Generative AI in New Product Development

Sprint Zero: Fast Clarity on What to Build (and What Not To)

Professional and Technical Consultants Association (PATCA) 2025
Dr. Rolf Biernath

Get clarity on your next product idea in just 10 days

Who's Behind This?

Dr. Rolf Biernath

58+ patents across hardware, software, sensors, and materials

30+ years in advanced product innovation at 3M

50+ product development programs ("Hard Tech")

PhD in Chem Engineering (UC Berkeley), GA Tech.

Expertise & Background

Known for technical fluency, cross-functional leadership, and delivering fast clarity on complex product decisions.
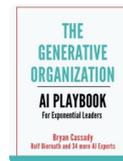
What Clients Say:

"Goldmine of practical ideas."

"Asked the questions no one else was asking."

"Helped us avoid months of wasted effort."

"Strategic thinking partner – helps envision potential futures."

My Consulting Goal:

10 significant new products or product lines at 10 companies

Status:

Two down, eight to go

Poll: Which Innovation Challenge Feels Familiar?

1 **Too Many Ideas, Not Enough Clarity:** "We have a pile of product or feature ideas but no clear way to choose."

2 **Internal Misalignment**: "Different leaders or teams are pushing in different directions."

3 **Unvalidated Ideas Gaining Momentum**: "We're moving forward but haven't tested the core assumptions."

4 **We've Been Burned Before**: "We've invested in products that flopped. We want to avoid repeating that."

5 **Decisions Are Stalled**: "We're stuck, circling the same options without real movement forward."

6 **No Time to Waste, Can't Afford Bad Bets**: "We need to move fast but we're not confident we're choosing wisely."

7 **Working on the Wrong Thing**: "Deep down, we're not sure this project will actually pay off."

Backstory

Primarily "Hard Tech" projects:

> "Building products for customers who don't yet know they'll need the product using technologies that don't yet exist."

$2 million lesson(s) at 3M

Learning from successes and failures.

Core Challenge: The High Cost of Decision Delays

Early Decisions

Cheap to make and easy to change. Quick pivots save resources and time.

Late Course Corrections

Exponentially costly. Teams, budgets, and timelines suffer from delayed insights.

Prototype Pitfall

Prototypes can mislead with false confidence and generate premature enthusiasm, masking fundamental flaws.

The earlier we find flaws, the cheaper they are to fix.

Biggest hurdle to my goal: Most New Products Fail

According to MIT and Stanford, 9 out of 10 new products fail. 7 lose money.

Most new product ideas aren't assets.
They are liabilities until proven otherwise.

How to remedy the dismal statistics?

Deep research into

- drivers

- questions that were answered too late

- lead indicators of impending success or failure

Which key aspects can be meaningfully addressed in a 2-week sprint?
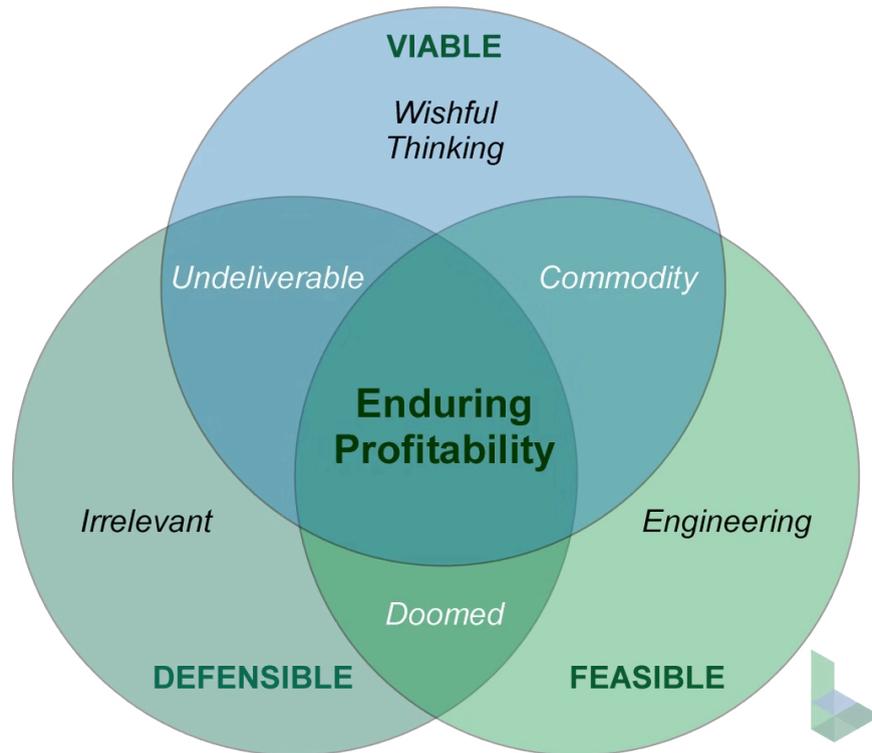## (Goal: cover 90% of failures)

