Dynamic Shift Schedule Automation Framework

Role: Program Manager – Capacity Planning and Workforce Management Team

Organization: Amazon, Amazon Robotics

Timeline: April 2021 – October 2021

Mission

To build an intelligent, scalable shift planning system that maximizes labor efficiency, minimizes SLA risk, and streamlines capacity adjustments while empowering employee-centric operations.

Vision

To create a unified scheduling solution that integrates real-time data, cross-functional inputs, and regulatory constraints into a repeatable, sustainable, and automation-ready operational model.

Project Overview

The Dynamic Shift Schedule Automation Framework was a large-scale transformation program designed to modernize and automate weekly scheduling across a 24/7 operation managing over 4,300 employees across four global delivery sites. This initiative replaced a fragmented, manually intensive scheduling process with a scalable automation system that ensured SLA compliance, employee fairness, and labor law alignment—all while reducing overhead and boosting workforce agility.

This project was pivotal in reshaping the way Amazon's support operations approached workforce capacity, especially under volatile demand forecasts, variable staffing conditions, and legally constrained scheduling rules. It became a gold standard for operational planning and one of my most impactful solo achievements during my tenure.

Strategic Objectives

- Automate the generation and dissemination of weekly shift schedules across 4,300+ employees
- Eliminate manual scheduling errors by introducing structured input protocols and validation workflows
- Align staffing with 30-minute interval volume forecasts to ensure SLA targets are consistently met
- Accommodate employee preferences, team-level constraints, and compliance with local labor laws
- Ensure seamless data transfer to downstream reporting and attrition tracking teams

Cross-Functional Leadership in Action

- Designed a multi-layered shift planning engine factoring real-time employee status, attrition flags, NPT windows, new hire ramp-up curves, and SLA protection buffers
- Replaced unstructured email workflows with a centralized Trouble Ticket System governed by submission timelines, exception workflows, and Sr. Manager approvals
- Implemented automated pre-validation tools using Excel VBA macros to eliminate input errors at source
- Collaborated with capacity planning and analytics teams to create 30-minute interval headcount demand models
- Integrated exclusion rules for employees exiting the company and those on split week-offs or training programs
- Structured final outputs for downstream consumers including internal ops reporting and attrition analysis teams

Outcomes & Enterprise Impact

- Reduced schedule generation time by 60% while improving accuracy and adaptability
- Enabled agile staffing aligned to forecast variability without breaching compliance regulations
- Increased visibility, accountability, and planning transparency across multiple management levels
- Minimized attrition risks and employee dissatisfaction by accounting for personal scheduling needs
- Recognized internally as a best practice in shift planning and adopted by other functional programs

Leadership Capabilities Demonstrated

- Strategic Thinking & Operational Architecture
- Workflow Standardization & Risk Management
- Labor Law Compliance & Employee-Centric Design
- Forecast Integration & Cross-Functional Coordination
- Automation Enablement & Planning Systematization

Technology Stack & Tools

Excel with VBA Macros – Dynamic validation and batch planning logic
SQL – Employee data extraction and filtering
Google Sheets / Outlook Integration – Ticket system interface and escalation workflows
Amazon Internal Tools – Forecast integration and volume reporting inputs

Legacy & Reflection

This framework laid the foundation for a truly data-driven, employee-sensitive, and SLA-resilient staffing model. What began as a manual effort transformed into a fully automated, standards-driven operational backbone. It not only elevated Amazon's scheduling accuracy

but also set a precedent for proactive workforce design that harmonizes performance and people-centricity.