Nakul Bajaj

Analyst, Data Scientist at ANZ

Melbourne, Australia

Experience

Analyst, Data Scientist
ANZ
May 2017 – Present • 1 yr 3 mos
Melbourne, Australia

Commercial and Institutional Banking

Founder
EAT ALL FRESH
Aug 2013 – Present • 5 yrs
New Delhi Area, India

Data Scientist
ANZ
Jan 2017 – Apr 2017 • 4 mos
Melbourne, Australia

Analyst intern
Yellowfin
Dec 2015 – Oct 2016 • 11 mos
Melbourne, Australia

Student Member
ISACA Melbourne Chapter
2015 – 2016 • 1 yr

Business System Analyst
Four-N-International
Aug 2013 – Jul 2015 • 2 yrs
New Delhi Area, India

PROBLEM FORMULATION

UNDERSTANDING THE BUSINESS PROBLEM

Who is the audience/stakeholders?

- Business
  - Profit vs Non Profit
- People

WHAT DRIVES BUSINESS?

- Business (Why do they exist, what are their goals?)
  - Profit (Want to grow profit by 10% in next year)
    - High profitable products
    - Reduced costs
    - Acquiring high value customers
  - Growth (Want to become Billion dollar company)
    - Open new stores
    - Acquire new businesses and lines

WHAT DRIVES PEOPLE?

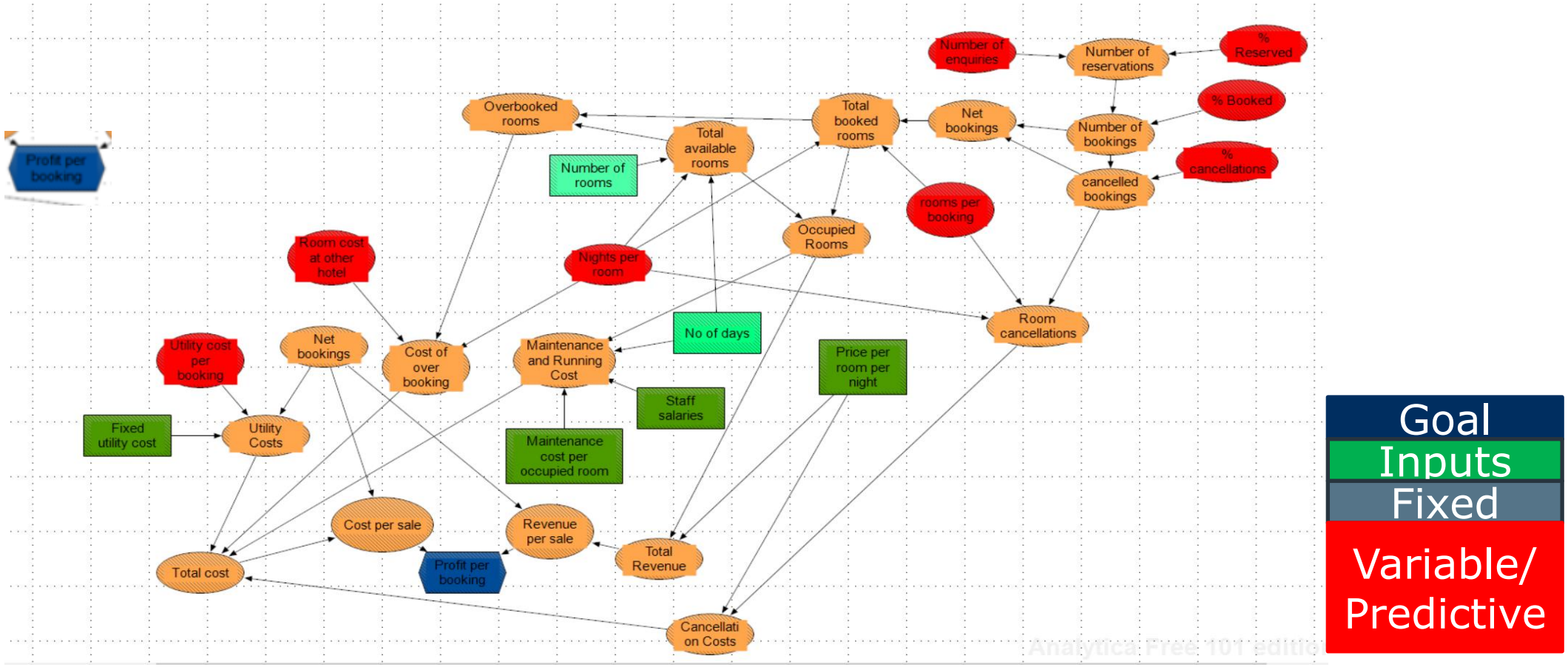
- What are their needs and wants?
  - Better standard of living (Want to provide good education to children and go on a family holiday twice a year)
    - Better personal investment opportunities (Vanguard vs Bank account)
    - Reduce personal debt options (Better debt management tools to reduce interest and charges) - PocketBook
    - Buy now pay later
  - Less stress (Want to go home early and adopt a healthy lifestyle)
    - Better transportation (Time problem)
    - Home exercise app (Fitness problem)
    - Yoga channel (Fitness problem)
    - Ready to eat healthy meals (Time problems)

