School of Information Systems and Technology Management

INFS5700 Introduction to Business Analytics

Team Assignment: Industry Sandbox Group Project

Your group project involves real-world challenges proposed by industry experts from Microsoft Australia. Throughout this term, you will be working with your teaching team, industry mentors, and peers to co-develop solutions that could make an impact in the real world.

Summary
- This assignment is to be undertaken as a group assignment
- Team size: 4-5 students (depending on the tutorial class size)
- Team formation method: Self-selection (students in the same tutorial)
- This assignment is graded upon 30 marks (i.e., 30% of the course total marks)

Important Dates
- Team formation: by Week 4 Friday, 23rd June 5.00pm
- Industry mentor sessions: 1st session (Week 4) & 2nd session (TBC)
- Visual report submission (20%): Week 10 Tuesday, 1st August 4.00pm
- Oral presentation (10%): Week 10 Tutorials

*All dates are set in Australian Eastern Standard/Daylight Time (AEST/AEDT). If you are located in a different time-zone, you can use a time and date converter.

Expected Learning
- Examine datasets using visual analytic techniques and communicate findings using dashboards and data driven visual reports.
- Effectively utilise visualisations to communicate with analytics team members and influence stakeholders.
- Develop problem-solving skills and learner agency that will serve you in the long-term

- Work effectively in a collaborative environment
- Enrich your professional profile with industry-relevant experience

Part 1: Project Background

The COVID-19 pandemic has caused significant changes in both our personal and professional lives. The rise of remote work and hybrid work models has led to a notable shift in the demand for office furniture and equipment. As a result of the pandemic, the US office furniture manufacturing industry saw a substantial 14.9% decline in revenue in 2020 (IBISWorld). Similarly, global spending on office equipment such as printers and copiers also experienced a significant decrease of 16.4% (Gartner). These figures underscore the significant impact of the pandemic on the office furniture and equipment industry.

Contoso, a company that specialises in selling office furniture and equipment, is concerned about these industry trends. As consultants for a leading analytics consulting company, your team has been contracted to provide an end-to-end analysis of Contoso' sales and order data. From the analysis, Contoso expects to gain insights on the current market landscape and develop strategies to sustain their business and increase their revenue and profit.

Part 2: Team Formation

In this project, you and your classmates will form a team to create feasible solutions to a real industry challenge.

You are expected to form your own teams (team size: 4-5) before the Team Formation Deadline – Week 4 Friday, 23rd June 5pm (AEDT).

You can only form a team with students from the same tutorial. We will have many group assignment related activities in the tutorials, and your team will get the best support when all of you get to work together in the same tutorial session. Students who have not joined a team by the deadline will be randomly allocated to teams. Please make sure that all team members are happy with the team formation before submitting the team member list to your tutor. The team formation nomination cannot be modified after submission.

Part 3: Project Deliverables

3.1 Project expectation

Your group assessment is designed as a "Sandbox Industry Project" – which means the assessment involves an actual problem in the industry, and was proposed by data analytics specialists to support you in developing the most

relevant and practical knowledge and skill sets. Unlike textbook case studies, these real project specifications will not have step-by-step guidance or a solution template. You will need your learning skills, critical thinking and problem-solving abilities, creativity and proactiveness to do well.

To succeed in this project, you will need to manage your learning process carefully – including demonstrating agency in performing self-directed learning, conducting research, taking initiative, and more. These tasks are expected to take an average of 12-15 hours (per week) of your time.

3.2 Project deliverables

There are two deliverables required in this assignment (30%):
- A comprehensive visual report to summarize the key insights in the datasets (20%).
- A oral presentation to communicate key findings to the C-Level executives at Contoso (in Week 10 tutorial) (10%).

3.2.1 Produce a visual report that encapsulate key insights

The visual report should contain a set of visualizations that you have produced in exploring and presenting the insights from the datasets. Such insights may include but not limited to sales, profits and order trends over time, customer segment trends, lost and new customer insights, shipping/delivery insights, as well as influencers for customer retention. Contoso stakeholders would also like to use the dataset your team creates for their own, ad-hoc analysis.

The secions below contains specific tasks your team will need to complete when creating the visual report.

Tasks:
Your team will have access to a spreadsheet that contains Contoso's product details, customer list, customers order data and other supporting information. You will be using the spreadsheet as a datasource to create your Power BI report from scratch.

Data Shaping and Modelling Activities:
- As part of the project, you are tasked to create a data model to be used for your reporting using sales data that is provided by Contoso.
- Apply data quality checks and techniques. There may be missing data and errors due to data entry issues.
- Create fields in Orders table calculating the following:
  - Gross Revenue

- o Net Revenue (Gross Revenue – Discount)
- o Net Profit (Net Revenue – Costs)
- o Cost of order
- o Days to ship from processing
- o Days to process from ordering
- o Total days to deliver
- Since the dataset will be shared to other analysts, ensure the table and column names are user friendly and consistent
- The data model should include all data shared in the spreadsheet, modelled in a star schema.

