BOLT UBC

DATATHON

SUMMIT BIOTECH: AN IMMEDIATE NEED TO ADDRESS EMPLOYEE TURNOVER

SPONSORED BY

> accenture

IT IS THE COMPETITORS' RESPONSIBILITY TO REVIEW AND UPHOLD APPLICABLE STANDARDS OF FAIR COMPETITION.

INSTANCES OF MISCONDUCT, SUCH AS CHEATING, PLAGIARISM, RESUBMITTING THE SAME CODE, OR IMPERSONATING A CANDIDATE, WILL RESULT IN THE COMPETITOR AND THEIR TEAM BEING AUTOMATICALLY DISQUALIFIED.

BOLT UBC BOOTCAMP 2022
TABLE OF CONTENTS

CASE STUDY

COMPETITION LOGISTICS

BOLT UBC BOOTCAMP 2022
INTRODUCTION

Susan Lao, the Chief Human Resources Officer of Summit Biotech, sighs tiredly after conducting yet another exit interview. This is the third interview of the week; another valuable employee has decided to unexpectedly leave the company.

Unfortunately for Susan, the exit interviews have not been very revealing. She is struggling to determine the root cause and is becoming increasingly flustered at the company's rising attrition rates.

To make matters worse, this is no secret, and the pressure is mounting from investors and leadership. With employee turnover at an all-time high, the board has demanded that Susan conduct an immediate investigation and outline an action plan. Recognizing that she may not have all the necessary resources and skill sets at her disposal, the board has given permission to work with the Analytics team to ensure that her insights and recommendations are data driven.

The Director of the Board has given Susan a 15-minute slot to present her findings during their next board meeting. The Director has warned Susan that the circumstances are dire, and that she is beginning to lose the confidence from some of the other members. It is critical that Susan is mindful of this as she prepares for the presentation.

Summit Biotech

BOLT UBC BOOTCAMP 2022
INSTRUCTIONS

You are part of the Data Analytics team at Summit Biotech, and Susan has reached out requesting immediate assistance. She has already begun to compile some helpful documentation (see Exhibits B-E) but needs a lot of support from a data perspective.

You immediately remember that there is a dataset that a former employee had begun to put together (Exhibit A), and that this would be a great starting point.

Susan also indicates that the board have provided her with a more detailed list of expectations, and would like the presentation to include the following:

- A summary of key findings from the employee dataset (5-10 visualizations) to better understand turnover.
- A clear statement of which subset* of individuals you believe to have the largest impact on employee turnover. This should be derived from the dataset as well as the additional exhibits.
- A set of realistic, data-driven recommendations on how the company can best address the needs of the identified subset and decrease the turnover rate in the foreseeable future. These recommendations should cover both the short-term (<2 years) and long-term.
- They would also like you to outline what success looks like and how they would go about measuring the efficacy of your recommendations.
- *Nice-to-have:* A machine learning model that identifies that most important predictors of attrition. This can be as simple or as complex as you like – but you must provide a rationale for why the model was selected as well as any notable limitations.

You will help Susan with each of the above points, including the presentation that she will deliver to the board. State any assumptions clearly.

* The subset can be any categorization that you choose. This could be based on variables such as age, marital status, job role, etc.

COMPANY BACKGROUND

BOLT UBC

Summit Biotech is a medical device manufacturer based in Vancouver, Canada. It was founded in 2012 by Sandra McKenney, Bennett Kingsley, and Simon Kumar, a team of individuals with backgrounds in life sciences, entrepreneurship, and engineering. The company is focused on developing proprietary treatments for cardiac conditions. Their current portfolio consists of 5 different products; their most popular being the BRIO3 System®, which delivers autonomic regulation therapy to treat patients experiencing heart failure. The firm currently sells their products to variety of customers, such as primary care providers, medical laboratories, hospitals and other treatment centers.

The firm invests heavily in research & development and is focused on recruiting top talent in the life sciences and research sectors. Their interdisciplinary team of scientists, researchers, and engineers are committed to researching and developing new solutions that transform the way we treat heart disease. The team is working diligently to expand their global partnerships to further this goal.

