

# **SpendGuard / Pigeon Finance — Budgeting that tames impulse**

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Design note: Inherits the brand color of 6.1P (mainly blue/green).

## The Problem

Australia's "frictionless" payment methods (touch, one-click within apps, automatic deductions, and BNPL) continue to reduce the pain of spending, making people aged 18-30 more prone to impulsive decisions and subsequent regret. Traditional "post-accounting/month-end review" methods fail to effectively intervene within the critical 10-30 second window (RBA, 2023; BIS, 2023). Evidence suggests that the increased penetration of touch and mobile payments leads to faster transactions and reduced caution (RBA, 2023); cross-national studies show that BNPL users are younger and at higher risk of delinquency and over-indebtedness (BIS, 2023); and behavioral science suggests that "pre-commitment plus nudges" can improve self-control in the moment of decision, providing a theoretical basis for the "record-keeping-cooling-off period-reconfirmation" intervention model (Ariely & Wertenbroch, 2002).

Among the target demographic (students and early career professionals aged 18-30), the main pain points are: low-volume, high-frequency purchases, and fragmented cross-platform spending lead to insufficient cash flow visibility, making it difficult to answer the question, "How much can I spend?"; existing tools often present reports after the fact, missing the window of impulse and lacking gentle support for immediate decision-making; irregular income and billing cycles, combined with subscription charges, easily lead to "cash troughs" within the month. Existing solutions, in contrast, generally favor aggregation and charting, lacking lightweight safeguards before payments are made; BNPL and banks operate independently, making it difficult to provide unified, integrated notifications of "this week's spending + risk alerts"; and the few products that offer intervention are overly forceful and disruptive, hindering real adoption and retention.

Therefore, we focused on the following: without disrupting payments, we moved "gentle friction" to 10-30 seconds before and after payment. This approach, through "recording first, a short cooling-off period, and secondary confirmation," reduces impulsive behavior and increases savings, aligning with the team's "log-before-buy + immediate spending visibility" design. Based on the above evidence, we have made a small shift from the earlier "post-action budget reminders" to "pre-decision behavioral guardrails" because the latter are more effective at the moment of choice (RBA, 2023; BIS, 2023; Ariely & Wertenbroch, 2002).

# The Solution

## Why Choose a Mobile App (Mobile-First)

Target users (aged 18-30, frequent mobile payment users) are most connected to their phones during the "moment of consumer decision-making." By introducing "gentle friction" to the tens of seconds before and after a payment, we can reduce impulse purchases and increase savings rates without forcing intervention (RBA, 2023; BIS, 2023). Australia's high penetration of mobile/touch payments and social media further supports a mobile-first approach to reach and engagement (DataReportal, 2025).

## Our Value Proposition (What it does)

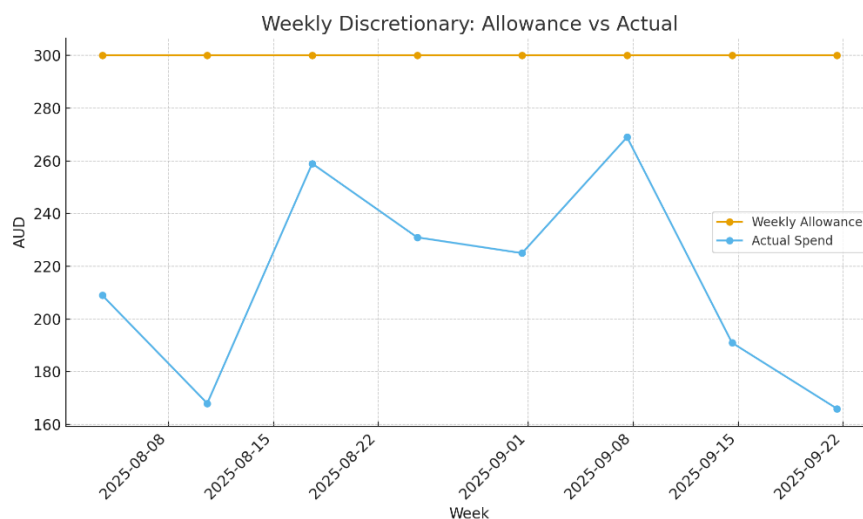
**Record before you buy:** Quickly record your intended spending before payment, instantly displaying the impact on your weekly spending/target budget, and reducing impulsive behavior (RBA, 2023).

