

Product Requirement Document (PRD)

Overview & Context

Application	BigBasket
Initiative Name	Progressive Fullfillment Signaling
Date	16/02/2026
Verions	V1
Author	Pradnya Mehendale
Stakeholders	Design, Engineering, Database teams

Problem Statement

P0 Problem Statement	Active users struggle with unreliable visibility of item unavailability and delivery timelines before checkout, leading to frustration, rework, and app switching late in the order flow.
User segment affected	Primary - Active grocery users whose cart experience item unavailability during checkout, especially during peak demand hours Secondary - Regular buyers who value predictability and feel frustrated when availability changes after cart-building efforts
Current pain points	1. Late- Stage visibility 2. Re-order loop/app switching 3. Expectation collapse at checkout 4. Abandonment spike
Business impact if not resolved	If unresolved, late-stage visibility issues will continue driving checkout abandonment, revenue leakage via app switching, reduced reorder trust, and increased operational costs from cancellations and dissatisfaction

Goals and Success Criteria

Business Goal	To improve order completion by reducing last-stage abandonment, potentially resulting in a moderate increase in completion rate over the next 3-6 months.
Key Metric	Order completion rate
Secondary Metric	Completion rate for low-confidence carts
Guardrail Metrics	- Substitution dissatisfaction rate - Post checkout cancellation - High confidence failure rate

User Persona & Map Journey

1. Time sensitive/urgent minute Buyer:

- Shopping on last minute or urgent basis
- Buys in small quantities
- Low tolerance for rework, switches apps quickly
- Shopping is done impulsively

Identity	Arjun, 35, working single, orders groceries 3X/ week
Goal / Motivation	-Prefer faster deliveries -Prefer saved time and a reasonable price -Habitual user
Patterns/ Behaviour	-Order whenever required (nothing planned) -Mobile app only - Impulsive or last-minute purchases
Pain/ Frustration	-Address inaccuracy - Items unavailable at the checkout stage - Tracking the order till it is delivered

2. Planned Household Buyer:

- Plans shopping regularly
- Buys in bulk/large purchases
- Value predictability, hate late surprises
- Shopping is done weekly/ monthly

Identity	Priya, 43, working mom, orders groceries 2X/ week
Goal / Motivation	-Save time for grocery shopping to focus on work -Stay within the monthly budget -Maintain healthy eating for self and family
Patterns/ Behaviour	-Order on the weekend to plan the week -Create a list and usually reorder the 80% & 20% new items -Mobile app only, books 2, 3 slots in advance
Pain/ Frustration	-Delivery slot timing inconsistent (sometimes it's 2hrs/ 4 hrs/6 hrs) - Items unavailable at the checkout stage



Proposed solution

In Phase 2, user research revealed that unreliable visibility of item unavailability before checkout is the primary driver of late-stage frustration and abandonment. However, deeper analysis revealed that the core issue is not inventory volatility itself, but the timing and communication of the uncertainty. When the changes are discovered only at checkout, users experience expectation collapse after investing efforts in building their cart.

Therefore, improving visibility is not merely about showing stock status, but about progressively shaping user expectations before commitment.

Solution Name	Progressive Fullfillment Signaling
Summary	Enable informed checkout decisions through progressive confidence signalling and built-in recovery options. This system introduces structured probability communication and a proactive recovery mechanism across the shopping journey to reduce late-stage checkout shock.

Phased rollout plan

Phase No.	Name	Prupose	System details
1	Fullfillment Confidence Indicator (Foundation)	Calibrate user expectation before checkout	-Display low/high/medium confidence inline below product price -Visible at Add-to-cart & cart stages -Tooltip explaining the confidence meaning -Calm, non-alarming visual design
2	Recovery Layer (Alternatives for low confidence)	Reduce the rework loop and prevent forced abandonment	-For low confidence in cart -Escalated visual treatment (red color display) -Inline “view alternatives” option -Prevents full journey restart