Result:

- **Sustainable Profits Framework** - key factors for enduring profitability

- **Prioritization Workshop** - evidence-based prioritization process

- **Pressure-Test Sprint** - 15 Worksheets that uncover risks and opportunities.

Sustainable Profits Framework

The 3 Questions That Make or Break Profitability

Is it VIABLE?

Will customers eagerly pay to solve the problem your product addresses?

Is it FEASIBLE?

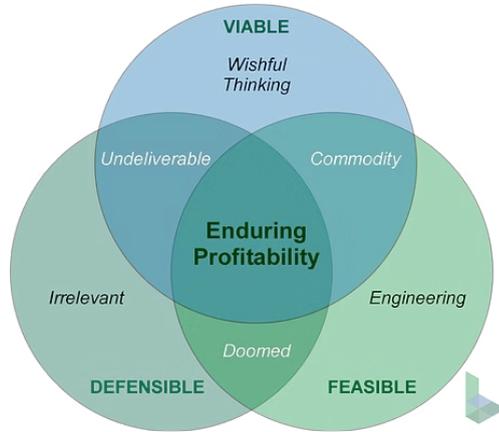Can you build and scale your solution profitably at target margins?

Is it DEFENSIBLE?

Can you defend the business from copycat products and price competition?

> *Brilliance in one circle doesn't save you if you miss the others.*

Mini-Case Example - Google Glass

Viability ❌

Consumers didn't see compelling daily use case. Social backlash ("Glassholes") killed mainstream adoption before it started.

Technical Feasibility ✔

Cutting-edge optics, voice control, and seamless cloud connectivity demonstrated Google's technical prowess.
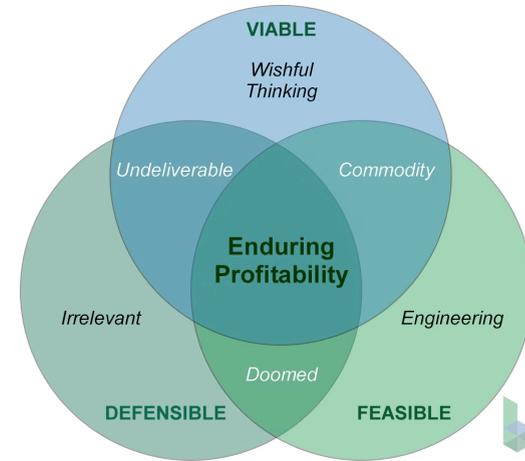
Business Defensibility ✔

Google had resources to defend the technology, but without customer demand, competitive advantage became irrelevant.

Failed to cross into mass market due to lack of customer eagerness and social acceptance.

