CRISP-DM: Business Understanding – Full Case Study Breakdown (1–36)

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Topic: Business Understanding

* Each business problem is broken down into the following components:
* 1. Business Problem Statement
* 2. Simplified Context of the Problem
* 3. Problem Identification
* 4. Business Objective
* 5. Stakeholder Expectations
* 6. Constraints & Limitations
* 7. Feasibility Check
* 8. Success Criteria
* - Business Success Criteria
* - ML Success Criteria
* 9. Business Impact

## Case Study 1

• Business Problem Statement: The telecom company wants to improve marketing by predicting what each customer needs or prefers and how they will respond to offers

• Simplified Context of the Problem: Customers have different needs. Sending the same offers to everyone wastes money and doesn’t work well.

• Problem Identification: Current marketing is not personalized, which leads to low customer engagement and high churn.

• Business Objective: Segment customers and target them with personalized telecom offers to boost engagement, satisfaction, and sales.

• Stakeholder Expectations: Improved customer satisfaction, Higher conversion rate.

• Constraints & Limitations: Limited or messy customer data, Privacy concerns, Real-time processing challenges,

• Feasibility Check: It is feasible with access to good data and machine learning tools

• Business Success Criteria: Increased revenue, reduced churn, improved customer loyalty.

• ML Success Criteria: High accuracy in predicting customer segments and offer response.

• Business Impact: More effective marketing, Increased customer retention and revenue, Competitive edge in the telecom market.

## Case Study 2

• Business Problem Statement: Operational issues affect network performance and customer experience.

• Simplified Context of the Problem: Poor network quality leads to customer complaints and service delays.

• Problem Identification: There is a lack of real-time insights into network faults and inefficiencies.

• Business Objective: Improve network quality by quickly identifying and fixing issues.

• Stakeholder Expectations: Better service quality, Fast issue resolution.

• Constraints & Limitations: High data volume, Complex infrastructure, Need for real-time analysis.

• Feasibility Check: It is possible with data analytics and AI monitoring tools.

• Business Success Criteria: Fewer complaints, better uptime.

• ML Success Criteria: Accurate fault detection and prediction.

• Business Impact: Improved service quality, Higher customer trust,

## Case Study 3

• Business Problem Statement: We cannot ensure that our products perform well according to customer requirements.

• Simplified Context of the Problem: Products fail to meet customer expectations because we lack useful data insights.

• Problem Identification: Without data analytics, we face quality issues and cannot meet customer needs.

• Business Objective:   
Use smart data solutions to improve product quality and satisfy customer expectations.

• Stakeholder Expectations: High product performance - Fewer defects - Better customer satisfaction

• Constraints & Limitations: Limited data availability - Budget and time constraints - Issues with data quality

• Feasibility Check: It is technically feasible with the tools we have, but it requires a skilled team and initial investment.

• Business Success Criteria: Increased customer satisfaction, fewer returns, improved reviews.

• ML Success Criteria: High accuracy in predicting defects or assessing quality.

• Business Impact: Improved product reliability - Better brand reputation - Increased customer retention and revenue

## Case Study 4

• Business Problem Statement: Customers share mixed feedback on social media. The company lacks a system to monitor and respond effectively.

• Simplified Context of the Problem: Social media contains valuable customer opinions, but the company does not analyze or use them properly.

• Problem Identification: The business cannot track customer sentiment in real-time.

• Business Objective: Use sentiment analysis to understand customer opinions and respond quickly to improve satisfaction.

• Stakeholder Expectations: Timely customer feedback analysis, improved brand image, and better customer support.

• Constraints & Limitations: Data privacy rules, unstructured data, need for real-time analysis, and limited technical skills or tools.

• Feasibility Check: It is technically feasible using modern AI tools. This requires the right tools, data access, and trained models.

• Business Success Criteria: An increase in customer satisfaction, faster response time, and better brand perception.

• ML Success Criteria: High sentiment classification accuracy, such as over 85%, and real-time processing capability.