**Lightweight Guardrails:** Trigger a cooling-off period and secondary confirmation for high-risk time periods, amounts, and categories, providing options to "check back later/check budget/continue" to respect user autonomy (Ariely & Wertenbroch, 2002). **Save before you get paid:** As income arrives, it's automatically allocated proportionally to your goal/emergency fund, using progress feedback to reinforce self-control and habit formation (RBA, 2023).

**High-visibility overview:** A concise dashboard summarizes "spendable funds, trends, and upcoming bills/subscriptions," reducing information blind spots (RBA, 2023).

(This model applies "pre-commitment + nudges" to the moment of decision, improving financial behavior through a balanced approach of experience and results. See Ariely & Wertenbroch, 2002.)

By visualizing "weekly spendable funds" alongside "actual spending," users can quickly perceive the marginal impact before and after a payment, thereby reducing impulsive behavior (RBA, 2023; DataReportal, 2025).



## **High-Level Design Principles (How it's designed, briefly)**

Low friction, controllable and non-intrusive, privacy-first, accessible, and reliable: Recording and confirmation are completed in two or three steps; reminders are configurable/disabled, and rules are transparent and editable; local data is prioritized and collection is minimized, requiring explicit authorization for connecting to external accounts and providing one-click export/deletion (OAIC, 2022); and it adheres to WCAG 2.2 accessibility and the OWASP MASVS mobile security baseline (W3C, 2023; OWASP, 2025).

## **Business Model**

Freemium + Pro Subscription + B2B2C Partnership:

Free covers basic recording/visualization/basic guardrails and target funds; Pro, with user authorization, provides enhanced contextual guardrails, automation, and deep insights, integrating with CDRs for multi-account aggregation when necessary (Treasury, 2025); B2B2C offers joint distribution with universities, banks, and welfare platforms to reduce CAC and enhance trust. All external communications adhere to the compliance boundaries of INFO 269/285 (ASIC, 2022; ASIC, 2025).

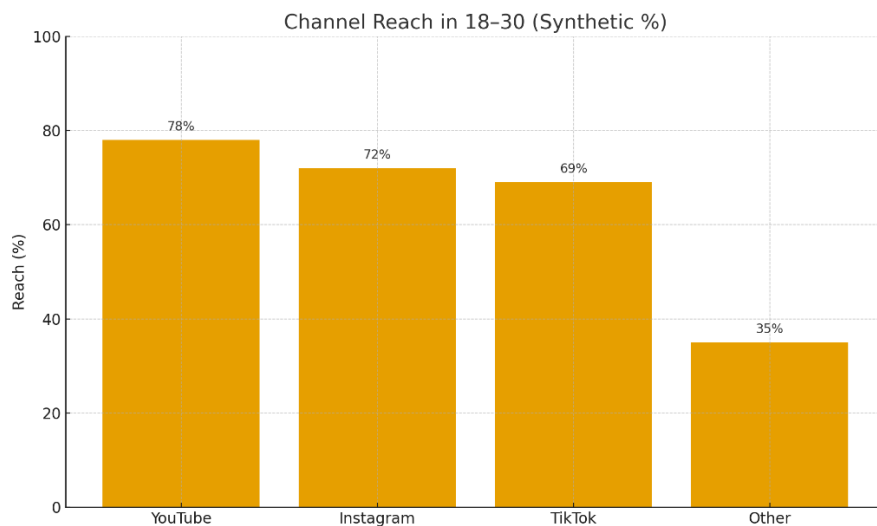
## **Success Metrics (How We Measure Success)**

Behavior and Results (abandonment/delay rate after guardrail triggering, rational selection rate after re-confirmation, PYF conversion rate), Growth and Retention (Install→Activation, D1/D7 retention, subscription conversion rate and channel CAC/payback period), Trust and Experience (data export/deletion request rate, accessibility score, crash rate/UMUX-Lite). Incorporate experimentation and review on a weekly/biweekly cadence (W3C, 2023; RBA, 2023).

## The Market

The primary demographic is students and early career professionals aged 18–30. They prioritize mobile, have high social media engagement, and engage in discrete, high-frequency, small discretionary purchases that are easily influenced by contextual cues (DataReportal, 2025). Australia's overall cashless and touch/mobile habits reinforce our "mobile-first" product and communication assumptions (RBA, 2023). From a channel perspective, YouTube/Instagram/TikTok's wide reach and low-cost pilots make it suitable for an initial reach strategy using a waitlist + campus ambassadors + short video A/B campaigns (DataReportal, 2025).