Mini-Case Example - Hoverboards

Viability: ✔ (Initially)

Massive consumer hype with millions wanting to purchase the trendy new transportation device

Technical Feasibility: ✔ (Initially)

Manufacturing shortcuts led to battery overheating, fires, recalls, and safety concerns

Business Defensibility: ❌

Flood of copycats with no brand differentiation or intellectual property protection

Short-lived fad where profitability eroded within months due to safety issues and market saturation.
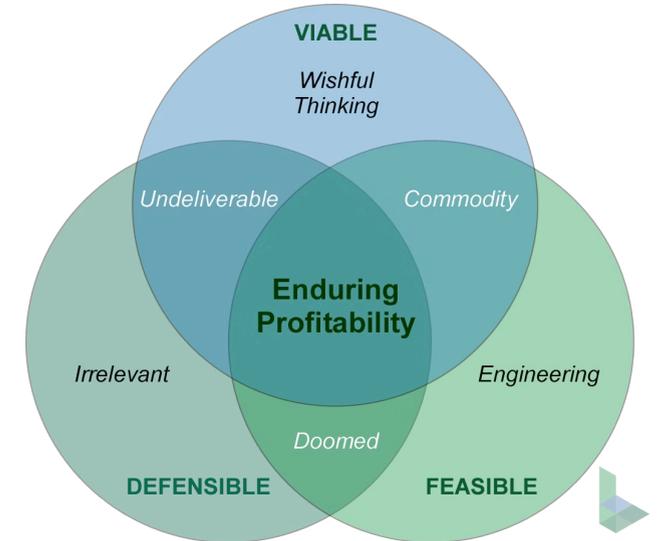
Mini-Case Example - Segway

The "Revolutionary" Transport Device
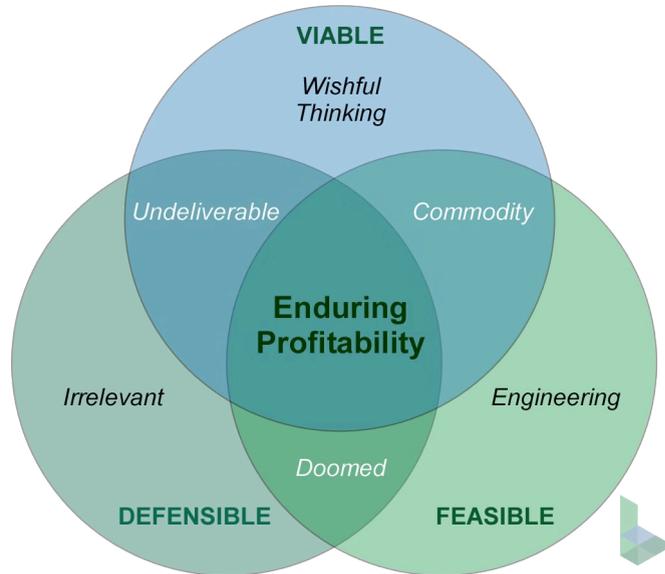
- Viability ❌: Too awkward, expensive ($5,000), and limited use cases for daily transportation

- Technical Feasibility ✓: Incredible self-balancing engineering and gyroscopic technology

- Business Defensibility ✓: Strong patent portfolio, but didn't matter without market demand

Became an icon of innovation hype but never achieved enduring profitability or mass adoption.

Mini-Case Example - Juicero

VIABLE

Wishful Thinking

Undeliverable   *Commodity*

Enduring Profitability

Irrelevant   *Engineering*

Doomed

DEFENSIBLE   **FEASIBLE**

Squeezed out: widely mocked startup Juicero is shutting down

The company, which offered pre-sold packets of diced fruits and vegetables that users plugged into its $400 machines, launched only 16 months ago

Juicero's $400 machine. Photograph: PR company handout

$120M Raised

Premium cold-press juicer with proprietary produce packs and sophisticated engineering

