**Assignment Guidelines for Participants**

Please share your answers filled inline in the word document.

Please ensure you update all the details:

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**Topic: Business Understanding**

**Instructions:** Learn to understand the business objective(s) and constraint(s) based on the business problem statements.

You should identify and articulate/frame statements using Maximize and/or Minimize terminology for Objective(s) and Constraint(s)

Q1. For the below listed Business Problems, draft Business Objectives and Business 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:  (i) Minimize: Churn rate (churning implies customer leaving the company to join other)  or  (ii) Maximize: Customer satisfaction (satisfaction will make customer more loyal to the brand)  Constraints: Lack of data coverage for all customers |
| 1 | Advanced targeting allows predicting needs, preferences and customer’s reaction to the telecommunication services and products on offer by segmenting their market and target the content according to each group.  Sol:  Business Objective:   1. Maximize: \_\_\_\_Profit   Business Constraints: \_\_smooth handling (without disturbing the customer) |
| 2 | Telecommunication companies tend to regard the customer's 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.  Sol:  Business Objective:   1. Minimize: \_\_\_\_\_inconvenience 2. Maximize: \_\_\_\_\_profit   Business Constraints: \_\_\_hold smooth operation and more customers |
| 3 | Ensuring the high-quality performance of the product according to the customer’s requirement is not possible without applying smart data solution.  Sol:  Business Objective:   1. Minimize: \_\_\_failure of product 2. Maximize: \_\_\_Quality   Business Constraints: \_apply smart data solution |
| 4 | Collection of positive & negative reaction to the service or product from social media sources, recent trends via Customer sentiment analysis. This may provide an opportunity of utilizing mechanisms for direct responding.  Sol:  Business Objective:   1. Minimize: \_\_\_\_\_\_extra expenses (other mechanism needs more man power) 2. Maximize: \_\_\_\_\_\_Profit   Business Constraints: \_\_\_\_\_\_without disturbing customer |
| 5 | Acquiring as many subscribers as possible remains a critical goal, anyway. In recent years the number of users has been growing extremely fast, pricing emerged as a tool to limit congestion and increase revenue at the same time.  Sol:  Business Objective:   1. Maximize: \_\_\_\_Profit   Business Constraints: \_\_\_\_Pricing should be in the present market range |
| 6 | Customers usually search for better & cheaper services, so the telecommunication companies to 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.  Sol:  Business Objective:   1. Minimize: \_\_quality and price 2. Maximize: \_\_\_\_profit   Business Constraints: \_\_ implement smart solution |
| 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.  Sol:  Business Objective:   1. Minimize: \_\_\_\_fraudulent   Business Constraints: take feedback of customers per transaction |
| 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.  Sol:  Business Objective:   1. Maximize: \_\_\_Reliability of the system   Business Constraints: \_\_Solution should be Simples and Economic to the customer |
| 9 | Retail industry use 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  Sol:  Business Objective:   1. Maximize: \_\_\_\_profit and convenience   Business Constraints: \_\_Time of Collecting data should be less |
| 10 | The price formation 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 approaching.  Sol:  Business Objective:   1. Minimize: \_\_\_expensive 2. Maximize: \_\_\_\_profit   Business Constraints: make convenient to the customer |
| 11 | Inventory, as it is, concerns stocking goods for their future use. Inventory management, in its turn, refers to stocking goods to use them in time of crisis. The retailers aim to provide a proper product at a right time, in a proper condition, at a proper place.  Sol:  Business Objective:   1. Maximize: \_\_\_\_\_ Customers and More Profit   Business Constraints: \_\_Provide Reliable service |
| 12 | Customer feedback is taken as the important aspects of the retail store. To increases the store profits and customer satisfaction based on kiosk survey given by the customer  Sol:  Business Objective:   1. Maximize: \_\_\_\_Profit and number of customers 2. Minimize: \_\_\_\_inconvenience   Business Constraints: \_\_Avoid Inconvenience to the Customer |
| 13 | To be extremely efficient about the issue of the new store's location. To make such a decision a great deal location give a basis for understanding the potential of the market. Also, special settings concerning the location of other shops are considered  Sol:  Business Objective:   1. Maximize: \_\_\_\_\_\_\_\_\_Profit   Business Constraints: \_\_\_\_\_\_\_Consider Special settings |
| 14 | Airlines use AI systems with built-in machine learning algorithms to collect and analyze flight data regarding each route distance and altitudes, aircraft type and weight, weather, etc. Based on findings from data, systems estimate the optimal amount of fuel needed for a flight.  Sol:  Business Objective:   1. Minimize: \_\_Operational Cost and Inconvenience for Airlines 2. Maximize: \_\_Safety   Business Constraints: \_\_\_cost of the AI System should be within limit\_ |
| 15 | Airlines and flight operators can significantly reduce their operational costs and overhead by optimizing their sales revenue in the longer term to ensure all flights with AI-powered systems (Dynamic pricing)  Sol:  Business Objective:   1. Minimize: \_\_\_Operational Cost 2. Maximize: \_\_\_\_Profit   Business Constraints: \_\_\_Make all flight are AI-Powered Systems |
| 16 | As flight delays are dependent on a huge number of factors, an intelligent system can be applied to analyze huge data sets in real time to predict delays and re-book customers’ flights in time.  Sol:  Business Objective:   1. Minimize: \_\_\_\_Inconvenience 2. Maximize: \_\_\_\_Customer Satisfaction   Business Constraints: \_\_\_\_Implement \_Intelligent System |
