Product Requirements Document (PRD):
Southwest Airlines Digital Resilience & ITIL Transformation

Executive Summary

Southwest Airlines (SWA/LUV) is a major low-cost carrier operating over 800 aircraft to more than 120 destinations. This PRD outlines a comprehensive modernization of SWA's IT Service Management (ITSM) and technology infrastructure to address systemic failures in scheduling, safety maintenance, and data fragmentation.

Problem Statement

The airline currently faces critical challenges across three primary domains:

- **General Business:** Strategic drift following leadership changes and strained disaster recovery/business continuity plans.
- **Service Delivery:** Supply chain failures leading to an aging fleet and high maintenance costs, as well as critical safety incidents.
- **Technology:** Outdated, non-integrated software (specifically "Sky Solver") and fragmented database architectures that lack monitoring integrity.

Solutions

The primary goal is to transition technology from a cost center to a core asset value through the **Southwest Service Value System (SWA-SVS)**.

Key Objectives:

- **Operational Resilience:** Eliminate single points of failure in scheduling and flight operations.
- **System Integration:** Synchronize all operational data into a singular, cloud-based platform.
- **Proactive Maintenance:** Integrate maintenance systems with IT resource scheduling to move from reactive to proactive service.
- **Regulatory Compliance:** Ensure safety standards and legal compliance to avoid further government penalties

Stakeholders & Users

- **Operational Staff:** Crew schedulers, pilots, and flight attendants requiring reliable software.
- **Maintenance Teams:** Technicians requiring integrated asset management.
- **Executive Leadership:** Decision-makers requiring data-driven roadmaps and risk assessments.
- **Customers:** Passengers requiring predictable, safe, and dependable travel.

Functional Requirements

Infrastructure & Data Management

- **Singular Cloud Platform:** Migration of fragmented databases to a unified cloud or hybrid model with full ETL processes for data integrity.
- **API Integration:** Implementation of backend APIs to ensure all modern technologies are integrated across the enterprise.
- **Monitoring & Alerts:** Centralized real-time monitoring with automated notifications for system weaknesses or failures.

Application Modernization

- **Next-Gen Scheduling System:** Complete replacement of "Sky Solver" with a high-capacity, API-compatible scheduling engine.
- **Self-Service Portal:** A streamlined channel for user requests and maintenance reporting.

ITIL Practice Implementation

- **Change Control & Enablement:** Rigorous peer review and validation for all new technology deployments.
- **Service Validation & Testing:** Requirement for end-to-end testing in non-production environments prior to live deployment.
- **Asset Management:** Lifecycle tracking of all IT hardware, software licenses, and warranties

Non-Functional Requirements

- Availability: Target Service Level Agreement (SLA) of 99.999%.
- Performance: Reduce Mean Time to Repair (MTTR) from days to hours.
- Security: Implementation of robust Identity and Access Management (IAM) for the cloud platform.
- Scalability: Systems must automatically scale resources based on real-time workload demands
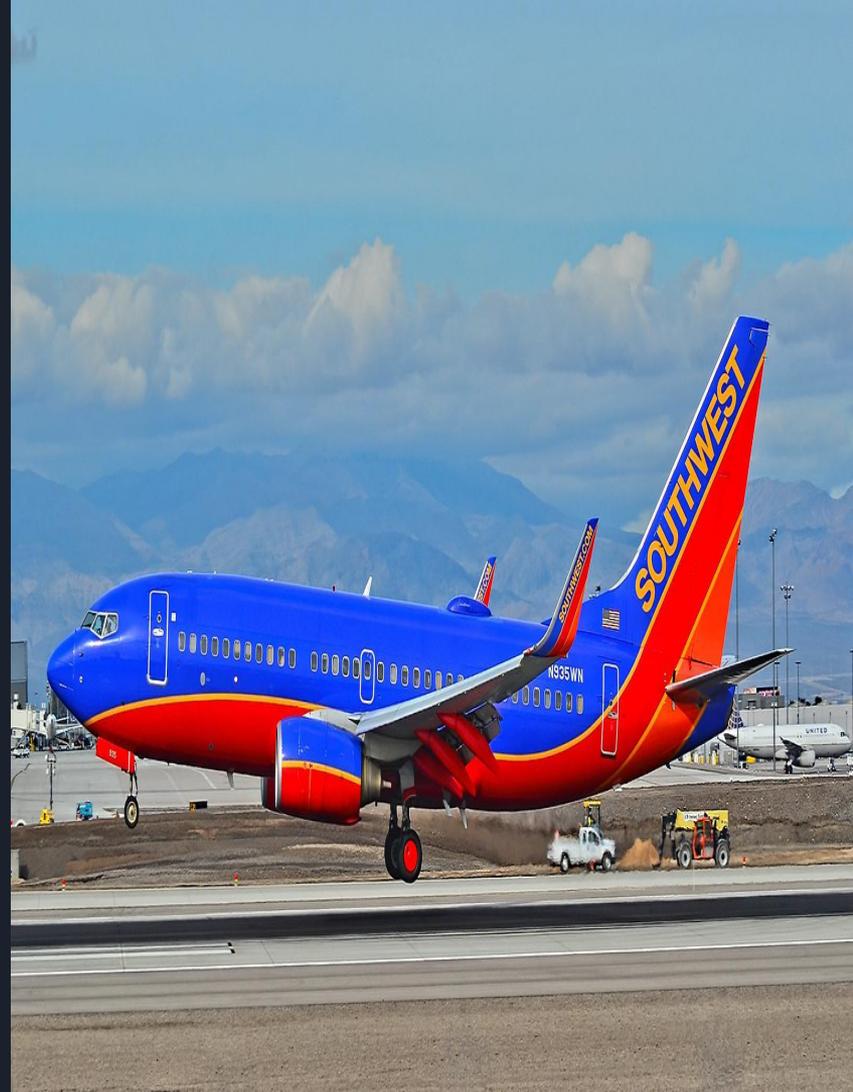
Implementation

- Phase 1: Adoption & Integration,Quick adoption of modern technologies; initial cloud migration.

- Phase 2: Resolution & Testing,Resolving design/build issues; rigorous on-site and off-site testing.

- Phase 3: Optimization & Retirement,Permanent decommissioning of legacy systems; locking in innovative solutions.

Success Metrics (KPIs)

- **System Reliability:** Reduction in flight cancellations attributed to software failures.

- **Safety Compliance:** Zero-tolerance for safety-related incidents and successful completion of third-party audits.

- **Vendor Performance:** Adherence to restructured SLAs with enforceable penalties for delays.

Please refer to the ITIL 4 case study of Southwest Airlines by M. A. Watkins for more details. © 2025