Alias Web (PartyFlow) — MVP Release

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1. Executive Summary

1.1 Product Overview

Alias Web (PartyFlow) is a browser-based multiplayer party game that eliminates the friction of traditional party games through:

- **Zero-install gameplay:** QR code scan → play immediately
- **Real-time multiplayer:** WebSocket-powered synchronization for 2-10 players
- **Modern content:** Актуальные слова для Gen Z + миллениалов (20-35 лет)

- **Dual-screen support:** Phone as controller + tablet/laptop as scoreboard

1.2 Problem Statement

Current pain points with existing Alias games:

1. **Physical board games:**
   - "Кто-то забыл коробку, карты залиты пивом"
   - Устаревший контент: "синхрофазотрон", "кочерга"
2. **Mobile app clones:**
   - Requires App Store download (5+ min setup for group)
   - Platform fragmentation (iOS vs Android sync issues)
   - Poor UX, ads, laggy performance
3. **Existing web games:**
   - Low production quality
   - Unreliable WebSocket connections
   - No dual-screen support

1.3 Solution

PartyFlow solves this through:

- **Browser-based PWA:** No installation required, works on all devices
- **QR-code onboarding:** 2 taps from home screen to game start (<60 seconds)
- **Robust WebSocket architecture:** <200ms latency, automatic reconnection
- **Party-proof UX:** 72-96px fonts, haptic feedback, accidental-swipe prevention
- **Viral loop baked in:** 1 host → 8-10 players → 2-3 new hosts (target K=1.2-1.5)

1.4 MVP Success Criteria

Metric	Target	Measurement Window
K-factor	>1.0 (sustainable viral growth)	30 days
Session length	>15 minutes	Per game session
D1 retention	>40%	Day after first play
D7 retention	>15%	Week after first play
Onboarding time	<90 seconds (home → first round)	User testing
Accidental swipe rate	<5% of total swipes	Gameplay analytics
WebSocket stability	>95% uptime during sessions	Server monitoring

1.5 Business Model

MVP (100% Free):

- Single "Starter Pack" (50 words)
- No monetization until K-factor >1.0 validated

Post-MVP (Freemium):

- Premium word packs: ₽99-299 per pack
- Target conversion: 5-10% of hosts
- Projected ARPU: ₽10-15 per host
- Break-even conversion: 0.08% (unit economics validated)

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2. Product Vision & Goals

2.1 Vision Statement

> *"Make party games as easy to start as sending a meme — no downloads, no setup, just scan and play."*

2.2 Product Positioning

Core differentiation:

- Актуальный контент vs устаревшие слова конкурентов
- Zero-friction onboarding vs multi-minute app installation
- Social-first experience vs single-device gameplay

Competitive landscape:

Product	Type	Onboarding	Content	Our Advantage
Alias (mobile app)	Native app	5+ min setup	Устаревший	Zero-install + актуальный контент
Heads Up!	Native app	App Store download	Англоязычный	Русская локализация + PWA
Psych!	Native app	Complex sync	Rigid formats	Простота + swipe UX
Codenames Online	Web	Good	English-focused	Более динамичный геймплей

2.3 Target Audience

Primary: Party Animal (Саша, 26 лет)

- Маркетолог в IT, организует вечеринки 2-3 раза в месяц
- JTBD: "Быстро развлечь 6-10 друзей без awkward пауз"
- Success = запустили за <60 сек, все смеются, кто-то просит линк

Secondary: Corporate Organizer (Лена, 32 года)

- HR-менеджер, организует тимбилдинги для 15-30 человек
- JTBD: "Простая активность для team bonding без cringe"
- Willingness to pay: ₽1500-3000 за кастомные паки

Tertiary: Casual Gamer (Дима, 29 лет)

- Backend разработчик, любит настолки, ценит quality
- JTBD: "Хорошо сделанная игра, которая не стыдно рекомендовать"
- Замечает детали: полировка, game balance, отсутствие багов

2.4 MVP Goals

Phase 1 (Weeks 1-4): Nail the Viral Loop

- Achieve K-factor >1.0 through post-game CTA optimization
- Validate onboarding flow (<90 sec to first round)
- Test with 50-100 early adopter groups

Phase 2 (Weeks 5-8): Validate Engagement

- D7 retention >15%
- Avg 1.8+ sessions per host
- Qualitative feedback: >70% "would host again"

Phase 3 (Weeks 9-12): Monetization Soft Launch

- Launch 3 premium packs
- Target 3-5% conversion
- Maintain K-factor >1.0 (monetization shouldn't hurt virality)

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3. User Personas & Use Cases

3.1 Primary Persona: Party Animal (Саша)

Demographics:

- 26 лет, маркетолог в IT
- Доход: 120-150k ₽/мес
- Москва/СПб, снимает квартиру с друзьями
- Active on Instagram, TikTok, Telegram

Psychographics:

- Экстраверт, организатор вечеринок
- Early adopter новых продуктов
- Ценит простоту и актуальность
- "Я тот, кто придумывает, чем заняться"

Jobs To Be Done:

> *"Когда наступает awkward пауза на вечеринке, мне нужно быстро развлечь 6-10 человек без объяснения правил, чтобы все были в моменте и веселились вместе"*

User Journey:

```
1. Саша замечает awkward паузу на вечеринке
2. Открывает partyflow.ru на телефоне
3. Нажимает "Новая игра" → видит QR-код
4. Друзья сканируют QR → попадают в lobby
5. Саша нажимает "Старт" (60 секунд прошло)
6. Игра идёт 20 минут, несколько моментов смеха
7. Post-game: "Хочешь создать свою игру?" CTA
8. 2-3 друга создают свои игры → вирусный цикл
```

Pain Points:

- Физический Alias: коробка забыта, карты старые
- App-based games: долгая установка, sync issues
- Объяснение правил убивает вайб

Success Metrics:

- Onboarding <60 sec
- 2+ моментов смеха за игру
- Кто-то просит линк ("вирусный индикатор")

3.2 Secondary Persona: Corporate Organizer (Лена)

Demographics:

- 32 года, HR/People Ops в IT-компании (50-150 человек)
- Доход: 180-220k ₽
- Организует 3-4 тимбилдинга в год

Jobs To Be Done:

> *"Когда я организую team event на 15-30 человек, мне нужна активность без cringe, которая подходит интровертам и экстравертам, чтобы команда расслабилась и узнала друг друга"*

User Journey:

```
1. Лена планирует quarterly team offsite
2. Гуглит "игры для тимбилдинга" → находит PartyFlow
3. Тестирует на небольшой группе (6 человек)
4. Запускает на реальном ивенте (20 человек, 2 комнаты)
5. Post-event: "Хочу кастомный пак про нашу компанию"
6. Готова платить ₽1500-3000 за custom content
```

Pain Points:

- Классические тимбилдинги: дорого, cringe
- Board games: не масштабируются на 20+ человек
- Mafia: половина "мертвы" и скучают

Monetization Potential:

- Highest willingness to pay
- Recurring revenue (quarterly events)
- B2B upsell: "Create Your Own Pack" (Post-MVP)

3.3 Tertiary Persona: Casual Gamer (Дима)

Demographics:

- 29 лет, backend developer
- Доход: 200-250k ₽

- Посещает игротеки, играет в Codenames, Dixit

Jobs To Be Done:

> *"Мне нужна хорошо сделанная игра, которая не уступает физическим настолкам, но не требует таскать коробку, чтобы я мог рекомендовать её без стыда за execution"*

Pain Points:

- Мобильные клоны: "поделки, full of ads, лагают"
- Web-игры: "low effort, кривая синхронизация"

What he notices:

- Полировка: плавные анимации, responsive UI
- Game balance: честный таймер, понятный счёт
- Details: "О, тут используется Framer Motion, приятно"

Success Criteria:

- Zero bugs during first session
- Animations smooth (60fps)
- Content quality: не банальные слова

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4. Feature Scope: MVP vs Post-MVP

4.1 MVP Feature Set (Must Have)

Module 1: Room & Lobby System

- ✅ Host creates room → QR code + shareable link
- ✅ Guest scans QR → joins without registration
- ✅ Auto-generated player names ("Игрок 1", "Игрок 2")
- ✅ Auto team assignment (balanced teams)
- ✅ Real-time player join updates (WebSocket)
- ✅ Start game button (disabled if <4 players)

Module 2: Core Game Loop

- ✅ Word presentation on explainer's phone
- ✅ Swipe UX: up = guessed, down = skipped
- ✅ Synchronized 60-second timer

- ✅ Haptic feedback (vibration on swipe)
- ✅ Score tracking (real-time updates)
- ✅ Round end statistics

Module 3: Word Pack System

- ✅ Single "Starter Pack" (50 words)
- ✅ Difficulty mix: 30% easy, 50% medium, 20% hard
- ✅ No monetization (100% free in MVP)

Module 4: Dual-Screen Sync

- ✅ Phone = controller (shows words, swipe interface)
- ✅ Tablet/Laptop = scoreboard (timer, score, NO words)
- ✅ Real-time state sync via WebSocket

Module 5: PWA Installation

- ✅ "Add to Home Screen" prompt after first game
- ✅ Offline fallback: "Connect to WiFi" message

4.2 Post-MVP Features (Nice to Have)

Phase 2: Content & Monetization (Month 3-4)