Fatal Flaw Discovered

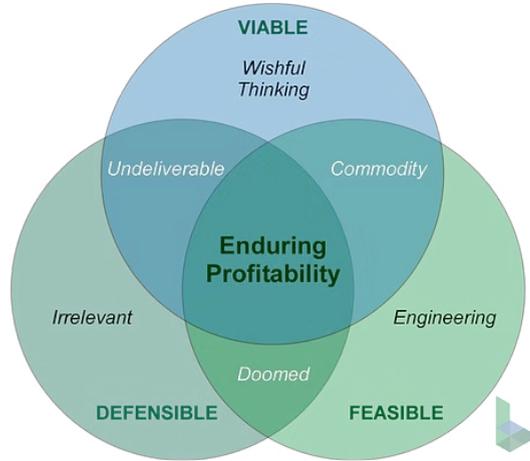Customers could squeeze juice packs by hand - no machine needed

Company Collapsed

Shut down in 2017 after public ridicule and investor withdrawal

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Engineered perfectly. Customers didn't care. No defensibility.

Mini-Case Example - Post-It™ Note

Viability ✔

Consumers love the product.

Technical Feasibility ✔

Right balance of sticky with release adhesive. Primer to stick to paper.

Business Defensibility ✔

Patents on colors, adhesive formulations, primers, processes. Trade secrets that still haven't been cracked.

Massive enduring profitability due to customer eagerness and business defensibility.

Introducing Sprint Zero

01

10-Day Pressure Test

Rapid evaluation of early-stage product ideas through structured analysis.

02

Due Diligence Focus

Not prototyping, not discovery — it's rigorous due diligence on profitability.

03

Clear Decision Framework

Outcome: Go / Pivot / Park decision with supporting evidence using the Sustainable Profits Framework.

✓ ***Fast clarity without big commitments.***

Question 1: Problem Viability

Do customers care enough about the problem to eagerly buy a solution?

- Understand real pain points

- Map customer journeys

- Validate demand signals

Without demand, even brilliant ideas fail.

Viability Worksheets

V0 – SalesPrep.com Problem Analysis report

V1 – Customer Interview Script.

V2 – Eagerness-to-Pay Prompts.

V3 – Market Timing Fit Worksheet.

V4 – Business Model Exploration & Fit Assessment Template.

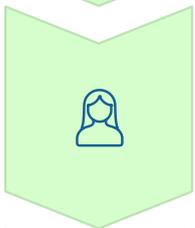V5 – Who Loses if We Win? – Opportunity & Opposition Worksheet.
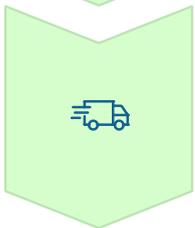
V6 – Viability Blind Spots Worksheet.

Using AI for Desirability

Analyze online reviews, forums, complaints

Generate personas and interview scripts

Summarize unmet needs fast

AI accelerates insight from months to hours.

Question 2: Technical Feasibility

Can we build and scale it profitably with existing tech?

Solution Concepts

Explore multiple technical approaches and architectural options.

Manufacturability

Check scaling potential and production bottlenecks early.

Risk Identification

Identify technical and operational bottlenecks before they become expensive.

Feasibility isn't about 'can we prototype?' — it's 'can we scale profitably?'

Feasibility Worksheets

F0 – Unit Costs via Perplexity AI Deep Research

F1 – Unit Economics

F2 – Value Chain Pricing & Profitability

F3 – Science, Engineering & Technology Readiness

F4 – Feasibility Resource Mapping

F5 – Feasibility Blind Spots

Using AI for Feasibility

Solution Generation

AI generates multiple technical approaches you might not have considered.
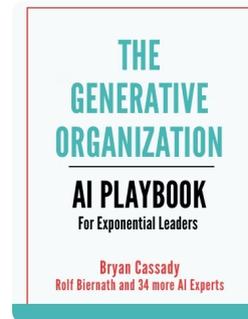
Competitive Analysis

Benchmark against existing patents and products for technical insights.

Cost Modeling

Run first-pass cost estimates across different scaling scenarios.

AI multiplies engineering imagination and accelerates feasibility assessment.

