Let’s calculate the profit and earnings step by step:

**Fixed Costs**

1. **Salary Cost:**
   * Total delivery partners: 10
   * Salary per partner: ₹12,000 per month
   * Total salary cost: 10×12,000=₹1,20,00010 \times 12,000 = ₹1,20,000
2. **Petrol Allowance:**
   * ₹100 per day per partner
   * Total daily petrol cost: 10×100=₹1,00010 \times 100 = ₹1,000
   * Monthly petrol cost (30 days): 30×1,000=₹30,00030 \times 1,000 = ₹30,000
3. **Fixed Monthly Cost:**
   * Salary + Petrol: ₹1,20,000+₹30,000=₹1,50,000₹1,20,000 + ₹30,000 = ₹1,50,000

**Revenue from Deliveries**

1. **Within 5 km:**
   * 100 deliveries/day at ₹45 each  
     Daily revenue: 100×45=₹4,500100 \times 45 = ₹4,500
   * Monthly revenue (30 days): 30×4,500=₹1,35,00030 \times 4,500 = ₹1,35,000
2. **Beyond 5 km:**
   * Deliveries: 100/day, distances distributed randomly from 6 km to 15 km
   * Average distance beyond 5 km: Average additional km=(1+2+...+10)10=5510=5.5 km\text{Average additional km} = \frac{(1+2+...+10)}{10} = \frac{55}{10} = 5.5 \text{ km} (Assuming uniform distribution of distances between 6 and 15 km)
   * Average delivery charge beyond 5 km: ₹45+(₹10×5.5)=₹45+₹55=₹100₹45 + (₹10 \times 5.5) = ₹45 + ₹55 = ₹100
   * Daily revenue from 100 deliveries: 100×₹100=₹10,000100 \times ₹100 = ₹10,000
   * Monthly revenue (30 days): 30×₹10,000=₹3,00,00030 \times ₹10,000 = ₹3,00,000
3. **Total Revenue:**
   * Within 5 km + Beyond 5 km: ₹1,35,000+₹3,00,000=₹4,35,000₹1,35,000 + ₹3,00,000 = ₹4,35,000

**Delivery Partner Commission**

* Commission rate: 20% of delivery charges
* Total delivery charges (monthly): ₹4,35,000
* Total commission: ₹4,35,000×0.2=₹87,000₹4,35,000 \times 0.2 = ₹87,000

**Net Profit Calculation**

1. **Total Costs:**
   * Fixed costs (Salary + Petrol): ₹1,50,000
   * Commission: ₹87,000
   * Total: ₹1,50,000+₹87,000=₹2,37,000₹1,50,000 + ₹87,000 = ₹2,37,000
2. **Net Profit:**
   * Revenue - Total Costs: ₹4,35,000−₹2,37,000=₹1,98,000₹4,35,000 - ₹2,37,000 = ₹1,98,000

**Summary**

* **Monthly Revenue:** ₹4,35,000
* **Monthly Costs:** ₹2,37,000
* **Net Profit:** ₹1,98,000

This calculation assumes uniform distribution of distances and no additional operational expenses.

To calculate the cost, profit, parcel volume, and required workforce to handle parcel deliveries across Mumbai, we need to analyze the scenario systematically. Here’s the calculation:

**Assumptions**

1. **Daily Parcel Volume (Demand):**
   * Mumbai's large population and businesses suggest significant demand.
   * Assuming a conservative **20 parcels per 1,000 people per day**:
     + Mumbai population ~20 million.
     + Total parcels: 20×20,000=4,00,000 parcels/day.20 \times 20,000 = 4,00,000 \text{ parcels/day.}
2. **Hub Distribution (3 Lines):**
   * **Western Line:** Borivali to Churchgate (~16 hubs).
   * **Central Line:** CST to Kalyan (~18 hubs).
   * **Harbour Line:** CST to Panvel (~16 hubs).
   * Total hubs = **50.**
3. **Average Distance:**
   * **Short Range:** 50% of parcels within 5 km.
   * **Long Range:** 50% of parcels distributed randomly across 6-30 km.
4. **Delivery Partner Capacity:**
   * 20 parcels/day per delivery partner on average.
5. **Charges:**
   * Within 5 km: ₹45 per parcel.
   * Beyond 5 km: ₹45 + ₹10/km.
6. **Costs Per Partner:**
   * Salary: ₹12,000/month.
   * Petrol: ₹100/day.

