**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**

**1**Business Objective:

2.Business problem:

3.Business success criteria:

4.ML Success criteria:

5.Economic Success Criteria:

**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:  Business problem:  Business success criteria:  ML Success criteria:  Economic Success Criteria:  Maximize: make the sale of the product more towards the customers  Analyse the smart data and give the more servises  Minimize: customer negative reviews  Business Constraints: Avablility extract the data and needs an d preference |
| 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:call drop rate  Maximize: make the satisfaction over the network  Business Constraints: \_overlook of unseen event over the network |
| 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: minimize the negativity of the product  Maximize: high -quality performance of the product  Business Constraints: give the low cost and make the high performance |
| 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: 1.minimize the negative reaction to words the product  2.give the customer proper guideness and assure that the product security  3.by providing the quality feature of the product  Maximize: improve the quality of the product as per need  2.impove the quality of the product.  Business Constraints: give the best service of the product  Collects the customer reaction |
| 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:1.good quality service  2.minimize the cost of the product  Minimize: 1.opertion cost and minimize negative reaction towards the product  Business Constraints: pricing of services |
| 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: 1.customer switching rate  Maximize: 1.customre life time value  Business Constraints: dynamic modeling 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 fraud at various point  Maximize: the profit of the company  Business Constraints: not possible to process the data at the various points leads to which trapdoor 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: te potentila tread and attach to network  Maximize: reduce the serious damage and give it the best security  The end point security  Business Constraints: applying the various security mechanisum and monioter across the varios glob |
| 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: cost of the sytem  Maximize: give the best the AI system  Give the best product for the accuracy purpose  Business Constraints: identification of exact feature of the product statisfaction |
| 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: erros In the prediction of the cost of the product  Maximize: make the stable price of the product  Business Constraints: designing the dynamic cost model is challenge |
| 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: make the goods cost is constant  Delivery time  Maximize: provide the good quality of the product  Customer satisfaction index about ad  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 product  Maximize: taking the large amount of feedback from customer and work on it  Business Constraints: getting the customer reviews using the smart mechanism and process with appropriate  Mechanism or agency |
| 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: make the less number of store in the same location  Analyzing the sale product in the given area  Maximize: correct decision about the selection of the location  Business Constraints: availability of the smart mechanism and data so to the 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: cost of the fuel  Maximize: accursing of the data to reduce the fuel  Business Constraints: environmental condition and unseen event 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: operational cost and losses  Maximize: sales of the revenue  Business Constraints: fuel price and predication of the customer number |
| 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: flight delay less  Maximize: real time and easy way to book seat  Business Constraints: Analyze large amount data |
| 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: eliminate fraudulent  Maximize: make the proper collection of the data  Business Constraints: analyze the data |
| 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: : schedule  Maximize: their time increases employee retention  Business Constraints: The way to schedule |
| 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: give the candidate the right goodwill  Maximize: finding the right candidate  Business Constraints: Organization policies find the right |
| 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: make the work as per the candidate will be suit for this  Maximize: make the tension free and hazardous less work  Business Constraints: find the right candidate |
| 21 | One of the greatest challenges that an HR leader could face is keeping the staff satisfied.  Business Objective:  Minimize: less amount of the work  Maximize: staff satisfaction  Business Constraints: problem of staff |
| 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: minimize cost  Maximize: save money  Business Constraints: Organization face huge cost |
| 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: make sure the candidate the statergy  Maximize: get more traffic at the company of a candidate  Business Constraints: Attract in the attention of candidate |
| 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: Provide program to all employers and complete that  Maximize: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Business Constraints: implementation of training program |
| 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: minimize job leave ration  Maximize: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Business Constraints: identifying attrition |
| 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Maximize: solve all the problem  Business Constraints: create the new schedule and time management |
| 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Maximize: less machine failure and maximize production  Business Constraints: analyze real time data and used it in real time manufacture |
| 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 unnecessary human effort  Maximize: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  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: time taken by inspection  Maximize: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Business Constraints: find an experienced inspector |
| 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Maximize: upgrade design and current version, brand image  Business Constraints: understand customer behavior |
| 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: make the cost of the product constant  Maximize: product development and best service  Business Constraints: understand data |
| 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:  Maximize: make the constant manufacturing of the product  Business Constraints: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Maximize: job posting and recruitments  Business Constraints: identify skill / find perfect candidate |
| 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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Maximize: go with trend and capture all audience  Business Constraints: some sports team and venue will always be at odds |
| 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: future outcome  Business Constraints: analyze them as size amount 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:  Business Constraints: collecting information from audience data |