THE GENERATIVE ORGANIZATION

AI PLAYBOOK
For Exponential Leaders

Bryan Cassady
Rolf Biernath and 34 more AI Experts

Question 3: Business Defensibility
Can We Defend Against Copycats?

IP Strategy	Economic Moats	Competitor Mapping
Patents, trade secrets, and proprietary technology create legal barriers.	Brand strength, network effects, and speed-to-market advantages.	Anticipate and prepare for competitive responses and market reactions.

Without defense, margins vanish due to competitive pressure.

Defensibility Worksheets

D0 – Competitive Alternatives Research Report

D1 – Business Defensibility Map

D2 – Moats and Momentum

D3 – Intellectual Property (IP) Audit & Strategy

D4 – Copycat Risk & Market Erosion Assessment

D5 – Defensibility Blind Spots

Using AI for Defensibility

1   **Prior Art Scanning**

Comprehensive patent landscape analysis in minutes, not weeks (patents.google.com).
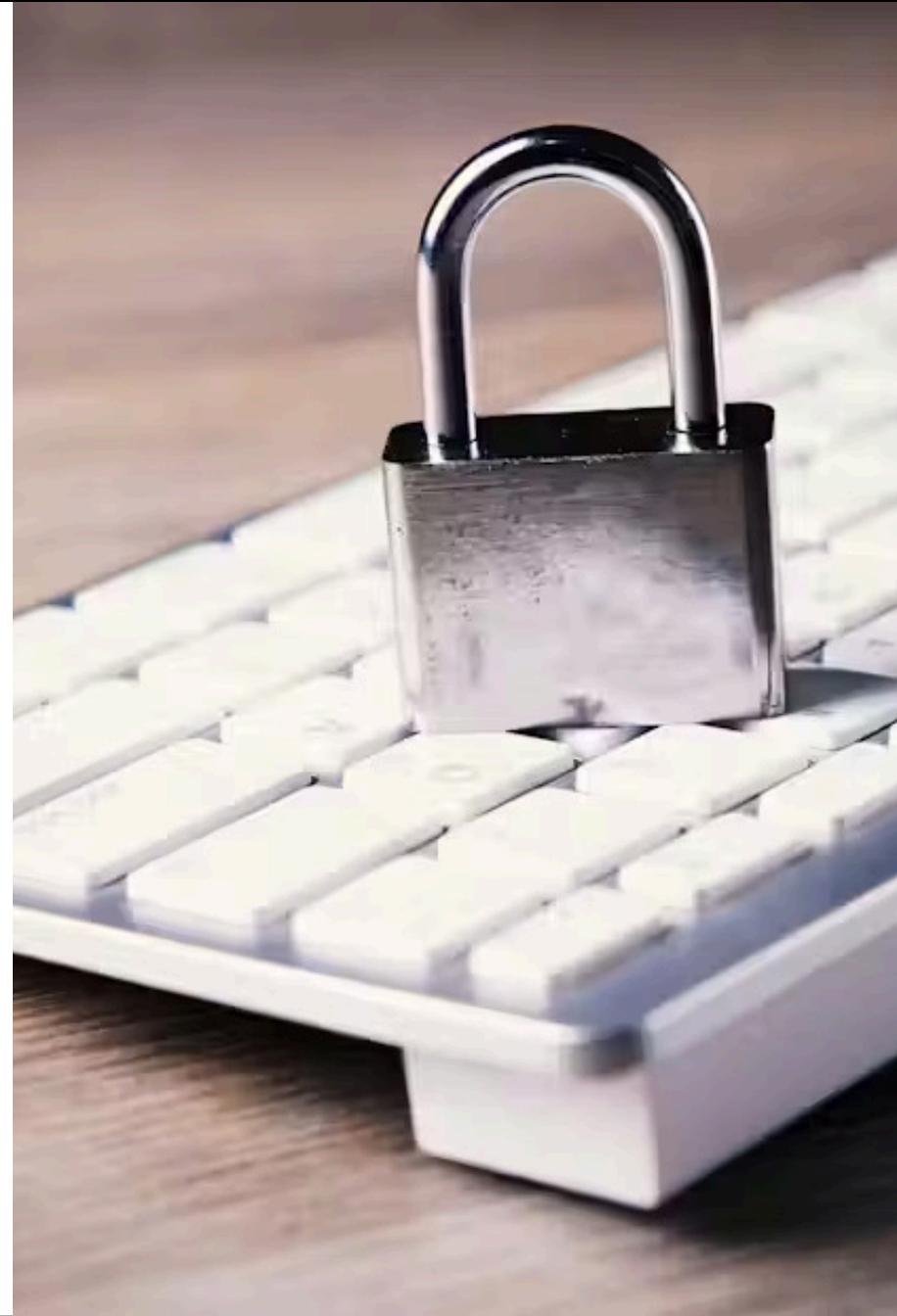
2   **Patent Drafting**

