

Aside - Pendo Implementation Fixes Required

Date: October 11, 2025

Priority: Critical - Analytics Foundation



PRIORITY #1: Visitor Identification (CRITICAL)

Issue:

New users are being tracked as anonymous visitors instead of identified users with phone numbers.

Evidence:

- **Current state:** 394 total visitors
 - Identified (phone numbers): 4 (1.0%)
 - Anonymous: 377 (95.7%)
 - **79 new anonymous visitors created in last 2 days alone**
- **Should be:** 100% identified with phone numbers as visitor IDs

Root Cause:

`pendo.initialize()` is likely being called before user authentication completes, OR the visitor ID is not being updated after login.

Required Fix:

Option A: Only Initialize After Login (Recommended)

```
// ❌ CURRENT (WRONG) - Don't do this
// On page load, before login
pendo.initialize({
  visitor: { id: 'anonymous' }
});
```

```
// ✅ CORRECT - Wait for authentication
// In login success handler / auth callback
```

```

async function handleLoginSuccess(user) {
  // 1. Complete authentication
  await authenticateUser(user);

  // 2. NOW initialize Pendo with phone number
  pendo.initialize({
    visitor: {
      id: `+1${user.phone}`, // "+15555551234" - E.164 format
      phoneNumber: user.phone,
      firstName: user.firstName || undefined,
      lastName: user.lastName || undefined,
      userId: user.id,
      hasCompletedProfile: !!user.firstName && user.lastName,
      signUpDate: user.createdAt,
      signUpMethod: user.signUpMethod || 'sms'
    },
    account: {
      id: "aside"
    }
  });

  // 3. Redirect to dashboard
  router.push('/dashboard');
}

```

Option B: Update Visitor ID After Login

If Pendo must be initialized on page load for some reason:

```

// On page load (if necessary)
pendo.initialize({
  visitor: { id: 'anonymous' },
  account: { id: 'aside' }
});

// After successful login - UPDATE the visitor
async function handleLoginSuccess(user) {
  await authenticateUser(user);

  // Update from anonymous to phone number
  pendo.identify({
    visitor: {
      id: `+1${user.phone}`, // This replaces anonymous ID
      phoneNumber: user.phone,

```

```

    firstName: user.firstName || undefined,
    lastName: user.lastName || undefined,
    userId: user.id,
    hasCompletedProfile: !(user.firstName && user.lastName),
    signupDate: user.createdAt,
    signupMethod: user.signupMethod || 'sms'
  }
});
}

```

Testing:

1. Clear cookies and log out
2. Open site in incognito window
3. Log in with test account
4. Check Pendo Visitors → Search for +1[phone]
5. Should show phone number as Visitor ID, NOT anonymous

Success Criteria:

- ☒ New logins create identified visitors (phone number IDs)
- ☒ No new anonymous visitors after fix
- ☒ 100% identification rate going forward

PRIORITY #2: data-pendo Naming Pattern Fixes

Issue:

Dev team is using **unique, incremental IDs** for similar elements instead of **generic values with metadata**. This creates maintenance problems and requires separate Pendo features for each instance.

2.1: Sidebar Board Links

Current (WRONG):

```

<a data-pendo="button-private-board-item-1">#drip</a>
<a data-pendo="button-private-board-item-2">#feedback</a>
<a data-pendo="button-private-board-item-3">#jobs</a>

```





```
<a data-pendo="button-private-board-item-4">#recipes</a>
<a data-pendo="button-shared-board-item-1">#home-improvement</a>
```

Should Be (CORRECT):

```
<!-- Private boards -->
<a data-pendo="sidebar-board-link" data-board-type="private">#drip</a>
<a data-pendo="sidebar-board-link" data-board-type="private">#feedback</a>
<a data-pendo="sidebar-board-link" data-board-type="private">#jobs</a>
<a data-pendo="sidebar-board-link" data-board-type="private">#recipes</a>

<!-- Shared boards -->
<a data-pendo="sidebar-board-link" data-board-type="shared">#home-improvement</a>
```

