SQA Advanced Unit specification: general information

Unit title: Providing Support to Users

Unit code: HR8H 47

Superclass:	CB
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Unit purpose

This Unit will present candidates with a range of issues and problems which influence the provision and operation of a user support service. It will provide an opportunity to gain expertise in researching, developing, operating and managing a user support service within an organisation. It is primarily intended for candidates who expect to follow careers in the provision of technical support in the IT departments of organisations. This Unit covers the issues and problems of organising and providing such a support service to users in an IT environment.

On completion of the Unit the candidate should be able to:

1   Describe the provision of support to users.
2   Determine the procedures, resources and organisational factors involved in operating a support service.
3   Review the records of user support provision.

Recommended prior knowledge and skills

Access to this Unit will be at the discretion of the centre, however it is recommended that candidates should have practical experience of applications software and user support gained by the achievement of appropriate National Units or through relevant work experience in a computing environment.

Credit points and level

1 SQA Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from National 1 to Doctorates.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes of this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

This Unit may, however, stand on its own as an introduction to the issues and problems to be considered when operating a user support service. It should be borne in mind that problems experienced by users are not confined to the technical and hardware aspects of the IT environment. Many of the requests for support involve problems with software which demand the skills of those with a software development background. The Unit should therefore be of interest to computing candidates on any computing programme.

Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Describe the provision of support to users.

Knowledge and/or Skills

♦ Types of user support requirements
♦ Sources of user support
♦ Methods of providing hardware support
♦ Methods of providing software support

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

♦ describe different types of support requested by users including hardware, software and operational needs.
♦ describe different sources of support available to users including manufacturers, suppliers, in-house and third party.
♦ describe different methods by which support can be provided:
   — For hardware — on-site, return to base and swap out.
   — For software — telephone, regular updates, on-site, web based such as on-line help desk, user forums, message boards, email, real time chat support and online user guides. Other forms of support may be available.
   — For both hardware and software — FAQs (Frequently Asked Questions).

Outcome 2

Determine the procedures, resources and organisational factors involved in operating a support service.

Knowledge and/or Skills

- Receiving and logging requests
- Prioritising requests
- Tracking and resolution
- Escalation
- Evaluation
- Reporting
- Maintaining Records – automated/manual
- Service Level agreements
- Online Support
- Call management
- Problem resolution
- Disaster Recovery

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can understand the following:

Human

How to use proper questioning techniques (asking questions effectively)
How to receive and log requests
How to prioritise requests
Tracking and resolution software
How to escalate requests
How to evaluate requests
Reporting and Maintaining records — automated/manual
The Support service structure — Levels of Support
How to estimate staffing levels
Staff training

Physical

Service Level Agreements
Journals and On-line support services
Internal and User communications
Telephone-related and call-management technologies
Problem resolution tools
The use of the Internet as a tool
Disaster recovery methods

Outcome 3

Review the records of user support provision.

Knowledge and/or Skills

- Analyse records of user support requests
- Identify instances of failure to meet the user's needs against service level agreements
- Identify current trends in user requests
- Make recommendations to improve the support service and reduce users needs for support

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- successfully complete and document at least one hardware based and one software based provided scenarios/case studies.

Unit specification: support notes

Unit title: Providing Support to Users

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

A large number of graduates of computing Group Awards find employment in the ever-growing area of user support, supporting any combination of the hardware, software and networking components of information systems. As the number of computer users, both in business and at home, is rapidly increasing, grounding in the issues, the problems and the procedures involved in the provision of support for users in order to sustain a successful IT environment, is highly desirable. Likewise, such skills should not be confined only to candidates undertaking a SQA Advanced Diploma in Computing: Technical Support. Graduates from both the SQA Advanced Diploma in Computing: Technical Support and the SQA Advanced Diploma in Computing: Software Development, as well as the SQA Advanced Certificate in Computing will benefit from undertaking this Unit, with an appreciation of some of the key issues involved in maintaining efficient and effective Information Systems in an organisation. With such skills they may easily and quickly find opportunities in this wide-ranging and rapidly expanding field, supporting the hardware environment, the software environment and also the operating systems and networking environments of the user, both in business as well as at home.

This Unit, therefore, is intended to support any of the SQA Advanced in Computing Group Awards, and also to prepare candidates for careers in the growing and popular area of providing support for users, by introducing the key issues and problems associated with setting up and operating such provision.