**Calculations**

**1. Number of Delivery Partners Required**

* Total parcels = 4,00,000/day.
* Parcels per partner = 20/day.
* Total partners needed: 4,00,00020=20,000 delivery partners.\frac{4,00,000}{20} = 20,000 \text{ delivery partners.}

**2. Revenue**

* **Within 5 km:**  
  50% of parcels = 2,00,000/day at ₹45 each: 2,00,000×45=₹90,00,000/day.2,00,000 \times 45 = ₹90,00,000/day.
* **Beyond 5 km:**  
  Average distance: (6+30)/2=18 km.(6+30)/2 = 18 \text{ km.}  
  Delivery charge = ₹45 + (₹10 × 13) = ₹175/parcel.  
  Revenue from 2,00,000 parcels: 2,00,000×175=₹3,50,00,000/day.2,00,000 \times 175 = ₹3,50,00,000/day.
* Total daily revenue: ₹90,00,000+₹3,50,00,000=₹4,40,00,000/day.₹90,00,000 + ₹3,50,00,000 = ₹4,40,00,000/day.
* Monthly revenue: ₹4,40,00,000×30=₹1,32,00,00,000.₹4,40,00,000 \times 30 = ₹1,32,00,00,000.

**3. Costs**

* **Salaries:**  
  20,000 partners × ₹12,000/month = ₹24,00,00,000/month.
* **Petrol Allowance:**  
  20,000 partners × ₹100/day × 30 days = ₹60,00,00,000/month.
* **Commission (20%):**  
  20% of ₹1,32,00,00,000 = ₹26,40,00,000/month.
* Total monthly costs: ₹24,00,00,000+₹60,00,00,000+₹26,40,00,000=₹1,10,40,00,000.₹24,00,00,000 + ₹60,00,00,000 + ₹26,40,00,000 = ₹1,10,40,00,000.

**4. Net Profit**

* Revenue - Costs: ₹1,32,00,00,000−₹1,10,40,00,000=₹21,60,00,000/month.₹1,32,00,00,000 - ₹1,10,40,00,000 = ₹21,60,00,000/month.

**Summary**

* **Total Daily Parcels:** 4,00,000.
* **Total Delivery Partners Needed:** 20,000.
* **Monthly Revenue:** ₹1,32,00,00,000.
* **Monthly Costs:** ₹1,10,40,00,000.
* **Monthly Net Profit:** ₹21,60,00,000.

**Resource Allocation (By Line)**

* Western Line (16 hubs): 32% of parcels → **1,28,000 parcels/day → 6,400 partners.**
* Central Line (18 hubs): 36% of parcels → **1,44,000 parcels/day → 7,200 partners.**
* Harbour Line (16 hubs): 32% of parcels → **1,28,000 parcels/day → 6,400 partners.**

Each hub would need ~400 delivery partners, depending on demand in that area.

Comparing your delivery pricing structure with Borzo's rates in Mumbai provides insight into competitive positioning. Here's a breakdown:

**Your Delivery Pricing Structure**

* **Within 5 km:** ₹45 per delivery.
* **Beyond 5 km:** ₹45 plus ₹10 for each additional km.

**Borzo's Delivery Pricing in Mumbai**

* **Base Charge:** ₹35.
* **Per Kilometer Charge:** ₹8 per km.

For example, delivering a parcel over a 1 km distance would cost:

* **Total Cost:** ₹35 (base) + ₹8 (per km) = ₹43.

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**Weight Considerations**

Borzo's pricing also varies with weight:

* **Up to 1 kg:** ₹45.
* **Up to 5 kg:** ₹45.
* **Up to 10 kg:** ₹145.
* **Up to 15 kg:** ₹195.
* **Up to 20 kg:** ₹245.

citeturn0search0

**Comparative Analysis**

* \*\*Short Distances (≤5 km):\*\*
  + **Your Service:** Charges a flat ₹45.
  + **Borzo:** Charges ₹35 base + (₹8 × distance in km).
    - *Example for 5 km:* ₹35 + (₹8 × 5) = ₹75.

**Observation:** Your service is more cost-effective for deliveries up to 5 km.

* \*\*Long Distances (>5 km):\*\*
  + **Your Service:** Charges ₹45 + (₹10 × additional km beyond 5 km).
    - *Example for 10 km:* ₹45 + (₹10 × 5) = ₹95.
  + **Borzo:** Charges ₹35 base + (₹8 × total distance in km).
    - *Example for 10 km:* ₹35 + (₹8 × 10) = ₹115.

**Observation:** Your service remains more economical for longer distances.

* \*\*Weight-Based Pricing:\*\*
  + **Your Service:** Pricing is distance-based, with no specified weight considerations.
  + **Borzo:** Charges increase with weight, especially beyond 5 kg.

**Observation:** For parcels over 5 kg, Borzo's rates increase significantly, potentially making your service more competitive for heavier items.

**Conclusion**

Your delivery service offers competitive rates, particularly for distances up to 5 km and for heavier parcels. Borzo's pricing structure includes a lower base fee but higher per-kilometer charges and weight-based increments, which can result in higher costs for longer distances and heavier parcels.

