**Assignment title: 10.1**

**Assessment activity front sheet**

This front sheet must be completed by the learner where appropriate and included with work submitted for assessment.

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| Learner’s name: | | Assessor’s name: | |
| Date issued: | Completion date: | | Submitted on: |

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| **Reference** | **Assessment criteria** | | **Achieved** | **Evidence** | **Comments/feedback**  **from assessor** | |
| **P1** | explain how networks communicate | | Yes/No | Presentation or slides and notes |  | |
| **P2** | identify communication protocols and models | | Yes /No | Presentation or slides and notes |  | |
| **P4** | describe what data elements are and why they are important | |  | Presentation or slides and notes |  | |
| **M1** | explain why communication protocols are important | | Yes/No | Computer based leaflet with explanation or observation record |  | |
| **M2** | explain why particular transmission methods are chosen in particular situations | | Yes/No | Computer based leaflet with explanation or observation record |  | |
| **Learner’s comments:** | | | | | | |
| **Learner’s signature:** | | | | | | **Date:** |
| **Assessor’s name and signature:** | | | | | | **Date:** |
| **Assessor’s general comments:** | | | | | | |
| **Internal verifier’s comments on assessment:** | | | | | | |
| **Name:** | | **Signature:** | | | | **Date:** |

**Assignment 10.1 — Media road show**

***Scenario***

The company you work for supplies communications equipment to a wide range of companies that run in-house networks. As a member of the marketing team you are involved with the development of a media road show to attract new sales. Your initial role is to draft an introductory presentation giving an overview of the communication systems available from your organisation. The main focus of this project is the different systems that can be used to connect separate sites together and the most suitable media needed to complete safe and accurate data transfer.

*The situations to be addressed are given below:*

• Methods of linking sites together making reference to transmission speed and the associated costs

• Point-to-point linking (IrDA, cable and satellite)

• Remote access to the network

• All of the recommended linking methods may need to be in place at the same time

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| Your senior engineer has asked you to include the following:  **Task 1** Communication systems - produce a presentation   1. Create a Presentation of the different typical communication devices that are available to link independent sites including an explanation why they are needed and an approximate cost of these devices. Then, describe what technologies they use to communicate **(P1)** 2. Add to this presentation information that identifies communication protocols and models that are used by current communications equipment (eg HTTP, HTTPS, FTP, SMTP; uniform resource locator; worldwide web; other; eg blogs, email, wikis, video conferencing, vlogs) and packet movements **(P2)** 3. In order to clarify some IT jargon describe what data elements are and why they are important **(P4)**   **Task 2** System selection - produce an accompanying leaflet/report   1. In P2 you described what communication protocols are now expand on this by explaining why they are important **(M1)** 2. In P1 you identified the client has two separate sites and they need specific communication media (mobile and static) to interconnect to the two main networks. Write a description of the communication methods and transmission media you are suggesting as the most suited to their needs with an explanation for your recommendations **(M2)** |

**Assignment title: 10.2**

**Assessment activity front sheet**

This front sheet must be completed by the learner where appropriate and included with work submitted for assessment.

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| Learner’s name: | | Assessor’s name: | |
| Date issued: | Completion date: | | Submitted on: |

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| **Reference** | **Assessment criteria** | | **Achieved** | **Evidence** | **Comments/feedback**  **from assessor** | |
| **P5** | describe the principles of signal theory | | Yes/No | Word Processed report |  | |
| **P6** | describe different transmission methods used | | Yes/No | Word Processed report |  | |
| **M3** | assess the effectiveness of data transfer over wired and wireless networks | | Yes/No | Word Processed report |  | |
| **D2** | compare the effectiveness of different transmission methods | | Yes/No | Word Processed report |  | |
| **Learner’s comments:** | | | | | | |
| **Learner’s signature:** | | | | | | **Date:** |
| **Assessor’s name and signature:** | | | | | | **Date:** |
| **Assessor’s general comments:** | | | | | | |
| **Internal verifier’s comments on assessment:** | | | | | | |
| **Name:** | | **Signature:** | | | | **Date:** |

**Assignment 10.2**

***Scenario***

There is also a wide range of underpinning theory that needs to be understood you need to address this in a report so that potential clients and technicians accept your expertise in this field.

