and gaining uptake of vendor courses / awards

- Cost and the associated funding gap was by far and away the biggest issue – in respect of equipment, software, materials, examinations and training
- Staff training was also raised as an issue in its own right – opportunity to train, getting staff to commit, level of difficulty of vendor courseware and exams

Best model for working with vendors

- Strong response that leaving to vendors or individual colleges would not work
- Lead partnership of colleges scored highest

Best way to work with vendor courseware / certifications

- Highest score – map to existing SQA units
- Second highest score – map onto SCQF and use as prior accreditation (preferred over developing vendor specific units)

What should colleges gain from DIVA or similarly focused programmes and partnerships?

- Support from vendors and SQA – DIVA as a focus for support and collaboration
- Better deals on training and software/hardware (through volume negotiation on pricing)
- Communications including sharing best practice
- Leading to improved profile of courses and a better offer to students
- Ultimately leading to employability of students

Most important trends / requirements to be addressed in the development of SQA awards

- Keep awards up to date and relevant
- Reduce amount of content
- Offer more options and preserve a variety of vendor options in awards
- Build in vendor certification by achieving SQA qualifications
- Curriculum should focus on design rather than how to use the software
- Tackle the decline in programming uptake because the economy needs programming
- Ensure progression opportunities
- Reduce the assessment load on students and use online assessment
- Produce SQA exemplars for all units where vendor qualifications are embedded
- Address training of teaching/lecturing staff
- Meet the needs of local industry and businesses – noting convergence of job roles and skills, changing delivery platforms and new working practices
- Address industry trends such as:
 - Network Security
 - Mobile applications
 - Advanced web applications
 - Social media
 - Computer games
 - Virtual worlds
- Involve more Diva partners, in other areas (automotive, electronics, etc)

Critical factors in making DIVA a success

- Collaboration, with commitment and input from all partners – vendors, SQA and education
- Continued investment
- Communications – make sure there is a planning/delivery/feedback loop, including specific requests for:
 - Networking and peer interaction
 - DIVA road shows raising awareness of vendor related opportunities
- Timely award updates

SQA Awards and Development Plans

For information on current vendor links see Appendix D.

Forward plans in the Computing area include:

Award	Review/Build	Vendor Links
PC Passport	Teaching & Learning materials for new awards (e-learning)	Certiport Microsoft
HNC/D Networking	Overhaul existing award	Cisco CompTIA Microsoft
HNC/D Computing	Scope review for 2011/12	Cisco CompTIA ITIL Microsoft Oracle
HN unit revisions to map vendor awards	Maintain HN links with vendor quals	Various
Vendor PDAs	Develop new PDAs to match Adobe, CIW (5 awards)	Options to be agreed
CISCO	7 new HN units to match CISCO curriculum	

In addition:

Credit transfer arrangements have been put in place for CompTIA's new Strata award in IT Fundamentals to the seven SQA Units listed at SCQF Level 4 & 5 and now need communication to SQA centres.

CIW's Site Designer award is being mapped to the HND Interactive Media.

The Computing team intends to develop an updated DIVA roadmap to illustrate links and make clear credit transfer information.

Opportunities in the AV and Engineering areas require further discussion.

Wider Context

This section is specifically focused on aspects that are relevant to DIVA. It addresses three core questions:

- Which industry trends will impact on DIVA developments?
- Where does DIVA fit with the policy landscape?
- Where could DIVA help to realise key policy objectives?

Technology Trends

Arguably most ICT and digital media industry trends are relevant to DIVA as an industry-focused initiative; however, DIVA has to prioritise resourcing. This section therefore takes the stance that DIVA should not be concerned with speculative long-range developments but with clearly visible trends that are already entering the mainstream.

The following shortlist is the result of consolidating inputs from a number of well-respected industry sources including Gartner (as reported on Silicon.com), trade press, vendor bulletins, and the Sector Skills Council trend reports, in particular e-Skills UK's *The IT & Telecoms Insights 2008*, which is still the key source of intelligence on which e-Skills policy is based. See Appendix B for the full list of References.

Trend 1: Business & IT Convergence

Technologists and creatives need management, business process, communication and commercial skills to help grow these vital sectors of the economy; vice versa, those running businesses across all growth sectors need better understanding of IT and digital media.

There is also a growing emphasis on the need for Enterprise and Skills and Entrepreneurship integrated with the curriculum. The Scottish Government's Determined to Succeed programme is a world leading example of this approach.

Trend 2: Sustainable Computing

This has risen up the political agenda dramatically from 2008 onwards, with interest galvanised by both the climate change lobby and the need to make cuts in the recession. Courses are springing up aimed primarily at IT directors/managers.

Trend 3: Security Monitoring and Analysis

Enterprises are more aware than ever of the need to detect suspicious activities and keep up to speed with audit requirements.

Trend 4: Cloud Computing

A technology that allows users access to relatively inexpensive, remotely provided and hosted services, helping to cut costs and potentially allowing larger IT departments to act as cloud providers themselves, offering services to customers and partners.

Trend 5: Virtualisation

Server virtualisation is a growth area to meet environmental objectives, reduce operational costs and save datacenter space.

Trend 6: Advanced Analytics

Analytics such as simulation, prediction and optimisation are predicted to become popular as they help businesses to make better decisions

Trend 7: Social Computing

'Digital natives' will drive these networks into the mainstream as they enter the workforce and the economy accelerates.

Trend 8: Growth of Open Source Software (in the public sector and especially in Education)

Increased uptake is likely to be driven by public spending cuts and the perception that O/S is now more robust and enterprise-ready with established brands and support channels.

Trend 9: Spread of OS approaches (free tools that allow learning & innovation in non-formal settings)

The increased availability of free and/or inexpensive, intuitive tools is having a democratic impact on content production, enabling consumers to interact with and interpret professionally produced content and then create and share their own.

The spread of 'open source' approaches, in which many programmers contribute 'bottom up' to the development of software, is also encouraging innovation and unexpected breakthroughs.

Trend 10: Mobile Apps

Consumer-based products will become the preferred platform for doing business, e.g. mobile phones and remote email.

As high-end mobiles continue to see high adoption rates, the associated apps and app stores will become of increasing strategic importance.

Trend 11: Cross-platform Content

A by-product of technological convergence – new platforms, devices and channels and associated demand for more and different content, requires skills to create and distribute content across multiple platforms.

Trend 12: Spread of Digital Media (across Business-to-Business and Public Services)

Digital media technologies are increasingly used in a wide range of business-to-business markets and across different sectors of the economy, for example, 3D visualisation in healthcare and games simulations in military and police training.