- 💰 Premium word packs (₽99-299)
- 💰 Pack preview before purchase
- 💰 3 launch packs: "IT-офис", "Мемы 2024", "18+ Жара"
- 🎨 Pack selection in lobby (currently hardcoded to Starter)

Phase 3: Engagement & Retention (Month 5-6)

- 📊 Game history: stats of past games
- 🏆 Achievements: "Explained 100 words", "Win streak 5"
- 📈 Leaderboard: top players among friends
- 🎯 Manual team assignment (drag & drop)
- ⏱️ Custom round duration (45/60/90 sec)

Phase 4: Viral Mechanics (Month 7-9)

- 📸 Share game highlights (screenshot + results)

- 🔗 Invite friends via WhatsApp/Telegram
- 🎁 Referral rewards: unlock premium pack for 5 invites
- 🌐 Viral coefficient tracking dashboard

Phase 5: Advanced Features (Month 10-12)

- 🛠️ "Create Your Own Pack" (B2B monetization)
- 🎭 Multiple game modes (Charades, Pictionary)
- 🌍 Multi-language support (English, Ukrainian)
- 💬 In-game chat

4.3 Explicitly Out of Scope (Not in Roadmap)

Will NOT build:

- ❌ User accounts / authentication (session-based only)
- ❌ Voice chat (use external apps like Discord)
- ❌ Video recording of gameplay
- ❌ Matchmaking with strangers (friends-only)
- ❌ AI-generated words
- ❌ Cross-platform sync (web-only, no native apps)

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5. Module 1: Room & Lobby System

5.1 Overview

Purpose: Enable host to create a game room and allow guests to join via QR code or shareable link with zero friction.

User Flow:

```
Error parsing Mermaid diagram!

Parse error on line 2:
...flow.ru] --> B[Тар "Новая игра"]    B -
----------------------^
Expecting 'SQE', 'DOUBLECIRCLEEND', 'PE', '-)', 'STADIUMEND',
'SUBROUTINEEND', 'PIPE', 'CYLINDEREND', 'DIAMOND_STOP', 'TAGEND', 'TRAPEND',
'INVTRAPEND', 'UNICODE_TEXT', 'TEXT', 'TAGSTART', got 'STR'
```

5.2 Functional Requirements

FR-1.1: Room Creation

Description: Host creates a new game room with unique identifier

User Story:

```
As a Host,
I want to create a game room with one tap,
So that I can instantly start organizing a party game
```

Acceptance Criteria:

- [ ] Tapping "Новая игра" generates unique room ID (format: `[A-Z0-9]{6}`)
- [ ] Room ID is URL-safe and easy to read aloud (e.g., `XY3M9K`)
- [ ] QR code is generated containing shareable link: `partyflow.ru/r/{roomId}`
- [ ] Shareable link is copyable with one tap
- [ ] Room persists for 24 hours or until host explicitly ends game
- [ ] Maximum 100 concurrent rooms per server instance

Technical Details:

- Room state stored in Redis with 24h TTL
- Room ID collision check (regenerate if exists)
- WebSocket connection established on room creation

FR-1.2: QR Code Display

Description: Host sees QR code and shareable link for guests to join

User Story:

```
As a Host,
I want to see a large QR code on my screen,
So that guests can scan it with their phone cameras
```

Acceptance Criteria:

- [ ] QR code size: minimum 300x300px on mobile, 400x400px on tablet
- [ ] QR code includes URL: `https://partyflow.ru/r/{roomId}`

- [ ] QR code has 2-second pulse animation (subtle "waiting" indicator)
- [ ] Shareable link displayed below QR with "Copy Link" button
- [ ] Copy link provides haptic feedback + "Скопировано!" toast (2 sec)
- [ ] QR code scannable from 30-50cm distance

Edge Cases:

- If QR generation fails → show shareable link only with error message
- If host navigates away → room remains active, can rejoin via URL

FR-1.3: Guest Join via QR / Link

Description: Guests scan QR code or click shareable link to join lobby

User Story:

```
As a Guest,
I want to scan a QR code and join without registration,
So that I can start playing immediately
```

Acceptance Criteria:

- [ ] Scanning QR opens `partyflow.ru/r/{roomId}` in default browser
- [ ] Clicking shareable link opens same URL
- [ ] No login, registration, or personal info required
- [ ] Guest auto-assigned name: "Игрок {N}" (N = join order)
- [ ] Random emoji avatar assigned (🎮🎯🎪🎨🎭🎬🎸🎹 pool of 20)
- [ ] WebSocket connection established within 500ms
- [ ] Join success confirmed with haptic feedback

Edge Cases:

- Room doesn't exist → redirect to home with error "Комната не найдена"
- Room full (10 players) → show "Комната заполнена, попробуйте позже"
- Room game already started → show "Игра уже началась, дождитесь следующего раунда" (Post-MVP: allow mid-game join)
- Poor WiFi connection → retry WebSocket connection up to 3 times with exponential backoff

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FR-1.4: Lobby Screen (Host View)

Description: Host sees all connected players with team assignments

User Story:

```
As a Host,
I want to see who joined in real-time,
So that I can start when everyone is ready
```

Acceptance Criteria:

- [ ] Player list updates in real-time (<500ms latency)
- [ ] Each player card shows: emoji avatar, name, team color
- [ ] Players are auto-assigned to Team A (blue) or Team B (orange)
- [ ] Team balance: ±1 player max (4v4, 3v3, 5v4 allowed; 5v3 not allowed)
- [ ] Staggered fade-in animation (100ms delay per player)
- [ ] Confetti burst animation at 4 players (minimum threshold)
- [ ] Player count displayed: "Игроков: {N}/10"

Auto Team Assignment Logic:

```
// Players join sequentially, assigned alternately
Player 1 → Team A
Player 2 → Team B
Player 3 → Team A
Player 4 → Team B
// etc.
```

Edge Cases:

- Player disconnects → remove from list, rebalance teams if needed
- Host disconnects → auto-promote next player to host (first joined)
- No players join after 5 min → show "Поделитесь ссылкой с друзьями!" reminder

---

FR-1.5: Player Name Editing (Optional)

Description: Players can optionally edit their auto-generated names

User Story:

```
As a Guest,
I want to change my name from "Игрок 1" to my actual name,
So that my friends recognize me
```

Acceptance Criteria:

- [ ] Tap on player card → inline text input appears
- [ ] Name max length: 15 characters
- [ ] Name validation: no profanity filter in MVP (trust-based)
- [ ] Name change broadcasts to all players in lobby via WebSocket
- [ ] Empty name reverts to "Игрок {N}"
- [ ] Duplicate names allowed (no uniqueness constraint)

Out of Scope (MVP):

- ❌ Profanity filter (Post-MVP)
- ❌ Name history / saved names
- ❌ Avatar customization (locked to random emoji)

FR-1.6: Start Game Button

Description: Host can start game when minimum players met

User Story:

```
As a Host,
I want to start the game when everyone is ready,
So that we can begin playing
```

Acceptance Criteria:

- [ ] Start button visible at all times on lobby screen
- [ ] Button disabled (greyed out) if <4 players
- [ ] Button enabled (green, prominent) if ≥4 players
- [ ] Tooltip on disabled button: "Минимум 4 игрока для старта"
- [ ] Tapping enabled button transitions to Core Game Loop (Module 2)
- [ ] Transition animation: 300ms fade-out
- [ ] All players receive "GAME_STARTED" WebSocket event simultaneously

Edge Cases:

- Player disconnects right before start → if <4 remain, disable button
- Host taps rapidly → debounce to prevent duplicate game starts
- WebSocket disconnected → show "Потеряно соединение" error, retry connection

---

5.3 WebSocket Events (Module 1)

Event: ROOM_CREATED

```
{
  "event": "ROOM_CREATED",
  "data": {
    "roomId": "XY3M9K",
    "hostId": "uuid-1234",
    "qrCodeUrl": "https://partyflow.ru/r/XY3M9K",
    "createdAt": "2026-02-11T14:30:00Z"
  }
}
```

Event: PLAYER_JOINED

```
{
  "event": "PLAYER_JOINED",
  "data": {
    "roomId": "XY3M9K",
    "playerId": "uuid-5678",
    "playerName": "Игрок 3",
    "avatar": "🎸",
    "team": "A",
    "joinedAt": "2026-02-11T14:31:00Z"
  }
}
```

Event: PLAYER_LEFT

```
{
  "event": "PLAYER_LEFT",
  "data": {
    "roomId": "XY3M9K",
    "playerId": "uuid-5678",
    "leftAt": "2026-02-11T14:35:00Z"
```

```
  }
}
```

Event: PLAYER_NAME_CHANGED

```
{
  "event": "PLAYER_NAME_CHANGED",
  "data": {
    "roomId": "XY3M9K",
    "playerId": "uuid-5678",
    "newName": "Cawa",
    "changedAt": "2026-02-11T14:32:00Z"
  }
}
```