Figure shows the YouTube/Instagram/TikTok reach of the 18–30 age group (illustrated), which aligns with DataReportal's (2025) social media penetration for this age group and supports the initial reach strategy of short video A/B campaigns and campus ambassadors.



## The Competition

Product	Strengths	Gap vs. your solution (Impulse-guard)	Pricing / Model
<b>Frollo</b>	Open Banking (CDR) aggregation; auto-categorisation and insights	No "log-before-buy," cooling-off, or two-step confirmation patterns	Free
<b>WeMoney</b>	Multi-account view; bill and credit-score tracking	Focused on debt/credit health; lacks behavioural guardrails for impulse control	Free (with product recommendations)
<b>ANZ Plus</b>	Bank-native budgets/insights/goal saving	Works on own bank data only; limited behavioural interventions	Bank account product
<b>CommBank App</b>	Cash Flow View + Spend Tracker + budgets	Strong visualisation, but no context-aware cooling-off / two-step confirmation	Bank account product
<b>PocketSmith</b>	Cash-flow forecasting and long-term planning	Planning is strong, intervention is weak; no "brake" for impulse purchases	Subscription

P.S. We are located in the upper right corner of Aggregation/Insights x Impulse-Guardrails

Compared to similar products (Frollo, WeMoney, ANZ Plus, CommBank, PocketSmith), our differentiation lies in: rather than simply offering the same "aggregation/classification/visualization" functionality, we implement behavioral guardrails 10–30 seconds before and after payment, creating a closed loop of pre-decision intervention: "record first, short cooling-off period, double-check." Furthermore, we leverage instant feedback from weekly spending and automatic PYF savings to improve self-control and achieve success. We also prioritize privacy and compliance (local-first, minimal collection, and app/WCAG/MASVS baselines) through a gentle, non-intrusive approach. Our Freemium + Pro + B2B2C offerings lower customer acquisition costs and enhance credibility. In short, we're at the top right corner of the "Aggregation/Insights x Impulse-Guardrails" equation: we provide visibility into cash flow while effectively curbing impulsive behavior, with measurable results and a definitive path.

# Your Solution Design

## 1) User Flow

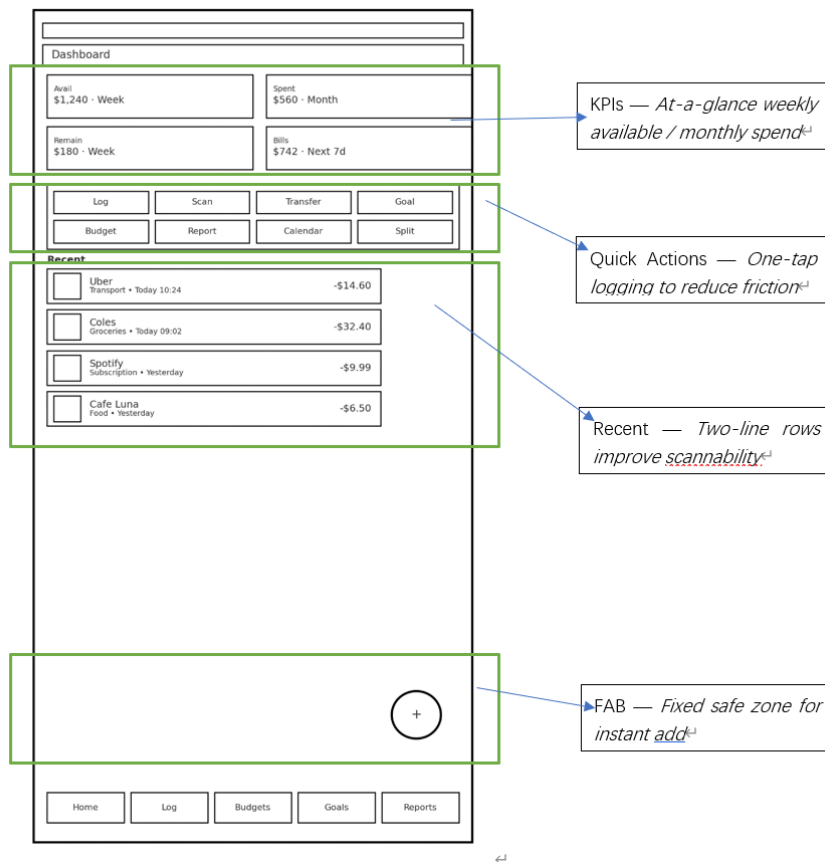
Trigger spending → Drag/click to record "expense intent" (amount + category chip + numeric keyboard; "Today/This Week's Spendable" is instantly displayed at the top of the interface) → If a high-risk time period/amount/category is hit, a short cooling-off period (light timer + alternative suggestions, no forced interruption) → Second confirmation (Continue/Later/Check Budget) → Complete/Cancel/Postpone.