Digital media has also transformed marketing – witness the development of new digital marketing courses.

Education & Policy Context

This section looks at the fit between DIVA objectives and wider policy objectives. Skills is a devolved matter, therefore most emphasis is placed on policy in Scotland with just a brief look at UK wide policy. The review of policy documents searched out references to industry-led or industry-endorsed education and training and specific references to vendor qualifications.

The aim was to identify whether DIVA, with its emphasis on industry-led qualifications, is more or less relevant in 2009 and whether DIVA therefore has a specific role to play in meeting policy objectives.

Government Skills Policy: The Leitch Review and Skills for Scotland

Current UK wide skills policy was framed in The Leitch Review published in 2006. The report was instrumental in recognising skills as a key driver for economic performance and the importance of the employer voice in determining public investment in education and training. Priority targets were set for literacy, numeracy and Level 2 and 3 Skills to ensure the UK moved up the global skills league table. Investment in higher level skills to support the 'knowledge economy' was seen as important but essentially the responsibility of employers. As a result, The Leitch Review has had far less impact on the highly skilled IT, Telecoms and Creative Industries.

The Scottish Government subsequently published its own strategy in September 2007, Skills for Scotland – A Lifelong Skills Strategy, in which underlying principles are broadly:

- A lifelong approach to skills from early years through to workplace learning
- The value of a sectoral approach to identifying and resolving skills needs and the role that SSCs play in this
- The centrality of the SCQF in supporting skills progression throughout individual careers

The strategy references the Scottish Government's commitment to the Lisbon Agenda and in particular the European Commission's e-Skills Strategy to grow highly skilled ICT practitioners and users in order to develop a more competitive ICT sector. Much of the strategy resonates with the principles that lie at the heart of the DIVA programme, in terms of high quality vocational learning opportunities that will better equip learners for employment. The strategy identifies what different partners need to do. SQA is asked to:

- *Involve employers in the development of qualifications through more active engagement with the Sector Skills Councils*
- *Work towards placing their qualifications in the SCQF and making links with other qualifications to open up opportunities for individuals*

Learning and Training Providers are asked to:

- *Consider themselves as part of one system geared towards helping people develop the skills they need, where articulation, integration and working with other providers are the norm*
- *Provide high quality, relevant, learning opportunities that have value in the workplace.*

Industry: Sector Skills Councils & Industry Bodies

The Sector Skills Councils that cover the information and communications technologies and digital media space are primarily e-Skills and Skillset, and to a lesser extent Creative and Cultural Skills. The Sector Skills Councils each have industry panels that provide market information. In addition, in Scotland there is a Digital Media Industry Advisory Group.

e-Skills UK, the Sector Skills Council for the IT and Telecoms Sectors

Qualifying the Information Age, The Sector Qualifications and Learning Strategy for IT and Telecoms, published in 2008, makes significant reference to vendor and industry awards. Background research showed that vendor/industry awards are far more likely to be held by IT and Telecoms professionals than IT-related academic or vocational awards – in fact, 60% of awards held by UK based IT/Telecoms professionals were found to be vendor/industry awards, with Microsoft Certified Systems Engineer/Professional (MCSE/MCP) most favoured. The report states,

Vendor awards are clearly highly valued by employers and also by employees as evidenced by the very high proportion of the workforce holding them...In addition lack of formal recognition of these awards means that their contribution to overall UK skills level is not fully taken into account.

The report includes quotes by vendors:

“It should be possible for all to accumulate credit for such learning progressively, in a way which is easily recognisable to all employers. It is old fashioned and elitist to exclude many vendor or work-based achievements from such recognition.” (Apple Computer UK)

“Vendor certifications are the current link to employers ...” (CompTIA)

Addressing this issue is one of the target areas for action in the SQLS:

e-skills UK to work to create and approve units and qualifications which enable formal recognition of vendor awards.

Notes: *vendor awards are already embedded in some awarding body qualifications as branded units however there is still a challenge to enable direct recognition.*

Following on from the SQLS, Creating the IT Nation: The Strategic Plan for Scotland 2009-2014, states:

The majority of the training that is undertaken by IT professionals is not recognised externally and does not lead to qualifications. Of the training that is recognised externally, the vast majority is for technical training leading to industry vendor qualifications, delivered by private training providers.

The plan therefore emphasises:

Continuing to contribute to the development of qualifications and units which enable recognition of IT vendor awards and employer training within the SCQF

It references DIVA as a partner in achieving the objectives of the plan and emphasises the importance of partnership working.

Skillset, the Sector Skills Council for Creative Media

Skillset covers: TV, film, radio, interactive media, animation, computer games, facilities, photo imaging and publishing.

In Scotland, Skillset has been highly involved in initiatives to rationalise qualifications, including revision of the SQA Higher National (HN) qualifications in relevant areas.

The Sector Skills Agreement for the Creative Media Industries Scotland Update 2008-11, emphasises the importance of industry-led curriculum:

We must ensure the voice of industry is clearly heard and influences qualifications and curriculum development throughout the compulsory education sector in Scotland, in line with the principles for curriculum design set out in Curriculum for Excellence.

In particular, under the Action 3 – Progression to work: Modern Apprenticeships & other work based learning, it states:

We will look closely at accreditation of industry training and its recognition through the SCQF by building stronger industry/education links.

It identifies as a key challenge:

developing relevant, industry endorsed, provision throughout the curriculum and for the workplace, public and private.

In the associated Sector Qualifications Strategy Action Plan for Scotland, Action 8.4.8 is Exploration of the accreditation of industry training programmes, which sets out:

Moving forward, Skillset will support dialogue between awarding organisations, qualification regulators and industry to ensure that there are opportunities for formal recognition of training programmes, where there is a clear need identified by industry...

Skillset will continue to strengthen partnerships between industry and Scottish stakeholders to support the development of, and access to, industry training. Skillset would like to explore with SQA the potential and the mechanisms for the accreditation of industry training programmes where accreditation is a skills solution sought by the sector, as well as the opportunity to credit industry training on the SCQF.

Creative & Cultural Skills, the Sector Skills Council for Advertising, Crafts, Cultural Heritage, Design, Music, Performing, Literary and Visual Arts

CCSkills published a Creative Blueprint for Scotland June 2008, a Sector Skills Agreement for the Creative and Cultural Industries in Scotland, which identified five key challenges including:

- Technical and specialist skills gaps
- Higher skills needed in business and enterprise

Again, the CCSkills SSA calls for qualification reform to prioritise industry needs:

There are many courses available, but people are unclear about what course to take and exactly what qualifications are needed to succeed. Qualification Reform will help to increase students' understanding, make sure that they have the right qualifications and that industry can get what it needs.