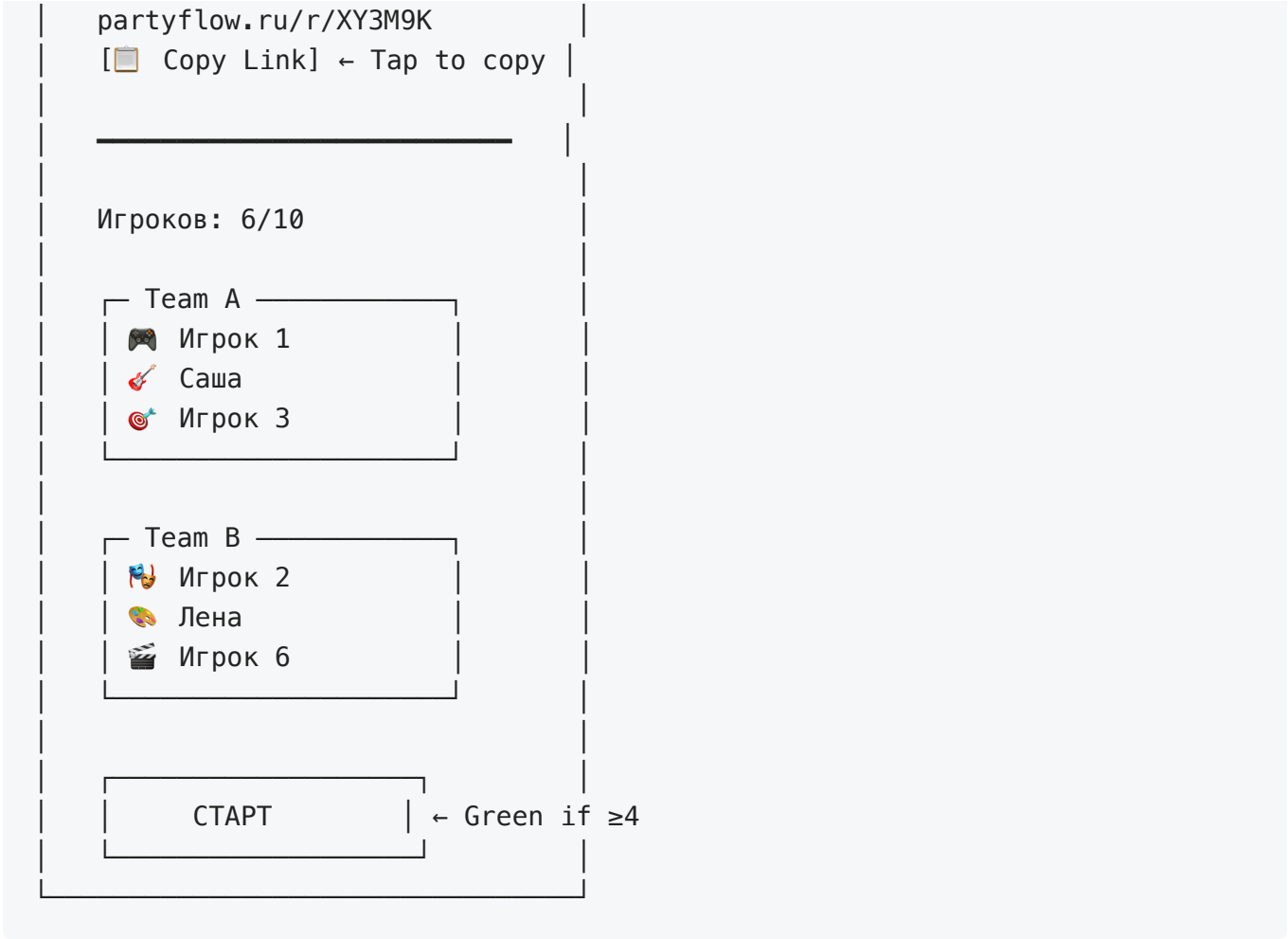
Event: GAME_STARTED

```
{
  "event": "GAME_STARTED",
  "data": {
    "roomId": "XY3M9K",
    "teams": {
      "A": ["uuid-1", "uuid-3", "uuid-5"],
      "B": ["uuid-2", "uuid-4", "uuid-6"]
    },
    "currentRound": 1,
    "startedAt": "2026-02-11T14:33:00Z"
  }
}
```

5.4 UI/UX Specifications

Lobby Screen Wireframe Elements:

```
┌─────────────────────────────────────┐
│   [PartyFlow Logo]                  │
│                                     │
│   ┌──────────────────┐              │
│   │   [QR CODE]      │  ← 300x300px
│   │                  │  ← Pulse animation (2s)
│   └──────────────────┘              │
│                                     │
```



Design Tokens:

- QR pulse: `@keyframes ping { 0%, 100% { opacity: 1; transform: scale(1) } 50% { opacity: 0.8; transform: scale(1.05) } }`
- Player card fade-in: `animation: fadeIn 300ms ease-in forwards`
- Team colors: Team A = `#3b82f6` (blue-500), Team B = `#f97316` (orange-500)
- Start button disabled: `bg-gray-400`, enabled: `bg-green-500`

5.5 Non-Functional Requirements (Module 1)

Performance:

- QR code generation: <200ms
- WebSocket connection: <500ms
- Player join latency: <500ms (from scan to lobby update)
- Room creation: <1s end-to-end

Scalability:

- Support 100 concurrent rooms per server instance
- Support 10 players per room (hard limit)
- Redis room state: 24h TTL, auto-cleanup

Reliability:

- WebSocket reconnection: automatic with exponential backoff
- Room state persistence: survive server restarts (Redis)
- Graceful degradation: if WebSocket fails, show "Reconnecting..."

Security:

- Room IDs: non-guessable (6 alphanumeric characters = 2.2 billion combinations)
- No CSRF tokens needed (session-based, not authenticated)
- Rate limiting: max 10 room creations per IP per hour

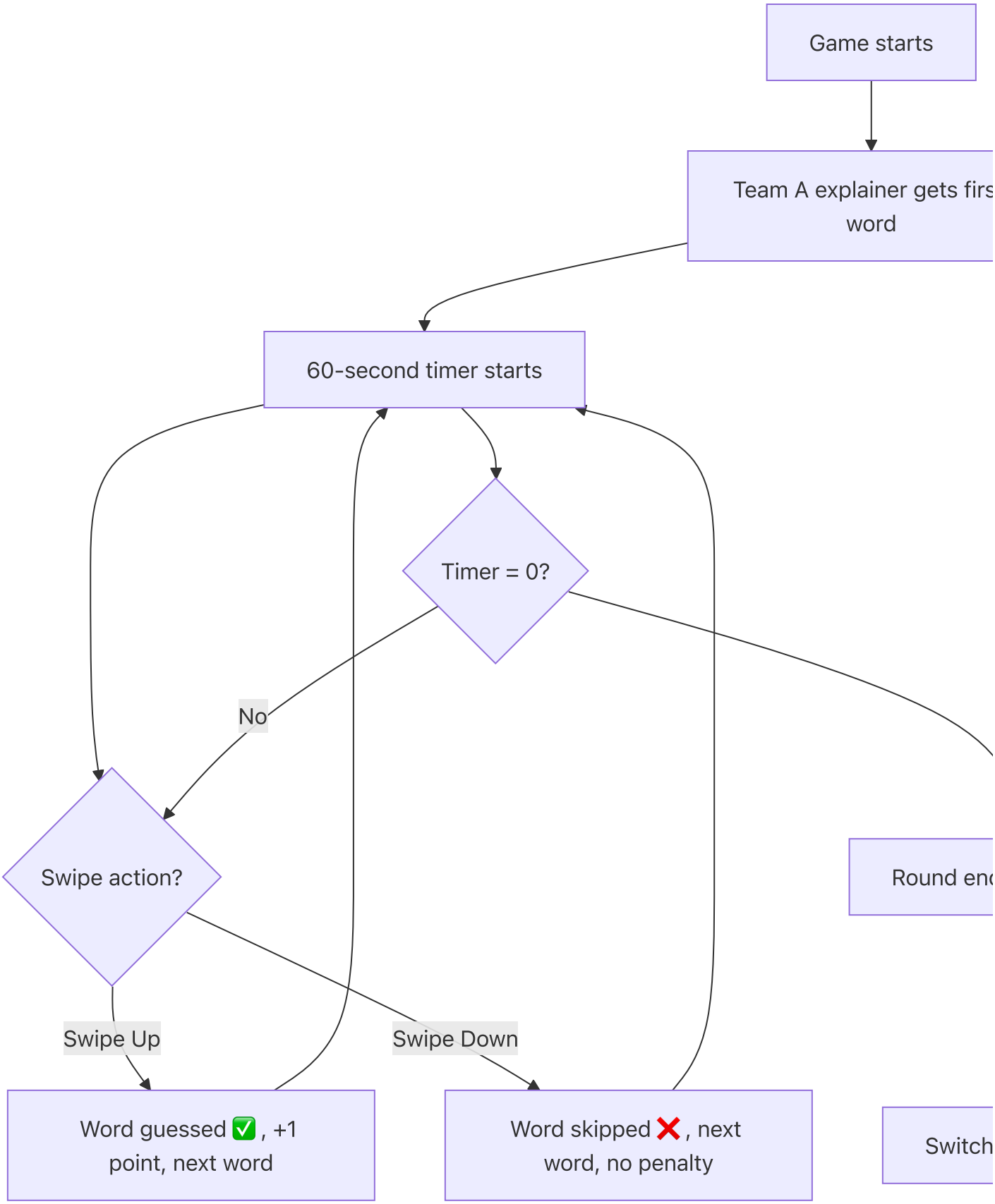
---

6. Module 2: Core Game Loop

6.1 Overview

Purpose: Enable explainer to swipe through words while timer counts down, with real-time score updates for all players.

