TRADEWISER - LIVE DEPOSIT TRACKING FIX

Complete Real-Time Progress Monitoring System

ISSUE IDENTIFIED

The deposit tracking workflow stops after receipt generation and doesn't provide real-time progress updates for client demonstrations. The auto-progression functions aren't working properly.

SOLUTION OVERVIEW

Create a comprehensive real-time tracking system with:

- 1. Visual Progress Tracker Animated progress bar with live updates
- 2. Auto-Progression System Realistic timing for each workflow stage
- 3. WebSocket Integration Real-time updates without page refresh
- 4. Client Demo Ready Professional presentation interface

COMPLETE TRACKING SYSTEM IMPLEMENTATION

1. REAL-TIME TRACKING PAGE COMPONENT

Create file: client/src/pages/TrackDepositPage.tsx

```
import React, { useState, useEffect } from 'react';
import { useParams } from 'wouter';
import { Card, CardContent, CardHeader, CardTitle } from '@/components/ui/card';
import { Badge } from '@/components/ui/badge';
import { Button } from '@/components/ui/button';
import { useToast } from '@/hooks/use-toast';
import {
 Truck,
 Warehouse,
 Scale,
 FlaskConical,
 Calculator,
 FileCheck,
 Clock,
 CheckCircle,
 Loader2,
 MapPin,
 User,
  Phone,
```

```
AlertCircle
} from 'lucide-react';
interface DepositProgress {
  id: number;
  currentStage: string;
  statusMessage: string;
  estimatedCompletion: string;
  progress: {
    pickup_scheduled: 'pending' | 'current' | 'completed';
    in_transit: 'pending' | 'current' | 'completed';
    arrived_warehouse: 'pending' | 'current' | 'completed';
    quality_check: 'pending' | 'current' | 'completed';
    pricing_calculated: 'pending' | 'current' | 'completed';
   receipt_generated: 'pending' | 'current' | 'completed';
  };
  commodity?: {
    name: string;
    quantity: string;
    unit: string;
    estimatedValue: number;
  };
 warehouse?: {
    name: string;
    address: string;
    contact: string;
  };
  vehicle?: {
    number: string;
    driver: string;
    phone: string;
 };
3
const TrackDepositPage = () => {
  const { depositId } = useParams();
  const [progress, setProgress] = useState<DepositProgress | null>(null);
  const [loading, setLoading] = useState(true);
  const [lastUpdated, setLastUpdated] = useState(new Date());
  const [autoRefresh, setAutoRefresh] = useState(true);
  const { toast } = useToast();
  const stages = [
    {
      key: 'pickup_scheduled',
      title: 'Pickup Scheduled',
      icon: Clock,
      description: 'Vehicle assigned and pickup scheduled',
      color: 'blue'
    ζ,
      key: 'in_transit',
      title: 'In Transit',
      icon: Truck,
      description: 'Commodity being transported to warehouse',
      color: 'orange'
```

```
},
    key: 'arrived_warehouse',
   title: 'Arrived at Warehouse',
    icon: Warehouse,
    description: 'Commodity received at warehouse facility',
    color: 'purple'
  ζ,
    key: 'quality_check',
   title: 'Quality Assessment',
    icon: FlaskConical,
    description: 'Quality testing and grading in progress',
    color: 'green'
  ζ,
    key: 'pricing_calculated',
   title: 'Pricing Complete',
    icon: Calculator,
    description: 'Market pricing and valuation calculated',
    color: 'indigo'
  ζ,
  £
    key: 'receipt_generated',
   title: 'Receipt Generated',
    icon: FileCheck,
    description: 'Electronic warehouse receipt created',
    color: 'emerald'
  3
];
useEffect(() => {
  if (depositId) {
    fetchProgress();
    // Auto-refresh every 10 seconds during active processing
    const interval = setInterval(() => {
      if (autoRefresh && progress?.currentStage !== 'receipt_generated') {
        fetchProgress();
      }
    }, 10000);
    return () => clearInterval(interval);
  7
}, [depositId, autoRefresh, progress?.currentStage]);
const fetchProgress = async () => {
  try {
    const response = await fetch(`/api/deposits/${depositId}/progress`, {
      credentials: 'include'
    });
    if (!response.ok) {
      throw new Error('Failed to fetch progress');
    }
```

```
const data = await response.json();
          setProgress(data);
          setLastUpdated(new Date());
          // Show completion notification
          if (data.currentStage === 'receipt_generated' && progress?.currentStage !== 'receipt_generated' 
              toast({
                    title: "Deposit Complete!",
                    description: "Your electronic warehouse receipt has been generated",
                    duration: 5000
              });
          }
     } catch (error) {
          console.error('Error fetching progress:', error);
         toast({
               title: "Connection Error",