• Business Impact: Better customer relationships, improved brand loyalty, and potential sales increases through proactive engagement.

## Case Study 5

• Business Problem Statement: Fast growing user causing congestion

• Simplified Context of the Problem: Increasing the customer that’s why company facing network problem.

• Problem Identification: Congestion due to user growth

• Business Objective: Increasing more and more customers and increase revenue

• Stakeholder Expectations: Good Service, increase revenue, customer satisfaction.

• Constraints & Limitations: Network Issue solve , For pricing customer will be happy

• Feasibility Check: Yes, with data-driven pricing and network scaling.

• Business Success Criteria: Increase number of customers and revenue increase

• ML Success Criteria: Good Price, and Correct models

• Business Impact: Customer base grows, revenue increases, but needs constant monitoring of network performance.

## Case Study 6

• Business Problem Statement: Customer wants better service and Cheap price

• Simplified Context of the Problem: High customer churn affects growth and Income.

• Problem Identification: low customer revenue and switching to other company for better service and best price

• Business Objective: Predict and grow Customer Lifetime Value

• Stakeholder Expectations: Wants use customer their service and more profit, less churn

• Constraints & Limitations: Data privacy and processing speed

• Feasibility Check: Using real time analytics tools and smart tools

• Business Success Criteria: reduced churn and increased churn

• ML Success Criteria: Accurate CLV prediction and model best performance

• Business Impact: Higher customer loyalty and profit through data-driven decisions.

## Case Study 7

• Business Problem Statement: Bypass fraud causing revenue loss in telecom companies

• Simplified Context of the Problem: All fraudsters are trying to another way for call to avoid charges

• Problem Identification: Customers are unhappy from company due to Fraudsters and Company reducing revenue.

• Business Objective: Use big data to find fraud and fraud bypass

• Stakeholder Expectations: Secure system, reduced fraud, customer satisfy, increase revenue.

• Constraints & Limitations: Real time processing, system cost

• Feasibility Check: Feasible with scalable big data systems.

• Business Success Criteria: Fraud cases drop, revenue increases.

• ML Success Criteria: High fraud detection accuracy, low false alarms.

• Business Impact: Better fraud control, improved trust, and financial gain.

## Case Study 8

• Business Problem Statement: Delayed data detection which causes system damage and data loss

• Simplified Context of the Problem: Threats are decreasing, manual detection is slow.

• Problem Identification: Lack of real-time threat detection and response.

• Business Objective: Use ML to detect threats early and automate responses.

• Stakeholder Expectations: System security, quick resolution, minimal data loss.

• Constraints & Limitations: False alerts, model accuracy.

• Feasibility Check: Feasible with cloud, ML models, and automation tools.

• Business Success Criteria: Reduced incidents, improved response.

• ML Success Criteria: High accuracy, low false positives.

• Business Impact: Improved security, saved costs, stronger customer trust.

## Case Study 9

• Business Problem Statement: Retailers lack data-driven strategies for maximizing profit.

• Simplified Context of the Problem: Manual analysis is slow and less accurate.

• Problem Identification: No optimized planning for products, pricing, and marketing.

• Business Objective: Use AI to analyze retail data and suggest best strategies.

• Stakeholder Expectations: Better insights, more profit, improved customer experience.

• Constraints & Limitations: Data integration issues, accuracy challenges, cost.

• Feasibility Check: Feasible with proper AI tools and historical data.

• Business Success Criteria: Increased sales and profit.

• ML Success Criteria : Accurate predictions and strategy.

• Business Impact: Accurate data prediction will help to improve revenue.

## Case Study 10

• Business Problem Statement: Price will be not decided on the basis of the customer ability and market competition.

• Simplified Context of the Problem: Wrong pricing affects sales and profit

• Problem Identification: Lack of data pricing strategies.

• Business Objective: Use data to decide to profitable pricing.

• Stakeholder Expectations: Higher profit , stable sales, customer satisfaction

• Constraints & Limitations: Changing market trends, limited data, real-time updates.

• Feasibility Check: Feasible using AI/ML and market data integration.