Summit Biotech

VISION: TO PUSH THE BOUNDARIES OF INNOVATION AND HELP PEOPLE LIVE LONGER, HEALTHIER LIVES.

MISSION: TO DISCOVER AND DEVELOP BREAKTHROUGH TECHNOLOGIES TO IMPROVE THE WAY WE TREAT THE HUMAN HEART.

VALUES

Boldness – We push beyond the edge of what is possible.
Quality – We are committed to delivering products of exceptional quality.
Integrity – We strive to achieve the highest ethical standards in our work.
Teamwork – We are collaborative team players.
Inclusion – We encourage team diversity and strive to foster a sense of belonging for everyone.

KEY METRICS, 2021:

ESTIMATED ANNUAL REVENUE = $515M
ANNUAL R&D EXPENSES = $88M

MARKET CAP = 2.04B

OF EMPLOYEES = 1,500
AVERAGE COST PER HIRE = $1,450

BOLT UBC BOOTCAMP 2022
INDUSTRY INFORMATION

The medical device manufacturing industry in Canada has grown on average 4.8% in the past 5 years (IBISWorld, 2021). The growth of the industry is driven by various factors, most notable being the growing aging population and increased public and private spending in the healthcare sector.

In a research exercise earlier this year, the Data Analytics team compiled various facts and figures relating to people analytics in the medical device manufacturing industry in 2021. Below are some numbers that was found through this exercise:

AVERAGE ATTRITION % BY DEPARTMENT:

Research & Development 15%

Human Resources 20%

Sales 15%
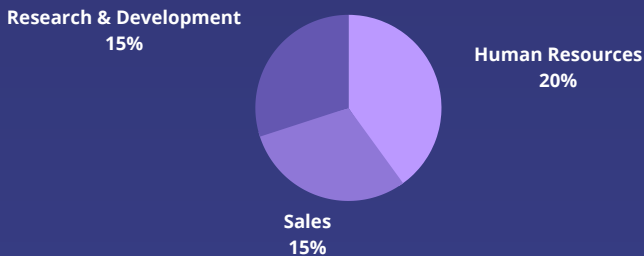
Average attrition rate	12%
Average employee distance from home	8.2 km
Average cost per hire	$1,300
Average HR-to-employee ratio	5.50%
Average % of employees who have worked OT in the past year, out of total employees	25%

VARIOUS STATISTICS BY JOB ROLE:

	Lab Technician	Sales Executive	Research Scientist	Sales Representative	Healthcare Representative	Manufacturing Director	Human Resources	Managers	Research Director
Attrition %	22%	19%	18%	31%	6%	6%	24%	5%	4%
Average Monthly Income ($)	3,400	7,500	3,400	3,100	8,400	7,800	4,400	18,000	17,000
% who identify as "Travel Frequently" for work	22%	15%	19%	21%	20%	22%	18%	12%	14%

IMPACT OF COVID-19

COVID-19 inevitably had an impact on the Canadian job market. For some companies, like Summit Biotech, the number of forced layoffs was minimal. However, as the market became increasingly "candidate-driven", and companies started to see mixed results with respect to employee turnover.

On the one hand, at the start of the pandemic, employees felt more compelled to stay with their current employer as they appreciated the job security. Employees sought to minimize uncertainty in already unpredictable circumstances. Research suggests that this perspective was only true for specific industries and during COVID's peak (2020 to the middle of 2021). During this time, there was a build up of turnover that would have naturally occurred – this exploded during 2021.

The increase in turnover is partially due to the following:

- COVID-19 has allowed for a larger number of people took the time to reflect on their career choices. People that had not previously considered a career change had more time, outside of their normal routines, to think about "what's next". They begun to consider "why" they work, rather than just their pay, responsibilities, and title.

- Beyond just the "why" – perspectives have also shifted around "what" and "where". Job descriptions and responsibilities have drastically changed – work can be done from anywhere. Similarly, candidates have come to expect remote work and increased flexibility. Return to office policies have been integral people's decisions around whether to leave.