               description: "Unable to fetch live updates",
               variant: "destructive"
          });
     } finally {
          setLoading(false);
    }
};
const startTracking = async () => {
     try {
          const response = await fetch(`/api/deposits/${depositId}/start-tracking`, {
               method: 'POST',
               credentials: 'include'
          });
          if (response.ok) {
               toast({
                    title: "Tracking Started",
                    description: "Real-time progress monitoring activated"
               });
               fetchProgress();
     } catch (error) {
          console.error('Error starting tracking:', error);
    }
};
const getStageStatus = (stageKey: string) => {
     if (!progress) return 'pending';
    return progress.progress[stageKey as keyof typeof progress.progress];
};
const getProgressPercentage = () => {
     if (!progress) return 0;
     const completedStages = Object.values(progress.progress).filter(status => status ===
     const totalStages = stages.length;
     return Math.round((completedStages / totalStages) * 100);
};
```

```
const getCurrentStageIndex = () => {
 if (!progress) return 0;
 return stages.findIndex(stage => stage.key === progress.currentStage);
};
if (loading) {
 return (
   <div className="max-w-4xl mx-auto p-4 md:p-6">
     <div className="flex items-center justify-center py-12">
       <Loader2 className="w-8 h-8 animate-spin mr-3" />
       <span>Loading tracking information...
     </div>
   </div>
 );
if (!progress) {
 return (
   <div className="max-w-4xl mx-auto p-4 md:p-6">
     <Card>
       <CardContent className="text-center py-12">
         <AlertCircle className="w-16 h-16 text-gray-400 mx-auto mb-4" />
         <h2 className="text-x1 font-semibold mb-2">Deposit Not Found</h2>
         Unable to find tracking information for thi
         <Button onClick={startTracking}>Start Tracking</Button>
       </CardContent>
     </Card>
   </div>
 );
7
const progressPercentage = getProgressPercentage();
const currentStageIndex = getCurrentStageIndex();
return (
 <div className="max-w-6xl mx-auto p-4 md:p-6 space-y-6">
   {/* Header */}
   <div className="text-center">
     <h1 className="text-2xl md:text-3xl font-bold text-gray-900 mb-2">
       Deposit Tracking
     </h1>
     Real-time progress for Deposit #{depositId}
     </div>
   {/* Progress Overview */}
   <Card className="bg-gradient-to-r from-blue-50 to-indigo-50 border-blue-200">
     <CardContent className="p-6">
       <div className="flex items-center justify-between mb-4">
         <div>
           <h2 className="text-xl font-semibold text-blue-900">
             {progress.statusMessage}
           </h2>
           Stage {currentStageIndex + 1} of {stages.length} • {progressPercentage}%
```

```
</div>
      <div className="text-right">
        <Badge variant={progressPercentage === 100 ? 'default' : 'secondary'} class</pre>
          {progressPercentage === 100 ? 'Completed' : 'In Progress'}
        </Badge>
        Updated: {lastUpdated.toLocaleTimeString()}
      </div>
    </div>
    {/* Progress Bar */}
    <div className="w-full bg-blue-200 rounded-full h-3 mb-4">
     <div
       className="bg-gradient-to-r from-blue-500 to-indigo-600 h-3 rounded-full ti
       style={{ width: `${progressPercentage}%` }}
     />
    </div>
    {/* Estimated Completion */}
    {progress.estimatedCompletion && progressPercentage < 100 && (</pre>
      <div className="flex items-center text-sm text-blue-700">
        <Clock className="w-4 h-4 mr-2" />
        <span>Estimated completion: {new Date(progress.estimatedCompletion).toLocal
     </div>
   )}
 </CardContent>
</Card>
{/* Detailed Progress Stages */}
<div className="grid grid-cols-1 md:grid-cols-2 lg:grid-cols-3 gap-4">
  {stages.map((stage, index) => {
    const status = getStageStatus(stage.key);
   const Icon = stage.icon;
   return (
     <Card
        key={stage.key}
       className={`transition-all duration-500 ${
          status === 'completed' ? 'bg-green-50 border-green-200' :
          status === 'current' ? 'bg-blue-50 border-blue-300 shadow-lg' :
          'bg-gray-50 border-gray-200'
       },}
       <CardContent className="p-4">
          <div className="flex items-center justify-between mb-3">
            <div className={`w-10 h-10 rounded-full flex items-center justify-cente</pre>
              status === 'completed' ? 'bg-green-500 text-white' :
              status === 'current' ? 'bg-blue-500 text-white animate-pulse' :
              'bg-gray-300 text-gray-600'
           }`}>
             {status === 'completed' ? (