User Flow:


Game starts
Team A explainer gets firs
word
60-second timer starts
Timer = 0?
No
Swipe action?
Round en
Swipe Up
Swipe Down
Word guessed ✅, +1
point, next word
Word skipped ❌, next
word, no penalty
Switch

6.2 Functional Requirements

FR-2.1: Word Presentation

Description: Explainer sees one word at a time on their phone screen

User Story:

```
As an Explainer,
I want to see a large, readable word on my screen,
So that I can explain it to my team from arm's length
```

Acceptance Criteria:

- [ ] Word displayed in center of screen
- [ ] Font size: 72px on mobile (viewport <768px), 96px on tablet
- [ ] Font weight: 900 (black), high contrast (white on dark gradient)
- [ ] Word readable from 60-80cm distance (tested with iPhone 14 Pro)
- [ ] Words fetched from current pack (Starter Pack in MVP)
- [ ] Words shuffled at round start (no repeats in single round)
- [ ] If word pool exhausted (unlikely with 50 words, 60s rounds), reshuffle

Edge Cases:

- Very long words (>15 characters) → reduce font size to fit (min 56px)
- Non-Cyrillic words (Post-MVP: English packs) → ensure font supports charset
- Word fetch error → show "Ошибка загрузки слов, попробуйте ещё раз"

FR-2.2: Swipe Mechanics

Description: Explainer swipes up (guessed) or down (skipped) to advance to next word

User Story:

```
As an Explainer,
I want to swipe words quickly and accurately,
So that I can explain as many as possible in 60 seconds
```

Acceptance Criteria:

- [ ] **Swipe Up** (guessed): word marked as correct, +1 point to team
- [ ] **Swipe Down** (skipped): word marked as skipped, 0 points (no penalty)
- [ ] Swipe detection: minimum 200px/s velocity to register
- [ ] Dead zone: center 40% of screen immune to swipes (prevents accidental triggers)
- [ ] Swipe must originate from outer 30% of screen (top/bottom edges)
- [ ] Visual feedback: 300ms flash of previous word + icon (✅ or ❌)
- [ ] Next word appears immediately after 300ms feedback
- [ ] Swipe latency: <100ms from gesture completion to next word

Dead Zone Logic:

```javascript
const screenHeight = window.innerHeight;
const deadZoneStart = screenHeight * 0.3;
const deadZoneEnd = screenHeight * 0.7;

if (touchY > deadZoneStart && touchY < deadZoneEnd) {
  // Ignore swipe (dead zone)
  return;
}
```

Edge Cases:

- Accidental horizontal swipe → ignore (only vertical swipes register)
- Swipe during last word of round → don't load next word, end round
- Multiple rapid swipes → debounce to prevent double-counting
- Swipe while WebSocket disconnected → queue action, sync on reconnect

---

FR-2.3: Haptic Feedback

Description: Phone vibrates on swipe to provide tactile confirmation

User Story:

```
As an Explainer,
I want to feel my phone vibrate when I swipe,
So that I know the action registered (even in noisy environment)
```

Acceptance Criteria:

- [ ] **Correct swipe (up):** Single 50ms vibration
- [ ] **Skip swipe (down):** Double vibration (30ms-pause-30ms)
- [ ] Haptic triggers via Vibration API: `navigator.vibrate([pattern])`
- [ ] Fallback for unsupported devices: visual pulse animation only
- [ ] Haptic intensity: medium (not too subtle, not too aggressive)

Haptic Patterns:

```
// Correct
navigator.vibrate(50);

// Skip
navigator.vibrate([30, 50, 30]);
```

Browser Compatibility:

- ✅ Chrome Android, Samsung Internet: full support
- ⚠ iOS Safari: vibration works only on user interaction (swipe qualifies)
- ❌ Desktop browsers: no vibration (graceful degradation)

FR-2.4: Timer (Synchronized)

Description: 60-second countdown timer visible to all players, synchronized via WebSocket

User Story:

```
As a Player,
I want to see the timer counting down,
So that I know how much time is left
```

Acceptance Criteria:

- [ ] Timer starts at 60 seconds when round begins

- [ ] Timer decrements every 1 second
- [ ] Timer displayed on: explainer phone (top-right), scoreboard (prominent)
- [ ] Timer font size: 80px (scoreboard), 32px (phone)
- [ ] Timer color changes: green (60-30s) → yellow (30-10s) → red (10-0s)
- [ ] Timer sync: <500ms deviation between all devices
- [ ] Server is source of truth (client displays server time, not local countdown)
- [ ] When timer hits 0: round ends, show round-end stats

Timer Sync Architecture:

```
Server sends TIMER_TICK event every second:
{
  "event": "TIMER_TICK",
  "data": {
    "roomId": "XY3M9K",
    "remainingSeconds": 45
  }
}

Client displays remainingSeconds + interpolates between ticks
```

Edge Cases:

- WebSocket lag >1s → client continues interpolating, resyncs on next tick
- Client tab backgrounded (mobile) → resume timer on tab focus
- Server crash mid-round → reconnect, resume from last known state

---

FR-2.5: Score Tracking

Description: Real-time score updates for both teams

User Story:

```
As a Spectator,
I want to see the score update live,
So that I can follow the competition
```

Acceptance Criteria:

- [ ] Score increments by 1 for each correct swipe
- [ ] Skip swipes do NOT affect score (no penalty in MVP)

- [ ] Scores displayed on scoreboard: Team A vs Team B (large, 192px font)
- [ ] Scores displayed on phone: compact (24px font, top-left corner)
- [ ] Score updates broadcast via WebSocket within 200ms of swipe
- [ ] Score animations: +1 number flies up and fades (300ms)

WebSocket Event: WORD_SWIPED

```
{
  "event": "WORD_SWIPED",
  "data": {
    "roomId": "XY3M9K",
    "wordId": "uuid-word-123",
    "action": "guessed", // or "skipped"
    "team": "A",
    "newScore": {
      "teamA": 12,
      "teamB": 8
    },
    "timestamp": "2026-02-11T14:40:15Z"
  }
}
```

FR-2.6: Round End Statistics

Description: Show round summary when timer hits 0

User Story:

```
As a Player,
I want to see how many words we guessed this round,
So that I can celebrate or strategize
```

Acceptance Criteria:

- [ ] Round end screen shows:
  - Words guessed: {N}
  - Words skipped: {M}
  - Time: 60 seconds
  - Points earned: {N} (equals words guessed)
- [ ] Round end screen displays for 5 seconds (auto-advance)

- [ ] After 5 sec, transition to next team's turn
- [ ] Host can tap "Продолжить" to skip 5-sec wait

Round End Wireframe:

```
┌─────────────────────────────────┐
│   Раунд завершён!               │
│                                 │
│   🎯 Угадано: 7 слов            │
│   ❌ Пропущено: 2 слова         │
│   ⏱️ Время: 60 секунд           │
│                                 │
│   +7 очков команде A            │
│                                 │
│   Следующий: Команда B          │
│                                 │
│   (Автоматически через 5 сек)   │
│   [Продолжить]                  │
└─────────────────────────────────┘
```

FR-2.7: Win Condition

Description: Game ends when a team reaches 50 points OR 12 rounds completed

User Story:

```
As a Host,
I want the game to end at a clear win condition,
So that there's a satisfying conclusion
```

Acceptance Criteria:

- [ ] **Primary condition:** First team to 50 points wins
- [ ] **Fallback condition:** After 12 rounds, highest score wins
- [ ] If tied after 12 rounds → sudden death (1 extra round per team until tie broken)
- [ ] Win screen displays: winning team, final score, game duration
- [ ] Win screen includes CTA: "Хочешь создать свою игру?" (viral loop)

Win Screen Wireframe:

```
┌──────────────────────────────────┐
│   🎉 Команда A победила!         │
│                                  │
│   Финальный счёт:                │
│   Команда A: 52                  │
│   Команда B: 47                  │
│                                  │
│   Продолжительность: 18 мин      │
│   Всего раундов: 9               │
│                                  │
│    ┌──────────────────────────┐  │
│    │ Хочешь создать свою      │  │
│    │ игру?                    │  │
│    │ [Новая игра]             │  │
│    └──────────────────────────┘  │
│                                  │
│   [Играть ещё раз] [На главную]  │
└──────────────────────────────────┘
```

6.3 WebSocket Events (Module 2)

Event: ROUND_STARTED

```json
{
  "event": "ROUND_STARTED",
  "data": {
    "roomId": "XY3M9K",
    "roundNumber": 1,
    "team": "A",
    "explainerId": "uuid-1234",
    "duration": 60,
    "startedAt": "2026-02-11T14:40:00Z"
  }
}
```

Event: TIMER_TICK

```json
{
  "event": "TIMER_TICK",
  "data": {
    "roomId": "XY3M9K",
    "remainingSeconds": 45
```

```
  }
}
```

Event: WORD_SWIPED (see FR-2.5 above)

