

# Twilio SMS Integration Proposal

## Overview

This document outlines the proposal for integrating Twilio SMS into RepairCoin for system notifications and booking communications.

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## Use Cases

### 1. System Notifications

- Subscription status changes (paused, cancelled, resumed, approved)
- Payment confirmations and failures
- Account verification (future)

### 2. Booking Notifications

- Booking confirmation (immediately after payment)
- 24-hour appointment reminder
- Booking cancellation alerts
- Rescheduling notifications

### 3. Reward Notifications (Optional)

- RCN reward received
  - Redemption approval requests
  - Token transfer confirmations
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## Recommended Plan: Pay-As-You-Go

Twilio offers a **pay-as-you-go** model with no monthly minimums, making it ideal for starting small and scaling as needed.

### US SMS Pricing

Type	Cost
Outbound SMS	\$0.0079/message
Inbound SMS	\$0.0079/message
Outbound MMS	\$0.0200/message
Inbound MMS	\$0.0100/message

### Phone Number Costs

Number Type	Monthly Cost
Local Number	\$1.00/month
Toll-Free Number	\$2.00/month

Short Code (high-volume)	~\$1,000/month
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**Recommendation:** Start with a **local number** at \$1.00/month

### Additional Fees

Fee Type	Cost
Failed message processing	\$0.001/message
Carrier pass-through fees	Varies by carrier

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## Cost Estimation

### Scenario: 100 Active Shops, 500 Bookings/Month

Notification Type	Messages/Month	Cost/Message	Total
Booking confirmations	500	\$0.0079	\$3.95
24-hour reminders	500	\$0.0079	\$3.95
Shop notifications	500	\$0.0079	\$3.95
Subscription alerts	50	\$0.0079	\$0.40
<b>Subtotal (Messages)</b>	<b>1,550</b>		<b>\$12.25</b>
Phone number (local)	1	\$1.00	\$1.00
<b>Monthly Total</b>			<b>\$13.25</b>

### Scaling Estimates

Scale	Bookings/Month	Est. Messages	Est. Monthly Cost
Starter	100	300	~\$3.50
Growth	500	1,500	~\$13
Scale	2,000	6,000	~\$48
Enterprise	10,000	30,000	~\$240

**Note:** Volume discounts available at \$500+/month spend (5-20% off)

## Implementation Phases

### Phase 1: Basic Setup (MVP)

1. Create Twilio account (free trial with \$15 credit)
2. Purchase local phone number (\$1/month)
3. Implement booking confirmation SMS

4. Implement 24-hour reminder SMS

## Phase 2: Full Notifications

1. Subscription status notifications
2. Payment failure alerts
3. Reward notifications
4. Shop notifications for new bookings

## Phase 3: Two-Way SMS (Future)

1. Reply to confirm/cancel appointments
2. SMS-based customer support
3. Automated responses

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# Technical Integration

## Backend Changes Required

```
// New service: backend/src/services/SmsService.ts
import twilio from 'twilio';

export class SmsService {
  private client: twilio.Twilio;

  constructor() {
    this.client = twilio(
      process.env.TWILIO_ACCOUNT_SID,
      process.env.TWILIO_AUTH_TOKEN
    );
  }

  async sendBookingConfirmation(phone: string, data: BookingData) {
    return this.client.messages.create({
      body: `Your appointment at ${data.shopName} is confirmed for ${data.date} at
${data.time}`,
      from: process.env.TWILIO_PHONE_NUMBER,
      to: phone
    });
  }

  async sendAppointmentReminder(phone: string, data: ReminderData) {
    return this.client.messages.create({
      body: `Reminder: You have an appointment tomorrow at ${data.shopName} for
${data.service} at ${data.time}`,
      from: process.env.TWILIO_PHONE_NUMBER,
      to: phone
    });
  }
}
```

## Environment Variables

```
# Twilio Configuration
TWILIO_ACCOUNT_SID=ACxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TWILIO_AUTH_TOKEN=xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TWILIO_PHONE_NUMBER=+1234567890
```

## Database Changes

```
-- Add phone number to customers table
ALTER TABLE customers ADD COLUMN phone_number VARCHAR(20);
ALTER TABLE customers ADD COLUMN sms_notifications_enabled BOOLEAN DEFAULT true;

-- Add phone number to shops table (if not exists)
ALTER TABLE shops ADD COLUMN phone_number VARCHAR(20);
ALTER TABLE shops ADD COLUMN sms_notifications_enabled BOOLEAN DEFAULT true;
```

