CSAP · MASTERING IN SYSTEMIC MANAGEMENT

A Systemic Study on Optimizing the Organization and Allocation of Human Resources at FOOD S.A.

Improving Productivity and Rationalizing Operating Costs
Through the Combined Application of SSM · DCSYM · System Dynamics · Digital Transformation · VSM · CSH

Olga Pitsouli

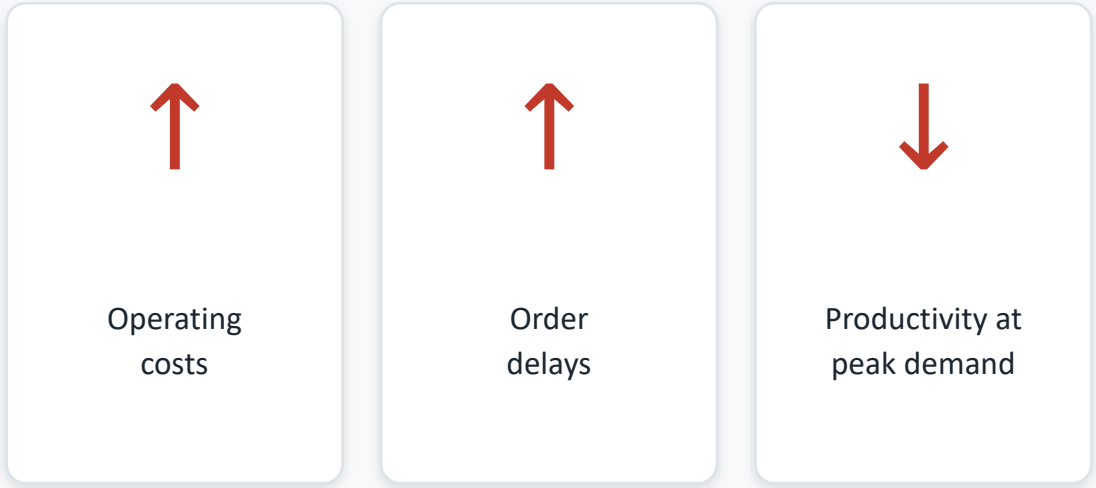
CSAP Certification Project · October 2026

THE PROBLEM

A complex supply chain under pressure

FOOD S.A. manages storage, packaging and distribution through a network of internal departments and external partners (suppliers, third-party warehouses, carriers).

1. Uneven staffing distribution across departments
2. Overlapping responsibilities & unclear roles
3. Poor information flow between Warehouse and Packaging
4. Underused employee skills



Study's premise: these dysfunctions cannot be addressed piecemeal — they require systemic investigation.

PURPOSE OF THE STUDY

From diagnosis to systemic intervention

To investigate how the organization and allocation of human resources affect the operation of FOOD S.A., and to formulate improvement proposals through systemic methodologies.

1

Record

the existing organizational structure

2

Analyze

relationships between functional departments

3

Assess

the allocation of human resources

4

Identify

organizational weaknesses & bottlenecks

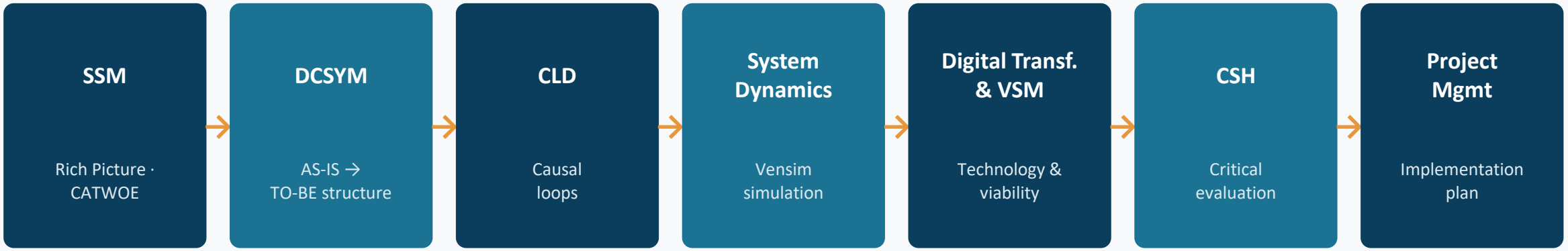
5

Develop

proposals to improve efficiency

METHODOLOGICAL FRAMEWORK

One unified systemic inquiry, not sequential methods



Each stage builds on the previous one's findings: the CLD incorporates DCSYM's bottlenecks, Vensim quantifies the CLD's loops, and the final proposals are validated by VSM and CSH.