• Business Success Criteria: Increased revenue, improved pricing decisions.

• ML Success Criteria: Accurate price predictions , dynamic adjustment.

• Business Impact: Improved profit, customer satisfaction, and market position.

## Case Study 11

• Business Problem Statement: Improper stockouts which affects sales.

• Simplified Context of the Problem: Right products are not available at right time.

• Problem Identification: Lack of real time data.

• Business Objective: Optimize stock levels at high demand.

• Stakeholder Expectations: Efficient stock flow, reduced losses.

• Constraints & Limitations: Limited storage , Unpredictable demand

• Feasibility Check: Feasible using smart tools and sales data.

• Business Success Criteria: Fewer stockouts , better sales

• ML Success Criteria: Accurate demand forecast.

• Business Impact: Reduced losses, higher efficiency.

## Case Study 12

• Business Problem Statement: Lack of customer satisfaction affects on business.

• Simplified Context of the Problem: Customer suggestions are ignored, issues stay unsolved.

• Problem Identification: No system to collect , analyze and take action on feedback.

• Business Objective: Use feedback to improve service and increase satisfaction.

• Stakeholder Expectations: faster response, good service, valuable feedback.

• Constraints & Limitations: Low response rate,

• Feasibility Check: Feasible with digital analyze tool and AI support.

• Business Success Criteria: Better service , higher profits, and loyal customers

• ML Success Criteria: accurate analysis

• Business Impact: Improve brand, customer trust, and business growth.

## Case Study 13

• Business Problem Statement: Wrong store location may lead low customer it will affects to business profit.

• Simplified Context of the Problem: Location decides customer reach and sales success.

• Problem Identification: No proper method to select store location.

• Business Objective: Use proper data to select best store location.

• Stakeholder Expectations: High sales, strong market presence

• Constraints & Limitations: land availability , cost, competition

• Feasibility Check: Feasible using market data.

• Business Success Criteria: Good profit and sales.

• ML Success Criteria: Accurate location prediction

• Business Impact: Increased sales and customer reach and strategic market entry.

## Case Study 14

• Business Problem Statement: Airlines face the problem how exactly fuel needed.

• Simplified Context of the Problem: Over and under fueling affects safety and cost

• Problem Identification: No accurate system for fuel prediction.

• Business Objective: Optimize fuel usage using AI and flight data.

• Stakeholder Expectations: Lower costs , ensure safety.

• Constraints & Limitations: Data accuracy and weather conditions

• Feasibility Check: Feasible using ML / AI models.

• Business Success Criteria: Reduce fuel costs

• ML Success Criteria: Accurate fuel prediction using ML model

• Business Impact: Help to grow and Earn Profits more and more.

## Case Study 15

• Business Problem Statement: Fixed pricing affects airline business.

• Simplified Context of the Problem: All seats pricing is equally while customers demand are different.

• Problem Identification: No dynamic pricing system based on customer demand.

• Business Objective: Use AI for dynamic pricing which help us to make more profit.

• Stakeholder Expectations: Higher revenue, better seat utilization.

• Constraints & Limitations: Real time data need

• Feasibility Check: Feasible with AI/ML and historical sales data.

• Business Success Criteria: Increase revenue and business profit.

• ML Success Criteria: Accurate demand prediction and pricing.

• Business Impact: Help to increase more profit and competitive advantage

## Case Study 16

• Business Problem Statement: Unpredictable flight delays caused customer satisfaction and financial loss.

• Simplified Context of the Problem: Many factors are responsible for flight delays.

• Problem Identification: No real- time system to predict and respond to flight delays.

• Business Objective: predict flight delays, and automatically rebook passengers using AI model

• Stakeholder Expectations: Time to time alerts , rebooking options.

• Constraints & Limitations: Data accuracy , weather unpredictability.

• Feasibility Check: Feasible using AI / ML and real time flight data.

• Business Success Criteria: Fewer delays and improve customer satisfaction

• ML Success Criteria: High accuracy in delay prediction model.

