

Business Development Alternatives

Business Development Alternative Strategy	Revenue Collection Model
Buy-Implement-Evaluate-Develop Model	Monthly Subscription (Time Based Revenue Collection)
Research-Implement-Evaluate-Develop Model	Free Usage (No Revenue for Research and Development Purpose)
	Per Trip Pricing (On Usage Revenue Collection)

Buy-Implement-Evaluate-Develop

By Monthly Subscription Revenue Collection Model

Revenue and Benefits

Revenue and Quantitative Benefits:

A. Segway and Station

- a) From specification, each Segway can do 22 trip on one charge, each fully charged 0.3168 kWh.
- b) From approximation with 15 m², 16% efficiency, and 4.72 kWh/m² insolation in Bandung, each year one station creates 3,101 kWh.
- c) Therefore, by average approximation for five stations, 49000 rides uses solar energy.

B. Mobile Application

- a) From approximation of 1 uses per day for each user, 1k traffic in one day, 365k traffic in one year, This traffic can be used for advertisement.

C. Monthly Subscription

- a) From assumption of 1000 users for first year and growing 20% each month and Rp 10.000,00 subscription per user each month, revenue would be $r = 120,000 * (1 + 0.2)^n$ for n-th year until saturation when users amount reach 2000.

Revenue and Benefits

Qualitative Benefits:

- A. Futuristic marketable idea proof that SMI is a catalyst for national infrastructure acceleration through SDG Climate Action
- B. Research and Development for another system in Indonesia (ex. Airport, Train Station, Government Institution, etc)
- C. Reduction of gasoline usage inside campus
- D. Branding for ITB
- E. Mobility for academic civilian (especially professors and lecturers)
- F. High probability of sustainability and no emission for huge number of usage

Cost

Fixed Cost:

- A. Workforce (Total Rp 30.000.000,00) one time, (Total Rp 5.000.000,00) each year
 - a) First Year Development Rp 30.000.000,00 one time
 - b) Maintenance Overwatch Rp 5.000.000,00 each year
- B. Segway (Total Rp 255.000.000,00) one time
 - a) 25 Segway at average price Rp 10.000.000,00
 - b) 25 Container at average price Rp 100.000,00
 - c) 25 RF Transceiver at average price Rp 100.000,00
- C. Station (Total Rp 235.000.000,00) one time
 - a) 9*5 Conventional 16% efficiency solar panel at average price Rp 3.000.000,00
 - b) 5 Mechanical structure + workforce Rp 15.000.000,00
 - c) 5 Wiring+Powerwall+Inverter Rectifier+RF Transceiver Rp 5.000.000,00
- D. Application (Total 12.000.000,00) each year
 - a) 12 month Cloud services Rp 1.000.000,00
- E. Marketing Campaign (Total 10.000.000,00) each year
 - a) Digital marketing Rp 5.000.000 each year
 - b) Offline peer-to-peer marketing Rp 5.000.000 each year

Cost

Assumptions:

- A. Assuming each year growth on users increases 20%
- B. Assuming 2 minutes tolerable waiting time

Variable Cost:

A. Application Expansion

- a) Server expansion will cost linear according to traffic increase from half of the first year cost (Rp 12.000.000,00). Therefore it will cost $c = 12,000,000 * (1 + (0.5 * 0.2))^n$ or $c = 12,000,000 * (1.1)^n$ for n-th year

B. Segway Expansion

- a) The consumer needs will increase according to amount of consumer. From approximation that each user will use Segway for average of 3 times a day (from daily lecture activity), 3000 usage a day will be accumulated and distributed in 07.00-17.00 (10 hours) which gets averaged at 300 usage/hour. This usage average per hour grows linearly, which 25 segways will handle at average usage 12 usage/hour, with each usage of 5 minute on average. Tolerable waiting time assumed to be 2 minutes, therefore can be approximated linearly that 20% growth will grow the waiting rate. Calculation will give that the amount of Segway will need to increase by two for the first three years and two each year after the first three years.

BIED with Monthly Subscription Financial Analysis

Financial Analysis						
Time (year)	1	2	3	4	5	6
Internal Rate of Return	0.00	-0.77	-0.51	-0.21	0.13	0.51
NPV	-502,000,000	-389,523,810	-265,941,043	-129,506,533	4,992,159	158,218,066
Cost						
Segway	255,000,000	-	-	-	20,400,000	20,400,000
Station	235,000,000	-	-	-	-	-
Application	12,000,000	12,000,000	13,200,000	14,520,000	15,972,000	17,569,200
Workforce	30,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Marketing Campaign	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Total Cost (year)	502,000,000	27,000,000	28,200,000	29,520,000	51,372,000	52,969,200
Revenue						
Total Revenue	0	120,000,000	144,000,000	172,800,000	207,360,000	248,832,000
Cash Flow (year)	-502,000,000	-409,000,000	-293,200,000	-149,920,000	6,068,000	201,930,800
Revenue Source	Sales Amount	Conclusion		Annual Rate	5%	
Business Model : Monthly Subscription 10,000/month on 1000 users and growing by 20% each year until saturation in 2000 users (year 6)	Rp 10.000,00 per user	Payback Period	~ 5 Years			
		IRR	51.00%			
		ROI	40%			