Why:

-  One Pendo feature tracks ALL sidebar board clicks
-  Can segment by board type (private vs shared)
-  Works automatically for all future user-generated boards
-  No need to update code when users create new boards

Pendo Selector:

```
/* All sidebar board links */
[data-pendo="sidebar-board-link"]
```

```
/* Just private boards */
[data-pendo="sidebar-board-link"][data-board-type="private"]
```

```
/* Just shared boards */
[data-pendo="sidebar-board-link"][data-board-type="shared"]
```

2.2: Dashboard Board Cards

Current (WRONG):

```
<!-- Missing data-pendo entirely! -->
<div class="rounded-lg">
  <div class="relative">
    <h3>#drip</h3>
    <p>Private Board</p>
```




```
<span>4</span>
</div>
</div>
```

Should Be (CORRECT):

```
<a
  href="/tag/private/drip"
  data-pendo="dashboard-board-card"
  data-board-type="private"
  class="rounded-lg"
>
  <div class="relative">
    <h3>#drip</h3>
    <p>Private Board</p>
    <span>4</span>
  </div>
</a>

<a
  href="/tag/shared/home-improvement"
  data-pendo="dashboard-board-card"
  data-board-type="shared"
  class="rounded-lg"
>
  <div class="relative">
    <h3>#home-improvement</h3>
    <p>Shared Board</p>
    <span>3</span>
  </div>
</a>
```

Why:

-  Stable selector that won't break with CSS changes
-  One Pendo feature tracks ALL board card clicks
-  Works for all current and future user-generated boards

2.3: Content Card Action Buttons

Current (WRONG):

```
<button data-pendo="button-edit-message-500">Edit</button>
<button data-pendo="button-edit-message-501">Edit</button>
<button data-pendo="button-edit-message-502">Edit</button>
```

Should Be (CORRECT):

```
<button data-pendo="content-edit-btn">Edit</button>
<button data-pendo="content-edit-btn">Edit</button>
<button data-pendo="content-edit-btn">Edit</button>

<button data-pendo="content-delete-btn">Delete</button>
<button data-pendo="content-delete-btn">Delete</button>
```

Apply to:

- Edit button: `data-pendo="content-edit-btn"`
 - Delete button: `data-pendo="content-delete-btn"`
 - External link button: `data-pendo="content-external-link-btn"`
-

2.4: Modal Containers

Current (WRONG):

```
<!-- Missing data-pendo! -->
<div role="dialog" id="radix-r9:" class="fixed...">
  <!-- modal content -->
</div>
```

Should Be (CORRECT):

```
<div
  role="dialog"
  data-pendo="add-message-modal"
  class="fixed..."
>
  <!-- modal content -->
</div>
```

Apply to all modals:

- `data-pendo="add-message-modal"`
 - `data-pendo="create-private-board-modal"`
 - `data-pendo="create-shared-board-modal"`
 - `data-pendo="rename-board-modal"`
 - `data-pendo="convert-to-shared-modal"`
 - `data-pendo="delete-board-modal"`
 - `data-pendo="delete-message-modal"`
 - `data-pendo="delete-account-modal"`
 - `data-pendo="board-members-modal"`
 - `data-pendo="invite-to-board-modal"`
-

2.5: Modal Buttons

Current (WRONG):

```
<!-- Add Message Modal -->
<button data-pendo="button-cancel-add-message">Cancel</button>
<button data-pendo="button-submit-add-message">Add Message</button>

<!-- Delete Account Modal -->
<button data-pendo="button-cancel-delete-account">Cancel</button>
<button data-pendo="button-confirm-delete-account">Delete Account</button>
```