• Business Impact: Improve level of customer satisfaction , and Financial stable.

## Case Study 17

• Business Problem Statement: Airline lose revenue due to undetected credit card fraud transactions.

• Simplified Context of the Problem: Fraud transactions are not easy to handle manually.

• Problem Identification: No any intelligent system to detect fraud credit transactions manually.

• Business Objective: Detect fraud early using AI models and Customer transaction history.

• Stakeholder Expectations: Secure payments , fraud less.

• Constraints & Limitations: Real time detection, data privacy

• Feasibility Check: Technically feasible with historical data and AI models.

• Business Success Criteria: Reduce fraud related losses.

• ML Success Criteria: Machine learning model use for accurately prediction

• Business Impact: Increase profit, stronger security, increase brand reputation.

## Case Study 18

• Business Problem Statement: Due to improper scheduling affects to over work, low productivity.

• Simplified Context of the Problem: Airlines need right crew in right flights while balancing and roles.

• Problem Identification: No intelligent system for proper crew scheduling

• Business Objective: Optimize crew schedules to increase productivity.

• Stakeholder Expectations: Fair schedules, better work- life balance.

• Constraints & Limitations: Legal work limits, sudden delays

• Feasibility Check: Feasible using AI flights, crew and regulation data.

• Business Success Criteria: Improved crew satisfaction

• ML Success Criteria: High efficiency and automated Scheduling

• Business Impact: Increased retention, reduced costs

## Case Study 19

• Business Problem Statement: Poor company image reduces job applications,

• Simplified Context of the Problem: candidates are refer to work with good and reputed company.

• Problem Identification: Low good will affect hiring outcomes.

• Business Objective: Improve brand image to attract top talent.

• Stakeholder Expectations: better reputation , more applicants,

• Constraints & Limitations: limited branding budget.

• Feasibility Check: Achievable through the strategies.

• Business Success Criteria: Increased number of quality applicants.

• ML Success Criteria: Improved prediction candidates interest in which domain.

• Business Impact: reduced hiring cost, strong employer brand, increased profit.

## Case Study 20

• Business Problem Statement: Employees leaving jobs due to poor conditions.

• Simplified Context of the Problem: Employees are not ready for doing hard and risky jobs.

• Problem Identification: Low satisfaction in this job and employees change.

• Business Objective: Improve job conditions to stable employees.

• Stakeholder Expectations: safe, motivating and friendly environment.

• Constraints & Limitations: Budget and operational risk

• Feasibility Check: Investment in safety, training, and Tech.

• Business Success Criteria: Loose of employees, and increase productivity.

• ML Success Criteria: Accurate prediction of job satisfaction risk.

• Business Impact: Higher retention, safer environment, and reduced costs.

## Case Study 21

• Business Problem Statement: Employees are not satisfied that causes reduced productivity and turnover.

• Simplified Context of the Problem: HR struggles to keep staff satisfaction in changing work environment.

• Problem Identification: Staff dissatisfaction , lack of motivation among staff.

• Business Objective: Boost or increase staff satisfaction.

• Stakeholder Expectations: Happy, loyal, and Productive workforce.

• Constraints & Limitations: Limited HR resources.

• Feasibility Check: Feedback systems, and Training programs.

• Business Success Criteria: Improve staff satisfaction , profit in business

• ML Success Criteria: Accurate Prediction of Staff satisfaction and Unssatisfaction.

• Business Impact: Help to improve business productivity.

## Case Study 22

• Business Problem Statement: High Employee turnover increases costs.

• Simplified Context of the Problem: Training new employees and candidates.

• Problem Identification: High attrition caused or affect to cost.

• Business Objective: Reduce employee turnover.

• Stakeholder Expectations: Stable workforce and reduce training burden,

• Constraints & Limitations: Budget availability and time management.

• Feasibility Check: Feasible through feedback systems.

• Business Success Criteria: Decreased turnover and cost saving in HR.

• ML Success Criteria: Accurate prediction of employees.