The Scottish Digital Media Industry Advisory Group

The Group, made up of representatives from successful digital media companies in Scotland, has published a strategy, [Digital Inspiration: Strategy for Scotland's Digital Media Industry](#), and an associated website www.digitalinspiration.org.uk. It endorses the academic offer in Scotland (both FE and HE) for offering industry focused vocational training, emphasises the need for more widespread partnership, and calls for greater ambition to enable...

...a step change in the performance, reputation and profile of Scotland's digital media industries to double in the industry in three years

The report highlights that collaborative networks and international partnerships are increasingly prevalent models across the global media industries and are closely aligned to changes in innovation models. This endorses the DIVA model of partnership with global vendors, taking account of the need to equip Scotland's learners with globally recognised skills.

Recommendations relevant to education and training are:

Emerging and pervasive technologies such as computer games and communications software development should be demonstrated within the curriculum, to equip young people with appropriate expertise and attract them to future vocations.

The economic value of the creative arts, especially technologically-mediated subjects, need greater promotion in curricular provision. The appropriate policy partnerships need to drive priorities to produce the practitioners of the future.

Skills Academies

Skills Academies, led by the SSCs, whether national or a network, are charged with developing better links between education and industry and, as such, are also drivers for industry-led training.

The National Skills Academy for IT led by e-Skills is about to launch in England. Plans to date suggest that it will be an on-line offering with regional hubs helping to facilitate a blended approach as well as local tailoring and marketing. In Scotland a 'Business School for IT' is referenced in the Strategic Plan for Scotland 2009-14. The National Skills Academy will primarily incorporate vendor qualifications and as such will help to promote and drive further the uptake of vendor qualifications.

Also relevant to this study are the Skillset Media Academies in Scotland. In 2006, the Scottish Funding Council (SFC) supported the establishment of Creative Loop, a partnership of six colleges in Scotland (Aberdeen, Adam Smith (Fife), Cardonald (Glasgow), Dundee, Perth, Reid Kerr (Paisley)) with Scottish Screen, Skillset and the SQA, with a view to developing better links, up-skilling staff and sharing resources. In 2007, this group of colleges became Scotland's first Skillset Media Skills

Academy. This has since been extended to include Edinburgh Napier University allied with Edinburgh College of Art, and University of Abertay Dundee.

The DIVA Lead Centre model should cross reference these developments.

Progression: Scottish Credit and Qualifications Framework (SCQF)

The SCQF is intended to help employers, learners and the general public to get a perspective on the full range of Scottish qualifications and understand how qualifications fit together and link to other forms of learning. The Framework describes courses and programmes that lead to qualifications, identifies progression options, and allows individuals to transfer credit points between qualifications to take advantage of existing achievements. As such it has the potential to be a key vehicle for showing how the offerings from vendors and other industry bodies fit within mainstream Scottish curriculum. At the moment, only Microsoft has credit rated some of its offerings.

The importance of mapping vendor offerings onto the SCQF is endorsed by the Scottish Government in its Skills for Scotland strategy, in which it calls for focus on:

Challenging employers, learning providers, awarding bodies and others to use the Scottish Credit and Qualifications Framework (SCQF) as a tool to support learning, specifically to facilitate the recognition of learning and for enabling individuals to move smoothly through learning environments, getting credit for learning they have already achieved.

It is also endorsed by both e-Skills and Skillset.

e-Skills states as a priority:

- *Continuing to contribute to the development of qualifications and units which enable recognition of IT vendor awards and employer training within the SCQF*

Skillset states:

- *We will look closely at accreditation of industry training and its recognition through the SCQF by building stronger industry/education links*
- *Skillset is keen to ensure that all qualifications in its footprint sit within the SCQF and sees the SCQF as the vehicle for realising the vision of the Skills Strategy in Scotland, Skills for Scotland.*

Schools: Curriculum for Excellence (CfE)

The curriculum in schools and colleges in Scotland is currently undergoing a major revision following the launch of Curriculum for Excellence, which will be fully implemented across Scotland in the academic year 2010-11. It aims to develop four capacities in young people so that they become:

- successful learners
- confident individuals
- responsible citizens
- effective contributors

A thorough going review of qualifications is underway to support CfE. New National Qualifications at Level 4 and 5 were announced in June 2009 to replace Standard Grade General and Credit, and

Intermediate 1 and 2 qualifications, offering more flexibility, more focus on skills and applied learning, and more scope for personalisation, with a view to progression onto other learning and employment. A Curricular Area Review Group (CARG) has already been set up for Technologies, which will cover curriculum related to ICT and digital media.

This curriculum and qualification review opens up opportunity to address the role of vendor curriculum in the school context. Given increased levels of digital literacy for many young people, curriculum that would previously have been applicable at undergraduate or professional level is now relevant. Moreover, the school curriculum is an area for concern in addressing the ongoing decline in applications for computing courses. Vendor curriculum can offer high quality learning opportunities related more closely to the world of work, with the potential for greater engagement. The DIVA case studies on use of the Adobe Digital Design materials at Islay High School and Braes High School illustrate this point.

The work-related and broader-based projects that are often part of vendor curriculum are also well suited to helping learners develop the four capacities identified above. Oracle, for example, has already mapped its ThinkQuest resources (learning projects on a collaborative Learning Environment) onto the four outcomes identified in CfE.

Colleges: HMIE Aspect Reports

HMIE has published two relevant reports in October 2009 on Computing and Creative Digital Industries. The Computing report comments specifically and favourably on SQA's collaboration with vendors through DIVA:

A significant feature of SQA HNC and HND provision is the incorporation of a number of qualifications linked to the training and qualifications products of a number of major computing organisations.

By agreeing with these organisations common elements of the content of HNC and HND courses, SQA has added significant value to its HNC and HND awards. Learners studying particular units in HNC or HND frameworks are deemed to have covered the content of an appropriate vendor qualification, or part of it, and are thereby able to access the vendor qualification assessments without further study. In many cases, there is also a significant cost saving to learners who do not have to pay separately for a course leading to assessment for a vendor qualification.

It also affirms vendor provision at HE level:

At HE level, learners achieve more widely through study for vendor qualifications and many attain qualifications that recognise this wider achievement. The possession of one or more of these vendor qualifications increases significantly the employability of learners and makes them very attractive to employers.