Generate multiple patent claim variations and filing strategies.

3   **Competitive Scenario Simulation**

Model competitor responses and develop counterstrategies.

AI turns defense strategy from reactive to proactive.

Sprint Zero in Action

1 **Intake**
Define the product idea, market context, and strategic objectives clearly

2 **Test**
Systematically evaluate against the three critical success questions

3 **Evidence**
Synthesize research findings and market validation data

4 **Decision**
Choose your path: Go, Pivot, or Park the idea

Expose hidden risks early, when options are open.

Sprint Zero: The 10-Day Pressure-Test Sprint™

Know if your next product idea can win before you commit serious resources

🚫 The Problem

9 out of 10 new products fail

- Wasted months or years
- Burned cash & resources
- Missed growth targets
- Damaged credibility

🔍 The 3-Element Solution

Problem Viability (V): *Will customers eagerly pay?*
AI + research to verify demand & price.

Product Feasibility (F): *Can it be built and scaled profitably?*
Assess technology, supply chain, timelines.

Profit Margin Defensibility (D): *Can you defend your margins against competitors?*
Competitor analysis, IP protection, differentiation.

🎯 The Outcome

GO → Confident investment in a winning idea

PIVOT → Adjust before costly mistakes

STOP → Avoid sinking resources into a dead end

For CEOs

💰 Protect cash flow
📈 Launch products w higher odds of profit
🟢 Increase business value

For Investors

💼 Increase portfolio value
🚀 Accelerate growth in winning bets

For All

Accelerated Progress = Saved time & money

5 Keys to Confident Product Decisions

Clarity over Guesswork

Replace gut feel with objective, fact-based prioritization frameworks.

Most teams skip this and pay for it later.

Speed to Certainty

10 days to actionable insight versus 10 weeks of internal debate and analysis paralysis.

Slow decisions cost momentum and money.

External Objectivity

Cut through internal bias, politics, and loudest-voice-wins dynamics.

Your team's confidence may be misplaced.

Seasoned Intuition

Judgment shaped by dozens of product launches across multiple industries and markets.

Most teams learn expensive lessons the hard way.

Technical Fluency

Speak engineer, executive, and market language, so pivots and solutions come faster.

Most consultants miss viable solutions hiding in your existing tech.

Key Takeaways & Connect

Your Path to Profitable Products

- **Validate Early & Fast:** Pressure-test product ideas in just 10 days with Sprint Zero.
- **3 Critical Dimensions:** Rigorously assess Problem Viability, Technical Feasibility, and Business Defensibility.
- **AI-Powered Insights:** Leverage generative AI for rapid, deep market and technical analysis.
- **Confidently Decide:** Make Go/Pivot/Park decisions to optimize resource allocation and maximize value.
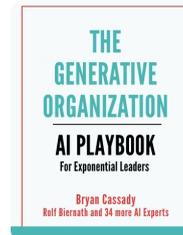
Let's Connect

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https://t.ly/Genorg24

Accelerate Physical Prototyping with AI

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