BOLT UBC BOOTCAMP 2022

EXHIBIT A: SUMMIT BIOTECH ATTRITION DATASET, 2021

BOLT UBC

A former employee within the Data Analytics team compiled 2021 employee data at the end of the year (attached spreadsheet). The document includes employee demographic data, survey data (from a recent satisfaction survey that was conducted company-wide), and various other data points.

In addition to employee information, the spreadsheet includes whether an employee left Summit Biotech by the end of the year.

See Attached: Summit Biotech - Attrition Dataset 2021.xlsx

BOLT UBC BOOTCAMP 2022

EXHIBIT B: 2021 COMPENSATION PLANNING EXERCISE, EXCERPT

Below is an excerpt of a compensation planning exercise done by the Human Resources department in mid-2021. Through this exercise, the department reviewed each job role and listed various compensation elements. The table below includes elements such as job level allocation, overtime pay, and stock option levels for only select job roles. Note that the items listed are not exhaustive – there are other elements of compensation (ex. benefits, vacation days, bonuses, etc.) that are not included in the excerpt below.

Job Role	Compensation Elements
Lab Technician	**Job Level Guidelines** Candidates should be primarily assessed by their educational background when assigning the appropriate job level upon hire (higher job level with higher educational attainment). **Overtime** • 1.5x regular rate of pay **Stock Options** • Can only opt-in after a minimum of 1 year of service with the company.
Manager	**Job Level Guidelines** Candidates should be primarily assessed by their educational background when assigning the appropriate job level upon hire (higher job level with higher educational attainment). **Overtime** • No OT compensation **Stock Options** • No changes to stock options policy – decision to opt-in is available upon joining the firm.
Sales Executive	**Job Level Guidelines** Candidates should be primarily assessed by their educational background when assigning the appropriate job level upon hire (higher job level with higher educational attainment). **Overtime** • No OT compensation **Stock Options** • No changes to stock options policy – decision to opt-in is available upon joining the firm.

EXHIBIT B: 2021 COMPENSATION PLANNING EXERCISE, EXCERPT

BOLT UBC

Job Role	Compensation Elements
Manufacturing Director	**Job Level Guidelines** Candidates should be primarily assessed by their educational background when assigning the appropriate job level upon hire (higher job level with higher educational attainment). **Overtime** • No OT compensation **Stock Options** • No changes to stock options policy – decision to opt-in is available upon joining the firm.
Sales Reps	**Commission** • Commission is connected to revenue – each sales representative earns 5% of each sale they make. **Job Level Guidelines** Candidates should be primarily assessed by the # of years' experience they have in sales when assigning the appropriate job level upon hire (higher job level with higher years' experience in sales). **Overtime** • 1.5x regular rate of pay **Stock Options*** • Can only opt-in after a minimum of 1 year of service with the company.

Stock Options: Due to a shortage in HR staff and high administrative burden, Summit Biotech decided to limit company stock option plans to managerial roles and implemented this change mid-2021. In other words, any *new joiners in non-managerial roles*, such as Lab Technicians and Sales Representatives, would not be able to opt-in until they were with the company for at least a year. However, existing employees could keep their current stock option level.

BOLT UBC BOOTCAMP 2022

EXHIBIT C: COVID-19 RETURN TO OFFICE MEMO

June 15th, 2021

Hi Team,

We have some exciting news – it is almost time to return back to the office!

Before we get into the details, we'd like to thank each of you for your commitment, hard work, and flexibility over the last year. We recognize how stressful recent times have been, and greatly appreciate your trust in us to navigate how we would continue to conduct our business.

While we are still in the midst of difficult circumstances, we believe that it's the right time for us to return to work. Although remote work has been relatively successful, we believe it makes sense to shift back to an office-model.

We'll be reopening in 3 phases:

- **Phase 1:** Those that are under the age of 60 without increased risk for serious illness are asked to return on July 5th, 2021. We'll be maintaining strict social distancing measures, and all employees will be asked to wear masks when social distancing is not possible and when moving about the workspace.

