

Barrel & Brew Case Study - Process Improvement Report

Prepared by: Ebuka Anthony
Akunedoziobi
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Executive Summary

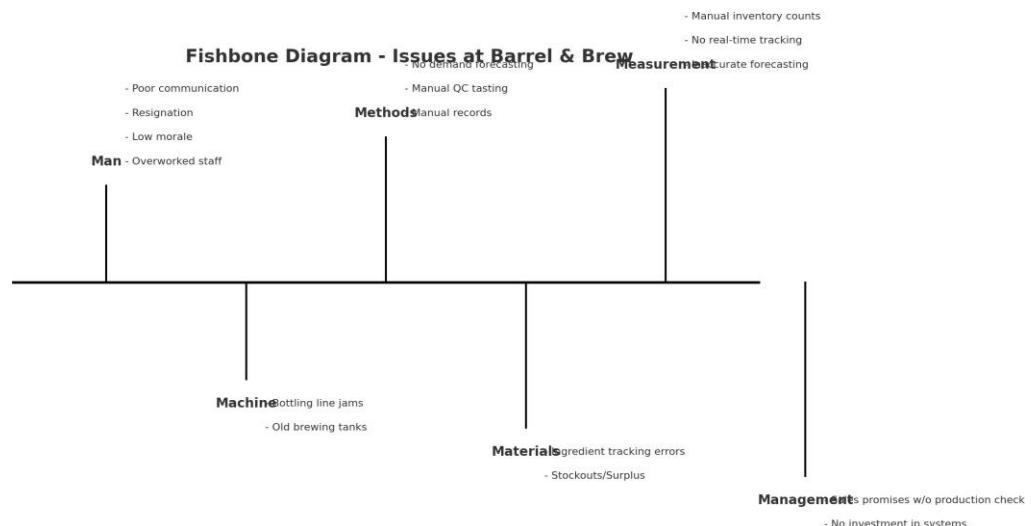
Barrel & Brew faces production delays, inconsistent quality, overworked staff, and outdated processes as demand increases. This report analyzes the gaps, categorizes root causes, and proposes improvements. Diagrams illustrate the current process, key issues, and a streamlined future state. The goal is to achieve reliable production, high quality, empowered staff, streamlined operations, data-driven decisions, and modern infrastructure.

1. Gap Identification

We compare the **current state** vs. **desired state**:

Area	Current State	Desired State	Gap
Production Reliability	Frequent delays, missed targets, equipment breakdowns	Consistent on-time production	Equipment upgrades, streamlined processes
Quality Control	Inconsistent taste, occasional batch discards	Uniform, high-quality product	Lack of automated quality monitoring, reliance on manual tasting
Employee Morale	Overworked staff, high overtime, resignations	Empowered, engaged workforce	Insufficient staffing, stressful work environment
Operations Tracking	Notebooks + outdated spreadsheets, prone to error	Centralized digital system	Absence of modern brewery management software
Forecasting	Intuition-based sales estimates	Data-driven demand planning	Lack of sales data collection & analytics
Equipment	Old bottling line jams, tanks near end of life	Modern, reliable infrastructure	Investment in new machinery
Communication	Sales promises without consulting production	Coordinated sales & production planning	Lack of cross-department communication system

Root Cause Analysis (Fishbone Diagram)

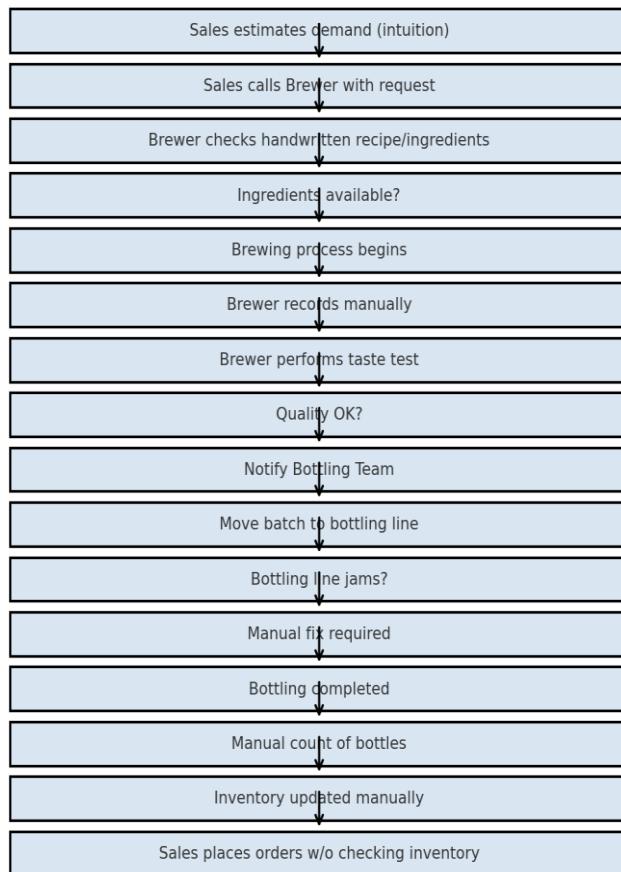


Issues were categorized across the 6Ms (Man, Machine, Methods, Materials, Measurement, Management):