## Comparison with Alternatives

### SMS Providers

Provider	US SMS Cost	Pros	Cons
Twilio	\$0.0079	Industry leader, great docs, reliable	Slightly higher cost
Plivo	\$0.0055	Lower cost	Less features
Vonage	\$0.0076	Good API	Less popular
AWS SNS	\$0.00645	AWS integration	Complex setup

### WhatsApp Business API (Alternative)

Feature	SMS	WhatsApp
Cost per message	\$0.0079	\$0.005 + Meta fee
Delivery rate	95%+	98%+
Rich media	MMS (\$0.02)	Free
Read receipts	No	Yes
Interactive buttons	No	Yes
User reach	Universal	Requires app

**Recommendation:** Start with SMS, add WhatsApp later for users who prefer it.

## Twilio Account Setup

## Step 1: Create Account

1. Go to [twilio.com/try-twilio](https://www.twilio.com/try-twilio)
2. Sign up (free trial includes \$15 credit)
3. Verify phone number

## Step 2: Get Credentials

1. Go to Console Dashboard
2. Copy **Account SID** and **Auth Token**
3. Add to environment variables

## Step 3: Purchase Phone Number

1. Go to Phone Numbers → Buy a Number
2. Select country: United States
3. Enable SMS capability
4. Purchase (\$1.00/month)

## Step 4: Upgrade Account (When Ready)

1. Go to Billing → Upgrade
  2. Add payment method
  3. Trial restrictions removed
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## Regulatory Compliance

### US SMS Requirements

1. **A2P 10DLC Registration** (Required for business messaging)
    - Brand registration: ~\$4 one-time
    - Campaign registration: ~\$15 one-time + \$10/month
    - Required for sending SMS to US numbers at scale
  2. **Opt-in/Opt-out**
    - Must obtain consent before sending SMS
    - Must support STOP to unsubscribe
    - Twilio handles STOP automatically
  3. **Message Content**
    - No promotional content without consent
    - Include business name in messages
    - Provide opt-out instructions periodically
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## Startup Costs Summary

### Minimum Viable Setup

Item	One-Time	Monthly
Twilio account	Free	-

Local phone number	-	\$1.00
A2P 10DLC Brand	\$4.00	-
A2P 10DLC Campaign	\$15.00	\$10.00
<b>Total</b>	<b>\$19.00</b>	<b>\$11.00</b>

### First Month Estimate (100 bookings)

Item	Cost
Setup fees	\$19.00
Phone number	\$1.00
Campaign fee	\$10.00
~300 SMS messages	\$2.37
<b>First Month Total</b>	<b>\$32.37</b>

### Ongoing Monthly (100 bookings)

Item	Cost
Phone number	\$1.00
Campaign fee	\$10.00
~300 SMS messages	\$2.37
<b>Monthly Total</b>	<b>\$13.37</b>

## Implementation Checklist

### Account Setup

- Create Twilio account
- Verify phone number
- Get Account SID and Auth Token
- Purchase local phone number
- Complete A2P 10DLC registration

### Backend Development

- Create SmsService class
- Add environment variables
- Integrate with booking confirmation flow
- Integrate with reminder scheduler
- Add phone number fields to database
- Create SMS preferences endpoint

## Frontend Development

- Add phone number input to customer registration
- Add SMS notification toggle in settings
- Display SMS status in booking confirmation

## Testing

- Test booking confirmation SMS
  - Test reminder SMS
  - Test opt-out (STOP keyword)
  - Verify message delivery rates
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## Sources

- [Twilio SMS Pricing \(US\)](#)
  - [Twilio Messaging Pricing](#)
  - [Twilio Phone Number Costs](#)
  - [Twilio WhatsApp Pricing](#)
  - [WhatsApp Pricing Changes July 2025](#)
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## Recommendation

Start with **Pay-As-You-Go** using the lowest tier:

1. **Initial Investment:** ~\$32 (includes setup fees)
2. **Ongoing Cost:** ~\$13-15/month for ~100 bookings
3. **Scale:** Upgrade to volume discounts at \$500+/month

This approach allows RepairCoin to:

- Test SMS functionality with minimal investment
- Validate user engagement before scaling
- Upgrade to higher tiers as volume grows