The report goes on to highlight one of the main challenges in working with vendor resources:

However, the product life cycles of SQA awards and vendor qualifications are not closely synchronised. When either SQA or a vendor refreshes or updates a qualification, this can lead to mismatch between units of HNC and HND programmes on the one hand and vendor

qualifications on the other. SQA has recognised this issue and has work in hand to bring its qualifications into line with vendor qualifications, where appropriate.

The Aspect Report on Creative Digital Industries covers programmes which use digital technology as a primary tool to realise creative concepts and comments positively about the achievements of Scotland's colleges in this respect.

Most learners at HND or advanced diploma level develop sufficient specialist and key employability skills and personal attributes to be able to progress externally to further learning or to enter employment.

There is no specific commentary on vendor qualifications, but the assumption is that these are covered in the Computing report which references Adobe and Avid for example.

The Knowledge Economy: Creative and Digital Britain

To conclude this section on policy, it is worth referencing some of the key reports that the UK government has issued on aspects of the knowledge economy as a whole.

Creative Britain: New Talents for the New Economy, was published in February 2008, affirming the economic importance to Britain of its Creative and Cultural Industries. Although the report does not reference vendor qualifications, it emphasises the importance of developing an unrivalled pool of creative talent and ensuring that there are people with the right skills to meet the needs of sector expansion. The report calls on industry and academia, 'to build ever-stronger links in the interests of bridging gaps in skills provision.'

Digital Britain followed in 2009, which primarily seeks to position the UK as a long-term leader in communications and to maximise the digital opportunities for citizens to take advantage of 21st Century technologies. The report identifies skills as a key issue:

The ability of Digital Britain to contribute its full potential to our future economic growth is critically dependent on having enough people with the right skills in the right place at the right time to develop and apply the new technologies.

One of the issues covered in the report is the importance of good quality, plural and relevant multi-platform content for children and young people. In the context of education and training, this is an area where IT and digital media vendors have something to contribute as they continue to make significant investment in curriculum innovation.

In conjunction with the Digital Britain report, e-Skills and Skillset were asked to do a joint analysis of skills gaps which they report on separately in: Digital Britain: creating the Skills for the Digital Economy. They point up the discrepancy in government policy emphasis on lower level skills and the higher level skills needs of the IT, Telecoms and Creative Industries. There is no explicit mention of vendor qualifications, but there is a strong emphasis on meeting industry requirements including reform of the school curriculum.

Lastly, the DBIS report New Industry, New Jobs, published in April 2009, places significant emphasis on skills as one of four priority areas for intervention and in particular references high level skills and creativity as well as the lack of low and intermediate level skills:

First, a continued focus on ensuring that our economy is driven by high levels of skills and creativity. Britain is, and will continue to be, an economy driven by the creation and exploitation of knowledge. Over the last fifteen years the contribution of high-technology manufacturing and knowledge-intensive services to UK gross value added has increased steadily to over 40%.⁷ For this reason, any constraint on the ability of UK-based businesses to exercise comparative advantage on the basis of high levels of skills or knowledge must be regarded as a serious impediment to the UK's economic success.

The report specifically mentions technology as a driver that will determine skills investment:

*Second, it will also be necessary to pay particular attention to **technological change** where this is reshaping industries and demanding high levels of innovation, skills and investment from those businesses who will ultimately lead in these markets.*

This corroborates the SQA DIVA strategy of collaborating with global vendors to gain early insight into technology drivers and develop industry-linked qualifications to give Scotland's employers competitive advantage in the fast expanding Creative and Digital economy.

Emerging Vendor Opportunities

A key part of the review was a scan of recent and emerging vendor developments across the IT & Telecoms and New Media spaces, looking not only at the new offerings of existing DIVA partners but also potential opportunities with vendors outside the current DIVA alliance.

Opportunities were identified through desk research, vendor interviews and discussion with education and training providers, taking account of:

- Courses linked to certifications
- Curriculum Resources
- Continuing Professional Development (CPD) opportunities

The 12 Technology Trends identified above were used as a reference point for mapping and prioritising vendor developments:

1. Business & IT Convergence (demand for business-oriented technologists and vice versa)
2. Sustainable Computing ('Green IT')
3. Security Monitoring and Analysis
4. Cloud Computing
5. Virtualisation
6. Advanced Analytics
7. Social Computing
8. Growth of Open Source Software (in the public sector and especially in Education)
9. Spread of OS approaches (free tools that allow learning & innovation in non-formal settings)
10. Mobile Apps
11. Cross-platform Content
12. Spread of Digital Media (across Business-to-Business and Public Services)

Although not a mainstream industry trend as such, RFID (Radio-frequency identification) was also added to the list as a valuable niche option to explore with a national industry body.

For each of the **existing DIVA vendor partners**, a simple framework was used to log and summarise the different types of opportunities available (certificated courseware, curriculum resources or CPD) including their relevance in each case to different sectors (schools, FE or HE) and to the 12 industry trends above. A section was included on the framework to identify potential benefits to the Scottish education and training sector; however, an estimate of market demand was omitted at this stage, recognising that quantitative data on uptake is difficult to obtain, as confirmed by the e-Skills Sector Qualification and Learning Strategy which states that:

...obtaining valid quantitative data relating to the take up of vendor/industry qualifications is extremely difficult. Primarily this is due to the commercially sensitive nature of this information, but even where vendors or industry bodies are prepared to share data, the extraction of country specific information is often hampered due to the multi-national nature of operations/recording systems and the use, by many of the vendors and industry bodies, of independent organisations to assess and certify their qualifications.

The opportunity review framework is shown below:

Vendor						
	Description of Resources	Sector Relevance			Mapped to Trend	Benefit/Notes
		Sch	FE	HE		
Courses linked to Certification	Courses/certifications that plug into key trends & reflect demand				12 industry trends	Why should SQA look at this in particular
Curriculum Resources	Resources that support courses/certifications					
CPD	Teacher/trainer resources or training events					
Notes:						

An initial summary has been completed for all of the existing and active DIVA vendor collaborations to expose headline opportunities; however, it is envisaged that the framework could provide a platform for ongoing analysis and that these basic summaries will be added into and refined further through more detailed discussion around renewal of agreements with DIVA vendor partners. The initial summaries exposed a number of opportunities for consideration by the SQA's Qualification Managers in collaboration with education colleagues, in addition to upgrading existing vendor-related units and awards.

Focusing on the 12 industry trends also exposed a number of opportunities **outside the existing DIVA partnership**. The review process has therefore recommended that SQA consider expanding the DIVA partnership and a shortlist of vendor options has been identified.