Consequently, candidates are introduced firstly to the basic problems facing users of computers, both hardware and software, and frequently encountered by user support professionals; secondly to the sources from which users may acquire support; and thirdly to the methods by which such support can be delivered to the user. Another factor in planning user support, which needs to be taken into account, is what happens in the event of a natural disaster. There needs to be preparation for a wide range of incidents, such as:

♦   Flooding
♦   Fire
♦   Network failure
♦   Major power failure
♦   Data loss or corruption
♦   Theft

Procedures to be followed in the above situations need to be established and practiced. It is particularly important to consider how the helpdesk copes with disasters if it is on the same site as the users. If the helpdesk is located across several locations it is far easier to plan because it would be extremely unlikely to have multiple sites simultaneously affected by the same disaster.

Candidates are then presented with a range of issues faced by a user support centre, firstly in terms of several of the key procedures involved in operating the service, and secondly a consideration of the resources to be taken into account, both human and physical. Good questioning techniques are an essential skill in user support which should be taken into account.

Asking the correct question will lead to a quicker resolution of the problem. There are many websites with information on this. Also college technicians are a good source of knowledge for this.

Finally, candidates will be asked to review and analyse a batch of typical 'logged calls' requesting help from the support staff, and identify various trends and patterns in both the problems recorded and the problem resolutions. Candidates will be asked to prepare a report on these points and also to make recommendations to senior management for improvements in the support service.

The Unit is also capable of standing on its own, outwith the context of an SQA Advanced Computing Group Award, as a stand-alone introduction to these specific issues and problems to be tackled in the provision of support to users.

Guidance on the delivery of this Unit

Since it is recommended that candidates have prior knowledge and experience of using computer systems and hardware/software concepts, and if it were intended to offer this Unit during the first year of an SQA Advanced Group Award, it would best be delivered near the end of the session. If, however, it is to be delivered in the second year of the programme of study, then the Unit may be scheduled at the discretion of the centre.

This Unit covers a range of identifiable and specific issues and problems involved in the provision of support for users. As such, several assessments, as opposed to a singular holistic approach, would be considered preferable for assessing the candidates' competence in the knowledge and understanding of these issues.

Guidance on the assessment of this Unit

Outcomes 1 and 2 will be assessed by a series of multiple-choice/multiple-response questions from the list in the knowledge and skills section, ie the different kinds of problems presented to providers of user support by a typical user, the range of sources to which a user may turn in order to obtain support, and finally, the range of methods by which support may be 'delivered' from the provider to the user.

A presentation from a senior member of staff in a support centre covering the topics presented in the Outcomes would also assist, allowing the candidates the opportunity to ask questions pertinent to the Outcomes. Candidates should also take along a 'check-list' of points to look out for, points to raise and questions to ask.

Since external visits can be very difficult to arrange at the best of times, and not all centres may be close to a user support service, such a visit is not listed in the Outcomes and as such is not mandatory for this Unit. However, a visit will certainly underpin the learning process so should be encouraged. Where there are no suitable visit locations within reasonable travelling distance, then, assuming that every Centre offering this Unit will probably have a support service of its own, the tutor may consider using this in-house service as a model.

As a minimum, a visit to the centre by a senior member of staff of a support centre (either internal or external) should be considered.

Likewise, candidates should be encouraged, where possible, to gain some experience of operating a support service. This could be achieved by working in tandem with a centre's support section, or where this is not feasible, then simulating the exercise within a centre's computing department. Call-logging software is also available for purchase. And where this is not possible, a range of call-logging software is also available for downloading from the Internet as either freeware or shareware. Use of internet sites which provide support should be used, there are many which provide online support. www.scan.co.uk which has various methods of support available and, http://www.providesupport.com/ which provides live chat software which can be trialled.

Such exercises will likewise underpin the candidate's understanding and appreciation of the need for suitable processes, procedures and documentation within any organisation.

Outcome 3 should be assessed by means of scenario based problems. Candidates should be issued with a scenario describing a typical business environment, and be asked to correctly document a solution to at least two user requests (one software and one hardware recommended). More can be used at the discretion of the centre.