• Business Impact: Improve productivity, Strong relationships with employees.

## Case Study 23

• Business Problem Statement: Facing problem to attract Quality candidates towards the hiring page.

• Simplified Context of the Problem: Getting less Attention to ads of hiring candidates.

• Problem Identification: Poor candidate engagement.

• Business Objective: Use AI to attract Quality candidates toward hiring page.

• Stakeholder Expectations: Faster hiring with quality candidates.

• Constraints & Limitations: Budget , Data Privacy, Security.

• Feasibility Check: Feasible using AI, analytics, job ad optimization.

• Business Success Criteria: Increased page visit.

• ML Success Criteria: Accurate targeting.

• Business Impact: More qualified Applicants, increase productivity,

## Case Study 24

• Business Problem Statement: Training and certification programs are not effectively implemented, leading to compliance and performance issues.

• Simplified Context of the Problem: Employees need a training programs and certification.

• Problem Identification: Lack of skill development.

• Business Objective: Improve training delivery and employee growth.

• Stakeholder Expectations: Timely effective, increase training programs.

• Constraints & Limitations: Budget , limited time, employee schedules.

• Feasibility Check: AI based tracking and flexible scheduling.

• Business Success Criteria: High training completion.

• ML Success Criteria: Predict employee training needs.

• Business Impact: skilled workforce, better performance , and low risks.

## Case Study 25

• Business Problem Statement: High employee attrition affects company performance and increases costs.

• Simplified Context of the Problem: HR struggles to identify why employees stay or leave.

• Problem Identification: Lack of insight into attrition patterns.

• Business Objective: Predict attrition risk and improve employee retention

• Stakeholder Expectations: Lower attrition, satisfied and stable workforce.

• Constraints & Limitations: Data quality, privacy concerns, and analytical capability.

• Feasibility Check: Feasible using machine learning and employee feedback data.

• Business Success Criteria: Reduced attrition and improved retention rate.

• ML Success Criteria: High accuracy in predicting at-risk employees.

• Business Impact: Cost savings, improved workforce stability, and better performance.

## Case Study 26

• Business Problem Statement: HR is overloaded with routine queries, causing delays and inefficiency.

• Simplified Context of the Problem: Employees frequently ask about leave, salary, and scheduling issues.

• Problem Identification: High volume of repetitive queries affects HR productivity.

• Business Objective: Automate HR query resolution to save time and improve service.

• Stakeholder Expectations: Quick, accurate, and 24/7 support for employee queries.

• Constraints & Limitations: Budget, data security, and integration with current HR systems.

• Feasibility Check: Feasible using AI chatbots and self-service HR platforms.

• Business Success Criteria: Reduced response time and improved employee satisfaction.

• ML Success Criteria: Accurate query classification and automated resolution.

• Business Impact: Better HR efficiency, reduced workload, and happier employees.

## Case Study 27

• Business Problem Statement: Machine failures cause production loss.

• Simplified Context of the Problem: Few important machines are very useful for their entire production . From failure that machine it causes or stop the entire process.

• Problem Identification: No predictive system which can alert before machine failure.

• Business Objective: Improve machine performance using data science and AI.

• Stakeholder Expectations: Reliable machine, Best and Quality Performance.

• Constraints & Limitations: Old machines , limited data, and budget integration.

• Feasibility Check: Possible with sensor data and modern tools.

• Business Success Criteria: Increased productivity, reduce downtime

• ML Success Criteria : High prediction accuracy.

• Business Impact: Saves costs , avoid losses.

## Case Study 28

• Business Problem Statement: Lack of a structured method to identify high-impact products and reduce errors.

• Simplified Context of the Problem: Manual and inconsistent processes cause inefficiencies and reduce quality.

• Problem Identification: No clear visibility into which product/process contributes most to value or loss.

• Business Objective: Apply DMAIC to improve quality, reduce errors, and identify impactful products.

• Stakeholder Expectations: Better product insights, fewer defects, increased efficiency.

• Constraints & Limitations: Data collection issues, employee resistance, time for implementation.