This event is recorded in the guardrail dataset for subsequent personalized thresholds. Parallel to this, on payday, Pay-Yourself-First automatically transfers funds to the "target fund/emergency fund," providing positive feedback on visible progress and expected achievement dates.

## 2) Design sketches and prototype evolution

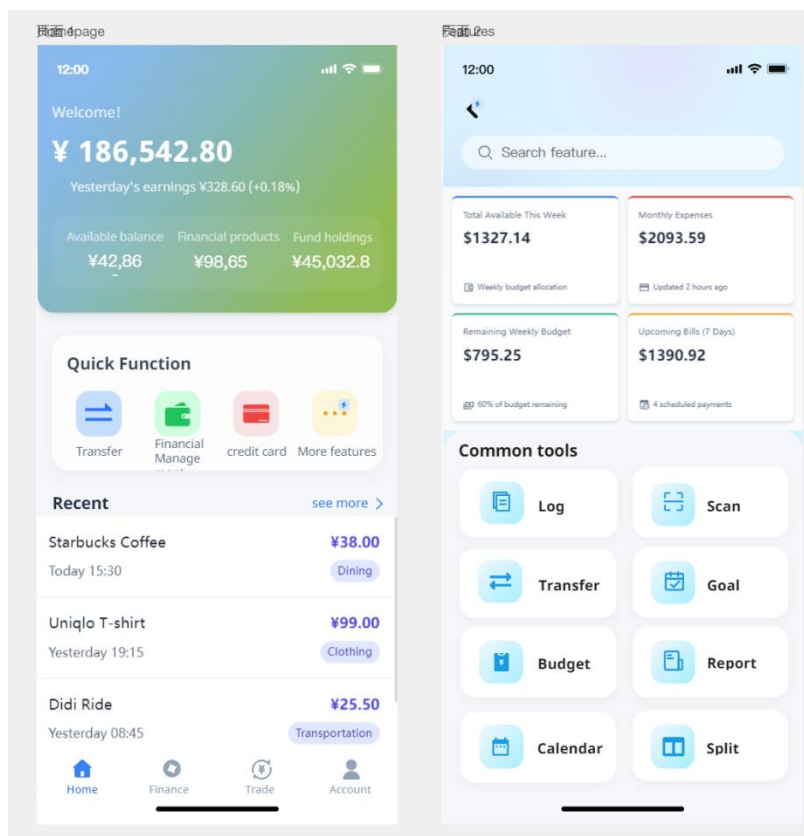
- Lo-fi (Verifying Information Priority and Triggers): Dashboard (Weekly Amount/Last 7 Days' Bills/Quick Actions), Log (Numeric Keypad + Category Chip + Receipt Scanner), Guardrail Pop-up (Near Limit Reminder + Three Options + 24-Hour Reminder), Goals (Progress Bar + ETA). Ensure visibility, clickability, and comprehension.
- Mid-fi (Improving Rhythm and States): Complete empty states, error states, and offline logging; implement text and cadence for the cooling-off period countdown; ensure reminders are toggleable/editable, maintaining a gentle yet effective experience.
- Hi-fi (Visual and Accessibility): Unify color palette and typography hierarchy; align contrast and touch size; refine the hierarchy and tone of KPI cards and Guardrail; and define the "Export/Delete Data" and Nudges areas in settings.

