



Faculty of Business and Law
Assignment Brief 2022/2023

Unit Title: Industry 4.0		
Unit Code: 5Z7Z0037_2223_9	Core: Yes	Level: 7
Assignment Title: Individual Assignment 1		
Unit Leader: Dr Zenon Michaelides		
Contact Details: z.michaelides@mmu.ac.uk BS 5.06 0161-247-2721		
<u>Submission Date:</u> Tue, 17 Jan 2023, 21:00	<u>Feedback Return Date:</u> Tue, 14 Feb 2023, 08:30	
<u>Submission Instructions:</u> Upload your report on Moodle. The report must be in the doc or docx file format. Peer-assessment forms (if completed) should be emailed to the unit leader vial the email address above.		
<u>Feedback Return Information:</u> Feedback will be available on Moodle on dates specified therein.		
<u>Assignment Task & Wordcount:</u> In this individual assignment (Assessed 100% towards your unit final mark). Requirement: 1. Produce a MAXIMUM 3500-word (Maximum word count: see explanatory notes on word count below) individual report in which you critically evaluate how one Industry 4.0 (I4.0) technology is driving transformation in organisations. -You should select and focus on only one type of I4.0 technology of your choice and investigate in depth its impacts on a firm’s operations and their environment. -You must critically and analytically discuss the drivers and the impact of the Industry 4.0 technology which you have identified, on a relevant business and their performance. -You will provide insights as to how that Industry 4.0 technology has been addressing operational issues in a business and improving these. -You should present a brief historic review within your introduction, describing the evolution to Industry 4.0 to date and its impact in terms of societal, sustainable, ethical and technological evolution .		
<u>Over-length work</u> 2. Critical essays and assignments have a stated word count. Written work that exceeds the stated count is viewed as a form of rubric violation. When we set an assignment with a		

particular word count, we are assessing how well you are able to construct and develop an argument, or compose a creative piece, within a given limit.

For this reason, markers will apply the following **penalties to overlength work**:

Amount the submitted work is in excess of the provided guidance and effect on final mark:

- **0% - 10% None**
- **11% - 30% Mark reduced by 10%**
- **>31% Mark capped at 50%**

3. **What is included and what is excluded from the word count:**

Word count ***includes***: all text, quotations, and footnotes (if used),

Word count ***excludes***: Title and Bibliography/List of References.

Further explanatory notes:

-Your coursework assignment indicates a **MAXIMUM length**.

-That maximum word count covers all text, including quotations and footnotes (if applicable), but does not include the essay title and bibliography.

-Penalties will be imposed (on a sliding scale, see above) on any piece of assessed work that exceeds the maximum word count by more than 10% of the maximum length (i.e. more than 1650 for a 1500 word essay or 3300 for a 3000 word essay and so on).

-Under-length work will not incur extra penalties but will usually bring its own penalty because the full word count is not being used.

Included in word count:

- All text, including quotations and footnotes (if used).

Excluded in word count:

- The essay/report Title,
- Bibliography (List of References),

Unit Learning Outcomes (LO) Assessed:

1. Explain the historic context and evolution, which has transformed societal development from the first industrial revolution to what is known as the fourth industrial revolution, or Industry 4.0.

2. Evaluate the drivers of Digitisation and Information Technologies.

3. Assess the impact of Industry 4.0 to the business environment.

Further Assignment Details and Instructions:

You must critically and analytically discuss the current landscape, the drivers and the impact of the Industry 4.0 (I4.0) technology which you have identified, on the relevant business and their performance but also to people and society. You will provide insights as to how Industry 4.0 (I4.0) has been addressing operational issues and improving efficiencies, but also provide a critical review of societal and environmental changes, both positive and negative.

Report

The main tasks are as follows:

Select ONE **Industry 4.0 (I4.0) technology**, critically discuss and evaluate **how is driving transformation** in an organisation. In order to narrow the scope, you should select only one type of I4.0 technology of your choice. (such as CPS, blockchain, IoT, Big Data & Big Data Analytics, Cloud Computing, etc.) and critically review in depth its impacts on a firm's operations and their environment. Furthermore, you should select one Case Study firm, to focus your discussion on.

1. Critically discuss one Industry 4.0 technology (such as Internet-of-Things (IoT), cyber-physical-systems, cloud computing, etc.) and in your discussion **critically review appropriate, current academic literature**.
2. **Choose one organisation in any sector**. It is preferable to find an existing organisation to which you have direct access. Small or medium-sized organisations are recommended; however, a sub-section or department of a big organisation may be considered.
3. Study the existing **impact that Industry 4.0 has/may have on the organisation** and critically assess the current vs. future operations of the organisation.
4. **Critically evaluate drivers for Industry 4.0 adaptation** on the selected organisation. The evaluation should also focus on human and societal aspects of Industry 4.0 adaptation, and not only the technologies that support it. Theories underpinning this evaluation must be based on current literature discussed in part 1.
5. **Critically analyse the impact of practices and technologies** discussed in part 4 on the performance of the chosen organisation. In this part, the evaluation should focus on both what works and what does not. Possible areas of evaluation in the organisation may cover automation of business processes, operational flexibility, resilience, sustainability, competitive advantage in exploiting opportunities, as well as human, societal aspects and financial impacts. Support your analysis with relevant literature as required.
6. **Identify potential areas for improvement and the potential gains** from adopting Industry 4.0 in organisations. Also identify and possible arguments and downsides of adapting Industry 4.0, such as the effects of automation on workforce reduction, operational consolidation and efficiency improvement initiatives which **impact on social/environmental aspects of society**.