• Feasibility Check: Feasible with proper data, tools, and trained teams.

• Business Success Criteria: Fewer process errors, improved quality and impact analysis.

• ML Success Criteria: Accurate identification of key factors and root causes.

• Business Impact: Enhanced product quality, reduced cost, and better decision-making.

## Case Study 29

• Business Problem Statement: Small product defects are missed by human inspectors and inspection takes time.

• Simplified Context of the Problem: Manual inspection is slow and sometimes inaccurate.

• Problem Identification: Inability to detect minor defects and delay in production.

• Business Objective: Automate visual inspection using AI/ML to improve speed and accuracy.

• Stakeholder Expectations: Fast, accurate, and consistent defect detection.

• Constraints & Limitations: High setup cost, need for large image datasets, integration complexity.

• Feasibility Check: Technically feasible with proper hardware, data, and skilled team.

• Business Success Criteria: Reduced inspection time, improved quality control.

• ML Success Criteria: High detection accuracy , low false negatives.

• Business Impact: Increases efficiency, reduces rework and costs, improves customer satisfaction.

## Case Study 30

• Business Problem Statement: The company wants to improve product usage and brand image by redesigning the product based on customer preferences.

• Simplified Context of the Problem: Current product design doesn't fully align with customer needs, leading to lower engagement.

• Problem Identification: Lack of insights into which features customers value and how they interact with the product.

• Business Objective: Identify popular features and customer behavior to guide design upgrades.

• Stakeholder Expectations: Increased product usage, customer satisfaction, and brand reputation.

• Constraints & Limitations: Budget, time, data availability, and privacy regulations.

• Feasibility Check: Feasible if sufficient user data and analytical tools are available.

• Business Success Criteria: Increased usage, positive feedback, better sales.

• ML Success Criteria: Accurate identification of key features and behavior patterns.

• Business Impact: Enhanced product design, improved customer loyalty, and stronger brand presence.

## Case Study 31

• Business Problem Statement: Contract manufacturers struggle to justify their product development choices due to lack of reliable, data-driven insights.

• Simplified Context of the Problem: Manufacturers need to make informed decisions based on quality, cost, and reliability.

• Problem Identification: Lack of understanding data which affects for justification which causes customer confidence.

• Business Objective: Understanding the proper data which help to increase trust of customer.

• Stakeholder Expectations: High product quality, customer satisfaction and trust.

• Constraints & Limitations: Limited access to accurate data.

• Feasibility Check: Technically feasible with proper system and advanced tools,

• Business Success Criteria: Improve customer satisfaction and faster product approval.

• ML Success Criteria: High model accuracy to predicting the quality data.

• Business Impact: Better product decisions, stronger customer relationships, and competitive advantage in the market.

## Case Study 32

• Business Problem Statement: Manufacturers face inefficiencies and hidden losses in their production, logistics, and supply chain operations due to lack of deep analytical insights.

• Simplified Context of the Problem: Routine manufacturing and distribution methods are not optimized, leading to delays, waste, and reduced profitability.

• Problem Identification: Lack of visibility into operations and poor utilization of data prevent identification of inefficiencies.

• Business Objective: To gain actionable insights across production, inventory, logistics, and supply chain for improved decision-making and efficiency.

• Stakeholder Expectations: Data-backed strategic decisions, Transparent and efficient operations

• Constraints & Limitations: High cost of analytics tools

• Feasibility Check: Feasible with the use of AI/ML tools and cross-functional data integration.

• Business Success Criteria: Reduction in production delays, improved profit margins, and better resource planning.

• ML Success Criteria: High model accuracy in predicting process bottlenecks, inventory demands, and logistics delays

• Business Impact: Improved operational efficiency, increased profitability, and smarter end-to-end supply chain management.

## Case Study 33

• Business Problem Statement: There is a gap between available job opportunities and the skilled labor force, leading to prolonged vacancies and inefficiencies in recruitment.

• Simplified Context of the Problem: Unable to find the suitable qualify candidates which affects to entire business and productivity.