Should Be (CORRECT):

```
<!-- Add Message Modal -->
<button data-pendo="modal-cancel-btn">Cancel</button>
<button data-pendo="modal-save-btn">Add Message</button>

<!-- Delete Account Modal -->
<button data-pendo="modal-cancel-btn">Cancel</button>
<button data-pendo="modal-delete-confirm-btn">Delete Account</button>
```

Generic button names across ALL modals:




- Cancel buttons: `data-pendo="modal-cancel-btn"` (same everywhere)
- Save/Submit buttons: `data-pendo="modal-save-btn"` (same everywhere)
- Delete/Confirm buttons: `data-pendo="modal-delete-confirm-btn"` (for destructive actions)

Why: Pendo uses parent modal context to distinguish them:

```
/* Cancel in Add Message modal */  
[data-pendo="add-message-modal"] [data-pendo="modal-cancel-btn"]
```

```
/* Cancel in Delete Account modal */  
[data-pendo="delete-account-modal"] [data-pendo="modal-cancel-btn"]
```

Benefits:

-  One Pendo feature tracks ALL modal cancellations
 -  Can also create aggregate "all cancel clicks" metric
 -  Simpler, more maintainable code
-

2.6: Modal Close X Buttons

Current (WRONG):

```
<!-- Missing data-pendo! -->  
<button type="button" class="absolute right-4 top-4...">  
  <svg>...</svg>  
  <span class="sr-only">Close</span>  
</button>
```

Should Be (CORRECT):

```
<button  
  type="button"  
  data-pendo="modal-close-x-btn"  
  class="absolute right-4 top-4..."  
>  
  <svg>...</svg>  
  <span class="sr-only">Close</span>  
</button>
```

Apply to: All modals' close X buttons



PRIORITY #3: Private Board URL Structure

Issue:

Private board URLs not updated to new format. Shared boards are correct, but private boards still use old format.

Current:

- Private: `/tag/drip` ❌
- Shared: `/shared/home-improvement` ✅

Should Be:

- Private: `/tag/private/drip` ✅
- Shared: `/tag/shared/home-improvement` ✅

Implementation:

Update routing:

```
// New route with board type
app.get('/tag/:boardType/:boardName', (req, res) => {
  const { boardType, boardName } = req.params;

  if (!['private', 'shared'].includes(boardType)) {
    return res.status(400).send('Invalid board type');
  }

  const board = getBoard(boardName);
  if (!board) {
    return res.status(404).send('Board not found');
  }

  // Verify URL type matches actual board type
  if (board.type !== boardType) {
    return res.redirect(301, `/tag/${board.type}/${boardName}`);
  }

  renderBoard(board);
});

// Redirect old URLs
app.get('/tag/:boardName', (req, res) => {
  const board = getBoard(req.params.boardName);
  if (!board) {
```










```
    return res.status(404).send('Board not found');
  }
  // Redirect to new format with board type
  res.redirect(301, `/tag/${board.type}/${board.name}`);
});
```

Update all board links in:

- Dashboard board cards
 - Sidebar navigation
 - SMS confirmation messages
 - Any other places generating board URLs
-

What's Already Working

Good News:

1.  Modals don't close when clicking outside (ESC key closes them)
 2.  Most elements HAVE data-pendo attributes (just wrong naming)
 3.  **data-pendo** added to Pendo custom HTML attributes
 4.  Existing identified users show correct phone number format
 5.  **Board URL structure is correct and consistent:**
 - Private boards: **/tag/private/board-name**
 - Shared boards: **/tag/shared/board-name**
 6.  Segment completely removed (window.analytics = undefined)
 7.  Cross-device tracking works (same phone number ID across devices)
 8.  Account ID correctly set to "aside"
 9.  Form inputs have data-pendo attributes
-

Summary of Required Changes

Critical (Must Fix):

1. **Visitor Identification** - Stop creating anonymous visitors (Priority #1)
2. **data-pendo naming pattern** - Change from unique IDs to generic names (Priority #2)
3. **SMS Tracking** - Implement comprehensive SMS event tracking (Priority #3)