DAX Requests by stakeholders:
- Create a Calendar table to relate to your fact table. Your calendar table should at least include the columns below. Name your calendar table "Calendar"
  - Date
  - Year
  - Month
  - Fiscal Year
  - Fiscal Quarter
- The Midwest managers wants a calculation that will give them their **Net Revenue** immediately, without having to use filter pane/slicers/visualisation interactions. Create this calculation and call it **Net Revenue Midwest**.
- The analysts have also requested a few calculations to be created. See the table below and ensure the names of the calculations are as follows:

Calculation	Name of Calculation
Profit Margin	Profit Margin
Previous Fiscal Year's Net Revenue	Net Revenue FY
Percentage Net Revenue Growth Fiscal Year on Year	YoY (%)
Fiscal Year To Date Net Revenue	Net Revenue YTD

Bonus / Optional (please note this task is optional):
- The analysts also want to have access to a calculation that will allow for analysis of top 10 products based on revenue, without the use of filter pane/slicers/visualisation interactions. Create this calculation and name the calculation as Top 10 Products Revenue.
- Lastly, the analysts want to be able to use calculations of the number of new customers in FY23 and lost customers in FY23 (customers who didn't

purchase in FY23 in comparison to FY22). Ensure to prefix the name of your calculation/s as Optional_xx).

- ➢ Submission: Week 10 Tuesday, 1st August 4.00pm
- ➢ Only ONE submission is required per team.
- ➢ Marking criteria: see assessment criteria in Appendix.

3.2.2 Deliver a oral presentation to communicate key findings

The oral presentation is your opportunity to communicate key findings/insights to the C-level executive at Contoso to address their concerns. You are expected to leverage on different communication techniques such as story telling to create an effective and engaging presentation. Specifically, your team will need to:

- Prepare a silde deck for the presentation (12 slides max, everything is included in this page limit)
- Deliver a oral presentation in Week 10 tutoial (12 minutes max)

Any content beyond 12 slides (for the pitch deck) and beyond 12-minute mark (for the pitch video) will NOT be assessed. A detailed marking rubric can be found in Appendix.

- ➢ Submission: Week 10 Tuesday, 1st August 4.00pm
- ➢ Only ONE submission is required per team.

3.3 Submission and Presentation

During Week 10 tutorials, each group will present their work to the class. All group members must participate and present. Slides are expected to be of a high quality and your presentation format should be concise and suitable for senior management. Your presentation will be shared with your industry mentors from Microsoft Australia.

3.3.1 Submission Format
- The visual report should be saved in the format of **Microsoft Power BI Desktop Document (.pbix)** and submitted through Team Assignment Submission Link under the *Assessments* tab on Moodle page.
- The slide-deck with speaker notes that summarizes the key points should be submitted as a single file through Team Assignment Submission Link under the *Assessments* tab on Moodle page.

- All teams need to submit the files based on the following naming convention: GROUP_ASSIGNMENT_COURSE_CLASS_GROUP NAME i.e. GROUP_ASSIGNMENT_INFS5700_W11A_G1.

3.3.2 Late Submission Penalties
Late submissions are subject to a penalty of 10% of the available marks per day, including weekends and public holidays.

Part 4: Opportunities to Engage with Industry Partners

Project Introduction (Week 4 Wednesday, 21st June 5:00pm – 6:00pm): Your industry mentors from Microsoft Australia will join us online to share their experiences and perspectives of the challenges in the assignment and answer your questions.

Check-point Webinar: Details will be provided on Moodle closer to the date.

Part 5: Dealing with Group Issues and Conflict Resolution

Conflict is almost inevitable when you work with others. People have different viewpoints and, under the right set of circumstances, those differences may escalate to conflict. It is common that most groups experience issues at some time. What matters is how you handle that issue or conflict. This will determine whether it works to the team's advantage or contributes to its demise. Conflict is not necessarily a bad thing, though. Healthy and constructive conflict is a component of high-functioning teams. Conflict arises from differences between people; the same differences that often make diverse teams more effective than those made up of people with similar experience. When people with varying viewpoints, experiences, skills, and opinions are tasked with a project or challenge, the combined effort can far surpass what any group of similar individuals could achieve. Team members must be open to these differences and not let them rise into full-blown disputes.

Understanding and appreciating the various viewpoints involved in a conflict are key factors in its resolution. These are key skills for all team members to develop. The important thing is to maintain a healthy balance of constructive difference of opinion and avoid negative conflict that is destructive and disruptive. One of the objectives of this project is to help you build communication and conflict resolution skills. The following resources are included to support you:

[Guide to Group Work](#)

[Identifying Group Issues](#)

[Dealing with Group Work Issues](#)

