**Business Understanding**

**Instructions:**

Please share your answers filled in-line in the word document. Submit code separately wherever applicable.

Please ensure you update all the details:

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_ Batch ID:** \_\_\_\_\_\_\_\_\_\_\_

**Topic: Business Understanding**

**Instructions:** Learn to understand the business objective(s) and constraint(s) based on the business problem statements. You should identify and frame statements using the words “maximize” and/or “minimize” for objective(s) and constraint(s) (for example: “maximize profit” “minimize risk”, etc.)

Q1. For the below listed business problems, draft the business objectives and constraints.

**Hint:**

* Objective(s) implies the goals to be achieved in terms of maximizing & minimizing.
* Constraint(s) are the challenges/limitations in achieving the objectives.

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| **S.no** | **Business Problem** |
| **Hint:** | Smart data platforms can bring together customer transactions data and data from real-time communication streams to disclose the insights concerning customers feelings about the services which allows addressing the satisfaction-related issues and churn prevention.  **Sol: Hint**  Business Objective:  Minimize: Churn rate (churning implies customers going to another company for their needs)  (or)  Maximize: Customer satisfaction (satisfaction will make customer more loyal to the brand)  Business Constraints: Lack of data coverage for all customers |
| 1 | Advanced targeting allows predicting needs, preferences, and customers’ reaction to the telecommunication services and products on offer by segmenting their market and targeting the content according to each group.  Business Objective:  Maximize: Provide Better telecommunication service by providing offer.  1 .Customer rating on various service’s provided to the customers  Minimize: Customers negative reviews  Business Constraints: Availability exact data of customer need and preferences |
| 2 | Telecommunication companies tend to regard the customers’ engagement process and internal channels as a guarantee of smooth functioning of the operations. Network management and optimization gives an opportunity to identify the root causes.  Business Objective:  Minimize: The call drop rate  Maximize: To improve the root causes of network management and optimization  1.The satisfaction index over the network  Business Constraints: Overlook of unseen events like environmental, condition’s, pricing limits due to competitive conditions |
| 3 | Ensuring the high-quality performance of the product according to the customer’s requirement is not possible without applying smart data solutions.  Business Objective:  Minimize: The failure of the product ,minimize the negative reviews of the products and it’s servies  Maximize: Provide better services according to the customer’s need  Customer care personnel so as to provide high quality performance  Business Constraints: If customer support is increased then product cost is going to increase and now a day customer are looking for low cost and best support |
| 4 | Collection of positive & negative reactions to the service or product from social media sources, recent trends via customer sentiment analysis may provide an opportunity to utilize mechanisms for direct responding.  Business Objective:  Minimize: Negative review  Faulty data and its wrong references  Maximize: Quality improvement, positive sentiment  Business Constraints: Misinterprets of sentiment, getting various resources to collect the customer’s reactions |
| 5 | Acquiring as many subscribers as possible remains a critical goal. In recent years, the number of users has been growing extremely fast and pricing emerged as a tool to limit congestion and increase revenue at the same time.  Business Objective:  Maximize: The subscribers base and optimize the operation cost so as to provide maximum benefit to the customer  Minimize: Operation cost and negative reaction of customer  Business Constraints: Pricing of services is bottleneck |
| 6 | Customers usually search for better & cheaper services so the telecommunication companies measure, manage, and predict the customer lifetime value (CLV). Smart solutions process real-time insights based on customer purchasing behavior, activity, services utilized, and average customer value.  Business Objective:  Minimize: Customer’s switching rate  Maximize: Customer’s life time value on the network  Business Constraints: Designing dynamic modeling of offers |
| 7 | In telecommunications, companies prevent bypass fraud by using big data to review the source of transactions, the cost of the call, and the destination number, in real-world situations.  Business Objective:  Minimize: The frauds at various points  Maximize: The profit of the company  Business Constraints: Sometimes it is not possible to process the data at various points which lead to trapdoors for frauds. |
| 8 | Identify security issues, conduct predictive analysis, and use machine learning-based solutions to analyze any patterns of threats and automated escalations to resolve issues before they cause serious damage.  Business Objective:  Minimize: Minimize the threats, potential threats and attacks to the network  Maximize: Maximize the security, end point security  Business Constraints: Applying various security mechanisms and monitors across various points increases the cost of the operation and hence the overall cost |
| 9 | Retail industry uses AI systems with built-in machine learning algorithms to collect and analyze data regarding products, transactions, etc. Based on findings from data, systems estimate the best strategies that can be implemented for the profit of the business  Business Objective:  Minimize: The wrong inference from such tools so as to take correct actions  Maximize: Improve various best strategies to improve profit  The accuracy of prediction’s of customer’s satisfaction on various products  Business Constraints: Identification of exact feature of product satisfaction |