Candidates may be introduced to the principles of ITIL http://www.itil-officialsite.com/ and be provided with an opportunity to research and discuss the framework in order to gain an awareness and overview of the ideology and the processes, which together constitute IT Service Management. Many experts and leading practitioners within the IT industry have contributed to the development of ITIL and the result is a framework that provides a best practice, common sense, structured approach to the essential processes involved.

ITIL was initially designed and developed in the 1980s but has recently been revised and updated to bring it in line with modern practices. Available best practice now comprises integrated guidance from the Office of Government Commerce (OCG) and the British Standards Institution (BSI). Its use is supported by a qualification and training structure that has been adopted to recognize professional competence in IT Service Management.

ITIL is the most widely used management approach to the delivery and support of IT services and infrastructure, worldwide. There is a plethora of information on ITIL available through the Internet. Also the National Occupational Standards should be looked at to gain more up to date information http://www.ukstandards.co.uk/Pages/index.aspx.

Assessment Guidelines

Outcomes 1 and 2

Assessment must be covered by an-end of-Unit 40 question multiple-choice/multiple-response question test.

The examples given below are indicative of the typical learning content and are not intended to form a prescriptive list for the purpose of assessment.

It is envisaged that at least 20 questions for assessment should arise from Outcome 1 and 2, and should sample from the Evidence Requirements for Outcomes 1 and 2. Some areas to mention are listed below. These are not mandatory and future technologies and legislation can be incorporated as the need arises.

The different types of support requested by users including hardware, software and operational needs:

♦ The different sources of support available to users including manufacturers, suppliers, in-house and third party.
♦ The different methods by which support can be provided:
♦ for hardware, on-site, return to base and swap out for software — telephone, regular updates, on-site, on-line (as listed above Outcome 1).
♦ Administrative procedures required to be implemented.
♦ Relevant documentation required to support these procedures.
♦ The human resources required with a typical structure.
♦ Physical resources required to assist the support technicians.

As a guide to the standards required, the assessment must incorporate, as a minimum, the following four sections.

1   **At least five** of the listed procedures must be included in the assessment questions. The five procedures must**,** however, include the most important procedures of 'Receiving and Logging Requests'.

2   **At least 3** questions about the requirements relating to the design of a form suitable for logging user requests for support

A suitable form, no larger than A4 size, can be designed as a **formative assessment** to help explain the content of the forms. As a guide to the information required on such a form, the candidate will be expected to include space to record the following detail items as a minimum:

♦ Call logging reference number
♦ Date and time call received
♦ Caller's name, department and return phone number
♦ (Geographical) location of problem (eg room, department, building)
♦ Brief description of problem
♦ Name of technician resolving the problem
♦ Description of problem resolution
♦ Date and time problem resolution completed

3   **Four Questions** relating to staffing levels required for the support service, the levels of support to be applied, and details of any qualifications and training required for the support staff must be sampled.

4   The last **eight questions** can be sampled from suitable physical resources and sources of help that must be prepared, and which are recommended as being of assistance to the support staff in executing their duties.

Outcome 3

The candidate must be assessed by the preparation of at least two scenarios/case studies covering hardware and software issues. Candidates will be issued with a scenario/case study describing a typical support service, its structure, staffing and contractual terms of service within the organisation, along with logged calls from the users requesting support over a period of time (a week, a month), and their resolution. Candidates will be required to analyse the records and answer identifying various trends and patterns in the requests and provision of user support, and also to make recommendations for improving the user support service. It is suggested that the candidate is assessed using at least one hardware and one software problem be shown in at least two scenarios.

Assessment is open-book; however the report/log should be prepared under supervised conditions in order that the assessor can assure the authenticity of each candidate's submission.

The candidate must be issued with a detailed description of a company's IT usage and the organisation of the existing support service. This should contain references to:

♦   Organisation size
♦   Brief description and quantities of hardware used
♦   A list of typical software used
♦   Number of users
♦   Hours of work of users
♦   The support service centre: — Number of staff
♦   Levels of support
♦   Hours of availability
♦   Procedures currently in place
♦   Hardware/software items actually supported

The candidate is required to study the scenario, review the logged calls, then prepare an answer for senior management, identifying the following points:

♦   Instances of failure to meet the user's request for support in terms of any four of the following:
    —   Period of availability
    —   Level of resolution
    —   Number of users
    —   Types of items to be supported
    —   Method of support delivery

At least **two** instances of failure must be identified for any **four** of the above. These instances should be supported by reference to the relevant logged calls.