The Pattern to Follow:

❌ DON'T do this:

```
<button data-pendo="button-edit-message-500">Edit</button>
<button data-pendo="button-edit-message-501">Edit</button>
<button data-pendo="button-cancel-add-message">Cancel</button>
<button data-pendo="button-cancel-delete-board">Cancel</button>
```

✅ DO this:

```
<button data-pendo="content-edit-btn">Edit</button>
<button data-pendo="content-edit-btn">Edit</button>
<button data-pendo="modal-cancel-btn">Cancel</button>
<button data-pendo="modal-cancel-btn">Cancel</button>
```

Key Principle:

Similar elements = Same data-pendo value

Use metadata attributes (like `data-board-type`) for segmentation, not unique IDs.

📱 PRIORITY #4: Implement Comprehensive SMS Tracking (Phase 2)

Issue:

SMS messages are not being tracked in Pendo. SMS is the primary user interface for Aside, so this is critical missing functionality.

Evidence:

- User sent SMS to add content to recipes board today
- Content successfully added to board (confirmed in web interface)
- Pendo visitor timeline shows NO "SMS Message Received" events
- Only web activity is being tracked

Required Implementation:

Setup: Install Pendo Server-Side SDK

```
npm install pendo-track-events-node
```

Initialize in backend:

```
const Pendo = require('pendo-track-events-node');

const pendo = new Pendo({
  apiKey: process.env.PENDO_API_KEY
});

module.exports = { pendo };
```

Add to .env:

PENDO_API_KEY=your-integration-key-from-pendo

Core SMS Events to Track:

1. SMS Message Received (Every Message)

Track ALL incoming SMS messages as the foundation:

```
app.post('/api/webhook/twilio', async (req, res) => {
  const { From, Body, MessageSid } = req.body;

  try {
    // Parse message
    const urls = extractUrls(Body);
    const hashtags = extractHashtags(Body);
    const messageType = determineMessageType(Body); // See below

    // ✨ Track EVERY SMS message
    await pendo.track({
      event: 'SMS Message Received',
      visitorId: From,
      properties: {
        messageLength: Body.length,
        containsUrl: urls.length > 0,
        urlDomain: urls[0] ? new URL(urls[0]).hostname : null,
        hashtagsUsed: hashtags,
        hashtagCount: hashtags.length,
        messageType: messageType, // 'content', 'command', 'help', etc.
        timestamp: new Date().toISOString(),
        source: 'sms'
      }
    });
  } catch (error) {
    // Handle error
  }
});
```

```

    }
  });

  // Continue with message processing...
} catch (error) {
  console.error('SMS webhook error:', error);
  res.sendStatus(500);
}
});

```

Analytics this enables:

- Total SMS messages sent per user
 - SMS engagement over time
 - Message patterns (with URLs, with hashtags, plain text)
 - Most active SMS users
-

2. Content Added via SMS

Track when users successfully add content (links, notes, ideas):

```

// After saving message to database
await pendo.track({
  event: 'Content Added via SMS',
  visitorId: From,
  properties: {
    contentType: urls.length > 0 ? 'link' : 'note',
    hasUrl: urls.length > 0,
    urlDomain: urls[0] ? new URL(urls[0]).hostname : null,
    boardName: hashtags[0] || 'untagged',
    messageLength: Body.length,
    timestamp: new Date().toISOString(),
    source: 'sms'
  }
});

```

Analytics this enables:

- Content capture rate (messages → saved items)
- Link vs note distribution
- Most common content sources (domains)

- Organization habits (tagged vs untagged)
-

3. New Board Created via SMS

Track when users create new boards with first-time hashtags:

```
// When isNewBoard === true
if (isNewBoard && hashtags.length > 0) {
  await createBoard(From, hashtags[0], 'private');

  await pendo.track({
    event: 'New Board Created via SMS',
    visitorId: From,
    properties: {
      boardName: hashtags[0],
      boardType: 'private',
      messageLength: Body.length,
      containsUrl: urls.length > 0,
      isFirstBoard: await isUsersFirstBoard(From),
      timestamp: new Date().toISOString(),
      source: 'sms'
    }
  });
}
```