Event: ROUND_ENDED

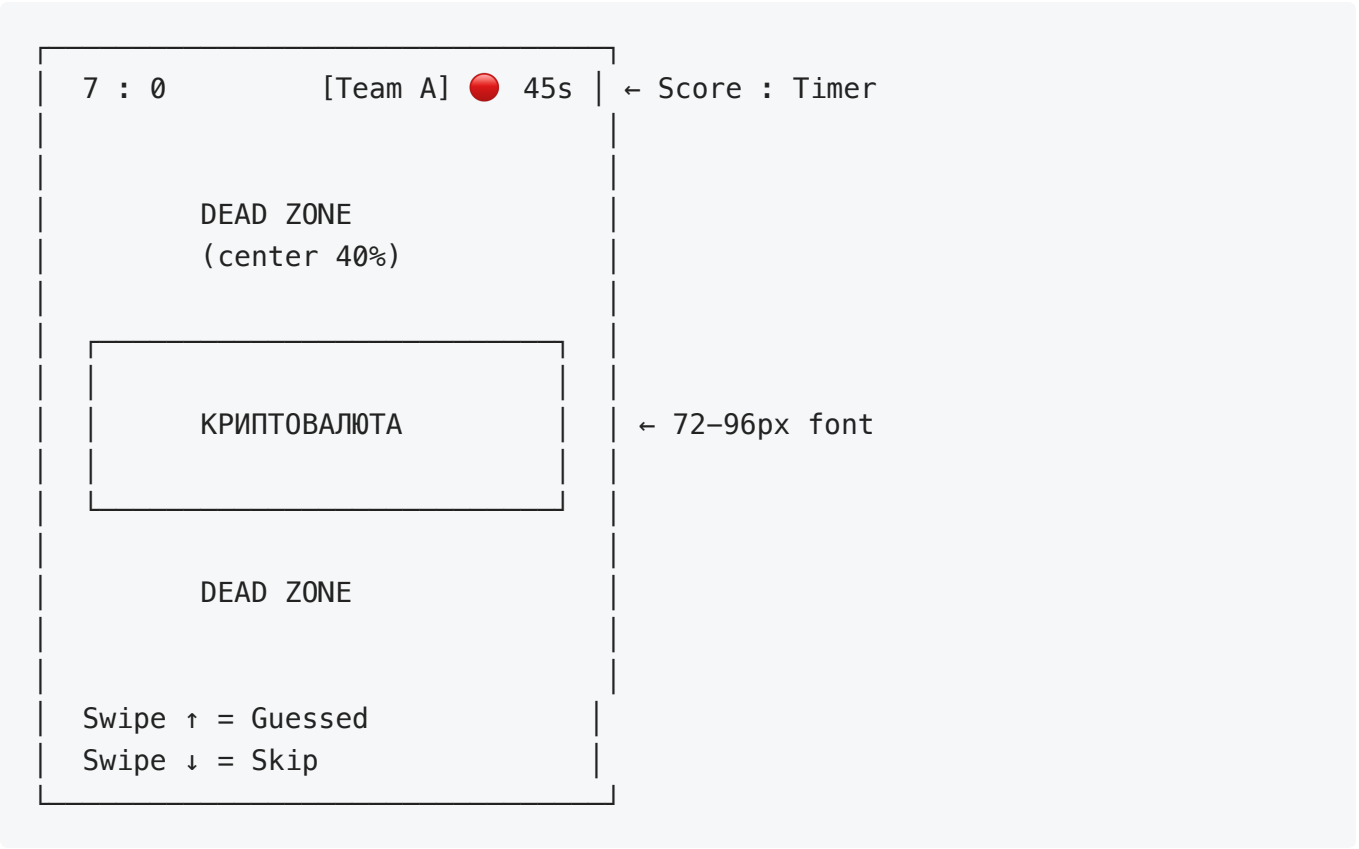
```
{
  "event": "ROUND_ENDED",
  "data": {
    "roomId": "XY3M9K",
    "roundNumber": 1,
    "stats": {
      "wordsGuessed": 7,
      "wordsSkipped": 2
    },
    "score": {
      "teamA": 7,
      "teamB": 0
    },
    "endedAt": "2026-02-11T14:41:00Z"
  }
}
```

Event: GAME_ENDED

```
{
  "event": "GAME_ENDED",
  "data": {
    "roomId": "XY3M9K",
    "winner": "A",
    "finalScore": {
      "teamA": 52,
      "teamB": 47
    },
    "totalRounds": 9,
    "duration": "18m 30s",
    "endedAt": "2026-02-11T14:58:30Z"
  }
}
```

6.4 UI/UX Specifications

Swipe Gameplay Screen (Phone):



Design Tokens:

- Word card: `rounded-[3rem]`, `bg-gradient-to-br from-indigo-600 to-purple-600`
- Word text: `font-black text-white text-center`
- Feedback flash: `@keyframes flash { 0% { opacity: 0 } 50% { opacity: 1 } 100% { opacity: 0 } }`
- Swipe transition: `transform: translateY(-100vh)` (up) or `translateY(100vh)` (down), `duration: 300ms`

6.5 Non-Functional Requirements (Module 2)

Performance:

- Swipe latency: <100ms
- Word change animation: 300ms total
- Timer tick latency: <500ms sync across devices
- Score update latency: <200ms

Reliability:

- Swipe actions queued if WebSocket disconnected → sync on reconnect
- Timer continues client-side if server lags → resync on next tick
- No word loss: all swipes persisted to Redis

Usability:

- Accidental swipe rate: <5% (validated via dead zone + velocity threshold)
- Font legible at 60cm (tested with iPhone 14 Pro at 72px)
- Haptic feedback feels natural (not annoying)

---

7. Module 3: Word Pack System

7.1 Overview

Purpose: Provide curated word content for gameplay, with support for future premium packs.

MVP Scope:

- Single "Starter Pack" (50 words)
- Hardcoded in frontend (no backend API in MVP)
- Post-MVP: Premium packs, backend API, monetization

7.2 Functional Requirements

FR-3.1: Starter Pack Content

Description: Default word pack included in MVP

Acceptance Criteria:

- [ ] Pack contains exactly 50 words
- [ ] Difficulty mix: 15 easy (30%), 25 medium (50%), 10 hard (20%)
- [ ] Words are актуальные for Gen Z + миллениалы (2024-2026)
- [ ] Words include: IT-сленг, мемы, современные термины, поп-культура
- [ ] No 18+ content, no politics, no religious terms
- [ ] All words explainable in 10-15 seconds without однокоренные слова

Content Categories (Example Mix):

- IT & Tech (20%): криптовалюта, баг, фича, апдейт, скролл
- Modern Slang (30%): токсик, краш, вайб, кринж, флексить
- Pop Culture (20%): Гарри Поттер, TikTok, Netflix, Spotify

- Abstract (15%): эмпатия, прокрастинация, мотивация
- Everyday (15%): телефон, пицца, кот, диван

Difficulty Examples:

- **Easy:** телефон, кот, пицца, TikTok, Spotify
- **Medium:** токсик, краш, вайб, фича, апдейт, кринж
- **Hard:** эмпатия, делегирование, блокчейн, NFT, газлайтинг

FR-3.2: Word Delivery

Description: Words fetched and shuffled at round start

Acceptance Criteria:

- [ ] Words stored as JSON array in frontend (hardcoded in MVP)
- [ ] Words shuffled using Fisher-Yates algorithm at round start
- [ ] No repeats within single round (50 words, typical round = 6-8 words)
- [ ] If round exceeds 50 words (unlikely), reshuffle and continue

Data Structure:

```
{
  "packId": "starter",
  "name": "Стартовый пак",
  "words": [
    { "id": "w1", "text": "криптовалюта", "difficulty": "hard" },
    { "id": "w2", "text": "токсик", "difficulty": "medium" },
    { "id": "w3", "text": "кот", "difficulty": "easy" }
    // ... 47 more
  ]
}
```

FR-3.3: Post-MVP: Premium Packs (Out of MVP Scope)

Description: Paid word packs for monetization (Phase 2)

Planned Packs (Post-MVP):

1. **"IT-офис"** (₽199) — для разработчиков и tech companies

2. **"Мемы 2024"** (₽99) — актуальные интернет-мемы
3. **"18+ Жара"** (₽299) — взрослый контент для 21+ вечеринок

Monetization Features (Post-MVP):

- Pack preview (5 words shown before purchase)
- In-app purchase flow (Stripe/YooKassa integration)
- Pack selection in lobby
- "Create Your Own Pack" (B2B premium, ₽1500-3000)

7.3 Non-Functional Requirements (Module 3)

Performance:

- Word shuffle: <50ms
- Word fetch (hardcoded): instant (no network call)

Content Quality:

- 70%+ words rated "норм" or "огонь" in playtesting
- <10% words rated "что это?" or "слишком сложно"

---

8. Module 4: Dual-Screen Sync

8.1 Overview

Purpose: Enable phone as controller (shows words) + tablet/laptop as scoreboard (shows timer, score, but NO words to prevent cheating).