- **Phase 2:** All full-time employees without risk for serious illness are asked to return, and non-essential business travel can resume on August 2nd, 2021. We'll continue to strictly socially distance and wear masks.

- **Phase 3:** Return to unrestricted staffing in our workspace. Date is to be determined based on the success of Phases 1 and 2 and the percentage of our workforce that has received the COVID-19 vaccine.

BOLT UBC BOOTCAMP 2022

EXHIBIT C: COVID-19 RETURN TO OFFICE MEMO (CONTINUED)

Some employees may be wondering if they'll be permitted to continue working from home. Our opinion is that we work best from the office, where we can brainstorm new ideas and collaborate in-person. So while we understand that many have settled into working remotely, we will be asking all employees to return to the office based on their eligibility outlined in the 3-phase approach above.

If you are hesitant about returning to the office, please speak with your manager as soon as possible.

Most importantly, we ask that if you aren't feeling well, then please stay home. Similarly, if you live with an individual who is not feeling well, please stay home. Additionally, if you've had close contact with someone who has tested positive for COVID-19, we ask that you notify your manager and please stay home for 2 weeks, or until you're able to produce a negative test result.

We can't wait to see you in-person!

Warmest regards and our very best,

Ashley Eaton

The Leadership Team

BOLT UBC BOOTCAMP 2022

EXHIBIT D: A HANDFUL OF FORMER EMPLOYEE JOB BOARD REVIEWS

BOLT UBC

The following reviews have been sourced from a job board review website.

Review #1 (07/19/2021):
- Demographics: Female, 25
- Role: Lab Technician
- Rating: 4/5
- Pros: I liked feeling that the work I do matters. Many of my coworkers were friendly and always willing to help out with difficult projects.
- Cons: Back-to-work policy didn't align with my personal priorities.

Review #2 (04/20/2021):
- Demographics: Male, 23
- Role: Sales Representative
- Rating: 2/5
- Pros: The mission is well-defined and patient focused – this aligned with my values.
- Cons: I felt extremely under supported – there is a lack of training and emphasis on personal development. I felt very isolated in my role.

Review #3 (03/15/2018):
- Demographics: Female, 42
- Role: Research Director
- Rating: 5/5
- Pros: Love that our team is from such diverse backgrounds but all united towards a single goal. The feeling of camaraderie and belonging is authentic and represents the values that are important to me.
- Cons: As with most growing & scaling companies - change is constant and have learnt that you have to be open and flexible in order to thrive. I appreciate the monthly all-hands and communication that help keep me in check of the company's progress in areas outside my main focus.

EXHIBIT D: A HANDFUL OF FORMER EMPLOYEE JOB BOARD REVIEWS (CONTINUED)

BOLT UBC

Review #4 (01/15/2021):
- Demographics: Male, 25
- Role: Sales Representative
- Rating: 1/5
- Pros: N/A
- Cons: Salaries for non-managers are far below market and employees are not allowed to discuss their pay. Stock options are offered but this doesn't make up for the gap. Vacations can be difficult to book.

Review #5 (09/22/2021):
- Demographics: Male, 31
- Role: Research Scientist
- Rating: 5/5
- Pros: In my years of work experience, this is the best company culture that I have been a part of. The company definitely has high expectations of the team and the job is oftentimes demanding, but that is expected when trying to achieve great things! Employees are regularly recognized for their accomplishments, and are provided with promotion opportunities where deserved. Management is approachable and transparent. In a fast-paced, high-growth environment like this, individuals that crave a challenge and are willing go beyond their role to help the team succeed will definitely find this company to be a great place to work.
- Cons: I know the return to office policy wasn't well received by all, but I've been in the office the whole time, so it didn't impact me...