Any vendors outside the existing DIVA partnership would need to be qualified by the same process as the current DIVA vendors. The DIVA selection process covers:

- UK resourcing – *indication of the human and other resources within the vendor organisation, in the UK and globally, devoted to academic engagement*
- Engagement with UK education sector – *numbers of schools, colleges, universities, students*
- Key advocates – *in Scotland & UK*
- Academic Programme – *whether the vendor has a structured academic programme in place, whether operational in the UK, what kind of learning materials and academic pricing structure, motivation and success factors (NB If no Academic Programme, whether thinking of one, and interested in dialogue with SQA)*
- Engagement with other Awarding Bodies – *which ones for which areas*

See Appendix E for an overview of the DIVA vendor engagement process.

DIVA Objectives Revisited

Having found that there was still strong interest and opportunity in relation to DIVA and having established DIVA's relevance to skills policy in Scotland and the UK, the review turned to the original DIVA objectives to understand if there was still a good fit with SQA policy.

The original objectives of DIVA were:

- To provide Scottish learners with industry-enriched ICT vocational qualifications aligned to the needs of the workplace, with first-class curriculum support
- To incorporate high-quality support materials from industry partners into SQA qualifications
- To offer professional development opportunities for teachers and lecturers, to better equip them to introduce the new industry-enriched curriculum and awards to students.

These objectives were framed in the context of the SQA Corporate Plan which sets out SQA's vision and objectives for Scotland's education and training sector and for SQA as an organisation. Since DIVA was first set up in 2004, the Corporate Plan has been renewed. The review found that DIVA still fits with and contributes to the vision and objectives set out in the Corporate Plan 2009-12.

For example, it helps to deliver SQA's commitments to the Skills for Scotland strategic goals:

- To continue to develop a qualifications system that recognises a broader range of skills and achievements than at present
- To ensure that individuals receive appropriate credit for their achievements and see clear routes to other learning opportunities, creating More Choice, More Chances
- To having a learning and qualifications system that supports the needs for the individual and the needs of employers

SQA's strategic goals for 2009–12 commit SQA to working with partners across both the public and private sectors to identify more flexible and inclusive ways of recognising individuals' learning, skills and experience.

DIVA already delivers on SQA's Strategic Goal 1 to: develop, deliver and maintain a portfolio of qualifications and services to support the needs and aspirations of Scotland and its people. The specific objectives of Strategic Goal 1 are set out below, along with the ways in which DIVA either already contributes to achieving the objective, or has the potential to do so:

Strategic Goal 1: Objective	DIVA contribution
A1.1 Develop and execute Curriculum for Excellence and National Qualification Group Award implementation plans	Relevance of DIVA to school curriculum and goals of CfE – potential opportunity to contribute to the current qualification review exercise
A1.2 Review our approach to communication, stakeholder engagement and partnership working for qualifications development, including identifying appropriate areas for co-development, partnerships and in-house development	DIVA is an internationally recognised exemplar of multi-stakeholder partnership working

<p>A1.3 Refine and embed revised approach to qualifications development including:</p> <ul style="list-style-type: none"> • model for regular review and updating of qualifications • approach to analysis of labour market information, strategic review of sectors and market appraisal to prioritise developments • programme management including capacity planning and flexible deployment of resources 	<p>The DIVA model includes regular strategic review with vendors and education partners, use of industry foresight information to prioritise developments and shared planning of qualification development including factoring in vendor and education partner contributions</p>
<p>A1.4 Review existing qualifications, services and support to ensure that SQA's portfolio continues to meet stakeholder needs</p>	<p>DIVA includes sector consultation on uptake of specific vendor offerings and feedback on changing market requirements leading to review of additional vendor offerings</p>
<p>A1.5 Build our capacity for business development and customer relationship management to promote and sell our portfolio of qualifications</p>	<p>DIVA brings with it vendors' experience and expectation of strong communications and responsive customer service - potentially a useful prompt and challenge</p>
<p>A1.6 Review stakeholder engagement plan to increase awareness and understanding of the breadth of SQA's portfolio and expertise to increase our ability to contribute to and influence national policy</p>	<p>DIVA has contributed significant additional breadth and expertise to SQA's portfolio which should be reflected more strategically and systematically in SQA's stakeholder communications</p>
<p>A1.7 Identify new products, services and markets</p>	<p>DIVA has driven new qualifications development, offered new CPD services, and opened up additional market opportunities for clients</p>
<p>A1.8 Deliver timely and accurate certification for all qualifications ensuring appropriate business continuity arrangements are in place to minimise any potential disruption</p>	<p>DIVA has helped to support SQA's objective in this area</p>
<p>A1.9 Promote the benefits of a national qualifications framework for quality, efficiency and progression</p>	<p>DIVA has brought high quality vendor offerings into the national qualifications framework increasing cost-effective access for learners and offering better progression options to employment</p>

In the light of this strong linkage with the SQA Corporate Plan and the findings of the report more generally, the following recommendations for DIVA development were made.

Recommendations

1. Re-affirm and re-invigorate **the role of DIVA** as a strong vehicle for delivering SQA Corporate Business Plan 2009-2012 objectives and broader policy objectives.

In the light of increased emphasis in policy on industry-led education and training in order to provide Scotland's employers with the skills they need to thrive in the global digital economy, the strategic rationale to invest in the DIVA programme is stronger than ever. Key examples examined in this report include:

- Scottish Government: *Skills for Scotland, a Lifelong Skills Strategy*
- e-Skills and Skillset: *Digital Britain, Creating the Skills for the Digital Economy*
- e-Skills: *Creating the IT Nation Strategic Plan for Scotland 2009-2014*
- Skillset: *Sector Skills Agreement for the Creative Media Industries Scotland Update 2008-11*
- Scottish Digital Media Industry Advisory Group: *Digital Inspiration Report*

Demand for vendor resources and certifications remains high, as confirmed by education sector practitioners in the current consultation. They represent a key means for learners to differentiate themselves and acquire skills that they know employers will want. They also provide high quality resources that can enrich the curriculum and engage learners in school as well as college, when appropriately presented. This is particularly pertinent at a time when there is a continued decline in the number of people studying technology at school, college and university.

In the IT and Digital Professional context, the majority of recognised external training is for non-accredited vendor training and cost can often prohibit access for individuals or small companies. Mainstreaming incorporation of these certifications would better support the needs of industry, according to e-Skills and Skillset.

