

Semtrol ERP - Business Management & Production Platform

Modular ERP platform for retail, restaurants, services, distribution, fuel operations and manufacturing workflows, including raw material control, production stages and traceability to final customer delivery.

Business context Operational, commercial, financial and manufacturing workflows	Core stack C#, .NET Framework, ASP.NET Core, Blazor Server, SQL Server, REST APIs
Focus ERP, POS, inventory, accounting, production, reporting and fiscal integrations	Value Centralized operations, production traceability and stronger business visibility

Context

Semtrol ERP is a business management and production platform developed to support companies with operational, commercial, administrative, financial and manufacturing workflows.

The platform has been used across environments such as retail, restaurants, distribution, services, fuel stations, manufacturing operations, printing-related production and raw material processing companies.

The system was designed to centralize core business processes into a single platform, helping companies manage sales, purchases, inventory, customers, suppliers, accounts receivable, accounts payable, banking, accounting, invoicing, reporting, fiscal processes and production workflows.

Business Problem

Many small and mid-sized companies operate with disconnected tools: spreadsheets, manual reports, separate POS systems, isolated inventory records, informal accounting processes and production tracking outside the main business system.

- sales, inventory, accounting and production data are not always aligned;
- stock levels and raw materials are difficult to control;
- production costs are hard to trace;
- manufacturing stages are not always connected to purchasing, inventory and sales;
- reporting is slow, inconsistent or dependent on technical staff;
- business owners lack real-time visibility over daily operations.

Solution

I developed and evolved Semtrol ERP as a modular business management platform focused on real operational needs. The system centralizes key business areas such as sales, purchases, inventory, invoicing, customers, suppliers, accounts receivable, accounts payable, banking, accounting, reports, POS operations, electronic invoicing and production workflows.

Sentrol ERP allows companies to manage their daily operations from a single system, reducing manual work and improving visibility across commercial, financial, inventory and production processes.

Core Capabilities

Sales Management

Sales operations, invoice generation, customer transactions, payment tracking and integration with business reporting.

Purchasing and Supplier Management

Supplier records, purchases, costs, payables and inventory impact from purchase transactions.

Inventory Control

Product tracking, stock movement, locations, costs, availability, raw materials and operational inventory behavior.

Accounts Receivable and Accounts Payable

Customer balances, supplier debts, payments, pending invoices and financial follow-up.

Banking and Cash Control

Bank movements, cash control, payment registration and operational financial tracking.

Accounting and Fiscal Reporting

Accounting-oriented processes, fiscal reports, transaction classification and reporting structures required for business control.

POS and Operational Sales

Point-of-sale operations for retail, restaurants, fuel-related workflows and other commercial environments.

Reporting and Business Visibility

Reports for sales, inventory, financial activity, fiscal information, production behavior and operational decision-making.

Electronic Invoicing Integration

XML generation, fiscal document handling, digital signature workflows, QR codes and external service integrations.

Production and Manufacturing Management

Semtrol ERP includes production workflows for companies that transform raw materials or inputs into finished products. The production module supports manufacturing order control, raw material consumption, finished product generation, production cost tracking, inventory movement between raw materials and finished goods, production stages and operational traceability.

This allows companies to follow the production cycle from material purchase to finished product delivery.

Printing and Materials Processing Operations

The platform has supported production workflows for companies involved in printing-related operations, including processing materials such as panel board for printed products and managing production steps tied to customer orders. This type of workflow requires visibility over materials, production status, inventory impact and final delivery.

Tobacco Processing Workflow

Semtrol ERP has also supported a tobacco processing operation, covering the flow from raw material purchase to finished product placement with the final customer. This includes control over purchasing, inventory, processing stages, production outputs, sales and delivery traceability.

Technical Scope

- C# backend development;
- ASP.NET Core and .NET Framework components;
- Blazor Server and web interfaces;
- REST APIs;
- SQL Server database design;
- stored procedures, views, functions and indexes;
- transaction handling;
- production workflow logic;
- inventory costing logic;
- reporting logic;
- XML and JSON integrations;
- fiscal integrations;
- deployment and production support;
- progressive modernization of legacy modules.

Technologies Used

C#, .NET Framework, ASP.NET Core, Blazor Server, SQL Server, Stored Procedures, Views, Functions, Indexes, REST APIs, XML / JSON, electronic invoicing integrations, reporting tools, Azure App Service, Azure SQL Database and GitHub Actions CI/CD.

Business Value

- centralized sales, purchase, inventory and production information;
- better visibility over customer and supplier balances;
- improved stock and raw material control;
- better traceability from purchase to production to sale;
- production cost visibility;
- reduction of manual reporting;
- stronger fiscal and invoicing processes;
- better operational traceability;
- support for multiple business environments;
- continuity for companies using legacy processes;
- foundation for modernization, cloud deployment and AI-powered reporting.

Why This Project Matters

Semtrol ERP demonstrates long-term experience building, maintaining and modernizing real business software.

This project combines business process understanding, ERP and POS workflows, production and manufacturing workflows, raw material and finished goods control, SQL Server optimization, reporting and fiscal requirements, legacy modernization, production support, real users, operational pressure and integrations with external systems.

Semtrol ERP is a strong example of the kind of business systems I specialize in: platforms that support real companies, real transactions, real production workflows, real operational complexity and long-term technical evolution.

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