BOLT UBC BOOTCAMP 2022

EXHIBIT D: A HANDFUL OF FORMER EMPLOYEE JOB BOARD REVIEWS (CONTINUED)

Review #6 (01/15/2021):

- Demographics: Male, 28
- Role: Executive Assistant
- Rating: 3/5
- Pros: An amazing team and everyone is super willing to help each other. Lots of opportunities to learn and take on new tasks. Company is doing some innovative science and is definitely cool.
- Cons: Close-minded management that won't listen to your ideas; hierarchy is very deliberate.

Review #7 (01/15/2021):

- Demographics: Female, 22
- Role: Sales Representative
- Rating: 2/5
- Pros: Colleagues are great.
- Cons: Employees are often expected to work overtime, on weekends, and on holidays without being properly compensated for it. Overall, a terrible work culture (culture of fear rather than safety). A lack of transparency (answers to employees' questions are often vague – especially during COVID). Switch to remote helped mitigate issues with micromanagement but everything flooded back when we forced to return to the office.

Review #8 (01/15/2021):

- Demographics: Female, 23
- Role: Sales Representative
- Rating: 4/5
- Pros: I felt like what I was selling matters. I enjoyed trying to sell cutting-edge technology.
- Cons: I felt undervalued at times, especially during COVID. I liked working remotely and actually found we were more productive and could fit in more sales calls. The pay isn't bad, but it's not great either; the benefits are fine…

BOLT UBC BOOTCAMP 2022

EXHIBIT E: COMPANY TRAINING PLAN FOR SELECT JOB ROLES, 2020

BOLT UBC

When COVID-19 led to the rapid shutdowns of workplaces in early 2020, the Human Resources department in Summit Biotech had to respond quickly and adapt their company-wide training plans.

Previously, the firm had in-person, instructor led trainings across various job roles. Overnight, the team had to pivot and outsource the development of online training material. The job roles that were primarily impacted were Sales Representatives and Lab Technicians.

Below is a summary of the revised training approaches for these job roles in early response to the COVID-19 pandemic. These are still currently in effect:

Sales Representatives:
- New representatives are required to complete 15-20 online modules, amounting to a total of 40-50 hours of total training within their first 2 weeks of starting
  - These modules include interactive elements such as simulations and scenario practice
  - There are 2-3 modules dedicated to each of Summit Biotech's products
  - At the end of each module, each employee is quizzed and requires 80% to pass
- After the two weeks of training, each Sales Representative would be assigned sales leads to begin their work or are expected to generate new leads. They are also expected to travel independently when necessary to do sales pitches to potential clients..
- After easing into their roles, different Sales regions organized virtual monthly townhalls to re-cap accomplishments, share sales strategies, and introduce any new joiners.

EXHIBIT E: COMPANY TRAINING PLAN FOR SELECT JOB ROLES, 2020 (CONTINUED)

Lab Technicians:

- New technicians are required to complete 10 online modules, amounting to a total of 20 hours of total training within their first week of onboarding
  - These modules include interactive elements such as simulations and scenario practice
  - At the end of each module, each employee is quizzed and requires 80% to pass
- After the first week of online training, new lab technicians are expected to visit their local lab to complete their work. All lab technicians were required to visit the lab at least once a week to complete necessary tasks. This frequency increased as pandemic restrictions loosened.
- When it was safe to do so, it was required that there were at least two lab technicians in one lab at a time. Any new lab technicians would be paired with a more senior lab technician to gain familiarity with their role. Most of the time, this was the lab supervisor.

Other Roles (Ex. Executives & Directors, Researchers, etc.):

- Largely on-the-job shadowing.

The dataset used for this case is modelled after a fictitious dataset published by IBM (Pavansubhash, 2017).

References

IBISWorld. (2021, November). Industry market research, reports, and Statistics. IBISWorld. Retrieved April 29, 2022, from https://www.ibisworld.com/

Pavansubhash. (2017, March 31). IBM HR Analytics Employee Attrition & Performance. Kaggle. Retrieved April 29, 2022, from https://www.kaggle.com/datasets/pavansubhasht/ibm-hr-analytics-attrition-dataset

BOLT UBC BOOTCAMP 2022
COMPETITION – TEAM STRUCTURE

BOLT UBC

To compete in the Datathon, all delegates must be in a team of 3 to 5 people. Each team will have a Discord text channel and a voice channel for communication purposes.