SOFT SYSTEMS METHODOLOGY

Understanding the problem situation

Rich Picture — Key Problem Areas

- Delays between Warehouse and Packaging
- Inadequate staff scheduling
- Poor information exchange
- Increased transportation costs
- Difficulty adapting to peak periods

CATWOE — The Transformation

FROM

suboptimal use of human resources, increased operating costs, and limited coordination

TO

effective staff allocation, improved collaboration, and increased productivity

---

Owner: Board of Directors & General Management

A targeted intervention: the Commercial Department

The AS-IS / TO-BE comparison is not a redesign of the entire org chart — it is one specific, well-documented change at the bottleneck.

AS-IS

Commercial Dept.
Assistant (1.5.1i)

One employee absorbs the department's entire workload — reports directly to the Office Manager

TO-BE

1.5.1i

New role
1.5.2i

A parallel role shares the workload — reduces overtime and strengthens resilience during peak periods

Directly addresses SSM findings: "Underused skills" and "Increased overtime"

CAUSAL LOOP DIAGRAMS

“Limits to Growth”: why simple reallocation isn't enough

R1 · Reinforcing

Staff Allocation → Productivity → Service Quality → Sales → Profitability → Investment → (loop)

The “virtuous cycle” — a purely positive chain

+

B1 / B2 · Balancing

Sales ↑ → Workload ↑ [delay] → if capacity doesn't adjust → Overtime → Errors → Service Quality ↓

The loop that “cancels out” the R1 benefit

−

Interpretation

Rising sales trigger, with a delay, the balancing loop. Without timely staffing adjustment, the initial improvement reverses.

Second diagram (training): same pattern — “Fixes that Backfire” (R2 vs B3)