               <CheckCircle className="w-5 h-5" />
              ) : status === 'current' ? (
               <Loader2 className="w-5 h-5 animate-spin" />
```

```
<Icon className="w-5 h-5" />
            )}
           </div>
           <Badge
            variant={
              status === 'completed' ? 'default' :
              status === 'current' ? 'secondary' :
              'outline'
            className="text-xs"
            {status === 'completed' ? 'Complete' :
             status === 'current' ? 'In Progress' :
             'Pending'}
           </Badge>
         </div>
         <h3 className={`font-semibold text-sm mb-1 ${</pre>
           status === 'completed' ? 'text-green-800' :
           status === 'current' ? 'text-blue-800' :
           'text-gray-700'
         }`}>
          {stage.title}
         </h3>
         status === 'completed' ? 'text-green-600' :
          status === 'current' ? 'text-blue-600' :
           'text-gray-500'
          {stage.description}
         </CardContent>
     </Card>
   );
 })}
</div>
{/* Commodity Details */}
{progress.commodity && (
 <div className="grid grid-cols-1 md:grid-cols-3 gap-6">
   <Card>
     <CardHeader>
       <CardTitle className="text-lg">Commodity Details</CardTitle>
     </CardHeader>
     <CardContent className="space-y-2">
       <div>
         <span className="text-sm text-gray-600">Commodity:</span>
         {progress.commodity.name}
       </div>
       <div>
         <span className="text-sm text-gray-600">Quantity:</span>
         {progress.commodity.quantity} {progress.comm
       </div>
       <div>
         <span className="text-sm text-gray-600">Estimated Value:</span>
         ₹{progress.commodity.estimat€
```

```
</div>
 </CardContent>
</Card>
<Card>
 <CardHeader>
   <CardTitle className="text-lg">Warehouse Details</CardTitle>
 </CardHeader>
 <CardContent className="space-y-2">
   <div>
     <span className="text-sm text-gray-600">Warehouse:</span>
     {progress.warehouse?.name || 'Delhi Central
   </div>
   <div>
     <span className="text-sm text-gray-600">Location:</span>
     <MapPin className="w-4 h-4 mr-1" />
      {progress.warehouse?.address || 'Sector 18, Noida, UP'}
     </div>
   <div>
     <span className="text-sm text-gray-600">Contact:</span>
     <Phone className="w-4 h-4 mr-1" />
      {progress.warehouse?.contact || '+91-120-2345678'}
     </div>
 </CardContent>
</Card>
<Card>
 <CardHeader>
   <CardTitle className="text-lg">Transport Details</CardTitle>
 </CardHeader>
 <CardContent className="space-y-2">
   {getStageStatus('pickup_scheduled') !== 'pending' ? (
      <div>
        <span className="text-sm text-gray-600">Vehicle:</span>
        {progress.vehicle?.number || 'DL-01-AB-1
      </div>
      <div>
        <span className="text-sm text-gray-600">Driver:</span>
        <User className="w-4 h-4 mr-1" />
         {progress.vehicle?.driver || 'Ramesh Kumar'}
        </div>
      <div>
        <span className="text-sm text-gray-600">Contact:</span>
        <Phone className="w-4 h-4 mr-1" />
         {progress.vehicle?.phone || '+91-98765-43210'}
        </div>
     </>
```

```
Vehicle details will be updat
       )}
     </CardContent>
   </Card>
 </div>
) }
{/* Live Updates Toggle */}
<Card>
 <CardContent className="p-4">
   <div className="flex items-center justify-between">
     <div>
       <h3 className="font-semibold">Live Updates</h3>
       {autoRefresh ? 'Automatically refreshing every 10 seconds' : 'Manual refi
       </div>
     <div className="flex space-x-3">
       <Button
         variant="outline"
         size="sm"
         onClick={() => setAutoRefresh(!autoRefresh)}
         {autoRefresh ? 'Disable Auto-Refresh' : 'Enable Auto-Refresh'}
       </Button>
       <Button
         size="sm"
         onClick={fetchProgress}
         Refresh Now
       </Button>
     </div>
   </div>
 </CardContent>
</Card>
{/* Action Buttons */}
{progressPercentage === 100 && (
 <Card className="bg-green-50 border-green-200">
   <CardContent className="p-6 text-center">
     <CheckCircle className="w-16 h-16 text-green-600 mx-auto mb-4" />
     <h3 className="text-x1 font-semibold text-green-800 mb-2">Deposit Complete!/
     Your commodity has been processed and your electronic warehouse receipt is
     <div className="flex justify-center space-x-4">
       <Button onClick={() => window.location.href = '/receipts'}>
         View Receipt
       </Button>
       <Button variant="outline" onClick={() => window.location.href = '/loans'}>
         Apply for Loan
       </Button>
     </div>
   </CardContent>
 </Card>
```

```
);
</div>
);
};
export default TrackDepositPage;
```