- **Man**: Overworked staff, resignations, poor communication
- **Machine**: Bottling line jams, old tanks
- **Methods**: Manual records, no demand forecasting
- **Materials**: Ingredient tracking errors, stockouts
- **Measurement**: Inaccurate forecasting, manual inventory
- **Management**: Sales promises without checking production, lack of investment

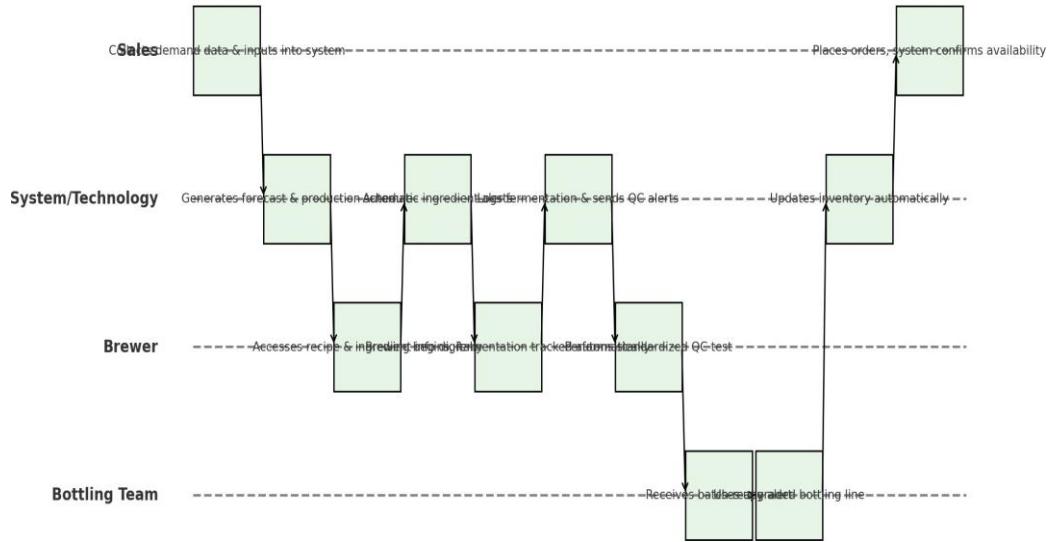
2. Current Brewing & Bottling Process Flowchart

Current Brewing & Bottling Process Flowchart



3. Proposed Future State - Swim Lane Diagram

Proposed Future State - Swim Lane Diagram



4. Current vs Future State Comparison

Current vs. Future State Comparison - Barrel & Brew		
	Current State	Future State
Demand Forecasting	Intuition-based estimates by Sales	System-generated forecasts using sales data
Recipe & Ingredients	Notebooks & outdated spreadsheets	Digital recipe library & real-time inventory tracking
Brewing Process	Manual progress recording, taste-test QC	Automated fermentation tracking & standardized QC tests
Bottling	Old bottling line, frequent jams, manual fixes	Upgraded bottling line, minimal downtime
Inventory	Manual bottle counts, error-prone spreadsheets	Automatic inventory updates in system
Sales Orders	Sales promises without checking stock	System checks inventory before confirming orders
Employees	Overworked, stressed, resignations	Empowered staff with reduced workload
Management	Reactive, fragmented communication	Proactive, data-driven coordination

5. Recommendations & Next Steps

To successfully transition from the current state to the desired future state, Barrel & Brew should take the following steps:

1. **Invest in Modern Equipment** - Replace the bottling line with an automated system to reduce jams and downtime. - Upgrade brewing tanks to improve reliability.
2. **Implement a Brewery Management System (BMS)** - Digitize recipes, ingredient tracking, and inventory. - Enable real-time monitoring of fermentation and automated quality alerts.
3. **Adopt Data-Driven Forecasting** - Collect sales data from restaurants and distributors. - Use analytics to create accurate demand forecasts and production schedules.
4. **Improve Workforce Management** - Hire additional staff or restructure shifts to reduce overtime. - Provide training on new systems and equipment. - Foster a culture of collaboration between sales, brewing, and bottling teams.
5. **Enhance Communication** - Integrate sales and production planning through the BMS. - Ensure orders are only confirmed when stock availability is verified.
6. **Phased Implementation Plan** -

Short Term (0–3 months): Introduce data collection, improve staff communication, pilot forecasting tools.

Medium Term (3–9 months): Invest in BMS software, digitize records, begin staff training.

Long Term (9–18 months): Upgrade bottling line and brewing tanks, scale operations sustainably. By following this roadmap, Barrel & Brew can achieve consistent production, maintain quality, support employees, and ensure sustainable growth.