DIVA has already achieved vendor links across an impressive range of curriculum, including Adobe, Cisco, CompTIA, ComputerPREP (CIW), ITIL, Microsoft and Oracle. These achievements and the broader benefits delivered by DIVA for the education sector and Scotland's learners were highlighted in the DIVA 2007 Evaluation and more recently in the HMIE Aspect Report on Computing in Colleges published October 2009.

Building on this existing success, the re-invigorated role of DIVA within curriculum review will be important as part of a range of responses to address accessibility of skills required by employers and to enliven the curriculum. It will also help to ensure that SQA remains competitive in this fast-moving and heavily contested field by continuing to develop new qualifications.

2. Raise **the profile of DIVA** within SQA, in particular assign responsibility as an internal DIVA Champion to a senior level post within SQA with a cross-departmental remit.

When DIVA was launched in 2005, it was ground breaking and is still viewed by vendors as a global best practice example of industry and education collaboration. Now that it has moved

beyond a pilot exercise and there is evidence of more extensive potential, it would be timely to raise awareness both within SQA and beyond.

To this end, DIVA would benefit from a strategic champion within SQA able to liaise with senior level contacts in vendor and partner organisations as well as internally. It would also benefit from a requirement for regular reporting of DIVA developments at senior management level to help raise profile.

3. Create a process for regular strategic level **dialogue with DIVA vendor partners**

In the nature of the digital economy, it is driven by far reaching global technology trends as much as by foreseeable employer demand – which makes engagement with the technology industry an important factor in addressing forward planning.

Vendors consulted as part of the current exercise have expressed interest in more extensive dialogue on forward plans to enable greater alignment of vendor and SQA units/awards and also on progression opportunities where vendor links have been established.

This is particularly important from two perspectives:

- Greater dialogue would help vendors to gain a fuller understanding of the SQA awards development process
- Whilst there can be no vendor bias in SQA award development, discussion with vendors on award development could factor in useful expertise to be balanced alongside other inputs and could also gain valuable insights into technology trends

Strategic dialogue with vendors at national level is also likely to leverage more opportunities than any one institution could achieve, helping to address some of the barriers identified by the education sector to adopting and gaining uptake of vendor-based opportunities. In the education sector consultation, cost in respect of equipment, software, materials, examinations and training was stressed as the biggest barrier, but practitioners also highlighted the importance of other issues for uptake:

- Timely availability of vendor updates
- Advance notice of vendor content changes
- Vendor specific staff training

These are all issues where a co-ordinated policy of communication and negotiation through DIVA could facilitate some solutions for the Scottish education sector as a whole.

It is also worth noting that vendors contribute more than certification related courses. For example, vendors may make corporate social responsibility investments for education and citizens where global campaigns require national and regional engagement to harness appropriate advantage

4. Review **the Lead Centre model** to encompass cross-sector and cross-regional Lead Centre Partnerships, leveraging the benefits of existing vendor/education sector relationships

The consultation process highlighted that there is confusion in some cases over the role of DIVA Lead Centres and also issues of coverage for different parts of Scotland and different sectors. Some vendor partnerships have been without Lead Centres and in some cases Lead Centres have cut across existing vendor/education sector arrangements. It is a mark of the success of DIVA that more colleges and schools in Scotland are now working with vendors, which means that that there are more existing relationships to take into account.

However, the consultation also indicated a marked preference for a DIVA arrangement to cascade qualifications, materials and skills throughout the sector, with the majority of survey respondents supporting a Lead Centre partnership proposal.

If Lead Centre partnerships are taken forward, there needs to be a clearer set of expectations about objectives, activities, and outputs for the cascading process, working closely with SQA.

It is also clear from talking with vendors and those institutions or individual champions who are already actively working with vendors as part of accredited programmes that there needs to be a mechanism for factoring these existing relationships into any re-invigorated DIVA arrangements.

5. Expand **the range of DIVA partners** but review the **selection criteria** for which vendor developments to engage with, placing more emphasis on mapping to key industry trends and existing/predicted demand to ensure take up by learners and relevance to employers.

The 12 industry trends identified below are explained in more detail in the body of the report. They are used here as a basis for indicating where specific courseware is relevant or where embedding in existing Computing units (or units in other areas of the curriculum) may be applicable.

Trend	Discrete	Embed
1. Business & IT Convergence (demand for business-oriented technologists and vv)	Y	Y
2. Sustainable Computing	Y	Y
3. Security Monitoring and Analysis	Y	
4. Cloud Computing		Y
5. Virtualisation	Y	
6. Advanced Analytics	Y	
7. Social Computing	Y	Y
8. Growth of Open Source Software (in the public sector and especially in Education)	Y	Y
9. Spread of OS approaches (free tools that allow learning & innovation in non-formal settings)		
10. Mobile Apps		Y
11. Cross-platform Content	Y	Y
12. Spread of Digital Media (across Business-to-Business and Public Services)	Y	Y

This analysis has exposed a large number of opportunities for expanding collaboration with existing DIVA vendor partners as well as entering into discussions with other vendors currently outside the DIVA framework. These opportunities will require further qualification to focus on those that will yield the most benefit and uptake. It is likely that a broad range of opportunity will still present itself and, if this potential is to be exploited fully, it will require new approaches to vendor, education sector and awarding body collaboration.

6. Focus on **mapping vendor certifications** to SQA awards rather than creation of new vendor specific units, but take into account good practice in relevant vendor developments when building new units

The consultation survey indicated that there is still a strong appetite for mapping vendor materials to SQA awards and this is preferred over creation of new vendor specific awards.

This strategy does not overcome the underlying challenge of how to synchronise the product lifecycles of SQA awards with vendor developments which typically move much faster in line with technology changes. This puts pressure on SQA resources which are already stretched to fulfil the scale of the curriculum requirements in the IT and digital media areas. The current consultation was not asked to address this issue in particular and no 'magic bullet' has come to the fore in discussions. However, a better dialogue with vendors, relevant centres and other public sector partners could help to share the problem, bring fresh perspectives to bear, and potentially leverage greater investment (see Recommendation 10. Collaboration).

7. Encourage vendors to submit their courseware and certifications for **SCQF credit rating**

One way of bringing vendor offerings into mainstream education and benefiting learners is to ensure greater transparency of where they fit by mapping onto the SCQF. This was endorsed as an option in the sector consultation, scoring higher than building vendor specific SQA units. It would also make the mapping onto SQA units and awards easier.

Both e-Skills and Skillset endorse the SCQF route in their Strategies for Scotland, as does the Scottish Government's Skills for Scotland Strategy.