| 10 | The price determination process depends not only on the costs to produce an item but on the wallet of a typical customer and the competitors' offers. The tools for data analysis bring this issue to a new level of its approach.  Business Objective:  Minimize: Errors in prediction of the cost of the product  Maximize: Maximize the offer for the customers  Optimize the cost of the product so the both side there will be win-win situations  Business Constraints: Designing dynamic cost model is challenge  Rate of change of dollar range |
| 11 | Inventory deals with stocking goods for their future use. Inventory management refers to stocking goods to use in times of crisis. The retailers aim to provide the right product at the right time in the proper condition.  Business Objective:  Minimize: The delivery of product time to the customer  Maximize: Maximize the good quality product instead of bad quality products  Customer satisfaction index about the delivery and proper condition  Business Constraints: Maintaining the big inventory and space increases the operational cost |
| 12 | Customer feedback is taken as an important aspect of the retail store. Considering customer feedback and making changes can increase the store profits and customer satisfaction.  Business Objective:  Minimize :Customer complaint about the products  Maximize: Providing the better quality product to the customer can improve the store profits  Providing better quality product to the customer can improve the feedback  Customer base and profit in turn  Business Constraints: Getting customer’s reviews using smart mechanisms and process with appropriate mechanisms |
| 13 | Businesses have to be extremely cautious about choosing a new store's location. To make such a decision, a great deal of study regarding the location is required which gives us a basis for understanding the potential of the market. Also, special settings concerning the location of other stores are considered.  Business Objective:  Minimize: The mistakes in analyzing the sale of the products in the given area  Maximize: To take the proper location for the improvement of the business  Business Constraints: Availability of smart mechanisms and data so to have correct analysis |
| 14 | Airlines use AI systems with built-in machine learning algorithms to collect and analyze flight data regarding each route distance, altitudes, aircraft type, weight, weather, etc. Based on findings from the data, systems estimate the optimal amount of fuel needed for a flight.  Business Objective:  Minimize: Error in collecting the data  Fuel cost and operational cost in turn  Maximize: The accuracy of prediction’s  The accuracy of prediction of data so as to optimize the cost of fuel  Business Constraints: Environmental condition and unseen events estimation |
| 15 | Airlines and flight operators can significantly reduce their operational costs and overhead by optimizing their sales revenue in the longer term with AI-powered systems (dynamic pricing)  Business Objective:  Minimize :Minimize loss  Maximize: Maximize the profit  Business Constraints :Fuel Pricing |
| 16 | As flight delays are dependent on a huge number of factors, an intelligent system can be applied to analyze huge datasets in real time to predict delays and re-book customers’ flights in time.  Business Objective:  Minimize: Minimize the delay time  Maximize: Better techonolgy that enhanced the intelligent system  Business Constraints: |
| 17 | By analyzing specific customer’s flight and purchase patterns, and coupling it with historic data, algorithms are able to point out suspicious credit card transactions and detect fraudulent cases thereby saving airline and travel companies millions of dollars every year.  Business Objective:  Minimize: eliminates fraudulent  Maximize: To maximize fraud Detection and preventio  Business Constraints: analyze specific customer flight |
| 18 | What is the optimal way to schedule an airline’s crew to maximize their productive time and balance their working hours to increase employee retention?  Business Objective:  Minimize:  Maximize: Maximize the optimal solution  Business Constraint: |
| 19 | The image of the enterprise in the community largely influences the recruitment process. A person may not be interested in applying for a job in an enterprise whose goodwill is low.  Business Objective:  Minimize:  Maximize:  Business Constraints: |
| 20 | If the job is boring, hazardous, tension ridden, and lacking in opportunities for advancement, very few people may be available for such jobs.  Business Objective:  Minimize:Lack of laziness  Maximize: Improve the disclpiline in each and every department with strict rule  Business Constraints: |
| 21 | One of the greatest challenges that an HR leader could face is keeping the staff satisfied.  Business Objective:  Minimize: Minimize the workload  Maximize: Maximize the extra social acitivties  Business Constraints: |
| 22 | Organizations face huge costs resulting from employee turnover. Some costs are tangible such as training expenses and the time it takes from when an employee starts to when they become a productive member.  Business Objective:  Minimize: : Employee turnover cost  Maximize: Improving to save the money from that  Business Constraints: |
| 23 | Attracting the attention of a candidate and driving the traffic towards a company’s hiring page is one place where an AI can see widespread use.  Business Objective:  Minimize:  Maximize: Using advertisement  Business Constraints: |
