

BC3406 Business Analytics Consulting
Semester 2, AY2017-18

Business Analytics Client Engagement Brief

The business analytics hackathon is a relatively risk-free environment and provides the last opportunity to improve your competencies gained over the course of your degree programme. The hackathon is modelled as a consulting engagement with a client. As in actual consulting teams, your team will comprise a mix of members with a multi-disciplinary mix of personal, functional and technical skills. At the close of the consulting engagement, your team members will evaluate you on your teamwork and interpersonal skills. The rubric used to assess your team's performance is provided below.

This document contains information that will facilitate the successful completion of the consulting engagement within the stipulated time and to client's requirements. Please read this document carefully and raise your points of clarifications to peers, instructors or the hackathon partners via the stipulated channels. All communications with the hackathon partners will be mediated through the course instructors.

Milestones

Date	Activity	Tasks	Resources
22 Feb	Hackathon Briefing <ul style="list-style-type: none">• Understanding the Problem• Understanding the Data	In-class discussions with stakeholders on case and problem	Hackathon partners
1 Mar	Hackathon Clinic – Data and Analytics	Discussions with stakeholders on problem and data Progress Report 1	Moderated communications with hackathon partners
15 Mar	Hackathon: Clinic – Data and Analytics	Discussions with stakeholders on data and findings Progress Report 2	Moderated communications with hackathon partners
22 Mar	Hackathon: Internal Review	Internal review Discussions with stakeholders on data and findings	Experts: Dr. A Lee Gilbert, Mr Gino George Moderated communications with hackathon partners
29 Mar	Hackathon: Refinement of Insights	Discussions with stakeholders on data and findings Progress Report 3	Moderated communications with hackathon partners
30 Mar	Submission of reports	Submit report through the Assignment page on NTULearn	
2 Apr onwards	Additional workshop on storytelling	Evaluations of Submissions	Expert: Dr A Lee Gilbert Instructors, faculty, hackathon partners
19 Apr	Finals and Presentations		Hackathon partners, faculty, and instructors

Data Hackathon Deliverables

There are three types of deliverables:

1. Three 1-page **Progress Reports** summarizing completed tasks and outstanding tasks. The progress reports are to be submitted by end of day (23:59 hrs NTULearn server time) through the Assignments page on NTULearn on:
 - a. Tuesday, 27 February;
 - b. Tuesday, 13 March;
 - c. Tuesday, 27 March.
2. An **Internal Review**:
 - a. to be presented to the course instructors on Thursday, 22 March from 9:00 am onwards;
 - b. is a presentation deck of not more than 5 slides summarizing the team's:
 - i. understanding the problem
 - ii. analytic approach and model
 - iii. initial results
 - iv. initial insights and recommendations
3. **Consulting Engagement Report**. Each team will be required to satisfactorily meet the client's requirement(s) that documented in the following pages.

The consulting engagement report is due end of day (23:59 hrs NTULearn server time) 30 Mar 2018

Submit your team's report, in pdf format, through the Assignments on NTULearn. Label your submission in the following format: "BC3406_Team_X.pdf"; where X represents the team name or number.

The report should contain the following at the minimum:

- A cover page that includes a title, names and matric numbers of the team members.
- A table of contents to the submission.
- A 2-page executive summary of the objectives, client requirements, key business insights, and key recommendations.
- Appendices supporting the development of the business insights, e.g. problem analyses, data analyses, models, implementation plan, etc.
- A presentation deck of not more than 5 slides summarizing the consulting engagement. The text/script of the presentation should be included in the Notes pages of the presentation deck.