DIVA could be used as a vehicle to support vendors investing in credit rating their courseware and certifications, by highlighting the SCQF with vendors and providing them with relevant information on processes and options. A range of cost-effective and easily accessible routes to getting materials reviewed and credit rated will be important.

If vendor material is SCQF rated, it is recommended that SQA look at developing a mechanism for fast-tracking accreditation of such SCQF rated units within its framework. This could include input from Lead Centre partners.

8. Explore how DIVA can help to deliver the objectives of the **Curriculum for Excellence** development work

The Digital Britain report highlights the importance of good quality, plural and relevant multi-platform content for children and young people. Vendors have something to contribute in this space.

Vendor resources can provide the means of achieving the four key capacities required by Curriculum for Excellence – successful learners, confident individuals, responsible citizens, effective contributors.

A raft of qualification review and new qualification development is about to commence for both schools and colleges, informed by the work of the Curricular Area Review Group (CARG) for Technologies. This creates an opportunity to incorporate a review of where vendor resources could play a greater role, or are already used significantly to enhance the curriculum but are not recognised. DIVA could provide a useful focal point as a co-ordinator of vendor engagement, specifically providing input for the CARG on Technologies.

9. Address the sector requirements for stronger DIVA **communications, showcasing and peer-to-peer networking opportunities**

Communications is a recurrent theme in the sector feedback on expectations from DIVA. The BiGGAR Economics Evaluation identified that a lot more needed to be done to cascade DIVA outputs effectively to colleges and learners. It recommended that DIVA should become more structured in its communications, with regular meetings and updates with vendors and centres, along with periodic events to disseminate information and share best practice. The current sector consultation flagged up communication about vendor issues as part of the support that DIVA should deliver and one of its critical success factors. An issue for SQA is the cross-cutting nature of DIVA which therefore makes communication difficult and resource hungry.

The Computing Department has created an online DIVA forum using JIGLU and has facilitated a DIVA stakeholder meeting in November 2009. One of the outcomes of the meeting was to agree that an annual DIVA update meeting with all stakeholders across all departments would be useful. The DIVA website www.sqa.org.uk/diva will also be updated at the end of this exercise. The possibility of a social networking site such as a Ning to allow communities of interest around different vendor activities has already been suggested as an additional medium.

It is recommended that the role of DIVA communications be reviewed both from the point of view of ongoing resourcing as a cross-cutting function and also opportunities for collaboration within a co-ordinated framework – for example, providing content and facilitating events. However, a clear communications lead and an agreed plan for activities would be required to facilitate shared action. This leads onto the issue of collaboration.

10. Use greater **collaboration** to achieve DIVA goals and leverage the potential benefits of DIVA

Many of the challenges that DIVA is seeking to address in terms of industry-led learning opportunities and many of the issues that it raises cannot easily be resourced and solved by one body. It requires collaboration between vendors, education institutions and practitioners, education sector agencies and funding bodies, and SQA.

A number of reports, notably from the Sector Skills Councils, talk about a step change needed to address the requirements of both the IT and Digital sectors and also the Digital Skills needs of the economy as a whole.

DIVA achieved the basis of a step change in linking vendor courses and awards to mainstream education but there are many challenges to maintain and expand on those existing achievements. Some of the recommendations above address those issues, but there needs to be a wider conversation.

It is therefore recommended that mechanisms are put in place to foster greater collaboration across existing DIVA partners, namely vendors, Lead Centres and SQA, and also that there is consultation more broadly with education sector agencies and representative bodies to discuss the contribution of DIVA to Scottish education and to draw up a shared strategic action plan.

In this context, DIVA could become a key and a unique contributor to the broad-based industry, employer, and public sector partnership required to build a strong digital economy in Scotland.

Appendix A: List of References

- BiGGAR Economics, Evaluation of DIVA for SQA, September 2007
- Creative & Cultural Skills, Creative Blueprint for Scotland, June 2008
- DBIS, New Industry New Jobs, April 2009
- DCMS, BERR and DIUS, Creative Britain, New Talents for the New Economy, February 2008
- e-Skills UK, Creating the IT Nation, The Strategic Plan for Scotland 2009-2014
- e-Skills UK, IT & Telecoms Insights 2008: Trends and UK Skills Implications
- e-Skills UK, Qualifying for the Information Age, The Sector Qualifications and Learning Strategy for IT and Telecoms, April 2008
- e-Skills UK, Sector Qualification and Learning Strategy, April 2008
- e-Skills UK and Skillsset, Digital Britain, Creating the Skills for the Digital Economy, A summary of recommendations for action, 2009
- Global Knowledge and TechRepublic, IT Skills and Salary Report 2009
- HMIe on behalf of the Scottish Funding Council, A subject based aspect report on provision in Scotland's colleges, Creative Digital Industries, October 2009
- HMIe on behalf of the Scottish Funding Council, A subject based aspect report on provision in Scotland's colleges, Computing, October 2009
- HMIe and LTS Computing for Excellence Conference proceedings, June 2009
- Enders Analysis, Key trends and issues in UK media and telecoms to 2012 for the Interim Digital Britain Report, December 2008
- Scottish Digital Media Industry Advisory Group, Digital Inspiration Report: Strategy for Scotland's Digital Media Industry, 2009
- Scottish Screen, Moving Image Education in Scotland
- Skillset, Sector Skills Agreement for the Creative Media Industries Scotland, Update 2008-11
- SQA, Corporate Plan 2009-12
- Technology Strategy Board, Creative Industries, Technology Strategy 2009-2012
- Plus various industry websites and bulletins, notably:
- CompTIA Smart Brief
 - Silicon.com

Appendix B: List of Consultees

Below is a list of individuals and organisations that were consulted as part of the evaluation.

SQA

Joe Wilson – Head of New Ventures, SQA

Bobby Elliott – Qualifications Manager, Computing and IT, SQA

Caroline Douglas – Qualifications Officer, Computing and IT, SQA

Ann Boyd – Qualifications Manager, AV, SQA

Patt Robb – Qualifications Manager, Engineering, SQA

Vendors

Anuja Dharkar – Worldwide Education Manager, Curriculum and Professional Development, **Adobe**

Andrew Nagle – UK Education Team, **Apple**

Dr Jane Lewis – Cisco Network Academy Program Manager UK & Ireland, **Cisco**

Michelle Henderson – E2C Programme Manager, **CompTIA**

Marjorie Quigley – Regional Director EMEA/APAC, **ComputerPREP (CIW)**

Cally Beck – Power Systems Academic Initiative Program Manager, Northeast IOT and CEEMEA IOT, **IBM**

Jane Richardson – Senior Regional Development Manager, **Oracle**

Caroline Stuart – Scotland Director, **Oracle**

In addition preliminary discussions have been held with vendors who are not currently DIVA partners. These are not listed as they are confidential prior to agreement.