SYSTEM DYNAMICS

Simulation model in Vensim

Stock 1

Available Human Resources

45 people

Stock 2

Staff Skill Level

index 0–100

Stock 3

Pending Orders

80 orders

Stock 4

Customer Satisfaction

index 0–100

24-month simulation · 1-month step · Euler method · three comparative scenarios

S1

Current State

No changes · fixed staffing

S2

Improved Allocation

Reallocation · reduced overtime

S3

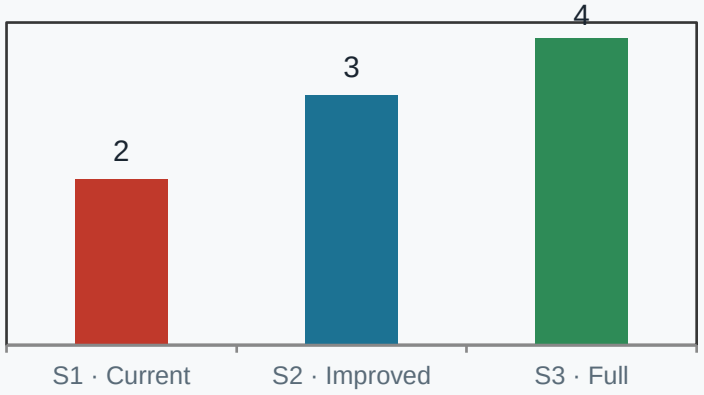
Full Implementation

Skills system · KPI Dashboard · coordination

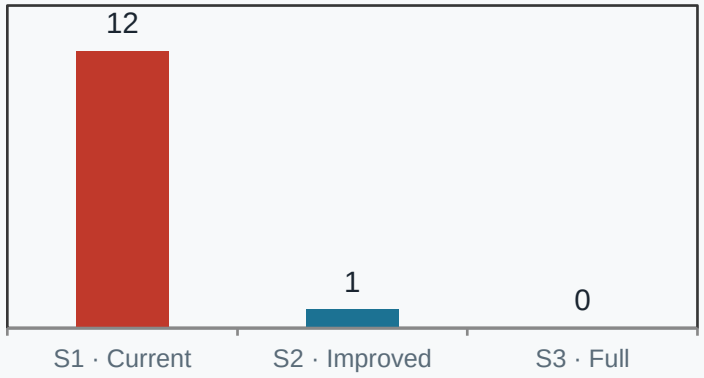
SIMULATION RESULTS

S1 vs S2 vs S3: what the model shows

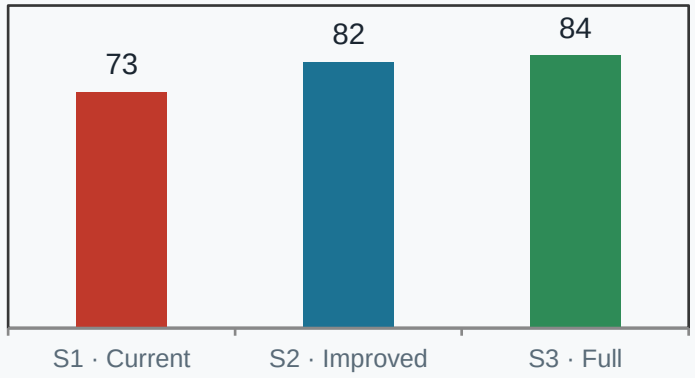
Productivity (orders/person/month)



Overtime Hours / month



Customer Satisfaction (0–100)



Delivery Time

30.9 → 2.2 days

−92.9% (S1 → S3)

Operating Cost — an important correction

€58,187 → €63,417/month (+9.0%)

S1's lower cost is a symptom of staff collapse (−41%), not efficiency — a controlled cost increase against full service delivery.

DIGITAL TRANSFORMATION

Four targeted technology interventions

HR Management System

Registry of skills, training & availability

Addresses: lack of organized workforce data

AI Forecasting & Allocation

Workload forecasting, smart allocation, attrition prediction

Addresses: suboptimal staffing at peak demand

Barcode/QR & Mobile WMS

Digital warehouse, real-time inventory tracking

Addresses: receiving delays & errors

Dashboard & Business Intelligence

Unified metrics for HR, warehouse, logistics, customers

Addresses: lack of a single view for management

VIABLE SYSTEM MODEL

Organizational viability: beyond mapping departments

System 1	Operational Units	Satisfactory
System 2	Coordination	Needs strengthening
System 3 / 3*	Control & Independent Audit	Moderate / Limited
System 4	Intelligence & Adaptation	Needs development
System 5	Policy & Strategy	Satisfactory

Key Finding

ERP/Dashboard is the means — not the coordination mechanism itself.

Explicit protocols, resource negotiation, and independent audit (3) are needed — not just technology.*

CRITICAL SYSTEMS HEURISTICS

Who benefits? Who decides? Who is left out?

IS vs OUGHT

Today: employees implement changes but do not participate in designing the changes that affect them.

Proposal: Participation Mechanism

Department representatives · anonymous feedback channel · right of access to personal KPIs

Three Interventions with Direct Impact on Individuals

Warehouse Automation

Surveillance concerns via barcode/WMS

Commercial Dept. Reallocation

Possible perceived loss of status (1.5.1i)

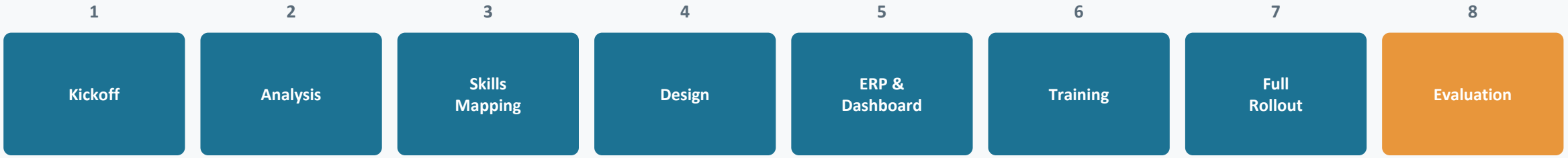
AI Attrition Prediction

Risk of stigmatization without oversight

PROJECT ORGANIZATION

12 months, 8 phases, 6 measurable goals

12	€80,000	8	8
months duration	indicative budget	implementation phases	deliverables (D1–D8)



Goals — Revised Based on Vensim Results

−100%	+84.5%	−92.9%	+15.6%	+9.0% (controlled)	new goal (CSH)
Overtime	Productivity	Delivery time	Customer satisfaction	Operating cost	Employee satisfaction

CONCLUSIONS

Well-organized people are a strategic factor for organizational viability

1	**Technical validity**	6 systemic methodologies, mutually connected — not sequential, standalone presentations
2	**Quantitative evidence**	A complete Vensim model with equations, 3 scenarios, comparable results
3	**Critical dimension**	CSH ensures the change is organizationally fair, not just efficient
4	**Practical applicability**	A concrete 12-month project plan with measurable, revised targets

Thank you for your attention

Questions & Discussion

Olga Pitsouli

Certification Project · CSAP Mastering in Systemic Management