Queensland University of Technology
Information Science

Assessment Task

IAB303 Data Analytics for Business Insight
Semester II 2022

Assessment 2 – TOWS Analysis Report

Name	Assessment 2 – TOWS Analysis Report
Due	Mon 21 Oct 11:59pm
Weight	40% (indicative weighting)
Submit	Jupyter Notebook via Blackboard

Rationale and Description

The primary focus of this unit has been to address business concerns with data analytics. An important dimension of this focus is found in creating insight from the analytics that is meaningful to key stakeholders such as the senior managers in a company.

This assessment builds on what you have learnt in assessment 1 (data analytics notebook) by using data analytics and visualisation/s to perform a TOWS analysis and report recommended actions to senior stakeholders. The TOWS analysis report will be written from a business perspective and use the data analytics cycle as a basis for deriving actionable recommendations. The report itself will be a Jupyter notebook, but rather than emphasising techniques (assessment 1), the emphasis will be on clearly connecting the data analytics to actionable recommendations.

Learning Outcomes

A successful completion of this task will demonstrate:

1. An understanding of the complete cycle of data analytics to address business concerns
2. An understanding of TOWS analysis as a way of connecting data analytics to actionable recommendations
3. An understanding of business stakeholders, particularly senior management

Essential Elements

To be successful in this task, you will need to include the following in your Jupyter notebook:

1. A clear description of the business concern and key stakeholders
2. At least one analysis of internal data with appropriate visualisation
3. At least one analysis of external data with appropriate visualisation
4. Detailed markdown descriptions of your thinking for each analysis
5. A detailed TOWS analysis for at least one combination of internal and external data, including appropriate recommended actions that address the business concern
6. Peer feedback notes including
    a. The names and student numbers of the members of your group
    b. Feedback that you received and how you addressed it
    c. Feedback that you provided to others

Marking Criteria

In a typical work environment, you would be accountable for your professional and ethical standards, your work would be likely be reviewed by your peers, and you would be required to present your work to management. Therefore, your grade for this assessment is conditional upon adhering to professional and ethical standards, completion of peer review, and presentation of your report. As well as meeting the quality criteria of the assessment, the following conditions apply:

- To achieve a **grade of 5** (Credit) or above for this assessment, you **must** present your report to the class (in your tutorial session) in the final week of the unit.
- To achieve a **grade of 4** (Pass) or above for this assessment, you **must** adhere to professional and ethical standards expected of Data Scientists including but not limited to originality of your work, crediting others' contributions, and treating data with care.
- To achieve a **grade of 4** (Pass) or above for this assessment, you **must** undertake a process of peer review.

Refer to the attached Criteria Sheet (rubric) for the primary criteria on which this assessment will be marked.

Feedback

This assessment involves a process of peer feedback. **This is mandatory, and you cannot pass this assessment without participating in this process**. As part of this process, you are required to form a group of 3-4 people within your tutorial group, and follow the following steps:

1. Email a draft PDF export of your report to each person in your group
2. Make notes on the drafts that you receive
3. Meet together to discuss the feedback for each group member
4. Write a summary based on:
    a. the feedback you receive from your group, including the names and student numbers of the group members who provided it, and how you acted on it.
    b. the feedback you provided to others in your group, including the names and student numbers of the group members that you provided it to.

Note, it is your responsibility to get together with others for peer review. Use your tutorial times to do this. You may also post to Slack (in tutorial or assessment channel) to find others who are looking for a peer review group.

Detailed Instructions

The following steps need to be completed for this assessment

1. Choose to work with either the provided scenario, or your own. If using your own scenario, check with the teaching team if it is appropriate for the assignment.
2. Using the supplied Jupyter notebook template for this assignment, ensure that all of your personal details are correct at the top of the notebook. Begin work by addressing each of the sections in the template ensuring that you meet the essential elements and address the criteria.
3. You may work with example data supplied and extend this, or work with your own data depending on how you approach the scenario.
4. Ensure that you perform at least one external analysis, and one internal analysis, and include appropriate visualisations for each i.e. your notebook should have at least 2 full data analytics cycles.
5. Make sure that your thinking behind your analysis is documented well using markdown.