Lead Centres

James Bisset – Adam Smith College

Deryck Nutley – Cardonald College

Colin Maxwell – Carnegie College

Willie McCabe – James Watt College

Jim Crilly – Motherwell College

Patrick Afchain – University of West of Scotland

Graham Murdoch – Strathclyde University

SQA DIVA Survey 2009

Introduction

The SQA has commissioned a review of the Digital media & ICT Vendor Alliance (DIVA) programme with the aim of identifying and updating requirements and fresh opportunities relating to industry certifications and programmes in the IT, digital media and engineering sectors. The review is being undertaken by Sero Consulting, the consultancy team that worked with the SQA to establish the programme, and will take account of:

- The recommendations of the DIVA evaluation in 2007 by BIGGAR Economics
- Current Scottish awards and SQA development plans
- Recent and emerging industry developments
- Delivery and assessment trends in these sectors
- The perspectives of teaching and lecturing staff
- Wider stakeholder recommendations

Feedback from colleagues in the FE and schools sectors is an important part of the review. We would therefore be grateful for your support in completing this survey by close of play on Wednesday 16th December. We appreciate that your time is valuable so we have kept the survey short and to the point. There are 11 questions which should take no more than 15 minutes.

To contribute your views please click on the Next below.

Thank you.

1. About you

Your name

Who you work for

Your job title

Your work e-mail address

2. I would be willing to take part in a follow-up telephone interview or focus group

Yes/No

3a. Please tick the appropriate boxes to describe your usage of or views on vendor and industry body certifications:

	Adobe	Apple	Autodesk	AVID	Certiport	Cisco	CIW	CompTIA	IBM	MS Office	MS Professional	Oracle	PTC
Certification used in SQA Awards													
Courseware used in SQA Awards													
Certification used outside SQA Awards													
Courseware used outside SQA Awards													
Gaining in popularity													
Declining in popularity													
Considering for the future													

3b. Please describe any vendor or industry body certifications or content from learning providers that you are using NOT included in 3a.

[Insert Text]

3c. Please describe any vendor or industry body certifications or content from learning providers that you would consider for the future NOT included in 3a.

[Insert text]

4. What factors do you think are important in incorporating vendor training in your courses?

	Not Important	Low Importance	Neutral	Important	Very Important
Advance notice of vendor content changes					
Timely availability of vendor updates					
Affordable vendor software and courseware					
Vendor specific staff training					
Branding & marketing input for prospectus					
Inclusion in SCQF					
Embedding in specific SQA award					
Support channel for delivery (e.g. lead centre)					
Peer network for practitioners					

5. How important is it to incorporate more vendor certifications in Scottish qualifications?

	Not Important	Low Importance	Neutral	Important	Very Important
National Certificates – Schools					
National Certificates – Colleges					
Higher Nationals					
PDA's					

6. What are the main barriers to adopting & gaining uptake of vendor courses / awards?

[Insert Text]

7. What do you think is the best model for working with vendors where 1 is "won't work" and 5 is best model"?

	1	2	3	4	5
Leave it to the Vendors					
Colleges working independently					
Lead Centre for Scotland					
Lead partnership of colleges					
SQA Lead					

8. What is the best way to work with vendor courseware and certifications?

	Not Important	Low Importance	Neutral	Important	Very Important
Use vendor content to enrich the curriculum but no mapping					
Map to existing SQA units					
Develop vendor specific units within SQA awards					
Map onto the SCQF and use as prior accreditation					

9. What should colleges expect to gain from DIVA or similarly focused programmes and partnerships?

[Insert Text]

10. What are the most important trends or requirements to be addressed in the development of SQA awards in your area?

[Insert Text]

11. What do you think are the critical factors in making DIVA partnerships a success going forward?

[Insert Text]

Thank you for your time.

Your feedback will help to inform the DIVA refresh activity. Outcomes will be reported via the DIVA website which is currently under review.

Appendix D: DIVA 2009 Vendor Links

Vendor	Vendor Course	Specific SQA Group Award (If Applicable)	Optional within NC/HN Awards
Microsoft	Microsoft Certified Desktop Support Technician	PDA in Desktop Support at SCQF Level 7	HNC/D Computing HNC/D Information Technology HNC/D Computer Networking
	Microsoft Certified Systems Administrator	PDA in System Administration at SCQF Level 7	HNC/D Computing HNC/D Computer Networking
	Microsoft Certified Systems Engineer	PDA in Systems Engineering at SCQF Level 8	HNC/D Computer Networking
	Microsoft Visual Basic (MVB)	PDA Advanced Certificate in Software Development (Microsoft Visual Basic)	-
	Microsoft Office Specialist (MOS)	PDA Certificate in Office Applications (Microsoft Office)	HNC/D Computing
	Microsoft Windows 2000	PDA Advanced Certificate in Networking (Microsoft Windows 2000)	HNC/D Computer Networking
	-	NPA in Digital Literacy at SCQF Level 3	NC Digital Media Computing
CompTIA	A+ , Network+ & Server+	PDA in Computer Support at SCQF Level 7	HNC/D Computing HNC/D Computer Networking
Oracle Internet Academy	Oracle Internet Academy Program – Introduction to Computer Science and Business	PDA in Database Programming at SCQF Level 8	HNC/D Computing HNC/D Information Technology
Cisco Network Academy	Cisco Certified Network Associate (CCNA)	PDA in Network Technology at SCQF Level 8	HNC/D Computing HNC/D Information Technology HNC/D Computer Networking
ICTL	-	PDA in Applications of ICT in Libraries at SCQF Level 7	-
	-	PDA in Applications of ICT in Libraries at SCQF Level 8	-
ITIL	ITIL Foundation Exam	PDA in IT Service Management at SCQF Level 7	HNC/D Computing
Adobe	Adobe CS3 Suite	NPA in Web Design Fundamentals at SCQF Level 5	NC Digital Media Computing
Certified Internet Webmaster (CIW)	CIW Foundation	PDA in Web Technologies Fundamentals at SCQF Level 7	HNC/D Interactive Media
IBM	System I Operator	Stand Alone Unit in Production	TBC

Appendix E: DIVA Vendor Engagement and Selection Process