World Class Professional Skills (also see PLOs in following section) being assessed or developed/assessed:

1. Apply critical thinking to the analysis of situations, draw appropriate conclusions and make recommendations for action
2. Be effective communicators
3. Apply advanced specific knowledge, professional and research skills in addressing complex issues in business analytics.

Plagiarism and Academic Integrity:

The work submitted must be your own. All submissions are checked for originality using various tools such as Turnitin. Please refer to the University's guidelines

<https://www2.mmu.ac.uk/student-case-management/guidance-for-students/academic-misconduct/>

Late submission:

If your submission is after the deadline but within five working days of it, your mark will be capped at 40%. If you attempt to submit after the five-day grace period, without approved exceptional factors, it will be classed as a non-submission. You will then be offered the opportunity to resubmit at the next assessment opportunity as determined by the exam board.

Please Note: Your tutor cannot grant extensions. If you think you are unable to submit on time due to a health or some other unforeseen issue you must contact the student hub and apply through formal channels for exceptional factors. <https://www2.mmu.ac.uk/student-case-management/guidance-for-students/exceptional-factors/>

Group Work Guidelines (If applicable):

- N/A for this assignment

Unit Specification:

Refer to Moodle for Unit Specification.

Assignment Support:

1. Contact Information/assignment support: For any assignment support contact details for your Unit Leader: Dr Zenon Michaelides (z.michaelides@mmu.ac.uk).

Formative feedback:

During tutorial sessions:

1. You will be required to complete certain tasks individually for formative assessment and feedback.
2. Formative feedback will be given to student when they book a slot to meet their tutor.

Resources:

You may utilise a wide variety of contemporary resources, but you must add to them appropriately.

- Contemporary peer-reviewed Academic papers
- Academic Text books and Research publications, such as PhD Thesis.
- Industry white papers-appropriately cited
- Industry case studies-appropriately used, referenced and cited

Textbooks:

1. The Fourth Industrial Revolution by Klaus Schwab, World economic Forum, ISBN-13: 978-1-944835-00-2
2. The Industries of The Future by Alec Ross, Simon & Schuster, ISBN: 978-1-4711-3525-5

Marking Criteria * (including how stepped marking applies)

See links for guidance help with this development

<https://www.mmu.ac.uk/academic/casqe/regulations/docs/curriculum-assessment-framework.pdf>

[University Policy on Assessment Grading, Criteria and Marking](#)

Mark	PGT Classification
95-100%	Distinction
90%	
85%	
80%	
75%	
72%	Marginal Distinction
68%	Merit
65%	
62%	
58%	
55%	
52%	Marginal pass
48%	Marginal Fail
45%	
42%	
38%	Fail
35%	
32%	
28%	
25%	
22%	
18%	
15%	
12%	
8%	
5%	
2%	
0%	

The following Programme Learning Outcomes (PLO) indicators have been embedded in teaching and assessment in order to ensure high standard of learning quality for all students:

PLO Number:	<u>Programme Learning Outcome (PLO)</u>
PLO 1:	Our graduates will apply critical thinking to practical and theoretical problems
<i>Performance Indicator 1.1</i>	Identify and apply information critically in relation to context
Trait Ref	Trait Description
1.1.1	Identify and interrogate relevant data and literature sources using methods appropriate to level of study and to discipline
1.1.2b (PGT)	Critique theory in discussion and analysis
1.1.2c (PGR)	Draw upon and extend theory in order to make original contribution to knowledge

PLO 2:	Our graduates will be effective communicators using a range of media
<i>Performance Indicator 2.1</i>	Demonstrate communication skills at the appropriate level and using appropriate media
Trait Ref	Trait Description
2.1.1	Organise work in a logical structure in order to draw conclusions that follow from line of argument
2.1.2	Apply consistent and appropriate referencing and in text citations
2.1.3	Demonstrate digital skills appropriate to level and to discipline
PLO 3:	Our graduates will demonstrate an awareness of ethical, corporate social responsibility and sustainability issues appropriate to the level of study and the discipline context
<i>Performance Indicator 3.1</i>	Identify and interrogate issues of ethics, responsibility and sustainability
Trait Ref	Trait Description
3.1.1	Recognise, explore and reflect on key ethical issues as they are affecting own and others' practice.
3.1.2	Recognise, explore and reflect upon corporate social responsibility and sustainability issues as they affect different stakeholders.
PLO 4:	Our graduates will demonstrate professional and commercial/corporate awareness
<i>Performance Indicator 4.1</i>	Demonstrate critical professional and commercial/corporate awareness in your discipline
Trait Ref	Trait Description
4.1.1	Identify and explain professional and commercial/corporate issues
4.1.2	Critically evaluate professional and commercial/corporate issues
4.1.3	Critically reflect upon own development as a current or future professional
<i>Performance Indicator 4.2</i>	<i>Demonstrate global and/or international awareness of business practice</i>
Trait Ref	Trait Description
4.2.1	Identify and explain debates in their global and/or international context
4.2.2	Critically discuss the global and/or international context