If you signed up as an individual: You will receive an email on May 6th, 2022, with your assigned team number and teammates' contact information.

We recommend you *proactively* reach out to your teammates, and ensure you have active communication. If you have trouble connecting with one or multiple members of your please reach out to BOLT execs via email or the Discord #help channel.

If you signed up as a group: You will receive an email on May 6th, 2022 with your team number. Please maintain close contact with your team.

BOLT UBC BOOTCAMP 2022

COMPETITION – CASE DELIVERABLES

- EACH TEAM WILL RECEIVE THE CASE AND DATASET AT 5 PM PST, MAY 13TH, 2022

- Each team will have 24 hours to work on the case

- **SUBMIT YOUR DELIVERABLES AT 5 PM PST, MAY.14TH, 2022**
  - **Naming Convention:** Team <#>.ppt and Team <#>.pdf
  - **File Format:** Powerpoint and PDF ONLY.
    - We recommend you take screenshots of your data analytics takeaways and embed those insights into your presentation.
  - **Presentation:** 15-minute presentation + 5-minute Q&A

- Note that your submission at 5 PM on Saturday, May 14th, will be FINAL. No changes are allowed after submission deadline. **Late submissions will NOT be accepted.**

Teams will be judged on three main categories:
- Data Analytics
- Business Recommendation
- Presentation Delivery

BOLT UBC BOOTCAMP 2022
COMPETITION – JUDGING PROCESS

FIRST ROUND:

All teams will be divided into 4 different judging breakout rooms. Each room will have approximately 8-9 teams. The teams are divided randomly.

Your team will be notified of your assigned room via Discord by 8:30 AM PST on Sunday, May 15th.

PLEASE ARRIVE AT LEAST 20 MINUTES BEFORE YOUR ALLOCATED PRESENTATION TIME.
DUE TO THE TIGHT SCHEDULE, <u>LATE TEAMS WILL BE DISQUALIFIED.</u>

Each team is allocated a total of 20 minutes for the first round of presentations: 15-minute first presentation + 5-minute Q&A.

The breakout room judges will select the top team in their breakout room to advance to the Final Round.

FINAL ROUND:

The top 4 finalist teams will be announced via Discord and Zoom by 2 PM PST on Sunday, May 15th. The finalist teams will present to a panel of judges. The final round is also open to public viewing.

After the announcement, the finalist teams will have 15 minutes to prepare.

Each team will have 15 minutes to present with 5 minutes of Q&A.

The winner of the Bootcamp will be announced by 4 PM PST via Zoom and Discord!

BOLT UBC BOOTCAMP 2022
COMPETITION – PRIZE STRUCTURE

BOLT UBC

PRIZE BREAKDOWN:

🏆 1ST PLACE: $500

🏆 2ND PLACE: $300

🏆 3RD AND 4TH PLACE: $100

ALL PARTICIPANTS:

BOLT UBC BOOTCAMP 2022 CERTIFICATE

BOLT UBC BOOTCAMP 2022
COMPETITION - JUDGES

BOLT UBC

JUDGES - MORNING

Maggie Li
Sales Analytics Manager
JTI Macdonald

Chang He
Data Analyst
BC Provincial Government

Aditi Priydarshani
Oracle Cloud HCM Consultant
Accenture

Madhu Sudhanarao
Technology Delivery Lead Manager
Accenture

Theodore Lau
Senior Software Engineer
Salesforce

Marc Espada
Associate Consultant
Cascadia

Nicole Shum
Global Product Marketing
Equinix

Thomas Villeneuve
Business Solution Architect
NMG Consulting

JUDGES - AFTERNOON

Christine Xu
Senior Analyst
LifeScan

Jordan Margulius
Staff Accountant
KPMG (representing
CPABC)

Pallavi Agarwal
Manager, Business Insights
& Analytics
TD Bank

*DISCLAIMER: FINAL JUDGE SELECTION IS SUBJECT TO CHANGE