| 24 | HR departments are responsible for the implementation of training programs. Some of these programs are designed to ensure your staff follows policies and procedures while others are used for job advancement. In some job settings, employees are required to complete certain certification programs.  Business Objective:  Minimize: : Lack of carrrer growth opportunity  Maximize: Providing program to all employers and complete that  Business Constraints: Implementation of training programs |
| 25 | Understanding people and why they decide to stay at or leave a job is arguably one of the most important questions for HR to answer. Identifying attrition risk calls for advanced pattern recognition in surveying an array of variables.  Business Objective:  Minimize:  Maximize: Maximize the understanding of pattern recognition  Business Constraints: |
| 26 | Your HR department likely deals with many requests and queries from employees throughout the day. This could include queries about available time off, vacation time, or HR issues with their paycheck. They may also receive requests for shift swaps and other scheduling problems.  Business Objective:  Minimize: : Disturbtion in workflow  Maximize:  Business Constraints: |
| 27 | In modern manufacturing, production can often depend on a few critical machines or cells. The same data that provides a manufacturer real-time monitoring can be analyzed through data science to improve asset management and prevent machine failure.  Business Objective:  Minimize: Machine Downtime  Maximize: less machine failure and maximize production  Business Constraints: analyze real time data and used it in real time manufacutre |
| 28 | Plan to help manufacturers analyze if their product and services are meeting all objectives for initial processes such as the DMAIC framework. They need a strategy to be used to determine which product has the highest impact. Helping in minimizing errors and losses and eliminating unnecessary human effort can increase the overall quality of products and services.  Business Objective:  Minimize: errors and losses and eliminates unneccesarry human effort  Maximize: Overall product and service quality  Business Constraints: without unnecessary human effort done work/analyzing data |
| 29 | Some flaws in products are too small to be noticed by the naked eye even if the inspector is very experienced. The time taken for inspection also slows down the production.  Business Objective:  Minimize:  Maximize:  Business Constraints: |
| 30 | A business wants to make design enhancements/upgrades to the current version of the product to increase consumption of the product and thereby the brand image. They need to identify the features which most of the customers use and they need to understand customer behavior towards the product, brand, and their interests.  Business Objective:  Minimize: Product unwanted Feature  Maximize: Ungrade design and current version,brand image  Business Constraints: understand data |
| 31 | For many contract manufacturers, product development is part of the service they provide so having data to validate their choices to their customer is crucial. To validate the choices, they need to depend on a wide range of factors such as value for money, quality, reliability, and service. It is crucial to gather such data.  Business Objective:  Minimize:  Maximize:  Business Constraints: |
| 32 | Manufacturers are able to detect all kinds of issues on their routine methods of production, from bottlenecks to unprofitable production lines. Companies are taking a deeper look into their logistics, inventory, assets, and supply chain management. The insights will bring high-value insights that uncover potential opportunities not just in the manufacturing process but also in the packaging and distribution.  Business Objective:  Minimize: detect all kinds of issues/minimize unprofitable production line  Maximize: cost effectiveness  Business Constraints: maintain, packaging and distribution |
| 33 | The Department of Employment, Skills and Small Business carries out research to identify skill shortages in the labor market. Factors for skilled labor shortage analysis are adequate availability of vacancy, job postings and recruitments, applicants’ qualifications for the job, factors affecting the position to be filled, such as required licensing requirements, qualification and experience requirements are few of those constraints that should be considered.  Business Objective:  Minimize: skiils shortage in labour market  Maximize: Improved the efficinency in learning algorithum  Business Constraints: |
| 34 | The world is constantly changing. Thus, the sports industry is faced with the challenge of trying to predict the next trend, the next big idea that will capture their audience. Coupling this challenge with that of technology, it’s clear that some sports teams and venues will always be at odds.  Business Objective:  Minimize: Gap between sports industry  Maximize: To improve the technology that will help to predict the next trend  Business Constraints: |
| 35 | Betting companies analyze the massive amounts of data generated by sporting events all around the world to come up with probabilities for future outcomes. Goes without saying that predictive modelling using machine learning techniques plays an important role in this.  Business Objective:  Minimize: minimize event cancellation  Maximize: Improve the accuracy of predictive model  Business Constraints: analyze the massive amounts of data |
| 36 | Stadium management and sponsors have studied the average profile of their audience carefully and have made targeted advertisements that appeal to their audiences. The broadcasters and stadium management have placed those ads carefully after conducting a careful analysis of its own resources for maximum impact.  Business Objective:  Minimize: appeal selected people and save money  Maximize: Maximize the advertisement  Business Constraints: collecting information from audience data |