Architecture:

- Phone subscribes to WebSocket events: WORD_SWIPED, TIMER_TICK
- Tablet subscribes to same events, but filters out word content
- Both devices render same state with different UI

8.2 Functional Requirements

FR-4.1: Phone = Controller Mode

Description: Explainer's phone shows words and accepts swipe input

User Story:

```
As an Explainer,
I want to see words only on my phone,
So that opponents can't read ahead and cheat
```

Acceptance Criteria:

- [ ] Phone displays: current word, timer, score (compact)
- [ ] Phone is only device that renders word text
- [ ] Swipe input handled on phone
- [ ] Phone sends WORD_SWIPED event to server on swipe

FR-4.2: Tablet/Laptop = Scoreboard Mode

Description: Large screen displays timer and score for all spectators, but hides words

User Story:

```
As a Host,
I want to display the game on a large screen,
So that everyone can follow the score and timer
```

Acceptance Criteria:

- [ ] Tablet displays: timer (circular progress, 200px), scores (192px font), team names
- [ ] Tablet does NOT display: current word, swipe UI
- [ ] Tablet shows: "Команда A объясняет..." + "Слов в раунде: {N}" (live counter)
- [ ] Timer color changes: green → yellow → red
- [ ] Score animations: +1 flies up on correct swipe
- [ ] Tablet readable from 3-5 meters (living room scenario)

Scoreboard Wireframe:

```
┌─────────────────────────────────────┐
│                                     │
│   Команда A: 12   |   Команда B: 8 │ ← 192px font
│                                     │
│        ⏱                            │
│      ( 45 )  ← Circular timer       │
│                                     │
```

```
|   Команда A объясняет...          |
|   Слов в раунде: 5                |
|                                   |
└───────────────────────────────────┘
```

FR-4.3: Device Auto-Detection

Description: Automatically determine if device should be controller or scoreboard

Logic:

```
if (viewport.width < 768px) {
  mode = "controller"; // Phone
} else {
  mode = "scoreboard"; // Tablet/Desktop
}
```

Acceptance Criteria:

- [ ] Phones (<768px) → controller mode
- [ ] Tablets/Laptops (≥768px) → scoreboard mode
- [ ] User can manually override mode (Post-MVP setting)

8.3 WebSocket Sync

Both devices subscribe to same events:

- ROUND_STARTED
- TIMER_TICK
- WORD_SWIPED
- ROUND_ENDED
- GAME_ENDED

Phone renders: word text + swipe UI
Tablet filters out: word content, only shows aggregate stats

8.4 Non-Functional Requirements (Module 4)

Performance:

- State sync latency: <200ms between phone and tablet
- Scoreboard updates within 200ms of phone swipe

Reliability:

- If tablet disconnects → phone continues independently
- If phone disconnects → tablet shows "Reconnecting..." but maintains game state

---

9. Module 5: PWA Installation

9.1 Overview

Purpose: Enable users to install PartyFlow as a Progressive Web App (PWA) for faster access and perceived ownership.

MVP Scope:

- "Add to Home Screen" prompt after first game
- Offline fallback message
- Post-MVP: Push notifications, advanced offline mode

9.2 Functional Requirements

FR-5.1: PWA Manifest

Description: Web app manifest enables installation

Acceptance Criteria:

- [ ] `manifest.json` includes: name, short_name, icons, theme_color, background_color
- [ ] Icons: 192x192, 512x512 (PNG, optimized)
- [ ] Display mode: `standalone` (hides browser chrome)
- [ ] Start URL: `/`
- [ ] Theme color: `#6366f1` (indigo-500)

manifest.json:

```
{
  "name": "PartyFlow — Alias Web",
  "short_name": "PartyFlow",
  "description": "Alias для вечеринок — играй прямо в браузере!",
```

```
  "start_url": "/",
  "display": "standalone",
  "background_color": "#0f172a",
  "theme_color": "#6366f1",
  "icons": [
    {
      "src": "/icon-192.png",
      "sizes": "192x192",
      "type": "image/png"
    },
    {
      "src": "/icon-512.png",
      "sizes": "512x512",
      "type": "image/png"
    }
  ]
}
```

FR-5.2: Installation Prompt

Description: Prompt user to install PWA after first successful game

User Story:

```
As a Returning Player,
I want to add the app to my home screen,
So that I can launch it faster next time
```

Acceptance Criteria:

- [ ] Prompt triggers after first game completion (win screen)
- [ ] Prompt shows: "Добавьте PartyFlow на главный экран для быстрого доступа!"
- [ ] Prompt includes: [Добавить] [Не сейчас] buttons
- [ ] If user dismisses, don't show again for 7 days
- [ ] If user installs, don't show again

Browser Compatibility:

- ✅ Chrome Android: native "Add to Home Screen" prompt
- ⚠ iOS Safari: manual instruction ("Share → Add to Home Screen")
- ❌ Desktop Chrome: banner shows, but less prominent

FR-5.3: Offline Fallback

Description: Show friendly message when no network available

Acceptance Criteria:

- [ ] Service worker caches core assets (HTML, CSS, JS, icons)
- [ ] If offline: show "Нет подключения к интернету. Подключитесь к WiFi, чтобы играть."
- [ ] Offline page includes: PartyFlow logo, message, [Retry] button

Out of Scope (MVP):

- ❌ Full offline gameplay (requires local state, no WebSocket)
- ❌ Offline word packs

9.3 Non-Functional Requirements (Module 5)

Performance:

- Service worker registration: <500ms
- Cached assets load: <1s on repeat visits

Reliability:

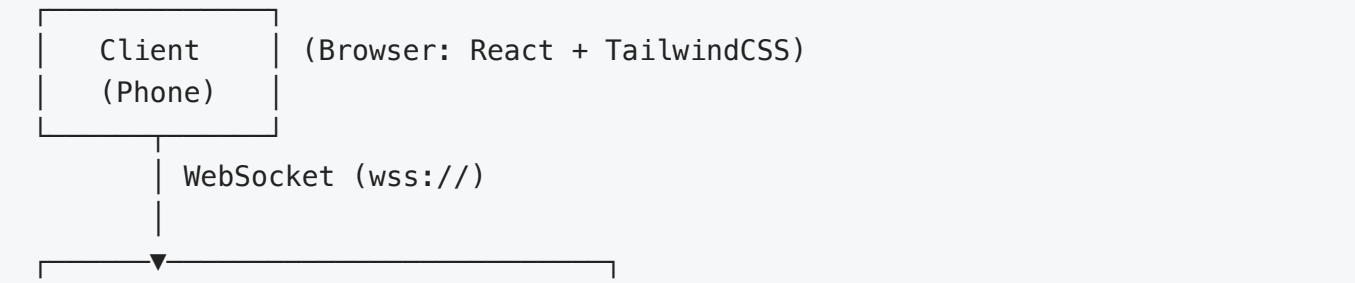
- Service worker survives browser restart
- Cache invalidation on new version deployment

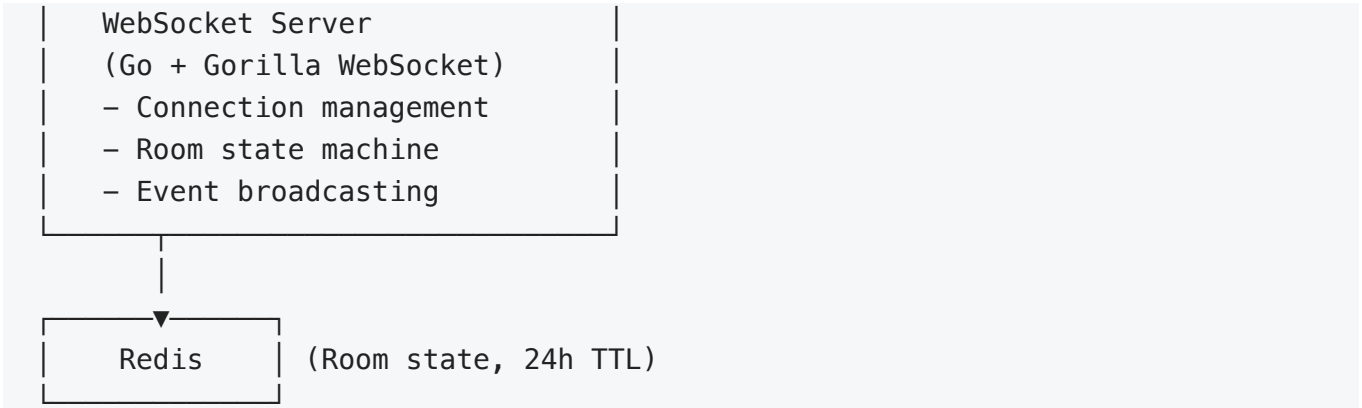
---

10. Technical Architecture

10.1 System Architecture

High-Level Diagram:





Components:

1. **Frontend (React + Vite)**
   - React 18 (hooks-based, no class components)
   - TailwindCSS for styling
   - Framer Motion for animations
   - WebSocket client for real-time communication
2. **Backend (Go)**
   - Gorilla WebSocket for connections
   - Gin framework for HTTP endpoints (health checks, room creation)
   - Redis client for state persistence
3. **State Storage (Redis)**
   - Room metadata (players, teams, scores)
   - TTL: 24 hours (auto-cleanup)
   - Pub/Sub for cross-instance synchronization (future scaling)

10.2 WebSocket Protocol

Connection Flow:

```
1. Client connects: wss://partyflow.ru/ws/{roomId}
2. Server authenticates connection (validates roomId exists)
3. Server sends ROOM_STATE snapshot to client
4. Client renders UI based on state
5. User actions → Client sends events → Server broadcasts to room
```

Message Format:

```
{
  "event": "EVENT_NAME",
  "data": { /* event-specific payload */ },
  "timestamp": "2026-02-11T14:30:00Z"
}
```

Critical Events (Already Documented in Modules):