### 3) Prototype placement and high-fidelity placeholders



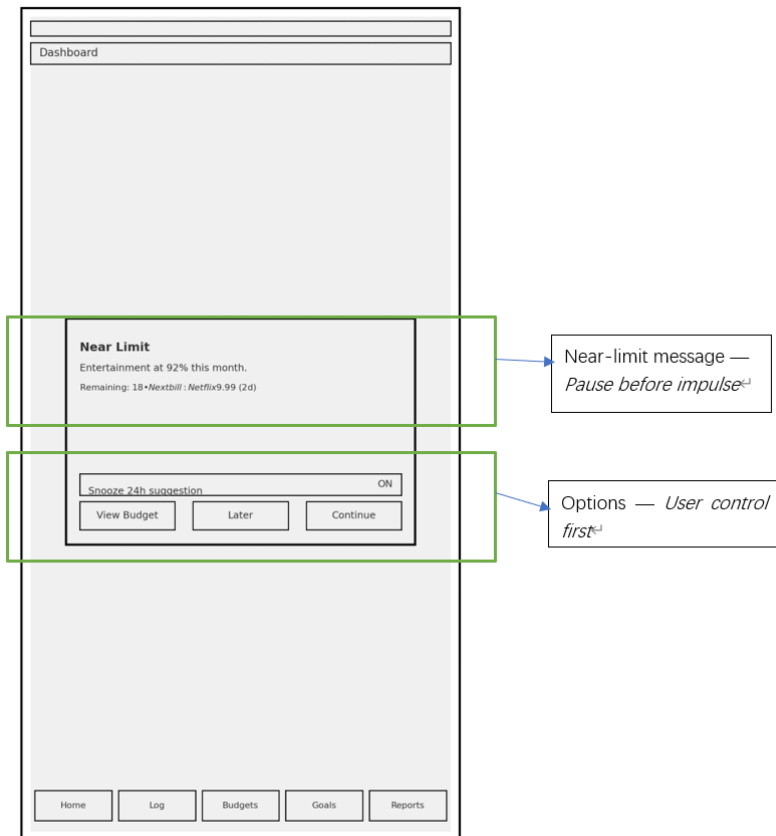
#### 1. Figure A — Dashboard

- Prototype: KPI (weekly disposable income/this month's expenses/last 7 days' bills) + two rows of Quick Actions + Recent list + FAB in the lower right corner.



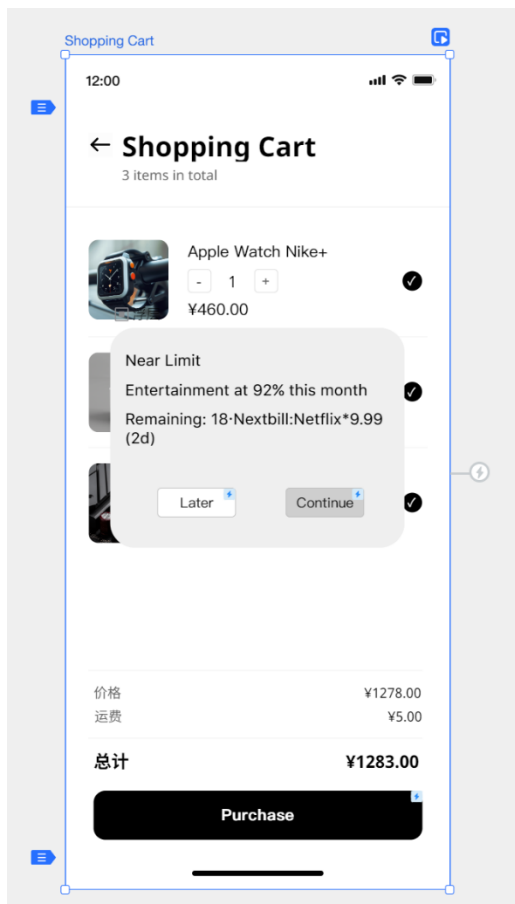
[HF-A Placeholder]: The original single home page is designed into two pages, the home page and the function page, to avoid the single page being too bloated





