COM7003

Technology & Trend Monitoring

<u>Assignment</u>

Date for Submission: Please refer to the timetable on ilearn

(The submission portal on ilearn will close at 14:00 UK time on the date of submission)

Assignment Brief

As part of the formal assessment for the programme you are required to submit a **Technology and Trend Monitoring** assignment. Please refer to your Student Handbook for full details of the programme assessment scheme and general information on preparing and submitting assignments.

Learning Outcomes:

After completing the module, you should be able to:

1)   Critically evaluate the emerging technological trends and identify potential challenges and open areas of research.

2)   Analyse the impact of the existing and emerging technologies on future trends in the above areas.

3)   Critically review the existing literature and form an independent opinion.

4)   Demonstrate the ability to conduct independent research and synthesize literature from wide array of sources.

5)   Acquire a technical understanding of the emerging technological advancements covering IT systems, Communication technologies and Cyber-Security.

6)   Demonstrate clear understanding of technological advancement and suggest solution approaches to existing challenges.

Guidance

Your assignment should include: a title page containing your student number, the module name, the submission deadline and the exact word count of your submitted document; the appendices if relevant; and a reference list in AU Harvard systems. You should address all the elements of the assignment task listed below. Please note that tutors will use the assessment criteria set out below in assessing your work.

You must not include your name in your submission because Arden University operates anonymous marking, which means that markers should not be aware of the identity of the student. However, please do not forget to include your STU number.

Maximum word count: 5,000 words

Please refer to the full word count policy which can be found in the Student Policies section here: Arden University | Regulatory Framework

Please note the following:

Students are required to indicate the exact word count on the title page of the assessment*.*

The word count includes everything in the main body of the assessment (including in text citations and references). The word count excludes *numerical data in tables, figures, diagrams, footnotes, reference list and appendices. ALL other printed words ARE included in the word count.*

Please note that exceeding the word count by over 10% will result in a 10-percentage point deduction*.*

Assignment Task

There has been rapid advancement in technology during the past decade. Communication technologies have evolved from wired to wireless, and with 5G, the mobile data speeds will match broadband-like speeds. Computing devices and their capabilities have evolved to the current smart phones with the CPU and memory to match desktop computers. In addition, smartphones have various sensors such as ambient sensors, gyroscope, accelerometer, cameras, microphones etc that have resulted in many innovative applications and technologies. Similarly, there has been rapid advancement in embedded devices and sensor technologies that enable bridging of the virtual world with the real physical world.

In this context, you are expected to write an industry-style report on the following current and emerging technologies that is enabling the connected future. The report should address the following questions:

1) Critically evaluate the emerging trends relating to mobile and wireless technologies within Information Technology landscape. Your discussion should particularly address the Mobile Edge Computing as an emerging technology, the technical features, service offerings etc. You are expected to discuss how it will impact the IT landscape as it exists today.

(20 marks)
(LOs 1, 3 & 4)

2) In the same context as the previous question, critically review the Big Data technologies and challenges associated with it. Your answer should discuss how Big data impacts the existing Information systems.

(20 marks)
(LOs 2 & 4)

3) The emergence of many short-range communication technologies such as NFC and ZigBee have enabled many innovative applications. In this context, describe the technologies enabling "Smart Home". Your discussion should address the technology enablers of smart home and the possible challenges such as problems of automation and data privacy.

(25 marks)
(LOs 4 & 6)

4) Cyber security threats and challenges are bound to multiply with the increasing connectivity and with smart connected applications. Briefly discuss the emerging security challenges, new threat vectors and vulnerabilities. Your discussion should also address any one emerging security mechanisms / technologies to counter-measure these new threats. Your discussion should be well supported by illustrations where appropriate and backed by valid academic references.

(25 marks)
(LO5)

5) Language, formatting, presentation and use of referencing.

(10 marks)

Formative Feedback

You have the opportunity to submit a draft to receive formative feedback.

The feedback is designed to help you develop areas of your work and it helps you develop your skills as an independent learner.

If you are a distance learning student, you should submit your work, by email, to your tutor, no later than 2 weeks before the actual submission deadline. If you are a blended learning student, your tutor will give you a deadline for formative feedback and further details.

Formative feedback will not be given to work submitted after the above date or the date specified by your tutor - if a blended learning student.

Referencing Guidance

You **MUST** underpin your analysis and evaluation of the key issues with appropriate and wide ranging academic research and ensure this is referenced using the AU Harvard system.

 Follow this link to find the referencing guides for your subject: Arden Library

Submission Guidance

Assignments submitted late will not be accepted and will be marked as a 0% fail.

Your assessment should be submitted as a single *Word (MS Word) or PDF* file. For more information please see the "Submitting an Assignment - Guide" document available on the A-Z key information on iLearn.

You must ensure that the submitted assignment is all your own work and that all sources used are correctly attributed. Penalties apply to assignments which show evidence of academic unfair practice. (See the Student Handbook which is available on the A-Z key information on iLearn.)

[1506]

Assessment Criteria (Learning objectives covered - all)

Level 7 is characterised by an expectation of students' expertise in their specialism. Students are semi-autonomous, demonstrating independence in the negotiation of assessment tasks (including the major project) and the ability to evaluate, challenge, modify and develop theory and practice. Students are expected to demonstrate an ability to isolate and focus on the significant features of problems and to offer synthetic and coherent solutions, with some students producing original or innovative work in their specialism that is potentially worthy of publication by Arden University. A clear appreciation of ethical considerations (as appropriate) is also a prerequisite.

Grade	Mark Bands	Generic Assessment Criteria
Distinction	70%+	Excellent analysis of key issues and concepts/. Excellent development of conceptual structures and argument, making consistent use of scholarly conventions. Excellent research skills, independence of thought, an extremely high level of intellectual rigour and consistency, exceptional expressive / professional skills, and substantial creativity and originality. Excellent academic/intellectual skills. Work pushes the boundaries of the discipline and demonstrates an awareness of relevant ethical considerations. Work may be considered for publication by Arden university
Merit	60-69%	Very good level of competence demonstrated. High level of theory application. Very good analysis of key issues and concepts. Development of conceptual structures and argument making consistent use of scholarly conventions. Some evidence of original thought and a general awareness of relevant ethical considerations
Pass	50-59%	A satisfactory to good performance. Basic knowledge of key issues and concepts. Generally descriptive, with restricted analysis of existing scholarly material and little argument development. Use of scholarly conventions inconsistent. The work lacks original thought. Some awareness of relevant ethical considerations. Satisfactory professional skills (where appropriate).
Marginal Fail	40-49%	Limited research skills impede use of learning resources and problem solving. Significant problems with structure/accuracy in expression. Very weak academic / intellectual / professional skills. Limited use of scholarly conventions. Errors in expression and the work may lack structure overall
	39% and below	A poor performance in which there are substantial gaps in knowledge and understanding, underpinning theory and ethical considerations. Little evidence of research skills, use of learning resources and problem solving. Major problems with structure/ accuracy in expression. Professional skills not present. Very weak academic / intellectual / professional skills. No evidence of use of scholarly conventions.

[1506]