Analytics this enables:

- Board creation rate
 - Organization adoption
 - Time to first board creation
 - Users who create multiple boards
-

4. SMS Commands & Features

Track special SMS commands and features:

Help Command

```
if (Body.toLowerCase().trim() === 'help') {
  await pendo.track({
    event: 'SMS Help Requested',
```

```

        visitorId: From,
        properties: {
            timestamp: new Date().toISOString(),
            source: 'sms'
        }
    });

    await sendHelpMessage(From);
    return res.sendStatus(200);
}

```

Invite Command

```

if (Body.toLowerCase().trim() === 'invite') {
    await pendo.track({
        event: 'SMS Invite Requested',
        visitorId: From,
        properties: {
            timestamp: new Date().toISOString(),
            source: 'sms'
        }
    });

    await sendInviteMessage(From);
    return res.sendStatus(200);
}

```

Feedback Command

```

if (Body.toLowerCase().startsWith('feedback ')) {
    const feedbackText = Body.substring(9).trim();

    await saveFeedback(From, feedbackText);

    await pendo.track({
        event: 'Feedback Submitted via SMS',
        visitorId: From,
        properties: {
            feedbackLength: feedbackText.length,
            timestamp: new Date().toISOString(),
            source: 'sms'
        }
    });
}

```

```
    await sendSMS(From, '✓ Thank you for your feedback!');
    return res.sendStatus(200);
}
```

Search Command (if implemented)

```
if (Body.toLowerCase().startsWith('search ')) {
    const searchQuery = Body.substring(7).trim();

    await pendo.track({
        event: 'SMS Search Performed',
        visitorId: From,
        properties: {
            searchQuery: searchQuery,
            searchLength: searchQuery.length,
            timestamp: new Date().toISOString(),
            source: 'sms'
        }
    });

    // Perform search and send results...
}
```

5. Identify New Users via SMS

When a new user texts Aside for the first time:

```
// Check if new user
let user = await User.findOne({ phone: From });
const isNewUser = !user;

if (isNewUser) {
    user = await User.create({
        phone: From,
        signupMethod: 'sms',
        signupDate: new Date()
    });
}

// ✨ Identify new user in Pendo
await pendo.identify({
    visitorId: From,
    visitor: {
```



```

    id: From,
    phone: From,
    signupDate: new Date().toISOString(),
    signupMethod: 'sms',
    phoneVerified: true
  }
});

// ✨ Track signup event
await pendo.track({
  event: 'User Signed Up via SMS',
  visitorId: From,
  properties: {
    signupMethod: 'sms',
    timestamp: new Date().toISOString(),
    source: 'sms'
  }
});
}

```

Helper Function: Determine Message Type

```

function determineMessageType(body) {
  const lowerBody = body.toLowerCase().trim();

  // Commands
  if (lowerBody === 'help') return 'help_command';
  if (lowerBody === 'invite') return 'invite_command';
  if (lowerBody.startsWith('feedback ')) return 'feedback_command';
  if (lowerBody.startsWith('search ')) return 'search_command';
  if (lowerBody.startsWith('name ')) return 'profile_update_command';

  // Content types
  if (extractUrls(body).length > 0) {
    return extractHashtags(body).length > 0 ? 'link_with_tag' : 'link_untagged';
  }

  if (extractHashtags(body).length > 0) return 'note_with_tag';

  return 'note_untagged';
}

```

SMS Analytics Dashboard Insights:

With this tracking, you can answer:

Engagement:

- How many SMS messages per user per day/week?
- What's the SMS retention rate?
- Which users are SMS-heavy vs web-heavy?

