

Project Design Phase
Problem – Solution Fit Template

Date	15 February 2025
Team ID	LTVIP2025TMID34512
Project Name	Pattern Sense: Classifying Fabric Patterns using Deep Learning
Maximum Marks	2 Marks

Problem – Solution Fit Template:

Identified Problem with the Customer

✓Textile manufacturers, designers, and retailers struggle with the **manual classification of fabric patterns**, which is:

- Time-consuming
- Inconsistent and prone to human error
- Difficult to scale with growing product lines
- Creates bottlenecks in product cataloging, inventory management, and quality control

This leads to operational inefficiencies, customer dissatisfaction, and revenue loss, especially for businesses dealing with high volumes of diverse fabrics.

Proposed Solution

Pattern Sense uses **Deep Learning models** to automatically classify fabric patterns (e.g., floral, geometric, abstract) from images with high accuracy.

It offers:

- ✓Automated, scalable pattern recognition
- ✓Consistent, fast, and accurate categorization
- ✓Integration into existing product management systems
- ✓Enhanced efficiency for designers, manufacturers, and online retailers

Purpose & Impact

✓**Solve complex problems aligned with customer reality**

- Pattern Sense fits seamlessly into existing workflows without requiring deep technical expertise.
- It leverages AI to handle the repetitive, tedious task of pattern classification, freeing teams to focus on creativity and innovation.

✓**Faster success and solution adoption**

- Integrates with current cataloging platforms, ERP systems, and online stores, reducing friction in deployment.
- Meets existing behavior patterns: customers already rely on visual classification, Pattern Sense automates this familiar process.

✓ Sharper communication and marketing strategy

- Messaging focuses on reducing human error, saving time, and improving consistency—clear triggers that resonate with operational managers and business owners.

✓ Increased touchpoints and trust-building

- Provides reliable, repeatable results for a common, everyday annoyance in the textile industry.
- Solves an urgent, costly problem for businesses with large product inventories and tight quality standards.

✓ Understanding and improving the current state

- Pattern Sense eliminates subjective inconsistencies.
- Offers data-driven insights, enabling process improvements across supply chains.

Summary

Pattern Sense achieves **Problem-Solution Fit** by addressing a high-friction, costly, and repetitive task with a scalable, AI-powered solution. It aligns with customer behavior, integrates into existing systems, and improves operational efficiency, driving faster adoption and stronger market impact.

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) CS Who is your customer? I.e. working parents of 0-5 y.o. kids	6. CUSTOMER CONSTRAINTS CC What constraints prevent your customers from taking action or limit their choices of solutions? I.e. spending power, budget, no cash, network connection, available devices.	5. AVAILABLE SOLUTIONS AS Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? I.e. pen and paper is an alternative to digital notetaking	Explore AS, differentiate
	2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.	9. PROBLEM ROOT CAUSE RC What is the real reason that this problem exists? What is the back story behind the need to do this job? I.e. customers have to do it because of the change in regulations.	7. BEHAVIOUR BE What does your customer do to address the problem and get the job done? I.e. directly related: find the right solar panel installer, calculate usage and benefits; Indirectly associated: customers spend free time on volunteering work (I.e. Greenpeace)	
Identify strong TR & EM	3. TRIGGERS TR What triggers customers to act? I.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.	10. YOUR SOLUTION SL If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.	8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.	Extract online & offline CH of BE
	4. EMOTIONS: BEFORE / AFTER EM How do customers feel when they face a problem or a job and afterwards? I.e. lost, insecure > confident, in control - use it in your communication strategy & design.			