# zensar

# Intelligent Machine Learning System **Boosts Profitability for Broadcaster**

▶ Case Study

## Overview
### Enhancing analysis, planning, and prediction

A direct broadcast satellite service company, with an annual revenue of about $1.9 billion, offers a wide range of audio, radio, and television channels to subscribers across 50 countries in Africa. Given the scale of its operations, it consulted with Zensar to build an intelligent in-house system to optimize media planning, post-campaign analysis, and viewership and rating prediction.

**Zensar's brief:** Design and deploy an intelligent machine learning (ML)-powered system that delivers on these two priorities:

- Predict ratings with precision across various content entities.
- Uncover insights related to viewing patterns and revenue optimization.

**Beyond the brief:**
Guided by our commitment to "experience-led everything," we ensured that our focus was not just on technology, but more importantly, on the people that it impacts.

# Challenges
## Need for an in-house solution

The company was keen to leverage the opportunities offered by emerging technologies to address these business needs:

- **In-house system:** Reliance on industry tools for multiple television ratings analysis had limitations. So, the company needed to remove this dependency on third-party tools.
- **Deep insights:** Understanding viewing patterns and preferences across different demographic groups is complex, yet crucial to enabling targeted advertising and maximizing revenue.
- **Advanced automation:** Managing a vast array of content requires an automated system to predict ratings accurately for TV shows, movies, and products.

# Solution
## Intelligent ML-powered system

As our client's technology partner, we collaborated with various internal stakeholders every step of the way to ensure that the solution outcomes align with business objectives.

**Planning and design:** After gaining granular insights into the client's IT landscape and business ecosystem, we carried out these key actions:

- Aggregate data from multiple sources into a unified data set, clean the data and normalize data formats by removing duplicates, and conduct exploratory data analysis (EDA) to uncover key insights.
- Engineer these features to enhance the predictive power of ML models:
  - User demographics such as age, gender, and ethnicity
  - Content attributes such as genre, release year, director, and cast
  - Viewing history such as past ratings and the viewing patterns of users
- Train multiple ML models by splitting the data into training and validation sets.
- Evaluate the models by testing with different algorithms to find out the best-performing model.

- Implement the selected model to ensure that it can handle large data sets efficiently.
- Monitor the model's performance continuously to improve accuracy with necessary adjustments.

**Enablement:** Drawing on our Azure competencies, we put together a powerful mix of technology enablers to deliver the solution:

- Azure ML was used for its comprehensive suite of tools and services, enabling efficient development, deployment, and management of ML models at scale.
- Azure Databricks was used to enable efficient big data processing, advanced analytics, and collaborative data science.
- Azure DevOps was used for its broad suite of development tools, enabling efficient collaboration, continuous integration, and continuous delivery.
- Azure Monitor was used for its comprehensive monitoring and diagnostics capabilities, ensuring optimal performance and application availability.
- Azure App Insights was used for its real-time monitoring and analytics, enabling proactive performance optimization and issue resolution for applications.
- Azure Key Vault was used for its secure management of keys, secrets, and certificates, ensuring robust protection of sensitive data.
- Azure App Services was used for its fully managed platform, enabling easy deployment, scaling, and management of web applications and APIs.
- Azure Function was used for its serverless computing capabilities, enabling scalable and cost-effective execution of event-driven code.
- Azure SQL was used for its fully managed database services, offering high availability, scalability, and built-in security for mission-critical applications.
- Azure VPN Gateway was used for its secure and reliable connectivity between on-prem networks and Azure, ensuring seamless and protected data transfer.
- Azure Active Directory was used for its robust identity and access management, ensuring secure and seamless access to resources across the enterprise.
- Azure Blob Storage was used for its scalable, cost-effective, and secure storage solution, ideal for managing large amounts of unstructured data.
- Azure Repos was used for its robust version control system, enabling efficient collaboration and code management across development teams.

**Implementation:** Leveraging AI capabilities, we deployed a solution that delivered on these business priorities:

- **Accurate predictions:** The intelligent system enables high accuracy in predicting ratings and personalized content recommendations for users.
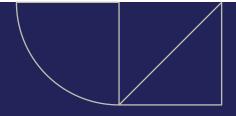
- **Categorized preferences:** The system helps identify ethnic group preferences for specific shows/movies and highlights popular content across different demographics.
- **Potent insights:** The system enables insight-driven strategies to optimize revenue by increasing advertisement prices, designing targeted campaigns based on user preferences, and implementing premium pricing for popular content advertisements.

## Impact
### Greater profitability

- Media planning optimized by accurate rating predictions
- Personalized recommendations to boost consumption
- Insight-driven targeted campaigns for different demographics

**Business outcomes:** With automation-driven operational efficiencies combined with advanced analytics that boosts content consumption and advertisement revenues, the solution enhances profitability.

# zensar
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Part of the $4.8 billion RPG Group, we are headquartered in Pune, India. Our 10,000+ employees work across 30+ locations worldwide, including Milpitas, Seattle, Princeton, Cape Town, London, Zurich, Singapore, and Mexico City.

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