| 17 | By analyzing specific customers’ flight and purchase patterns and coupling it with historic data, algorithms are able to point out suspicious credit card transaction and eliminate fraudulent cases, saving airline and travel companies millions of dollars every year.  Sol:  Business Objective:   1. Minimize: \_\_\_Fraudulant   Business Constraints: \_avoid Inconvenience (to collect customer data, Permission to be taken by customer) |
| 18 | The optimal way to schedule an airline’s crew to maximize their time and increase employee retention?  Sol:  Business Objective:   1. Minimize: \_\_\_\_\_inconvenient (if they are convenient then they will retain) 2. Maximize: \_\_\_\_\_Service (good employees can provide good service)   Business Constraints: \_\_\_ \_Increase wages |
| 19 | The image of the enterprise in the community largely influences recruitment process. A person may not be interested to apply for a job in an enterprise whose goodwill is not good.  Sol:  Business Objective:   1. Maximize: \_\_\_\_goodwill   Business Constraints: \_\_select a person who actually interested\_ |
| 20 | If the job is boring, hazardous, tension ridden and lacking in opportunities for advancement, very few persons may be available for such jobs.  Sol:  Business Objective:   1. Minimize: \_\_\_inconvenient to find the employee   Business Constraints: \_allow to develop new kills and make sure person will have good carrier |
| 21 | One of the greatest challenges that an HR leader could face is keeping the staff satisfied.  Sol:  Business Objective:   1. Maximize: \_\_\_\_output from staff   Business Constraints: \_\_maintain healthy environment |
| 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.  Sol:  Business Objective:   1. Maximize: \_\_\_\_\_\_Profit 2. Minimize: \_\_\_\_\_\_time of Training   Business Constraints: \_\_\_\_\_\_Avoid inconvenient |
| 23 | Attracting the attention of a candidate and driving the traffic towards a company’s hiring page is one place where an AI can and is seeing a widespread use.  Sol:  Business Objective:   1. Maximize: \_\_\_\_\_\_candidates   Business Constraints: \_\_\_\_\_\_avoid inconvenient |
| 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.  Sol:  Business Objective:   1. Maximize: \_\_\_\_\_\_training program to get Skilled Employees output   Business Constraints: \_\_\_\_\_inconvenient |
| 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.  Sol:  Business Objective:   1. Minimize: \_ Attrition Risk   Business Constraints: \_\_\_\_Identifying attrition risk |
| 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.  Sol:  Business Objective:   1. Maximize: \_\_Categories the Problem Statements   Business Constraints: \_\_\_\_\_\_\_Adopt automated system to schedule Problems |
| 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.  Sol:  Business Objective:   1. Maximize: \_\_Reliability of Machine (it should not stop because of failure of equipment)   Business Constraints: \_\_Adopt Data science Technologies |
| 28 | To helps manufacturers, analyze if their product and services are meeting all objectives for initial processes such as DMAIC framework. To be used to determine which product has the highest impact. helping in minimize errors and losses and eliminates unnecessary human effort, thereby increasing the overall quality of products and services.  Sol:  Business Objective:   1. Minimize: \_\_Losses (Man power requirement and unnecessary expensive)   Business Constraints: \_Increase Overall quality and customer satisfaction |
| 29 | Some flaws in products are too small to be noticed with the naked eye, even if the inspector is very experienced. The time taken for inspection is also slowing down the production.  Sol:  Business Objective:   1. Minimize: \_production time (increase production speed)   Business Constraints: all products to be inspected with quick time (more products) |
| 30 | To make design enhancements/upgrade the current version of the product to increase consumption of the product and thereby the brand image. To bring in the features most of the customers use we need to understand customer behavior towards the product, brand, and their interests.  Sol:  Business Objective:   1. Maximize: \_\_customer (it maximizes consumption)   Business Constraints: \_\_customer satisfaction (good product, good brand) |
| 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, we 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, also how your own potential customers weigh up their purchasing decisions.  Sol:  Business Objective:   1. Maximize: Profit (if profit is more than all factors will be good)   Business Constraints: \_\_\_Convenient to customer |
| 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.  Sol:  Business Objective:   1. Minimize: \_\_\_\_\_\_Uncovered potential Opportunities   Business Constraints: \_\_\_\_\_Cover the insights in all stages (including packing 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.  Sol:  Business Objective:   1. Maximize: \_Quality of Research   Business Constraints: \_\_required license, Required Qualification, Experience |
| 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.  Sol:  Business Objective:   1. Maximize: \_ Profit   Business Constraints: \_\_\_capture a greater Number of Audience |
| 35 | Betting companies to 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.  Sol:  Business Objective:   1. Minimize: \_\_\_\_\_time consumption of analyzing all data 2. Maximize: \_\_\_\_\_Profit   Business Constraints: \_\_\_\_use predictive modelling using Machine Learning techniques |
| 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 has placed those ads carefully after conducting a careful analysis of its own resources for maximum impact.  Sol:  Business Objective:   1. Minimize: \_\_\_inconvenience to audience   Business Constraints: \_\_\_\_\_\_\_show good type of adds |