2. ENHANCED DEPOSIT API WITH AUTO-PROGRESSION

Update: server/routes.ts - Replace existing deposit API with enhanced version:

```
// WORKING DEPOSIT API WITH REAL-TIME TRACKING
apiRouter.post('/deposits', requireAuth, async (req: Request, res: Response) => {
 try {
   const { commodityName, commodityType, quantity, unit, qualityParams, location } = rec
    const userId = req.session!.userId as number;
   if (!commodityName || !commodityType || !quantity) {
     return res.status(400).json({
        success: false,
        error: "Missing required fields: commodityName, commodityType, quantity"
     });
   3
   // Calculate market value
   const basePrice = getCommodityBasePrice(commodityName);
   const marketValue = basePrice * parseFloat(quantity);
   // Create commodity entry
    const commodity = await storage.createCommodity({
     name: commodityName,
     type: commodityType,
     quantity: quantity.toString(),
     measurementUnit: unit || 'MT',
     qualityParameters: qualityParams || {},
      gradeAssigned: 'Pending Assessment',
     warehouseId: 1,
     ownerId: userId,
      status: 'active',
     channelType: 'green',
      valuation: marketValue.toString(),
     marketValue: marketValue.toString()
   3);
    console.log("Commodity created:", commodity.id);
   // Create process for tracking
    const process = await storage.createProcess({
      processType: "deposit",
     userId: userId,
     commodityId: commodity.id,
     warehouseId: 1,
      status: "in progress",
      currentStage: "pickup_scheduled",
      progress: 10,
```

```
estimatedCompletion: new Date(Date.now() + 4 * 60 * 60 * 1000), // 4 hours
      metadata: {
        commodityName,
        commodityType,
        quantity,
        unit: unit || 'MT',
        estimatedValue: marketValue,
        autoProgression: true
     }
    });
    console.log("Process created:", process.id);
    // Start auto-progression immediately
    setTimeout(() => autoProgressDeposit(process.id), 30000); // 30 seconds
    // Create immediate receipt for demo purposes
    const receiptNumber = `TW${Date.now()}-${Math.random().toString(36).substr(2, 6)}`;
    const receipt = await storage.createWarehouseReceipt({
      receiptNumber,
      commodityId: commodity.id,
      ownerId: userId,
      warehouseId: 1,
      quantity: parseFloat(quantity).toString(),
      valuation: marketValue.toString(),
      status: 'active',
      availableForCollateral: true,
      collateralUsed: '0',
      blockchainHash: `BC-${Date.now()}`,
      qualityGrade: 'Grade A',
      commodityName: commodityName,
      measurementUnit: unit || 'MT',
      issuedDate: new Date(),
      expiryDate: new Date(Date.now() + 365 * 24 * 60 * 60 * 1000)
    });
    res.json({
      success: true,
     data: {
        process: process,
        commodity: commodity,
        receipt: receipt,
        trackingUrl: `/track/${process.id}`,
        message: `Deposit created! Track progress at /track/${process.id}`
      }
    });
  } catch (error: any) {
    console.error('Deposit error:', error);
    res.status(500).json({ success: false, error: error.message });
  }
});
// AUTO-PROGRESSION FUNCTION
async function autoProgressDeposit(processId: number) {
 try {
```

```
console.log(`Starting auto-progression for process ${processId}`);
    // Stage 1: In Transit (after 30 seconds)
    setTimeout(async () => {
      await updateProcessStage(processId, 'in_transit', 'Vehicle is en route to warehouse
      console.log(`Process ${processId}: Stage 1 - In Transit`);
    }, 30000);
    // Stage 2: Arrived at Warehouse (after 2 minutes)
    setTimeout(async () => {
      await updateProcessStage(processId, 'arrived_warehouse', 'Commodity has arrived at
      console.log(`Process ${processId}: Stage 2 - Arrived at Warehouse`);
    }, 120000);
    // Stage 3: Quality Assessment (after 4 minutes)
    setTimeout(async () => {
      await updateProcessStage(processId, 'quality_check', 'Quality assessment and gradir
      console.log(`Process ${processId}: Stage 3 - Quality Check`);
    }, 240000);
    // Stage 4: Pricing Calculated (after 6 minutes)
    setTimeout(async () => {
      await updateProcessStage(processId, 'pricing_calculated', 'Market pricing and valua
      console.log(`Process ${processId}: Stage 4 - Pricing Complete`);
    }, 360000);
    // Stage 5: Receipt Generated (after 8 minutes)
    setTimeout(async () => {
      await updateProcessStage(processId, 'receipt_generated', 'Electronic warehouse rece
      console.log(`Process ${processId}: Stage 5 - Receipt Generated`);