WHAT DATA EXISTS

Does it solve the problem/create the new opportunity

- Yes?
  - Is the problem already solved/Can you validate it with data
  - Use the data to solve the problem
- No?
  - Decide on the data points
  - Find the data.
- Partially
  - Can you use the data points to create new features that will address the problem

BREAKING DOWN THE GOAL INTO DATA POINTS (HOTEL BUSINESS)



KICK OFF MEETING

Create a focus towards the project, specify expectations, identify project members (15 minutes)

- Aim of the project
  - Background: $2M retail company
  - Research: According to Financial Times, sales declining @5% for last three months
- What you wish to achieve
  - Identify demographics with spending decline (age, gender)
  - Identify locations with spending decline (store locations, residential locations)
  - Identify why spending has declined (churn, competition increase, income impact)
- How will you achieve
  - Analysis (descriptive, demographic behaviour, churn behaviour, competitive analysis, spending analysis)
  - Data points (transaction data, demographic data, location data, income data - internal or external)
  - Algorithms (Random forest - top features that drive churn, clustering – identify competitors, Regression – identify **slope** spend features)
  - Wireframe (Drawing tools, what will the app look like)
  - Tools (Python for machine learning, MySQL database to build metrics, tables, etc., Javascript/HTML/CSS to build the app)
- Any road blocks you have
  - I don’t know JavaScript – Need to do a course or Power Point the analysis

TRADITIONAL VS AGILE APPROACH

Data What? > Explore How? > Insights Why? > Action Problem?

- Longer/Stressful

Action Problem? Insights Why? Hypothesis/Exploration points How? Data What?

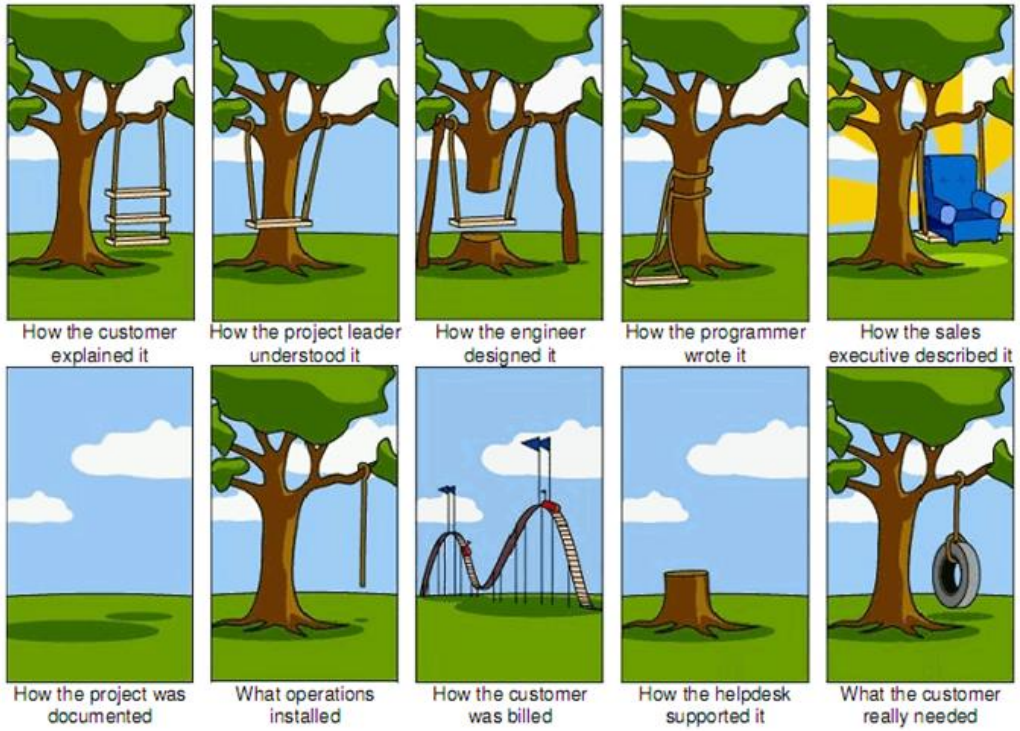
- Effective
- Iterate quickly

Define the outcomes to meet the problem by answering it with data

Define the MVP (Minimal viable product)

User story: As a government I want to decrease fees for students that belong to financial burdened households so they are able to go through the process of education with less financial burden and have equal opportunity to go to good schools.

WE DO NOT WANT THIS TO HAPPEN TO YOU



BEFORE APPROACHING THE DATATHON

Have you defined your audience?

Individual customer/Train or tram drivers/Government/Council Planner?

Pain points of each stakeholder?

Do you have the data to answer or find their issues?

Kick off meeting?

How quickly you are going iterate it?

Have you defined the MVP?

Tools:

1. 5 Whys – Ask yourself why you are doing this by working through 5 sequential whys.
2. Project Poster Template

DATATHON EXAMPLE (20 MIN WORKSHOP)

10 MINS

- Define stakeholders
- Define problems
- Link these to data points

5 MINS

- Wireframe (MVP)
- Analysis

5 MINS

- Present