Rubric for Business Analytics Hackathon

Team: _____

Criterion	1 - Below Expectations	2 - As Expected	3 - Above Expectations	Score
Identification of main issues, problems, and requirements	Is unable to articulate the client's issues, problems and requirements.	Understands what the client wants and is able to satisfactorily articulate the client's issues, problems and requirements.	Understands what the client wants and is able to concisely and coherently restate the client's issues, problems and requirements.	
Statistical analysis	Has trouble articulating client's needs into statistical questions that results in inappropriate use of statistical tools.	Attempts to translates the client's question(s); runs appropriate analyses; selects tools for solving the statistical question that are appropriate.	Accurately translates the client's question(s) into statistical questions, conducts proper analyses; and justifies use of appropriate tool to answer the question(s).	
Development of business insights	Interpretation of results are too complicated and do not take into account the needs or level of statistical expertise of the client. As a result conclusions, recommendations as well as supporting output, tables and charts are not helpful.	Interpretations of results make sense. Conclusions and recommendations are of limited help; output, tables and charts add value to the interpretation or the conclusions.	Interprets the results in a language that the client understands and can use, makes reasonable conclusions and recommendations for action, including any limitations of the analysis, and makes appropriate use of output, tables and charts with useful comments as needed.	
Communication of business insights	Report contains many distracting mistakes, making it generally difficult to follow	Report is generally clear, with minimal errors and flow of text is easy to follow at times.	Report is logical, complete, easy to read, is virtually error-free, and contains few if any reader distractions The report contains decisions and actions that the team recommends the client take to resolve issues identified.	
Appendices: Tables, Figures, Charts, Outputs	Information contained in the appendices is too hard to understand, and serve as distractions from the points that are being made in the report.	Information contained in the appendices is somewhat easy to comprehend, and adequately advance the points that are being made in the report.	Information contained in the appendices is easy to understand, is labelled and is clearly linked to the main report, including useful comments as needed. Appendices are used appropriately as a repository of additional and necessary materials.	
TOTAL				

The Consulting Engagement

Paula's Choice

Mission

Paula's Choice Skincare began with a commitment to customer advocacy and education, and that remains as a core element of our philosophy and product development. Our mission is to create skincare that keeps its promises and for products you can feel confident about buying and using.

Values

Paula's Choice provides customer education, consumer advocacy for industry truths and transparency in its own products. All claims are backed by research Backed, formulated fragrance and irritation free, and products are never tested on animals. We also have a 100% used product guarantee.

Context

Paula's Choice is seeking evidence-based business insights for the following reasons:

1. A need to provide better value to customers via **smart marketing** from data analytics;
2. **Reducing operational costs** to increase resources for further outreach;
3. To get a better picture about the **customer's journey** with Paula's Choice;

Burning Questions

1. What are the various customer journeys at Paula's Choice?
2. Which journeys should Paula's Choice sustain? And what strategies Paula's Choice might develop to sustain such journeys?
3. How might Paula's Choice improve customer **online interactions**? How as the UX redesign changed purchasing behavior?

Assumptions, Notes and Additional Requirements

1. Assume **50% margin** on each stock-keeping unit (SKU).
2. The channels for sales to consider are **retail, online, and international wholesale.**
3. Paula's Choice forecasts sales using the following windows: 6 months, 12 months, 18 months.
4. Assume **Monthly Replenishment**
5. Assume a **three (3) month lag time** for delivery of orders. For example, orders for April are locked in 31 January.

6. Constraints to consider include:
 - a. Maximum purchase order value is 50% of trailing three (3) months sales moving average (3SMA) of retail sales.
 - b. Minimum purchase quantity of each SKU
 - c. Downstream wholesale requirements

Data

One set of data is located in a folder labelled “NBS Data Hackathon 2018” in the C-drive of the allocated server.

Additional data on Events may be accessed using an application protocol interface (API) built by the client - hackathon.paulaschoice.tech

To use the API:

1. Call a url, e.g.
<https://hackathon.paulaschoice.tech/events/?email=customer111@email.com>
2. The data returned
 - a. Is a JavaScript Object Notation (JSON) array with all events pertaining to a customer;
 - b. The attribute list:
 - i. checkout-completed
 - ii. checkout-customer-infos-step
 - iii. checkout-payment-step
 - iv. checkout-start
 - v. create-cart
 - vi. order-cancelled
 - vii. order-create
 - viii. order-fulfilled
 - ix. order-paid
 - x. order-partially-fulfilled
 - xi. performed-discover
 - xii. update-cart
 - c. Is linked to the anonymized list in the Microsoft Excel files located on the server.
3. Customer15000@email.com onwards are customers whom have browsed our site but did not sign up or purchase.
4. You may use a chrome extension like <https://chrome.google.com/webstore/detail/jsonview/chklaanhfefbnpoihckbnefhakgolnmc?hl=en> to prettify the data in your browser