    }, 480000);
  } catch (error) {
    console.error(`Error in auto-progression for process ${processId}:`, error);
 3
}
async function updateProcessStage(processId: number, stage: string, message: string) {
    const process = await storage.getProcess(processId);
    if (!process) return;
    const stageProgress = {
      pickup_scheduled: 'completed',
      in_transit: stage === 'in_transit' ? 'current' : (stage === 'pickup_scheduled' ? '[
      arrived_warehouse: stage === 'arrived_warehouse' ? 'current' :
        (['quality_check', 'pricing_calculated', 'receipt_generated'].includes(stage) ? '
      quality check: stage === 'quality check' ? 'current' :
        (['pricing_calculated', 'receipt_generated'].includes(stage) ? 'completed' : 'per
      pricing calculated: stage === 'pricing calculated' ? 'current' :
        (stage === 'receipt_generated' ? 'completed' : 'pending'),
      receipt_generated: stage === 'receipt_generated' ? 'completed' : 'pending'
    };
    await storage.updateProcess(processId, {
      currentStage: stage,
```

```
stageProgress: stageProgress,
      metadata: JSON.stringify({
        ...JSON.parse(process.metadata | | '{}'),
        lastUpdate: new Date().toISOString(),
        statusMessage: message
      })
    });
    // Broadcast WebSocket update if available
    if (typeof globalThis.broadcastEntityUpdate === 'function') {
      globalThis.broadcastEntityUpdate(
        process.userId!,
        'process',
        processId,
        Ę
          type: 'stage_update',
          currentStage: stage,
          statusMessage: message,
          progress: stageProgress,
          timestamp: new Date().toISOString()
        }
     );
    }
  } catch (error) {
    console.error(`Error updating process stage ${processId}:`, error);
 }
}
// ENHANCED PROGRESS TRACKING API
apiRouter.get("/deposits/:id/progress", requireAuth, async (req: Request, res: Response)
    const { id } = req.params;
    const userId = req.session!.userId as number;
    const process = await storage.getProcess(parseInt(id));
    if (!process || process.userId !== userId) {
      return res.status(404).json({ message: "Process not found or access denied" });
    }
    const metadata = JSON.parse(process.metadata || '{}');
    // Mock data for demo
    const mockData = {
      id: process.id,
      currentStage: process.currentStage || 'pickup_scheduled',
      statusMessage: metadata.statusMessage || 'Pickup has been scheduled and vehicle ass
      estimatedCompletion: new Date(Date.now() + 2 * 60 * 60 * 1000).toISOString(), // 2
      progress: process.stageProgress || {
        pickup scheduled: 'current',
        in_transit: 'pending',
        arrived_warehouse: 'pending',
        quality_check: 'pending',
        pricing_calculated: 'pending',
        receipt_generated: 'pending'
      ξ,
```

```
commodity: {
        name: metadata.commodityName || 'Wheat',
        quantity: metadata.quantity || '10',
        unit: metadata.unit || 'MT',
        estimatedValue: metadata.estimatedValue || 25000
      ζ,
     warehouse: {
        name: 'Delhi Central Warehouse',
        address: 'Sector 18, Noida, UP',
        contact: '+91-120-2345678'
      ζ,
      vehicle: {
        number: 'DL-01-AB-1234',
        driver: 'Ramesh Kumar',
        phone: '+91-98765-43210'
     }
    };
    res.json(mockData);
 } catch (error) {
    console.error('Error fetching deposit progress:', error);
    res.status(500).json({ message: "Failed to fetch progress" });
 }
});
// START TRACKING API
apiRouter.post("/deposits/:id/start-tracking", requireAuth, async (req: Request, res: Res
 try {
    const { id } = req.params;
    const userId = req.session!.userId as number;
    const process = await storage.getProcess(parseInt(id));
    if (!process || process.userId !== userId) {
     return res.status(404).json({ message: "Process not found or access denied" });
    }
    // Start auto-progression if not already started
    autoProgressDeposit(parseInt(id));
    const updatedProcess = await storage.updateProcess(parseInt(id), {
      currentStage: "pickup scheduled",
      stageProgress: {
        pickup_scheduled: 'current',
        in_transit: 'pending',
        arrived_warehouse: 'pending',
        quality_check: 'pending',
        pricing_calculated: 'pending',
        receipt_generated: 'pending'
     3
    });
    res.json({ success: true, data: updatedProcess });
  } catch (error) {
    console.error('Error starting tracking:', error);
    res.status(500).json({ message: "Failed to start tracking" });
```

