Case Study: Building a Data Foundation for AI-Driven Marketing and Fraud Prevention at a European Telecommunications Company

Challenge

The telecom provider faced critical challenges requiring a data and marketing stack overhaul:

- Fragmented data across websites, apps, and backend systems created inconsistent analytics and operational silos
- Non-standardized tracking limited marketing automation and attribution capabilities
- Lack of infrastructure to rapidly test and scale AI-driven personalization
- Fraudulent orders drained resources and skewed campaign measurement
- Need for a real-time data platform integrating multiple streams for marketing and fraud detection

Solution

To address these challenges, the telecom provider partnered with Tealium for a phased transformation:

- **Data Foundation:** Deployed standardized data layer across digital touchpoints
- **Vendor Migration:** Migrated analytics and marketing tags to a unified system
- **System Setup:** Implemented AIStream for real-time data flow
- **Use Case Implementation:** Established AI/CDP roadmap
- **Organizational Enablement:** Delivered training and certification for organization-wide adoption.

Results

The initiative delivered measurable benefits spanning marketing performance, fraud prevention, and operational maturity:

- **Efficiency Improvements:** Strategic exclusion of low-propensity users reduced CPV by 16–28% and CPO by 12–28%. Single-source-of-truth infrastructure improved attribution accuracy and campaign resource allocation.
- **Fraud Prevention:** Predictive scoring models reduced declined and fraudulent orders. Integrating offline order outcomes improved detection accuracy, reduced false positives, and streamlined the customer journey.
- **Operational Excellence:** Organization-wide upskilling fostered data-driven innovation. Improved vendor onboarding, enhanced marketing, and risk operations agility.

16-28% **Reduction in Cost per Visit (CPV)**

12-28% **Reduction in Cost per Order (CPO)**

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Overview

Tealium partnered with a leading telecoms provider to modernize its European marketing operations. The goal was to build a unified, AI-ready data infrastructure for advanced marketing automation, personalization, attribution, and fraud prevention. This initiative aimed to boost campaign efficacy, deepen customer insights, and reduce fraudulent/declined orders through integrated analytics and machine learning.

The Challenge

The Telecoms provider identified several critical challenges that necessitated a strategic overhaul of their data and marketing stack:

- Fragmented data collection and disparate sources across websites, applications, and backend systems, leading to inconsistent analytics and operational silos.
- Limitations in marketing automation and advanced attribution due to non-standardized tagging and tracking frameworks.
- Inability to rapidly test, implement, and scale AI-driven marketing and personalization use cases.
- Operational and reputational risk impacts caused by fraudulent and declined orders, not only draining resources but also causing inaccurate measurement in campaign and marketing effectiveness.
- The need for a scalable data platform enabling real-time integration of multiple data streams, both for marketing and fraud detection purposes.

The Solution

To address these interconnected challenges, the Telecoms provider partnered with Tealium to execute a structured, phased transformation:

- **Data Foundation Setup**
    - Deployed a standardized data layer across all digital touchpoints, ensuring robust and consistent data collection.
    - Integrated backend sources, including CDW and CRM systems, connected into a centralized customer data hub, enabling unified profiles to be accessible for both marketing and fraud analysis.

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- **Vendor Data Source Migration**
    - Migrated all existing analytics and marketing tags to a new unified system using standardized rulesets, reducing complexity and data variance in a hybrid client-server architecture.
    - The harmonized structure improved both measurement accuracy for attribution and data quality for fraud modeling.

- **System Setup**
    - Implemented Tealium's AIStream for unified, real-time data flow.
    - Connected to key analytics and optimization platforms, such as Adobe Analytics and Optimizely.
    - Linked offline order outcomes (accepted/declined) with the central CDP, making this data available for AI and machine learning use cases, including fraud detection.

- **Use Case Implementation**
    - Established a prioritized roadmap for AI and CDP-driven initiatives - including real-time cross-device identity mapping, consent management, and real-time segmentation.
    - Leveraged predictive modeling and score-based audience exclusions with AIStream and in-house machine learning systems to:
        - Improve purchase propensity predictions for marketing efficiency.
        - Identify, prevent, and exclude fraudulent orders based on behavioral and transactional patterns.
    - Integrated operational processes for rapid deployment and iteration of both proof-of-concept and scaled use cases, combining marketing optimization with real-time fraud monitoring and measurement.

- **Organizational Enablement**
    - Delivered comprehensive training and certification, ensuring organization-wide upskilling and adoption of the new tools and processes.

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The Results

The initiative delivered measurable benefits spanning marketing performance, fraud prevention, and operational maturity:

- **Efficiency Improvements**
    - Strategic exclusion of low-value users (predicted by purchase probability scoring models) reduced cost per visit (CPV) by 16–28% and cost per order (CPO) by 12–28%.
    - The single-source-of-truth data infrastructure improved the accuracy of attribution and the quality of actionable insights, resulting in better resource allocation for campaigns.
- **Fraud Prevention Gains**
    - Predictive audience exclusion and real-time scoring models led to a demonstrable reduction in declined and fraudulent orders, validating the effectiveness of AI-powered fraud prevention in the data stack.
    - Integrating offline order outcomes into modeling further improved fraud detection accuracy and reduced false positives, helping to safeguard legitimate sales and streamline the customer journey.
- **Operational Excellence**
    - Organization-wide upskilling created a common language and culture of data-driven innovation.
    - Improved onboarding processes for new vendors and tools enhanced the agility of both marketing and risk operations.

Overall Summary

- By establishing an AI-ready, centralized data foundation in partnership with Tealium, this Telecoms provider realized transformational gains in both digital marketing and fraud prevention.
- The project unified data across silos, elevated their analytical and automation capabilities, and empowered both marketing and risk teams to act on real-time insights.
- Lessons learned included the value of cross-functional collaboration, the importance of rigorous model tuning and monitoring, and the critical role of continuous organizational learning in delivering sustainable, data-driven transformation.