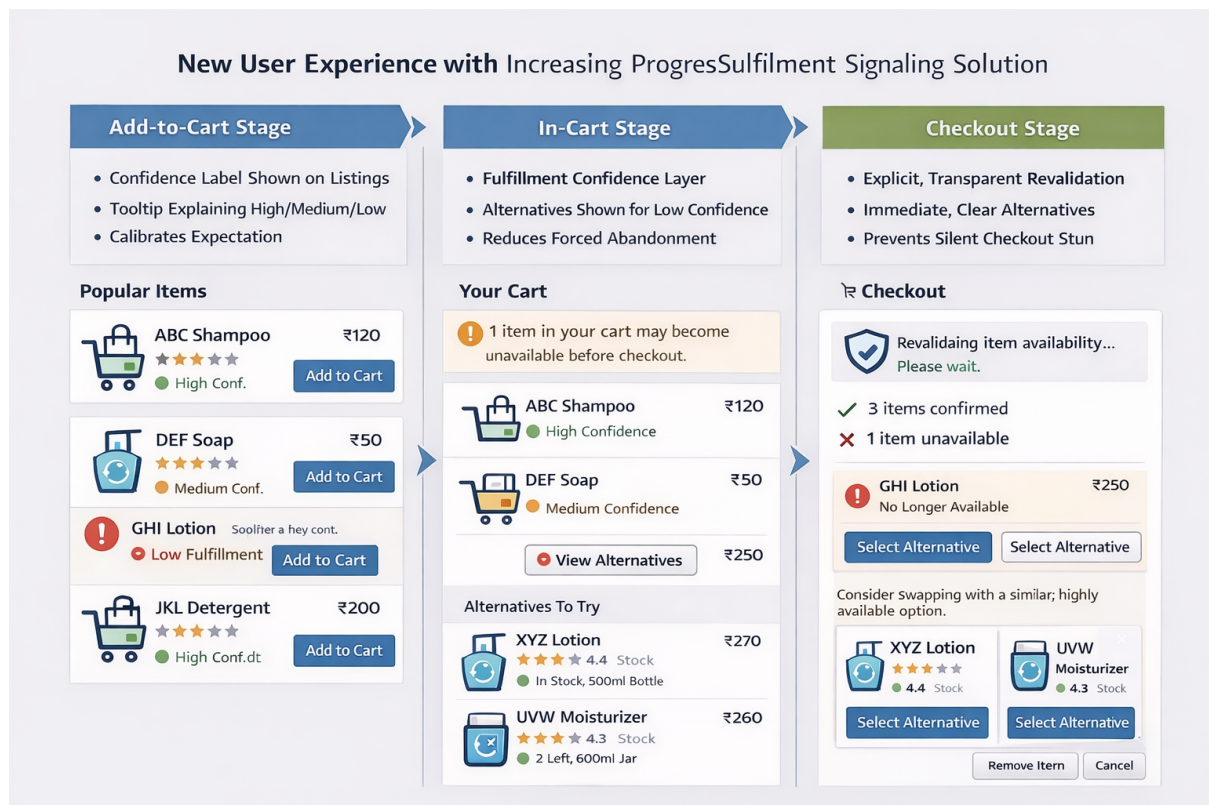
3	Explicit Checkout Revalidation	Replace unexpected failure with predictable confirmation	-Before payment, the system revalidates availability -Communication transparency “revalidating item availability.” - If Failure, clear expectation, immediate alternative suggestion -Avoid silent payment page shock
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Wireframes/mockups (with ChatGPT)

1 User Journey after Progressive Fulfilment signalling system implementation



2. Various stages of the user Journey after the Progressive Fulfillment signalling



Technical Consideration

1. Core dependencies
 - a. Real-time inventory system
 - i. Require to calculate accurate fulfillment confidence
 - b. Slot allocation system
 - i. Confidence must reflect slot-based fulfillment pressure to avoid misleading availability signals.
 - c. Demand velocity data
 - i. To estimate the likelihood of stock depletion before checkout using recent purchase trends.
 - d. Recommendation engine
 - i. To provide relevant quality substitutes for low confidence items
 - e. Checkout Revalidation
 - i. To support explicit stock revalidation before payment to prevent silent checkout failures.
 - f. User session management
 - i. Ensures confidence levels update dynamically if stock changes mid-session.
 - g. Analytics & Logs
 - i. Tracks confidence accuracy, abandonment rates, and guardrail metrics for rollout decisions.