You have been asked to explain in a Report all the advantages and problems that networking will create. An example of support problems user’s face is knowing how printers and wireless peripheral devices are connected to networks and how staff can carry out this connection independent of technical assistance. There is also a need to control who can access networks and how these controls are regulated. You need to pay particular attention to the fact that when mobile access is provided specific security controls will need to be in place.

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| ***Task***   1. In a report describe the underlying principles of signal theory **(P5)** 2. You have been working towards the marketing of your range of communications equipment. Describe the different functions and transmission methods used by the products you have already discussed. These methods might include: cabling - coaxial, optical fibre, unshielded twisted pair (UTP), shielded twisted pair (STP). Signalling technology including: infrared, radio, microwave, satellite **(P6)** 3. It has been suggested that the company only needs wireless networking so you need to evaluate its effectiveness by researching the various advantages and limitations of both wired and wireless networks in order to assess the effectiveness of data transfer, describing the problems that can limit each system thereby addressing the concerns of your client **(M3)** 4. You have identified in P1 specific media needed and fully described each of the media in M2 now compare the effectiveness of these different transmission methods, statistical data may be required to support your arguments **(D2)** |

**Assignment title: 10.3**

**Assessment activity front sheet**

This front sheet must be completed by the learner where appropriate and included with work submitted for assessment.

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| Learner’s name: | | Assessor’s name: | |
| Date issued: | Completion date: | | Submitted on: |

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| **Reference** | **Assessment criteria** | | **Achieved** | **Evidence** | **Comments/feedback**  **from assessor** |
| **P3** | identify different types of communication devices | | Yes/No | Word Processed report |  |
| **P7** | create direct network communication between two users | | Yes/No | Word Processed report |  |
| **P8** | set up interconnection devices for direct communication | | Yes/No | Word Processed report |  |
| **D1** | compare the OSI seven layer model and the TCP/IP model | | Yes/No | Word Processed report |  |
| **Learner’s comments:** | | | | | |
| **Learner’s signature:** | | | | | **Date:** |
| **Assessor’s name and signature:** | | | | | **Date:** |
| **Assessor’s general comments:** | | | | | |
| **Internal verifier’s comments on assessment:** | | | | | |
| **Name:** | | **Signature:** | | | **Date:** |

**Assignment 10.3**

***Scenario***

As a member of the market team you need to produce instructions for your client’s staff as they are not provided with significant on-site technical support. To address this create a comprehensive guide to help them better understand how networks work from both theoretical and practical aspects.

As there will be a high usage of the Internet, staff is expected to know how it functions and what equipment is best suited for the company to have a high level of access. The OSI seven layer model and the TCP/IP 5 layer models are also seen to be fundamental to data transfer across the Internet so an understanding of the role they play is advised for staff.

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| **Task**  Assuming the Internet is used by company staff you will need to inform them how it functions describing both the hardware and software elements involved as well as provide a list with full specifications for the components needed for a fast and safe connection. Then you need to create direct network communication between two users using the network you created in the previous task so two users can interact using a variety of media such as social networking and video (P7).  To help understanding of some of the practical aspects involved you should provide evidence (screen prints and photographs as directed by your tutor) of how to create direct network communication between two users (P7)  Then also provide evidence (screen prints and photographs as directed by your tutor) how to set up interconnection devices for direct communication (P8)  Write a report that informs staff how networks function which includes information on comparing the OSI-7 and 5 layers models (D1) |

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| **Grading Criteria**  In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all of the learning outcomes for the unit. The criteria for a pass grade describe the level of achievement required to pass this unit. | | |
| **To achieve a pass grade the evidence must show that the learner is able to**: | **To achieve a merit grade the evidence must show that**, **in addition to the pass criteria**, **the learner is able to**: | **To achieve a distinction grade the evidence must show that**, **in addition to the pass and merit criteria**, **the learner is able to**: |
| **P1** explain how networks communicate  **P2** identify communication protocols and models  **P3** identify different types of communication devices  **P4** describe what data elements are and why they are important  **P5** describe the principles of signal theory  **P6** describe different transmission methods used  **P7** create direct network communication between two users  **P8** set up interconnection devices for direct communication | **M1** explain why communication protocols are important  **M2** explain why particular transmission methods are chosen in particular situations  **M3** assess the effectiveness of data transfer over wired and wireless networks. | **D1** compare the OSI seven layer model and the TCP/IP model  **D2** compare the effectiveness of different transmission methods |