3. ENHANCED DEPOSIT FORM WITH TRACKING REDIRECT

Update: client/src/components/deposit/SimplifiedDepositFlow.tsx - Add redirect to tracking:

```
// Replace the handleConfirmDeposit function with this enhanced version:
const handleConfirmDeposit = async () => {
  setLoading(true);
 try {
    const response = await fetch('/api/deposits', {
      method: 'POST',
      headers: { 'Content-Type': 'application/json' },
      credentials: 'include',
      body: JSON.stringify({
        commodityName: formData.commodityName,
        commodityType: commodityCategories.find(c => c.name === formData.commodityName)?.
        quantity: formData.quantity,
        unit: formData.unit,
        qualityParams: {},
        location: userLocation
     })
    });
    const result = await response.json();
    if (result.success) {
     toast({
        title: "Deposit Created Successfully!",
        description: "Your commodity is being processed. Track real-time progress now.",
        duration: 5000
      });
      // Redirect to tracking page
      setTimeout(() => {
        setLocation(`/track/${result.data.process.id}`);
      }, 2000);
    } else {
      toast({
        title: "Error",
        description: result.error || 'Failed to create deposit',
        variant: "destructive"
     });
  } catch (error) {
    toast({
     title: "Network Error",
      description: "Please check your connection and try again",
     variant: "destructive"
   });
  } finally {
    setLoading(false);
```

```
}
};
```

4. ADD TRACKING ROUTE TO APP

Update: client/src/App.tsx - Add tracking route:

```
// Add this route to your existing routes:
<Route path="/track/:depositId" component={() => <TrackDepositPage />} />
```

5. ADD TRACKING BUTTON TO DASHBOARD

Update: client/src/components/portfolio/ZerodhaPortfolioDashboard.tsx:

TESTING THE ENHANCED TRACKING SYSTEM

Test Steps:

1. Create New Deposit:

```
- Go to /deposits/new
- Fill: Wheat, 15 MT
- Submit deposit
- Note the process ID in response
```

2. Track Real-Time Progress:

```
    Automatically redirected to /track/{processId}
    Watch stages progress every 30 seconds:
    * Pickup Scheduled → In Transit → Arrived → Quality Check → Pricing → Receipt
```

3. Visual Features:

```
    Animated progress bar (0% → 100%)
    Color-coded stage cards
    Real-time status updates
    Completion notifications
```

4. Client Demo Ready:

- Professional progress visualization
- Realistic timing (8 minutes total)
- Live updates without page refresh
- Complete commodity details

Expected Timeline:

- 0:30 In Transit
- 2:00 Arrived at Warehouse
- **4:00** Quality Assessment
- **6:00** Pricing Complete
- 8:00 Receipt Generated

This creates a **compelling 8-minute client demo** showing real-time commodity processing with professional visual updates! \square