- ROOM_CREATED, PLAYER_JOINED, PLAYER_LEFT
- GAME_STARTED, ROUND_STARTED, TIMER_TICK
- WORD_SWIPED, ROUND_ENDED, GAME_ENDED

10.3 State Machine

Room States:

```
LOBBY → PLAYING → ROUND_END → (loop PLAYING) → GAME_END
```

State Transitions:

From State	Event	To State	Conditions
LOBBY	GAME_STARTED	PLAYING	≥4 players
PLAYING	ROUND_ENDED	ROUND_END	Timer = 0
ROUND_END	ROUND_STARTED	PLAYING	Teams alternate
PLAYING	GAME_ENDED	GAME_END	50 points OR 12 rounds

State Persistence:

```
{
  "roomId": "XY3M9K",
  "state": "PLAYING",
  "players": [
    { "id": "uuid-1", "name": "Cawa", "team": "A" }
  ],
  "currentRound": 3,
  "scores": { "teamA": 15, "teamB": 12 },
  "timer": 45,
  "createdAt": "2026-02-11T14:00:00Z",
```

```
  "expiresAt": "2026-02-12T14:00:00Z"
}
```

10.4 Reconnection Strategy

Problem: Player loses WiFi for 5-10 seconds mid-round

Solution:

1. **Client-side:**
   - Detect WebSocket disconnect (`onclose` event)
   - Show "Переподключение..." overlay
   - Retry connection with exponential backoff: 1s, 2s, 4s, 8s (max 4 retries)
   - On reconnect: request ROOM_STATE snapshot from server
2. **Server-side:**
   - Keep room state in Redis (survives connection drops)
   - On reconnect: send current ROOM_STATE + TIMER_TICK (resume timer)
   - If player disconnected >60s: mark as inactive, continue game without them

Backoff Algorithm:

```
let retries = 0;
const maxRetries = 4;

function reconnect() {
  if (retries >= maxRetries) {
    showError("Не удалось переподключиться. Обновите страницу.");
    return;
  }

  const delay = Math.pow(2, retries) * 1000; // 1s, 2s, 4s, 8s
  setTimeout(() => {
    retries++;
    connectWebSocket();
  }, delay);
}
```

10.5 Scalability

Current Constraints (MVP):

- Single server instance
- 100 concurrent rooms max (10 players × 100 = 1000 connections)
- No load balancing (Post-MVP)

Vertical Scaling (Phase 2):

- Increase server CPU/RAM
- Target: 500 concurrent rooms per instance

Horizontal Scaling (Phase 3):

- Multiple WebSocket servers behind load balancer
- Redis Pub/Sub for cross-instance event broadcasting
- Sticky sessions (room affinity to server instance)

Estimated Capacity:

- 2 CPU, 4GB RAM → 100 rooms (1000 players)
- 4 CPU, 8GB RAM → 300 rooms (3000 players)
- 8 CPU, 16GB RAM → 500+ rooms (5000+ players)

10.6 Technology Stack

Layer	Technology	Rationale
Frontend	React 18 + Vite	Fast dev server, modern hooks API
Styling	TailwindCSS	Rapid prototyping, party-proof utility classes
Animations	Framer Motion	Smooth swipe transitions, haptic-like feel
WebSocket Client	Native `WebSocket` API	No library needed, built-in browser support
Backend	Go 1.21	High concurrency, low latency
WebSocket Server	Gorilla WebSocket	Production-ready, widely used
HTTP Framework	Gin	Lightweight, good for health checks
State Storage	Redis 7	In-memory speed, TTL support, Pub/Sub
Hosting (MVP)	Render.com / Railway	Easy deployment, auto-scaling

Layer	Technology	Rationale
CDN	Cloudflare	Static assets, DDoS protection

10.7 Security Considerations

WebSocket Security:

- WSS (WebSocket Secure) over HTTPS only
- Origin validation: reject connections from unauthorized domains
- Rate limiting: max 10 actions/second per connection

Room Security:

- Room IDs: 6 alphanumeric characters (2.2B combinations) → hard to brute-force
- No sensitive data in rooms (no passwords, no personal info)
- 24h TTL: rooms auto-delete, no long-lived data

DDOS Mitigation:

- Cloudflare DDoS protection
- Rate limiting: max 10 room creations per IP per hour
- Connection limit: max 10 connections per IP

---

11. Non-Functional Requirements

11.1 Performance

Metric	Target	Measurement
Page Load (First Visit)	<2s on 3G	Lighthouse
Page Load (Cached)	<1s	Lighthouse
WebSocket Connection	<500ms	Server logs
Swipe Latency	<100ms	Frontend instrumentation
Timer Sync Deviation	<500ms	WebSocket monitoring
Score Update Latency	<200ms	End-to-end test

11.2 Reliability

Metric	Target	Measurement
WebSocket Uptime	>99.5% during sessions	Server monitoring
Reconnection Success Rate	>90% within 10s	Client logs
Zero Data Loss	100% (all swipes persisted)	Redis logs

11.3 Usability

Metric	Target	Validation Method
Onboarding Time	<90s (home → first round)	User testing (n=10)
Accidental Swipe Rate	<5% of total swipes	Gameplay analytics
Fun-Factor (Laughter)	>1 moment per round	Playtesting observation
Viral Intent	>50% "yes, would host"	Post-game survey

11.4 Compatibility

Browsers (Must Support):

- ✅ Chrome 90+ (Android, Desktop)
- ✅ Safari 14+ (iOS, macOS)
- ✅ Samsung Internet 15+
- ⚠ Firefox 88+ (best-effort, may lack haptics)

Devices (Must Support):

- ✅ iPhone 12+ (iOS 15+)
- ✅ Android flagship phones (2020+)
- ✅ iPad (2020+)
- ✅ MacBook (2019+)

Screen Sizes:

- Phone: 375px - 428px width
- Tablet: 768px - 1024px width
- Desktop: 1280px+ width

---

12. Success Metrics & KPIs

12.1 North Star Metric (by Phase)

MVP (Weeks 1-4): K-Factor

- Target: K >1.0
- Definition: (Players who become hosts / Total players per session)
- Measurement: Track "Create New Game" button clicks from game-end screen

Monetization (Weeks 9-12): Conversion Rate

- Target: 5-10% of hosts purchase ≥1 pack
- Definition: (Hosts who purchased / Total hosts)
- Measurement: Payment gateway events

Scale (Month 6+): LTV / CAC

- Target: LTV/CAC >3.0
- Measurement: Cohort analysis, ad spend tracking

12.2 Pirate Metrics (AARRR)

Acquisition:

- Organic referrals (QR scans, link shares): >80% of new users
- Direct traffic (returning hosts): 10-15%
- Paid acquisition: 0% in MVP (<5% Post-MVP)

Activation:

- % who complete first game: >85%
- Time to first round: <90 seconds
- % who reach round 3: >70%

Retention:

- D1 (Day 1): >40%
- D7 (Day 7): >15%
- D30 (Day 30): >10%

Revenue (Post-MVP):

- Conversion rate: 5-10%

- ARPU: ₽10-15 per host
- Pack attach rate: 1.3 packs per paying host

Referral:

- K-factor: 1.2-1.5 (organic viral growth)
- Viral cycle time: 7 days
- Invites per session: 2-3 new hosts

12.3 Engagement Metrics

Metric	Target	Definition
Session length	>15 min	Avg time from room creation to game end
Rounds per session	6-9 rounds	Avg number of rounds played
Words per round	6-8 words	Avg words guessed + skipped
Sessions per host	1.8+ per week	Repeat play rate

12.4 Fun-Factor Metrics (Qualitative)

Playtesting Observations:

- Laughter moments: >1 per round
- Engagement level: >80% (not distracted by phones)
- Spontaneous reactions: "Ого, классно!", "Это сложное!"

Post-Game Survey (n=50 per phase):

- "Would you host again?": >70% yes
- "Swipe mechanic felt natural": >80% agree
- "Words were актуальные": >70% agree
- "Recommend to friends": >60% yes

12.5 Technical Metrics

Metric	Target	Alert Threshold
WebSocket Latency (p95)	<300ms	>500ms
WebSocket Disconnects	<5% per session	>10%
Reconnection Success	>90%	<80%
Server CPU	<70% avg	>85%
Redis Memory	<2GB	>3GB

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13. Risk Management

13.1 Top Risks (Prioritized)

Risk #1: K-Factor Stays Below 1.0 ⚠ CRITICAL

Likelihood: 40%
Impact: Critical (product dies without viral growth)

Symptoms:

- <2 new hosts created per session
- Low "Create New Game" CTA click rate
- Viral cycle >14 days

Mitigation:

1. **Invest 80% design effort on post-game CTA** (make it irresistible)
2. Test 3 CTA variants:
   - A: "Хочешь создать свою игру?"
   - B: "Твоя очередь! Запусти игру"
   - C: One-tap "Copy Invite Link"
3. Add referral incentive (Post-MVP): "Invite 3 friends → unlock bonus pack"
4. Share results feature: screenshot of win screen + auto-share to Telegram/WhatsApp

Trigger: If K <0.8 after 50 sessions → pivot to paid acquisition

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Risk #2: WebSocket Instability 🔴 HIGH

Likelihood: 30%
Impact: High (ruins user experience, kills retention)

Symptoms:

- > *10% disconnect rate per session*
- Timer desync >1s
- Lost swipe actions (score incorrect)