Content Capture:

- What % of messages result in saved content?
- Link vs note ratio
- Organization rate (tagged vs untagged)
- Most popular content sources (domains)

Feature Usage:

- How many users request help?
- How often do users use invite feature?
- Feedback submission rate
- Command usage distribution

User Behavior:

- SMS-first users vs web-first users
- Platform preference evolution
- Time to first board creation
- Organization sophistication over time

Growth & Virality:

- Invite request rate
- Conversion from invite to signup
- User referral patterns

Testing After Implementation:

Send test SMS with link and hashtag:

Text: "https://example.com/article #recipes"

1.

2. Check Pendo visitor timeline - should see:

- "SMS Message Received"
- "Content Added via SMS"
- (If new board) "New Board Created via SMS"

Send help command:

Text: "help"

3.

4. Check Pendo - should see:

- "SMS Help Requested"

Send invite command:

Text: "invite"

5.

6. Check Pendo - should see:

- "SMS Invite Requested"

Send feedback:

Text: "feedback The app is great!"

7.

8. Check Pendo - should see:

- "Feedback Submitted via SMS"

Success Criteria:

✓ Every SMS message generates at least one Pendo event ✓ Can see both SMS and web activity in unified visitor timeline ✓ Can segment users by SMS vs web engagement ✓ Can track SMS feature adoption (help, invite, feedback) ✓ SMS tracking works even if Pendo fails (error handling)

Error Handling:

Wrap all Pendo calls in try-catch to ensure SMS processing continues even if analytics fails:

```
try {
  await pendo.track({ /* event data */ });
} catch (error) {
  console.error('Pendo tracking error:', error);
  // Don't let analytics failure break SMS functionality
}
```

Testing After Fixes

Test 1: Visitor Identification

1. Clear cookies, open incognito window
2. Log in with test account (phone: 615-555-1234)
3. Go to Pendo → Visitors → Search for +16155551234
4. ☒ Should find visitor with phone number ID
5. ☒ Should NOT create new anonymous visitor

Test 2: Board Links

1. Open Pendo Visual Design Studio
2. Click any sidebar board link
3. ☒ Should suggest: [data-pendo="sidebar-board-link"]
4. ☒ NOT: [data-pendo="button-private-board-item-1"]

Test 3: Dashboard Board Cards

1. Click any board card on dashboard
2. ☒ Should suggest: [data-pendo="dashboard-board-card"]
3. ☒ NOT: Complex CSS selector

Test 4: Modal Buttons

1. Open any modal
2. Click element to select in Pendo
3. Press ESC to close modal
4. Check suggested selector
5. ☒ Modal container: [data-pendo="add-message-modal"]
6. ☒ Cancel button: [data-pendo="modal-cancel-btn"]

Test 5: Private Board URLs

~~1. Click a private board~~ ~~2. Check URL in browser~~ ~~3.  Should be: `/tag/private/drip`~~ ~~4.  NOT: `/tag/drip`~~

 **ALREADY FIXED - Private boards now use `/tag/private/` format**



Expected Impact

Before Fixes:

- Visitor identification: 1% (4 out of 394)
- Need custom CSS workarounds for most features
- Separate Pendo features for each board/modal/button
- Inflated visitor counts

After Fixes:

- Visitor identification: 100%
 - Clean, stable selectors using data-pendo
 - One feature tracks all similar elements (easier analytics)
 - Accurate visitor counts
 - Easier maintenance and feature tagging
-



Implementation Priority Order

1. **Fix visitor identification** (blocks everything else)
 2. **Implement SMS tracking** (primary user interface - critical missing data)
 3. **Update data-pendo naming patterns** (foundation for clean analytics)
 4. **Test everything** with Pendo Visual Design Studio
-



Reference

See "**Aside Analytics Implementation Guide**" for:

- Complete code examples
- Detailed explanations

- Testing procedures
- Phase-by-phase implementation