Peer Evaluation

A peer evaluation will be conducted at the end of the term to account for equal contribution. Significant unequal contributions should be discussed in due time within the group. In the case that a dispute emerges, the group needs to discuss with the LiC as early as possible. The purpose of the within-group peer evaluation is to critically reflect on the group work, to prevent "free-riding" and to redistribute marks between group members in cases where free-riding or unequal contributions occur. Claims of unequal contributions, especially if contradicting the evaluation of others, will need to be substantiated with evidence (e.g., group diary, personal diary, meeting notes, emails, Facebook messages). The LiC will make a final judgement in the case that a dispute emerges, calling in the group, considering earlier discussions and submitted evidence. Overall, active and genuine collaboration from each team member will lead to a well-performed team project

Appendix

Table 1. Marking Criteria for Visual Report (20%)

Criteria	%	Below Expectations (FL)	Meets Expectations (PS – CR)	Outstanding Performance (DN – HD)
Business Knowledge • Demonstrate a strong understanding of the business issue being analysed. • Provide contextual knowledge that are relevant for understanding the practicality and impact of the proposed recommendations.	8%	• Does not demonstrate appropriate application of knowledge in relevant topic areas. • Key objectives of the assessment not addressed.	• Demonstrate a capacity to explain and apply relevant concepts. • Provides some analysis and recommendations but not sufficiently substantiated by evidence from course materials and independent research.	• Makes a clearly informed and effective selection and application of knowledge that is highly appropriate for the project context. • Uses relevant examples and/or evidence to support recommendations. • Demonstrating extensive research and ability to consolidate information from various sources.
Visual Design • Information is presented in a manner that is visually appealing and easily understood. • The visual reports provide targeted audience with valuable, relevant and comprehensive insight to the business issue they are interested in.	12%	• The selection of visuals are inappropriate and/or incorrect in presenting the data, very limited variety of visuals are used to display data. • The visual designs are poor. They are visually unattractive and are communicating meaningless and mis-leading information to targeted audience.	• The selection of visuals are generally appropriate, though some data can be better presented by alternative visuals. • A limited variety of visuals have been used to displays data, though some advanced visuals can be used for effective presentation. • The visual design is reasonably appealing and effective in presenting and communicating relevant insights.	• Data are effectively presented by using most appropriate and correct visuals. • The visual report involves a variety of variables/measures and they are skilfully developed with a variety of visuals and interactive features. • The visual report comprehensively and elegantly address the problem, clearly connecting objectives and stakeholders that would use the visualizations.

Table 2. Marking Criteria for the oral presentation (10%)

Criteria	%	Below Expectations (FL)	Meets Expectations (PS – CR)	Outstanding Performance (DN – HD)
Business Knowledge • Accurate analyse the project requirements. • Present recent and relevant knowledge to support arguments and discuss them with accuracy and depth.	3%	• Does not demonstrate appropriate application of knowledge to rigorously analyse the project requirements. • Does not identify concepts that are relevant to the project.	• Applies relevant knowledge and sufficiently engages with the project requirements. • Demonstrates a capacity to explain relevant concepts in sufficient depth.	• Makes clearly informed and effective selection and application of knowledge that are highly appropriate for the project context. • Systematically and critically discriminates between assertion of personal opinion and information substantiated by robust evidence from course materials and independent research.
Problem Solving • Apply appropriate and rigorous analysis to understand the problem domain as presented in the project. • Demonstrate capacity for independent critical enquiry. • Propose evidence-based solutions that are relevant and practical, and clearly addressing the challenge proposed in the project.	3%	• Does not clearly or correctly identify the project requirements • Does not provide relevant and useful insights justified by analysis, theory and/or research. • Does not sufficiently consider or evaluate differing perspectives or acknowledge limitations and constraints of own recommendations.	• Identifies key elements of project requirements, but does not cover all relevant aspects or convey its complexity • Formulates plausible and appropriate recommendations although it may contain some weaknesses or over-simplification, and/or limited justification. • Does not sufficiently consider or evaluate differing perspectives or acknowledge limitations and constraints of own recommendations.	• Clearly discusses and addresses the project requirements through the application of rigorous analysis and critical thinking. • Clearly analyses the solution domain and assumptions are clearly articulated. • Demonstrates innovative thinking; project outputs show plenty of in-depth analyses that support the recommendation development process. • Presents highly relevant and practical recommendations; provides strong justifications to demonstrate its feasibility and impact. • Considers and evaluates differing perspectives and alternative strategies (if appropriate) and acknowledges limitations and constraints of own recommendations.

Business Communication	4%	• Does not engage the target audience.	• Engages with the target audience but lacks logical sequence.	• High quality presentation with clear logical flow and engaging content.
• Present relevant contents that can effectively address the specific target audience. • Present contents in a clear logical flow, effectively delivering important information. • Effective consolidation of information from multiple sources. • Engaging and professional.		• Does not present arguments in a logical manner; communication is unclear for the audience. • Delivery is not sufficiently professional (e.g., audio too weak, lack of visual aid, etc.).	• Reasoning and evidence are presented but not well organised. • Delivery is sufficiently clear but time management (e.g., content felt rushed) and engagement need improvement.	• Topics discussed are relevant for the target audience; effectively highlights the key findings/ideas of the work. • Presents well-evidenced arguments with accurate and relevant examples; overall delivery is effective and tailored for the target audience.