• Problem Identification: Shortage of skilled candidate, complex job roles.

• Business Objective: To identify skill gaps in the labor market and streamline the hiring process using data-driven insights.

• Stakeholder Expectations: Accurate labor market analysis, Reduced vacancy duration.

• Constraints & Limitations: Outdated or incomplete job data, Limited data sharing from employers.

• Feasibility Check: Feasible with access to updated labor data, integration of AI/ML tools, and collaboration between employers and the department.

• Business Success Criteria: Decrease in job vacancy periods and improved placement rates.

• ML Success Criteria: High accuracy in predicting skill shortages and job-market trends.

• Business Impact: Improved alignment between job demand and skilled workforce, leading to economic growth and reduced unemployment.

## Case Study 34

• Business Problem Statement: Sports organizations are unable to identify and predict future trends which cause to engage audience in sports.

• Simplified Context of the Problem: As the audience’s interests evolve rapidly, sports teams must adapt quickly using technology and data to stay relevant.

• Problem Identification: Inability to keep up with shifting trends and limited use of data-driven strategies leads to reduced fan engagement and revenue.

• Business Objective: To predict future sports trends and improve audience engagement through data and technology integration.

• Stakeholder Expectations: Increased fan loyalty and interaction, Enhanced use of emerging technologies.

• Constraints & Limitations: Rapidly changing fan preferences, Data privacy and security issues.

• Feasibility Check: The solution is feasible with investment in digital tools, data analytics, and training. Collaboration between teams and tech experts is essential.

• Business Success Criteria: Increased fan base, higher digital engagement, and improved ticket or merchandise sales.

• ML Success Criteria: Accurate trend predictions and personalized fan experience recommendations using data models.

• Business Impact: Enhanced audience engagement, improved competitiveness, and new revenue streams through digital innovation.

## Case Study 35

• Business Problem Statement: Betting companies face challenges in accurately predicting sports outcomes due to the dynamic nature of sports events and the vast volume of data.

• Simplified Context of the Problem: To stay competitive and ensure profitability, betting companies need accurate, real-time outcome predictions based on global sports data.

• Problem Identification: High data volume, real-time processing needs, and unpredictability in sports events make it difficult to generate accurate odds.

• Business Objective: To use machine learning techniques to analyze sports data and produce accurate probability models for better odds-making and user engagement.

• Stakeholder Expectations: Accurate and fair odds, Increased profitability.

• Constraints & Limitations: Massive, unstructured, and fast-changing data.

• Feasibility Check: Feasible with access to high-quality data, skilled data scientists, and robust ML infrastructure.

• Business Success Criteria: Improved accuracy in odds-making, increased user satisfaction, and revenue growth.

• ML Success Criteria: High model precision in predicting outcomes, low error rates, and scalability across sports types.

• Business Impact: Enhanced user trust, competitive advantage, regulatory compliance, and higher market share.

## Case Study 36

• Business Problem Statement: Stadiums and sponsors struggle to ensure that advertisements resonate effectively with a diverse audience, leading to reduced ad impact and ROI.

• Simplified Context of the Problem: Proper audience analysis and ad placement strategies are required to match advertisements with viewer interests.

• Problem Identification: Ineffective targeting due to limited audience insights leads to low engagement and unsatisfied sponsors.

• Business Objective: Ineffective targeting due to limited audience insights leads to low engagement and unsatisfied sponsors.

• Stakeholder Expectations: High engagement from target audience, Accurate data .

• Constraints & Limitations: Limited access to real-time audience data, analyzing audience interest.

• Feasibility Check: Feasible with modern audience analytics tools, machine learning models, and proper collaboration with broadcasters and sponsors.

• Business Success Criteria: Increased ad engagement, better conversion rates, and higher sponsor satisfaction.

• ML Success Criteria: Accuracy of audience segmentation and recommendation of optimal ad placement time and location.

• Business Impact: Improved ad performance, stronger sponsor relationships, and higher revenue through personalized and data-driven marketing.