## 2. Figure B — Guardrail Modal

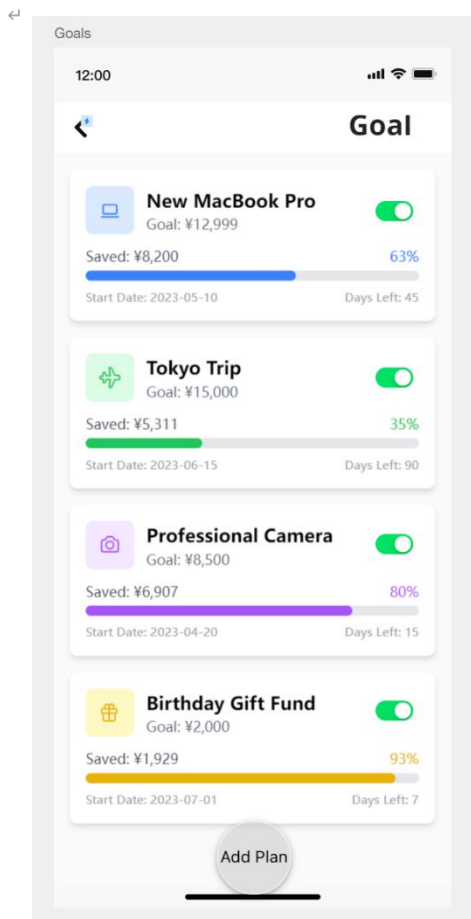
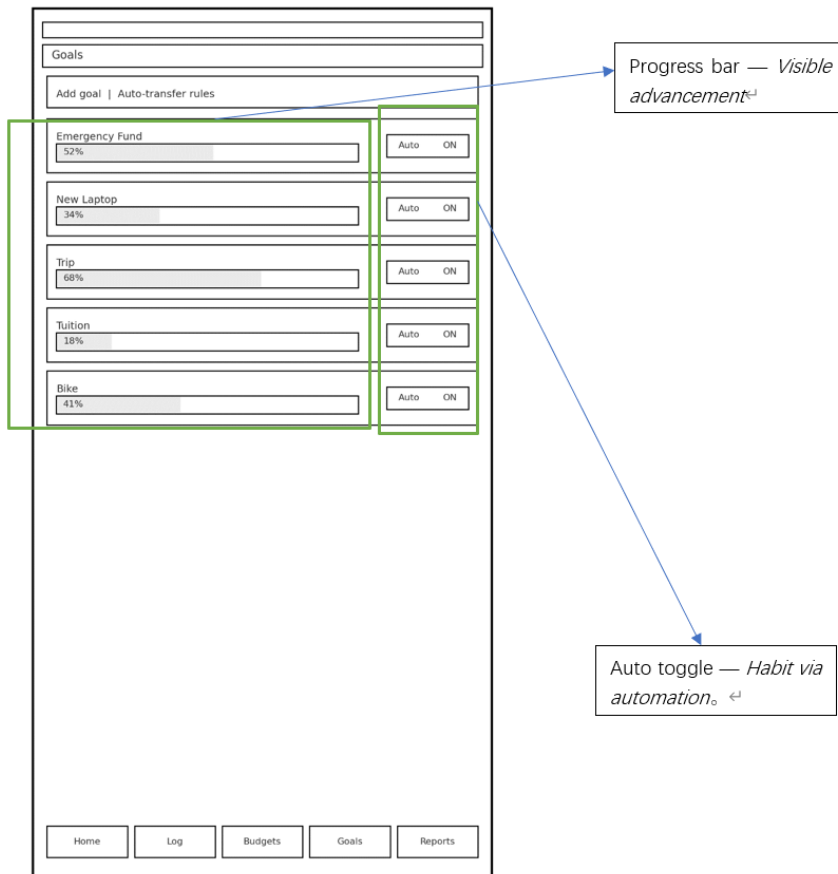
Prototype: Near-limit reminder + “Check budget/later/continue” + one-click 24h reminder.



- [HF-B Placeholder]: Simplify pop-up windows and place detailed settings in the app's internal settings section to avoid tedious operations

## • Figure C — Goals / PYF

Prototype: Goal card + progress bar + expected date, with Auto switch on the right.



[HF-C Placeholder]: Auto rule editing (proportional/fixed amount, payday, priority, exceptions); plus time limit, target amount, and start date

## 4) Test Plan Overview

### Participants and Environment

- 5–7 target users aged 18–30 (with mixed budgeting tool experience).
- Medium: Real device + interactive prototype (or PNG clipping); task cards; screen recording.

### Tasks

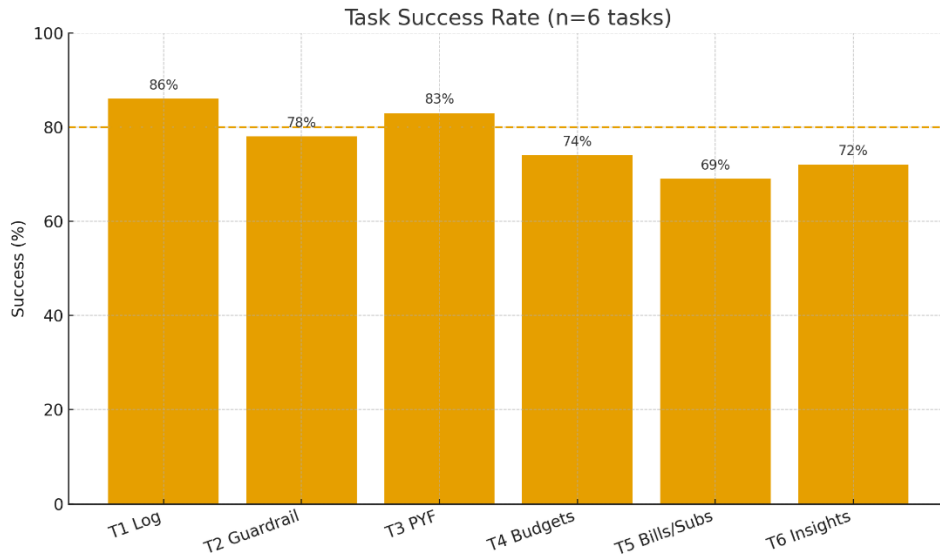
1. Pre-spending Record: Complete "Spending Intention" before buying coffee and observe the immediate changes in "Available Amount This Week."
2. Guardrail Trigger: Simulate approaching budget thresholds and handle Guardrail (select one of three options + 24-hour reminder).
3. Default Savings: Create an "Emergency Fund" and enable Auto, then view the ETA.
4. Budget Risk Control: Find the ">80%" category in Budgets and set a frequency reduction plan for this week.
5. Billing Period/Subscription: Find "Next Billing Date" and pause a subscription .
6. Insight (optional): In Reports, indicate "a change point compared to last week" .

