

Case Study: Ensuring Product Availability through Expectation-Driven Design in Logistics

In logistics, the journey of a product from production to shelf appears straightforward but often hides a long chain of dependencies. Unlike highly branching systems, supply chains typically follow a linear path with only a few alternatives—but numerous potential failure points and measurement opportunities. Expectation-Driven Design (EDD) provides a framework to manage these complexities by starting from the end-goal expectation and reverse-engineering the steps that must reliably occur for fulfillment.

Example: Gouda Cheese from the Netherlands to a Supermarket in Budaörs

- **Initial Expectation:** The cheese must be on the shelf, available for customers to purchase.

For this case, we assume that supporting conditions (e.g., functioning checkout system, correct product pricing and barcodes, customer ability to pay) are already in place. We also assume the basic prerequisites are met: a truck is available, a driver is assigned, warehouse staff are present, and the cheese is properly produced and packaged for transport.

Flow of Fulfillment:

1. Cheese is loaded onto the truck in the Netherlands.
2. The truck departs and travels across borders.
3. Customs clearance and border checks proceed without issues.
4. The truck completes the Hungarian leg of the journey successfully.
5. The cheese is unloaded at the Budaörs warehouse.
6. Warehouse staff handle the goods and move them to the supermarket floor.
7. The cheese is placed on the shelf.
8. Expectation achieved: customers can purchase the product.

Reverse-Engineering the Expectation:

1. **Expectation:** Cheese must be reliably available for sale.
2. **Process Design:** Identify and document every step from loading to shelf placement.
3. **Measurement Points:** Truck departure, border clearance, warehouse intake, shelf stocking.
4. **Validation:** Track potential delays or failures at each checkpoint (e.g., customs bottlenecks, vehicle breakdown, warehouse capacity issues).
5. **Feedback Loop:** Compare expected lead times and availability against actual performance. Refine processes or add contingencies where failures occur.

Significance: By starting from the end expectation—product availability—EDD highlights which process steps truly matter, where disruptions most often occur, and how to design interventions to minimize them. This structured approach transforms a linear supply chain into a measurable, resilient system that continuously aligns with customer expectations.