California Dairy Product Development Success Conference

The Economics of Innovation

Cost Modeling from Ingredient to Shelf

Part I

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35 Minutes

Why Economics First?

*"A great product that can't be sold profitably **isn't a success.**"*

Often an afterthought

Cost modeling is frequently the last step — it should be the first

Decisions compound

Every formula change ripples into margin impact

Build it in early

Today's framework saves costly reformulations later

Today's Roadmap

35 minutes • 4 sections • 1 financial framework

01	Ingredient Cost Modeling	8 min
02	Yield Calculations & Processing Costs	9 min
03	Packaging Options & Cost Implications	8 min
04	Setting & Tracking Margin Targets	5 min

SECTION 01

Ingredient Cost Modeling

Building your cost baseline from the formula up

8 minutes

Ingredient Cost Modeling

What goes into your cost baseline?

Start from day one

Cost modeling isn't a final step — it shapes every formulation decision

Build your cost baseline

Price per unit (lb, kg, liter) for every ingredient

Sourcing variables matter

Local vs. commodity vs. specialty sources drive wide cost swings

Dairy-specific ingredients

Milk solids, butterfat, cream, cultures, enzymes — each with unique pricing dynamics

Small changes, big swings

Even a 0.5% formula change can shift your COGS meaningfully

Practical Tip

Lock in ingredient costs before finalizing your formula. Cost surprises late in development are painful and expensive to fix.

Tools & Templates

- Spreadsheet cost tracker (per batch)
- Ingredient price database with update dates
- Supplier quote comparison sheet

SECTION 02

Yield Calculations & Processing Costs

Where assumptions meet the real world

9 minutes

Yield & Processing Costs

From batch to finished unit — what actually comes out?

Moisture & Evaporation

Whey drainage, evaporation, boil-off during processing

Trim & Separation

Rind loss, cream separation, imperfect cuts

Fill & Transfer Loss

Tank residuals, line losses, over-fill waste

Processing Cost Components

- Labor (direct & indirect)
- Utilities & overhead allocation
- Equipment depreciation & run time
- Scale-up assumption gaps (bench → pilot → commercial)

KEY FORMULA

(Ingredient Cost + Processing Cost) ÷ Finished Yield

= True COGS

SECTION 03

Packaging Options & Cost Implications

More than a container — it's a cost driver

8 minutes

Packaging: More Than a Container

15–40%

of total product cost is packaging

Common Dairy Packaging Formats

- Cups & tubs
- Pouches & flexible film
- Glass jars
- Vacuum/MAP trays
- Aseptic cartons
- Specialty formats

Material Cost

Glass vs. plastic vs. flexible film

MOQs

Min order quantities can lock cash

Equipment Fit

Fill/seal compatibility with your line

Match packaging to your price point & channel

Premium packaging at a mid-tier price point erodes margin.

SECTION 04

Setting & Tracking Margin Targets

Working backward from shelf price to sustainability

5 minutes

Setting & Tracking Margin Targets

Know your number before you set your price

Margin Types

Gross Margin — Revenue minus direct COGS
Contribution Margin — After variable costs
Net Margin — After all overhead & fixed costs

Channel Margin Expectations

Retail/Grocery	40–50% gross
Foodservice/B2B	25–35% gross
Direct-to-Consumer	55–65% gross

Working Backward from Retail Price

Retail Price	→ Retailer Margin	→ Distributor	→ YOUR Price
$8.99	−40%	−15%	$4.50

Tracking Margins Over Time

Markets move — your cost model needs to move with them

Build Margin Checkpoints Into Development

- Formula finalization — pre-pilot cost model
- Pilot run — validate yield assumptions
- Commercial scale-up — update all costs
- Quarterly review — catch ingredient volatility early

Red Flags

- Gross margin below channel threshold
- COGS creeping up without formula change
- Ingredient cost > 50% of target shelf price
- Packaging costs surprise at commercialization

When margins slip: First ask if you can **reformulate** without compromising quality — before you consider **repricing.**

Key Takeaways

1

Ingredient Cost

Know your cost per unit for every input before you finalize formulation

2

Yield %

Measure actual yield at every stage — don't rely on bench assumptions

3

Target Margin

Build backward from shelf price; margin drives every other decision

Cost modeling is a living document — revisit it every time your formula, supplier, or channel changes.

Questions?

Thank you for your time and attention.

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Coming Up:

Part II

Pricing strategy, retailer negotiations & building your go-to-market economics