### Metrics and Thresholds

**Usability:** Task completion rate  $\geq 80\%$ ; median time  $\leq 60$ s; false touches  $\leq 2$ ; UMUX-Lite  $\geq 70$ .

**Behavior/Conversion:** Abandonment/delay rate after guardrail triggering, rational choice rate for reconfirmation, and PYF achievement rate; if channel access is available, track waitlist → activation → D7 retention.

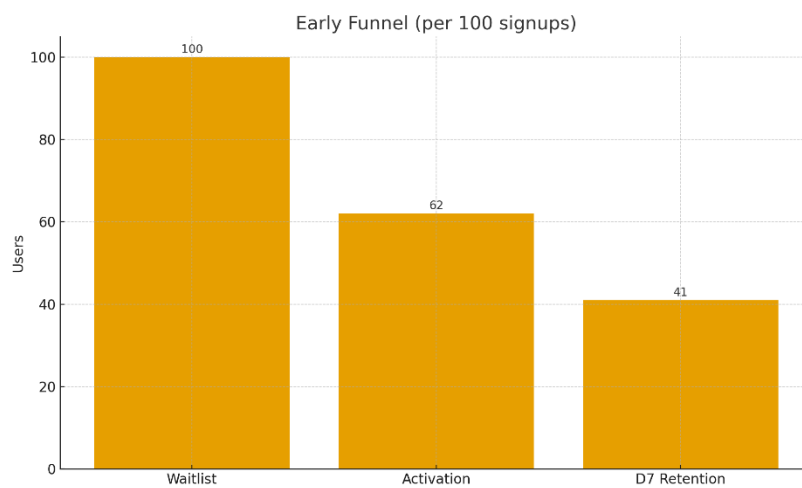
**Accessibility/Experience:** Contrast/reachability/screen reader issues  $\leq 3$ ; subjective comprehensibility and "non-intrusiveness" scores meet standards.



## Process and Judgment

Process: Warm-up (2 minutes) → Think-aloud Task (12–15 minutes) → SUS + Interview (5 minutes) → Review.

Judgment: If  $\geq 80\%$  of participants meet the threshold in  $\geq 4/5$  core tasks, the Lo-fi project passes and moves on to Mid/Hi-fi. Prioritize remediation of HF-1/2/3 (Dashboard/KPI, Log Reach, Guardrail Copywriting and Leveling).



## Go-To-Market

The rollout will be implemented in three phases: a warm-up phase, with a waitlist and campus ambassadors gathering early users; activation around the launch period, focusing on first record/first deposit; a growth phase, with rolling A/B testing through short-form video content, creator collaborations, and 30-day challenges, with weekly performance reviews based on metrics such as CTR, LP-to-Install, Install-to-Activation, Day 1/Day 7 retention, and CAC (DataReportal, 2025). All content will adhere to the factual/educational approach outlined in INFO 269, avoiding financial product recommendations; any BNPL-related integrations/partnerships will comply with the credit licensing and responsibilities outlined in INFO 285 (ASIC, 2022; ASIC, 2025). Copywriting and creative will be optimized based on local touch/mobile habits to increase relevance and conversions (RBA, 2023).

Funding: The first 6–9 months will primarily be self-funded, with a combination of campus innovation funds, small grants, and competition prizes. Pre-seed funding (for education/financial wellness) will be considered after validation.

## Growth Opportunities

— Next Steps: Functional Expansion (emotion recognition, open banking access), User Expansion (campus to workplace), Market Expansion (Australia to New Zealand/Asia Pacific).