♦ Instances of recurring trends or repeating requests for support, eg the same member(s) of staff, the same department, the same hardware involved, the same file handling problems, recurring logon difficulties, lost files, corrupt information, etc. At least **four** trends must be identified and supported by reference to the relevant logged calls.

♦ At least **four** recommendations to senior management, which if implemented, will result in an improvement in the efficiency and effectiveness of the support service provided, and/or result in a reduction in the user's need for support.

Online and Distance Learning

If this Unit is delivered by open or distance learning methods, additional planning and resources may be required for candidate support, assessment and quality assurance. A combination of new and traditional authentication tools may have to be devised for assessment and re-assessment purposes.

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003).*

Opportunities for developing Core Skills

This Unit would not normally develop Core Skills. This would be dependent on specific teaching and or assessment methods and as methods used on this Unit are not prescriptive this Unit could not guarantee inclusion of Core Skills

Equality and inclusion

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

History of changes to Unit

Version	Description of change	Date

FURTHER INFORMATION: Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our Centre Feedback Form.

General information for candidates

Unit title: Providing Support to Users

The continuing spread of large scale distributed and networked IT systems and an ever-increasing number of users have generated a rapidly growing demand for IT technicians who are equipped with the skills necessary to support and maintain this IT platform. The technical skills required, such as hardware/software installation, configuration and maintenance, along with the application of both, will be covered by a range of other Units in the SQA Advanced Qualifications in Computing. This Unit is designed to enable you to appreciate and deal with a range of key issues and problems which affect the organisation and provision of support for IT users. It is primarily intended to raise your awareness of the work of a support team and to prepare you for careers within this environment.

The Unit has three main areas.

Firstly, you will consider the requirements of a typical IT support service. This will include a range of the different types of problems which users experience, the various sources from which support may be received (both internal and external) and a range of methods by which support can be delivered to the user. You will consider a range of the key administrative procedures which should be implemented within a support centre in order for it to function and provide an efficient and effective support service.

The centre at its discretion may incorporate the ITIL Standards. ITIL® (IT Infrastructure Library) provides a framework of '***best practice'*** guidance for IT Service Management and is the most widely used and accepted approach to IT Service Management in the world. ITIL defines the processes rather than the procedures and therefore it is a flexible framework that can be adapted to fit any size of business.

You would consider the function of the service desk and its role in acting as a central point of contact between the IT user and IT Support service. The Service Desk is a function within the ITIL® framework, which provides a single, central point of contact for all Users of IT within an organisation, handling all Incidents, queries and requests. It provides an interface for all of the other Service Support processes.

Secondly, you will consider and research the key resources involved in the successful operation of an IT support centre. This will include both *human resources* — staffing levels, levels of support, staff training and also the *physical resources* available including journals, magazines, the internet and diagnostic tools.

Finally you will analyse a batch of support requests from users and report on any instances of failures to meet the users' needs along with recommendations to senior management on ways of improving the support service and reducing the users' need for support.

An awareness and understanding of these issues should enable you to become a more efficient and effective member of a support team within an organisation.

ITIL® is a registered trademark and a registered community trademark of the Office of Government Commerce (OGC) and is registered in the US Patent and Trademark Office.

There are three assessments for this Unit. You will be required to achieve a satisfactory level of performance in each of these assessments on order to achieve a pass for this Unit.

SQA Advanced Unit Specification

In Outcomes 1 and 2 you will undertake this assessment with closed-book conditions which will consist of 40 multiple-choice/multiple-response questions. These questions will cover aspects of support provision including a range of typical requests for support made by users, the sources of support to which users may turn for assistance and finally the range of methods by which support may be delivered to the user. This will also include reference to a range of key administrative systems, documentation and a strategy for staffing levels, structure and training. The range of physical resources available to the support staff will also require consideration.

A single assessment will cover Outcome 3. This will take the form of a case study where you will be issued with a scenario describing a typical organisation which has a widespread computerised IT platform. You will be asked to review a batch of 'logged calls', requests for help, analyse these and identify patterns and trends in the various problems and failures to meet the users' requests according to the terms of contract. You will cover these items and make recommendations to senior management for improvements in the service.