See next page:

Assessment Marking Criteria Rubric (Including Programme Learning Outcomes (PLO)* Assessment Criteria)

This is how your work will be graded. You will receive an overall grade that will be GUIDED by each of the criteria. The mark will fall into a 2, 5, or 8. This grade may be achieved by the demonstration of strengths in different areas. Manchester Metropolitan Step Marking Guide https://www.celt.mmu.ac.uk/assessment/lifecycle/5_step_marking.php

0-19%	20-34%	35-39%	40-49%	50-59%	60-69%	70-85%	86-100
<p>No identification and evaluation of the historical context, social evolution and business impact of the technology selected are presented. PLO* 4.2; 3.1</p> <p>No or over-descriptive literature review, with no meaningful and critical evaluations to society and business. PLO* 1.1.1; 1.1.2b; 2.1.2</p> <p>No evaluation of the drivers presented; no discussions associated with the theories with only few references are presented. PLO* 1.1.2c; 2.1.3</p> <p>No assessment of the impact for a specific firm is presented. The discussion does not consider any data and evidence. No or very shallow recommendations PLO* 4.1; 2.1.1</p>	<p>Poor identification and evaluation of the historical context and social evolution and business impact of the technology selected are presented.</p> <p>Over-descriptive literature review attempted but inadequate critical evaluations to society and business.</p> <p>Poor evaluation of the drivers presented; no discussions associated with the theories with only few references are presented.</p> <p>Poor assessment of the impact for a specific firm is presented. The discussion does not consider any appropriate data and evidence</p> <p>Irrelevant or very shallow recommendations</p>	<p>Some aspect of the identification and evaluation of the historical context social evolution and business impact of the technology selected are presented but is lacking robustness.</p> <p>Presented little literature review, and not enough meaningful and little critical evaluations to society and business.</p> <p>Some aspect of the evaluation of the drivers are presented, however no discussions associated with the theories and little references are presented.</p> <p>Some aspect of the assessment of the impact for a specific firm is presented. However, the discussion does not include any data and evidence.</p> <p>Inadequate recommendations with major issues</p>	<p>Aspect of the identification and evaluation of the historical context social evolution and business impact of the technology selected are presented.</p> <p>Presented some literature review, and some meaningful but limited critical evaluations to society and business.</p> <p>Aspect of the evaluation of the drivers without coherent discussions associated with theories but underpinned by a range of references is presented.</p> <p>Aspect of the assessment of the impact for a specific firm is presented, where the discussion builds on some data and evidence.</p> <p>Some recommendations with minor issues</p>	<p>The identification and evaluation of the historical context social evolution and business impact of the technology selected are presented. Some interesting insights are brought to link theory and practice.</p> <p>Presented appropriate literature review, and some appropriate critical evaluations to society and business.</p> <p>The evaluation of the drivers with relevant discussions associated with theories and underpinned by a range of references is performed.</p> <p>The assessment and investigation of the impact for a specific firm is performed, where the discussion relies on good primary and/or secondary data and evidence.</p> <p>Satisfactory recommendations with weak evidence</p>	<p>Very good identification and evaluation of the historical context social evolution and business impact of the technology selected. Interesting insights are brought to link theory and practice.</p> <p>Presented very good literature review, and very good critical evaluations to society and business.</p> <p>Very good evaluation of the drivers with relevant discussions grounded within relevant theories and underpinned by a coherent range of references. A very good assessment and investigation of the impact for a specific firm, where the discussion relies on very good primary and/or secondary data analysis.</p> <p>Satisfactory recommendation with strong evidence</p>	<p>Excellent identification and evaluation of the historical context social evolution and business impact of the technology selected. Relevant insights are brought to link theory and practice.</p> <p>Presented excellent literature review, and excellent and critical evaluations to society and business.</p> <p>An excellent evaluation of the drivers with solid discussions grounded within relevant theories and underpinned by a coherent range of references.</p> <p>An excellent assessment and investigation of the impact for a specific firm, where the discussion relies on excellent primary and secondary data analysis.</p> <p>Excellent recommendation with strong evidence</p>	<p>Outstanding identification and evaluation of the historical context social evolution and business impact of the technology selected.</p> <p>Presented outstanding literature review, and meaningful and exceptionally critical evaluations to society and business.</p> <p>An outstanding evaluation of the drivers with exceptional discussions grounded within relevant theories and underpinned by a coherent and robust range of references. Intuitive and persuasive recommendations.</p> <p>An exceptional assessment and investigation of the impact for a specific firm, where the discussion relies on rich primary and secondary data analysis.</p> <p>Outstanding insights brought to link theory & practice.</p>