Functionality: More granular contextual guardrails (time windows/geofencing/social events), subscription leakage insights, and financial literacy education content; Data Capabilities: Deepening CDR aggregation (reconciliation, classification, anomaly detection) and user visual authorization control (Treasury, 2025).

Compliance and Trust: Continue to adhere to the App principles of "Explicit Purpose, Minimized Collection, and Accessibility/Correctability," using WCAG 2.2 and MASVS as iterative benchmarks for user experience and security (OAIC, 2022; W3C, 2023; OWASP, 2025).

Market Expansion: After validation in Australia, a small-scale pilot will be launched in New Zealand/Asia Pacific, continuing the "content + campus/community + collaborative distribution" strategy (DataReportal, 2025).

## Concluding Remarks

Against the backdrop of frictionless payments and the widespread adoption of BNPL, placing behavioral guardrails at the moment of decision-making is a measurable path to achieving both user experience and results. This approach can reduce impulsive spending and increase savings, while also being robustly implemented within regulatory compliance and privacy frameworks (RBA, 2023; BIS, 2023; ASIC, 2022; ASIC, 2025; Treasury, 2025; OAIC, 2022; W3C, 2023; OWASP, 2025). This allows SpendGuard to establish evidence-based differentiation and long-term social value, transcending the homogenized "aggregation/classification/budgeting/insight" market (Ariely & Wertenbroch, 2002).

## References

1. Reserve Bank of Australia (2023) *The Evolution of Consumer Payments in Australia: Results from the 2022 Consumer Payments Survey (RDP 2023-08)*. Available at: [rba.gov.au/publications/rdp/2023/2023-08/full.html](https://rba.gov.au/publications/rdp/2023/2023-08/full.html) (Accessed: 17 Sep 2025).
2. DataReportal (2025) *Digital 2025: Australia*. Available at: [datareportal.com/reports/digital-2025-australia](https://datareportal.com/reports/digital-2025-australia) (Accessed: 17 Sep 2025).
3. Australian Securities & Investments Commission (ASIC) (2022) *Information Sheet 269: Discussing financial products and services online*. Available at: [asic.gov.au/.../discussing-financial-products-and-services-online](https://asic.gov.au/.../discussing-financial-products-and-services-online) (Accessed: 17 Sep 2025).
4. Australian Securities & Investments Commission (ASIC) (2025) *Buy now pay later credit contracts: Credit licensing (INFO 285)*. Available at: [asic.gov.au/.../buy-now-pay-later-credit-contracts-credit-licensing](https://asic.gov.au/.../buy-now-pay-later-credit-contracts-credit-licensing) (Accessed: 17 Sep 2025).
5. Australian Government Treasury (2025) *Consumer Data Right – overview*. Available at: [treasury.gov.au/policy-topics/economy/consumer-data-right](https://treasury.gov.au/policy-topics/economy/consumer-data-right) (Accessed: 17 Sep 2025).
6. Office of the Australian Information Commissioner (OAIC) (2022) *Australian Privacy Principles (APP) guidelines*. Available at: [oaic.gov.au/privacy/australian-privacy-principles/australian-privacy-principles-guidelines](https://oaic.gov.au/privacy/australian-privacy-principles/australian-privacy-principles-guidelines) (Accessed: 17 Sep 2025).
7. World Wide Web Consortium (W3C) (2023) *Web Content Accessibility Guidelines (WCAG) 2.2*. Available at: [w3.org/TR/WCAG22](https://w3.org/TR/WCAG22) (Accessed: 17 Sep 2025).
8. OWASP (2025) *Mobile Application Security Verification Standard (MASVS)*. Available at: [mas.owasp.org/MASVS](https://mas.owasp.org/MASVS) (Accessed: 17 Sep 2025).
9. Bank for International Settlements (2023) *Buy now, pay later: a cross-country analysis*. *BIS Quarterly Review* (Dec). Available at: [bis.org/pub/qtrpdf/r\\_qt2312e.htm](https://bis.org/pub/qtrpdf/r_qt2312e.htm) (Accessed: 17 Sep 2025).
10. Ariely, D. and Wertenbroch, K. (2002) 'Procrastination, deadlines, and performance: Self-control by precommitment', *Psychological Science*, 13(3), pp. 219–224.

Available at: [houdekpetr.cz/.../Ariely%20Wertenbroch%202002.pdf](http://houdekpetr.cz/.../Ariely%20Wertenbroch%202002.pdf) (Accessed: 17 Sep 2025).