2. Platform considerations -

- a. Android
- b. Ios
- c. Web

3. Accessibility considerations -

- a. Don't rely on color alone
- b. User color + text +icon
- c. Screen reader-friendly labels

4. Edge Cases to handle

High confidence fails	Explicit explanation: "Availability changed due to sudden demand." Immediate alternatives. Log this as a High Confidence Failure event
Multiple low-confidence items in the cart	Single summarized banner- " 5 items may change before checkout"
User changes delivery slots	Recompute confidence on delivery slots Update cart view instantly
Confidence change mid-session	Confidence label updates dynamically. Cart banner refreshes, no silent downgrade
Offline / Poor network	Show -" Availability will be confirmed while checkout" Avoid showing stale high-confidence items

Risk & Mitigations

1. Confidence Miscalculation -

Assumption	Confidence score accurately measures stock survival until checkout
Failure Mode	High confidence items become unavailable at checkout
Impact	Severe trust erosion(worse than the current state)
Detection Signal	High confidence failure rate > acceptable threshold
Likelihood	Medium (dependence on prediction quality)
Mitigation	Conservative threshold of high confidence. Limited rollout, monitor weekly failure rate

2. Increased user anxiety -

Assumption	Confidence signaling improves clarity without increasing stress
Failure Mode	Users feel constant uncertainty throughout browsing
Impact	Lower engagement, longer hesitation time
Detection Signal	Increased time-to-checkout, drop in add-to-cart rate
Likelihood	Medium
Mitigation	Calm visual signs, avoid alarming language, emphasize low items strongly.

3. Artificial completion increase -

Assumption	Alternatives reduce abandonment without reducing satisfaction
Failure Mode	User complete order but cancel later
Impact	Increase cancellation and refund costs
Detection Signal	Spike in post-checkout cancellation rates

Likelihood	Medium
Mitigation	Show high-quality substitutes only, provide easy editing before payment, and monitor cancellations within 24 hours

4. Over alerting / Signal Fatigue -

Assumption	Users respond rationally to confidence levels
Failure Mode	Users ignore the signals completely
Impact	System loses signaling power
Detection Signal	No behavior difference between low & high confidence carts
Likelihood	Low- Medium
Mitigation	Limit the number of low signals, A/B testing for visual intensity

Launch plan & timeline -

Phase	Timeline	Scope	Target segment	Objective
Phase 0-1 (design & planning)	Wk 1-2	UX, confidence logic, threshold definition	Internal stakeholders	Architecture & prediction model alignment
Phase 1 (pilot 5%)	Wk 3-8	Confidence indicator only (add-to-cart & cart)	Active users ≥ 2 who faced the issue in the last 30 days	Validate expectation calibration & confidence accuracy
Phase 2 (expanded rollout 25%)	Wk 10-12	Alternative layers added	Urban high-demand clusters	Reduce rework loop and order abandonment
Phase 3 - full rollout (100%)	Month 4-5	Confidence+alternative+checkout revalidation	All active users	Reduce checkout shock & improve trust
Phase 4- optimization	Month 6+	Threshold tuning & personalization	All users	Improve prediction & UX tone

Note -Timeline assumes a 2-sprint development cycle for core scoring logic and UI implementation, followed by 1 sprint for QA and controlled pilot rollout. Expansion phases are gated by metric validation rather than fixed dates

Not in scope

1. Inventory locking or reservation systems
2. Dynamic pricing mechanisms
3. Delivery route or ETA optimization
4. Full reorder system redesign
5. Marketing-driven urgency tactics

Open Questions & Next Steps:

1. What threshold defines High vs Medium vs Low confidence?
2. How accurate must confidence prediction be before scaling?
3. Should confidence adapt per user behavior?
4. How do delivery slot constraints affect confidence modeling?