**Note:** Pricing structures can vary based on additional services, delivery times, and specific terms. It's advisable to consider these factors when comparing services.

|  |  |  |  |
| --- | --- | --- | --- |
| **Distance (km)** | **Weight (kg)** | **KorierX** | **Borzo** |
| **5 km** | **1 kg** | ₹ 45 | ₹35 + (₹8 × 5) = ₹75 |
|  | **5 kg** | ₹ 45 | ₹ 75 |
|  | **10 kg** | ₹ 45 | ₹ 145 |
|  | **15 kg** | ₹ 45 | ₹ 195 |
|  | **20 kg** | ₹ 45 | ₹ 245 |
| **10 km** | **1 kg** | ₹45 + (₹10 × 5) = ₹95 | ₹35 + (₹8 × 10) = ₹115 |
|  | **5 kg** | ₹ 95 | ₹ 115 |
|  | **10 kg** | ₹ 95 | ₹ 195 |
|  | **15 kg** | ₹ 95 | ₹ 245 |
|  | **20 kg** | ₹ 95 | ₹ 295 |
| **15 km** | **1 kg** | ₹45 + (₹10 × 10) = ₹145 | ₹35 + (₹8 × 15) = ₹155 |
|  | **5 kg** | ₹ 145 | ₹ 155 |
|  | **10 kg** | ₹ 145 | ₹ 195 |
|  | **15 kg** | ₹ 145 | ₹ 245 |
|  | **20 kg** | ₹ 145 | ₹ 295 |

With weight charge calculation

To update the calculation with the weight-based additional charges for deliveries beyond 5 km, we will adjust the delivery charges based on the weight categories:

**Delivery Charge for Weight Categories:**

1. **For weight between 5 kg and 10 kg**, add ₹25 extra to the basic charge of ₹45.
2. **For weight between 10 kg and 15 kg**, add ₹50 extra to the basic charge of ₹45.
3. **For weight between 15 kg and 20 kg**, add ₹75 extra to the basic charge of ₹45.

Let's break this down step by step:

**Updated Revenue Calculation Beyond 5 km:**

* **Average Distance Beyond 5 km**: 5.5 km (As before)
* **Delivery Charge Without Weight**: ₹100 (as per previous calculation)

Now, we will consider the weight ranges.

**Revenue Calculation for Each Weight Category:**

1. **Weight between 5 kg and 10 kg** (Add ₹25):
   * Average Delivery Charge = ₹100 + ₹25 = ₹125
   * Daily Revenue for 100 deliveries = 100 × ₹125 = ₹12,500
   * Monthly Revenue (30 days) = 30 × ₹12,500 = ₹3,75,000
2. **Weight between 10 kg and 15 kg** (Add ₹50):
   * Average Delivery Charge = ₹100 + ₹50 = ₹150
   * Daily Revenue for 100 deliveries = 100 × ₹150 = ₹15,000
   * Monthly Revenue (30 days) = 30 × ₹15,000 = ₹4,50,000
3. **Weight between 15 kg and 20 kg** (Add ₹75):
   * Average Delivery Charge = ₹100 + ₹75 = ₹175
   * Daily Revenue for 100 deliveries = 100 × ₹175 = ₹17,500
   * Monthly Revenue (30 days) = 30 × ₹17,500 = ₹5,25,000

**Total Revenue Calculation:**

We will assume an equal distribution of deliveries across the weight categories for simplicity:

* **Total Monthly Revenue** from deliveries within 5 km = ₹1,35,000 (as previously calculated)
* **Monthly Revenue Beyond 5 km** (Taking the average of the 3 categories): Average Monthly Revenue=3,75,000+4,50,000+5,25,0003=₹4,50,000\text{Average Monthly Revenue} = \frac{3,75,000 + 4,50,000 + 5,25,000}{3} = ₹4,50,000

So, **Total Monthly Revenue** = ₹1,35,000 (within 5 km) + ₹4,50,000 (beyond 5 km) = ₹5,85,000

**Delivery Partner Commission:**

* **Total Delivery Charges** (monthly): ₹5,85,000
* **Commission Rate**: 20%
* **Total Commission** = ₹5,85,000 × 0.2 = ₹1,17,000

**Total Costs:**

* **Fixed Costs** (Salary + Petrol): ₹1,50,000
* **Commission**: ₹1,17,000
* **Total Costs** = ₹1,50,000 + ₹1,17,000 = ₹2,67,000

**Net Profit Calculation:**

* **Total Revenue** = ₹5,85,000
* **Total Costs** = ₹2,67,000
* **Net Profit** = ₹5,85,000 - ₹2,67,000 = ₹3,18,000

**Summary (Updated):**

* **Monthly Revenue**: ₹5,85,000
* **Monthly Costs**: ₹2,67,000
* **Net Profit**: ₹3,18,000

This is the updated calculation with the added charges for weight in deliveries beyond 5 km.