6. In the TOWS analysis section of the template, draw on your analysis from step 4 to combine in at least one quadrant of TOWS. You may do more than one if your analysis supports in. Ensure that this analysis is directed specifically at the business concern and is relevant to stakeholders. Your TOWS analysis should result in at least one actionable recommendation that directly addresses the business concern.
7. Ensure that you document your thinking in the TOWS analysis
8. At least 2 weeks before the assignment is due, ensure that you have formed your peer review group. This is up to you. The teaching team will not be involved in forming groups. If you are working virtually, then use the tutorial sessions and/or Slack to contact other class members to form your peer review group. Your group member's names should be entered in the peer review section of the assignment template.
9. At least a week before the due date, export your Jupyter notebook as a PDF and distribute to your peer review group members.
10. Provide feedback on other members reports and gather feedback on your report from other members.
11. Arrange to meet and discuss your peer feedback and record summaries of the feedback in your notebook (in the peer review section).
12. Revise your analysis report as appropriate based on feedback from your peers. If you make changes in response to feedback, you should make a note of these and explain why. If you do not make any changes, you should also explain why.
13. Ensure that your final report addresses all of the essential elements of the assignment and addresses the criteria in the criteria sheet.
14. Ensure that your notebook runs completely without errors and save it with all output complete and visible in the notebook.
15. Submit your Jupyter notebook via blackboard before the due date.
16. Conduct a 2 minute presentation of your work to the class in your tutorial session after the report has been submitted.

Questions

Questions related to the assessment should be directed initially to your tutor during the tutorial session. Your tutor may address these for the benefit of the whole class.

Use the Assignment 2 channel on Slack to ask additional questions related to the assignment.

The teaching team will not be available to answer questions outside business hours, nor in the hours immediately before the assessment is due.

Criteria Sheet – TOWS Analysis Report

Criteria	7	6	5	4	3	2
[1] Evidence of understanding business needs for actionable recommendations supported by clear data analytics.	Provides exemplary actionable recommendations that are highly relevant and clearly supported by high quality data analytics.	Provides actionable recommendations that are relevant and well supported by quality data analytics.	Provides actionable recommendations that are relevant and mostly supported by the data analytics.	Provides mostly appropriate recommendations that are generally supported by the data analytics.	There is a lack of relevant actionable recommendations and/or they are not supported by data analytics	There is little or no evidence of understanding of actionable recommendations.
[2] Demonstration of appropriate techniques for linking data analytics to a business concern with a narrative appropriate for stakeholders.	Develops a clear and consistent narrative that is highly engaging for stakeholders, and which integrates high quality data analytics with an insightful approach to the business concern.	Develops a clear and consistent narrative that is interesting for stakeholders, and which appropriately integrates data analytics with a robust approach to the business concern.	Develops a clear and consistent narrative that is useful for stakeholders and which is generally successful in integrating the data analytics with appropriate approach to the business concern.	Develops a narrative that is generally clear for stakeholders and sufficiently addresses a business concern with data analytics.	The narrative is lacking in clarity and/or the data analytics is insufficient and/or the approach to the business concern is inappropriate..	The is little or no demonstration of a narrative appropriate to stakeholders and/or missing data analytics and/or missing approach to business concern.
[3] Demonstration of a complete external data analytics process.	The external data analytics process is complete, clearly appropriate and implemented in an exemplary way.	The external data analytics process is complete, clearly appropriate and implemented well.	The external data analytics process is complete but some minor improvements could be made to the implementation.	The external data analytics process is mostly complete but the implementation could be improved significantly.	The external data analytics process is not complete and has significant implementation issues.	There is little or no demonstration of a complete external data analytics process.
[4] Demonstration of a complete internal data analytics process.	The internal data analytics process is complete, clearly appropriate and implemented in an exemplary way.	The internal data analytics process is complete, clearly appropriate and implemented well.	The internal data analytics process is complete but some minor improvements could be made to the implementation.	The internal data analytics process is mostly complete but the implementation could be improved significantly.	The internal data analytics process is not complete and has significant implementation issues.	There is little or no demonstration of a complete internal data analytics process.
[5] Evidence of understanding analytics visualisation and its significance to the business concern.	Provides exemplary evidence of a deep understanding of analytics visualisation and its significance.	Provides evidence of a robust understanding of analytics visualisation and its significance.	Mostly provides evidence of an understanding of analytics visualisation and its significance.	Provides evidence of a basic understanding of analytics visualisation and its significance.	There is a lack of evidence of understanding analytics visualisation and/or its significance.	This is little or no evidence of understanding of analytics visualisation.
[6] Demonstration of effective English expression and markdown documentation.	Excellent English expression and markdown documentation.	Very good English expression and markdown documentation.	Generally good English expression and markdown documentation.	English expression and markdown documentation is satisfactory for the tasks.	English expression is insufficient for the tasks and/or markdown use is insufficient for the tasks.	There is little or no evidence of a demonstration of English expression and/or effective markdown use..
[7] PROFESSIONAL & ETHICAL STANDARDS	Satisfactory				Unsatisfactory – Maximum overall grade of 3	
[8] PEER REVIEW	Completed				Not completed – Maximum overall grade of 3	
[9] PRESENTATION	Completed			Not completed – Maximum overall grade of 4		