Mitigation:

1. **Robust reconnection strategy** (exponential backoff, state recovery)
2. Load testing: simulate 100 concurrent rooms before launch
3. Monitoring: alert if disconnect rate >5%
4. Fallback: if WebSocket fails, degrade to HTTP polling (slow but functional)

Trigger: If disconnect rate >10% → emergency hotfix, delay launch

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Risk #3: Low Conversion (<2%) 🟡 MEDIUM

Likelihood: 30%
Impact: Medium (hurts revenue, but not fatal if K >1.0)

Symptoms:

- <2% hosts purchase packs
- High pack preview abandonment
- Negative feedback on pricing

Mitigation:

1. User interviews (n=20) before launching packs: validate pack appeal
2. Test ₽99 impulse price point (lower barrier)
3. "Try before buy": preview 5 words from pack
4. Launch discount: 50% off first pack for early adopters

Trigger: If conversion <2% after 500 hosts → re-evaluate pricing or pack quality

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Risk #4: Content Quality Issues 🟡 MEDIUM

Likelihood: 25%
Impact: Medium (affects fun-factor, retention)

Symptoms:

- > *30% words rated "что это?" or "устарело"*
- Low laughter rate (<1 per round)
- Negative feedback on word relevance

Mitigation:

1. Playtesting with 3 personas (Party Animal, Corporate, Casual Gamer) before launch
2. Content moderation: strict guidelines on актуальность
3. Feedback loop: "Report This Word" button (Post-MVP)
4. Monthly content updates: replace bottom 10% words based on skip rate

Trigger: If >20% words consistently skipped → emergency content refresh

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Risk #5: 3-Pack Catalog Limits ARPU 🟢 LOW

Likelihood: 50%
Impact: Low (ARPU cap, but addressable Post-MVP)

Symptoms:

- ARPU plateaus at ₽5-8 (below target ₽10-15)
- Users say "I've bought all packs, nothing new"

Mitigation:

1. Plan 6-pack expansion by Month 4
2. "Create Your Own Pack" premium feature (₽1500-3000, B2B focus)
3. Pack bundles: "Buy 2, get 10% off"
4. Seasonal packs: "Новый Год 2027", "Лето 2026"

Trigger: If ARPU <₽8 by Month 6 → accelerate pack roadmap

13.2 Risk Monitoring Dashboard

Risk	KPI to Watch	Green	Yellow	Red
Low K-factor	K-factor	>1.2	0.8-1.2	<0.8
WebSocket issues	Disconnect %	<5%	5-10%	>10%
Low conversion	Conversion %	>5%	2-5%	<2%
Bad content	Word skip %	<30%	30-40%	>40%
ARPU cap	ARPU	>₽10	₽5-10	<₽5

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14. Go-to-Market Strategy

14.1 Launch Plan

Phase 1: Stealth Launch (Week 1-2)

- Invite-only: 50 early adopters (friends, colleagues, Reddit communities)
- Goal: Validate core loop, find critical bugs
- Feedback: 1-on-1 interviews after first session

Phase 2: Soft Launch (Week 3-4)

- Public URL live, but no marketing
- Post to: r/webdev, Product Hunt "upcoming" page, Telegram tech chats
- Goal: Reach 100 hosts, validate K-factor >1.0

Phase 3: Product Hunt Launch (Week 5)

- Full Product Hunt submission
- Tagline: "Alias для вечеринок — играй прямо в браузере, без установки!"
- Goal: Top 5 product of the day, 500+ hosts

Phase 4: Content Marketing (Week 6-12)

- Blog posts: "Как мы построили PWA игру за 6 недель"
- Twitter threads: viral mechanics breakdown
- YouTube demo: influencer plays with friends

14.2 Positioning & Messaging

Tagline:

> *"Alias для вечеринок — играй прямо в браузере, без установки!"*

Value Props (by Persona):

Party Animal (Primary):

- "Запусти игру за 60 секунд — просто покажи QR-код"
- "Актуальные слова: 'токсик', 'краш', 'NFT' — не 'синхрофазотрон'"
- "Никаких установок — работает на любом телефоне"

Corporate Organizer (Secondary):

- "Тимбилдинг без cringe — простая игра для 20+ человек"
- "Универсальный контент — безопасно для офиса"
- "Кастомные паки про вашу компанию (Premium)"

Casual Gamer (Tertiary):

- "Качество настолки, удобство web-приложения"
- "Плавные анимации, honest game balance, zero багов"
- "Open-source WebSocket архитектура (coming soon)"

14.3 Pricing Strategy (Post-MVP)

Freemium Model:

Pack	Price	Target Audience	Conversion Expectation
Starter	Free	Everyone	100% (default)
"Мемы 2024"	₽99	Party Animal	8-12% (impulse buy)
"IT-офис"	₽199	Tech workers	5-8% (niche appeal)
"18+ Жара"	₽299	Adults 21+	3-5% (premium positioning)

Bundle:

- "Купи 2, получи 10% скидку" → ₽268 instead of ₽298

Premium Feature (Month 6):

- "Create Your Own Pack": ₽1500-3000 (B2B, corporate)

14.4 Distribution Channels

Organic (80% of traffic):

1. **Viral loop:** Post-game CTA → new hosts
2. **Word of mouth:** Telegram/WhatsApp shares
3. **Social proof:** Twitter threads, Reddit posts

Owned (15% of traffic):

1. **Product Hunt:** One-time spike
2. **Blog/SEO:** "Alias онлайн", "игры для вечеринок"
3. **Email (Post-MVP):** Newsletter with new packs

Paid (5% of traffic, Post-MVP only):

1. **Facebook/Instagram ads:** Target 25-35, "Развлечения"
2. **Google Ads:** "Alias онлайн", "party games"
3. **Influencer partnerships:** YouTube gaming channels

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15. Appendix

15.1 Glossary

Term	Definition
K-factor	Viral coefficient: (New hosts created / Total players per session)
Explainer	Player whose turn it is to describe words
Dead zone	Center 40% of screen where swipes are ignored (prevents accidents)
Haptic feedback	Phone vibration on swipe action
PWA	Progressive Web App (installable web app)
TTL	Time To Live (Redis expiration, 24h for rooms)
WebSocket	Real-time bidirectional communication protocol

15.2 User Stories (Complete List)

Module 1: Room & Lobby

1. As a Host, I want to create a game room with one tap, so that I can instantly start organizing.
2. As a Guest, I want to scan a QR code and join without registration, so that I can play immediately.
3. As a Host, I want to see who joined in real-time, so that I can start when everyone is ready.
4. As a Guest, I want to change my name, so that my friends recognize me.
5. As a Host, I want to start the game when minimum players met, so that we can begin playing.

Module 2: Core Game Loop

6. As an Explainer, I want to see a large, readable word, so that I can explain it from arm's length. 7. As an Explainer, I want to swipe words quickly, so that I can explain as many as possible in 60 seconds. 8. As an Explainer, I want to feel haptic feedback, so that I know my swipe registered. 9. As a Player, I want to see the timer counting down, so that I know how much time is left. 10. As a Spectator, I want to see the score update live, so that I can follow the competition. 11. As a Player, I want to see round stats, so that I can celebrate or strategize. 12. As a Host, I want the game to end at a clear win condition, so that there's a satisfying conclusion.

Module 3: Word Pack

13. As a Player, I want words to be актуальные, so that the game feels relevant to my generation. 14. As a Host, I want to not worry about content in MVP, so that I can focus on gameplay.

Module 4: Dual-Screen

15. As an Explainer, I want words only on my phone, so that opponents can't cheat. 16. As a Host, I want to display the game on a large screen, so that everyone can follow.

Module 5: PWA

17. As a Returning Player, I want to add the app to my home screen, so that I can launch it faster.

15.3 Dependencies & Blockers

External Dependencies:

- ❌ None (MVP is self-contained)

Internal Dependencies:

- ✅ Content team delivers Starter Pack (50 words) — DONE
- ✅ UX Designer delivers wireframes — DONE
- ✅ Technical Architect delivers WebSocket spec — DONE

Potential Blockers:

- ⚠ Redis hosting: ensure Redis instance available before deployment
- ⚠ Domain setup: `partyflow.ru` DNS + SSL certificate
- ⚠ Load testing: requires 10 devices for concurrent testing

15.4 Open Questions (TBD)

1. **Team composition:** Solo dev or team? (Affects velocity estimation)
2. **Launch timeline:** Target launch date? (Affects scope prioritization)
3. **Monitoring stack:** Sentry for errors? Mixpanel for analytics?
4. **Deployment:** Render.com vs Railway vs self-hosted?

15.5 Change Log

Version	Date	Author	Changes
0.1	Feb 10, 2026	PM	Initial draft, Modules 1-5 sketched
0.5	Feb 11, 2026	PM	Added UX Design, UX Research, Product Analytics inputs
1.0	Feb 11, 2026	PM	Finalized PRD with Technical Architecture, NFRs, GTM

Document Status

✅ **READY FOR DEVELOPMENT**

Next Steps:

1. **Dev Team:** Review PRD, estimate effort (story points)
2. **QA Team:** Review acceptance criteria, create test cases
3. **Content Team:** Deliver Starter Pack (50 words)

4. **PM:** Schedule kickoff meeting, create Jira tickets

Questions? Contact Product Manager: [P.S.]

End of PRD