

Case Study: Improving User Adoption & Data Quality Through Submission Design

Overview

Supported a federal vehicle safety data program where automakers submitted annual data for public reporting. The process suffered from inconsistent data formats, poor usability, and high manual effort. Identified a systemic lack of data standards and redesigned the submission experience to improve adoption and data quality.

Problem Identified

- No standardized data submission requirements
- Government stakeholders spent 6–8 months manually normalizing data annually
- Stakeholder belief that voluntary program prevented enforcing standards
- Poor user experience with no validation or guidance during submission

Root Cause

Lack of data standards and validation at the point of submission, combined with absence of user-centered workflow design.

Objective

Improve data quality at submission, reduce manual processing, and design an accessible, structured experience for automakers of varying capabilities.

Solution Delivered

- Defined standardized data formats and validation rules
- Designed flexible submission options, including smart upload templates
- Built multi-stage validation (upload, in-process, pre-submission)
- Created end-to-end workflow with notifications aligned to regulatory timelines

Before vs After Workflow

Before	After
Unstructured Submission → Manual Cleanup → Reporting	Standardized Input → Validation → Automated Processing → Reporting

Results

- Reduced automaker submission time from weeks to days
- Reduced government processing time from 6–8 months to ~1 week
- Improved data quality and eliminated large-scale manual normalization
- Increased adoption across organizations of varying technical capability

Key Contribution

Identified lack of data governance as root cause and designed a user-centered submission system that balanced flexibility with standardization, dramatically improving efficiency and adoption.