

Airway

Business Solution: Space Charging

MSMK 7012B Team 8

Xiangxin Zhang, Xinyue Yin, Jingwen Li,
Yue Yu, Simiao Ye, Yawen Yang, Jiafeng Zhang



Intro - Consumer Insights

Cables should be gone in a business environment

- Messy cables in an office
- Make a business looked unprofessional
- Embed a risk of causing fire (eg. electricity overload and short-circuit)
- Distract people from work
- Staffs have to bring chargers/cables to office or buy additional pairs (using their own money) to keep in the office
- Even a “wireless” charger need to be plugged into a socket (oops, more wires)



Airway

I.Intro

2. Situation Analysis

3. Marketing Objectives

4. Marketing Strategy

5. Implementation of the Marketing Strategy

6. Financials

7.Controls & Contingency Plans



Intro - Consumer Insights

How it looks like?



Airway

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Situation Analysis

Industry Overview and Analysis

Wireless Charging Technology

Type	Inductive	Resonant	Radio Frequency
Principle	Electromagnetic Induction	Utilized in gadgets	Space electric fields
Mechanism	electric current passed via a coil through charging station or pad	charging bowls through-surface type chargers can transmit a few centimeters	uncoupled RF charging allows transmitting at distances of many feet
Applications	smartphones, toothbrushes 	laptops, EVs, robots 	

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Situation Analysis

Industry Overview and Analysis

“Wireless power technology is still in its infancy stage.”

- The president of AirFuel Alliance



Asia Pacific is the largest market

the needs of infrastructure development +
increasing adoption of wireless devices +
higher smartphone penetration

Main players



Strengths

- Compatible with diversified devices
- Higher observability
- Advantages of early market entry
- Customization

Weaknesses

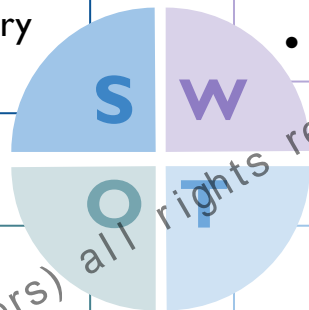
- Start-up in early phase
- Lower trialability
- Higher cost

Opportunities

- Internet of things (rapidly expanding wearables market)
- Easy to obtain market share
- Increasing needs of wireless charging on smartphone

Threats

- BOM is dependent on importing materials
- Adoption takes time
- Better wireless technology developed



Marketing Objectives

6 General Marketing Objectives



Fully understand customers by increasing **market research** quality



Increase positive **product reviews**



Increase **brand reputation**



Shorten the **sales cycle**



Increase **profitability**



Increase **customer lifetime value**

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Introduction (Year 1 to Year 3): Full to 90% Market Share

- Hong Kong market medium & large size companies
- full-cycle maintenance service

2

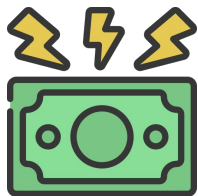
Growth (Year 3 to Year 5): 60% Market Share

- Defensive for new entrants
- Enhance product updates
- Establish absolute market advantages
- Start to build after-sales service team
- Enter Japan and South Korea market

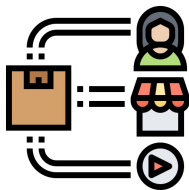
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Mature (after Year 5): 55% Market Share

- Maintain product dominance
- Perfect after-sales service
- Create brand uniqueness
- Enter Mainland China and Europe market

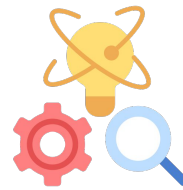


- Financial pressure



- No existing sales channels

↓
Relatively high marketing costs



- Technical difficulties

↓
Long period of R&D

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Geographic

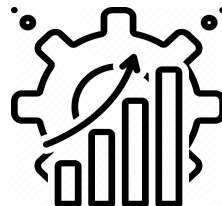
- Asia (1st enter Hong Kong, then Mainland China, Japan, Singapore, South Korea, etc.)

Demographic

- MLEs (medium-sized to large enterprises) in IT, consulting, etc
- Usually over 250 headcounts, with an turnover under 41 Million Euros, and a balance sheet total under 35.2 Million Euros

Behavioral/Psychographic

- Care about employees' satisfaction and productivity
- Afraid of unexpected power-off during key moments
- Want to keep operating cost low
- Create a professional corporate image
- Dare to try new things



Marketing Strategy - Positioning

We deliver values instead of electricity to businesses

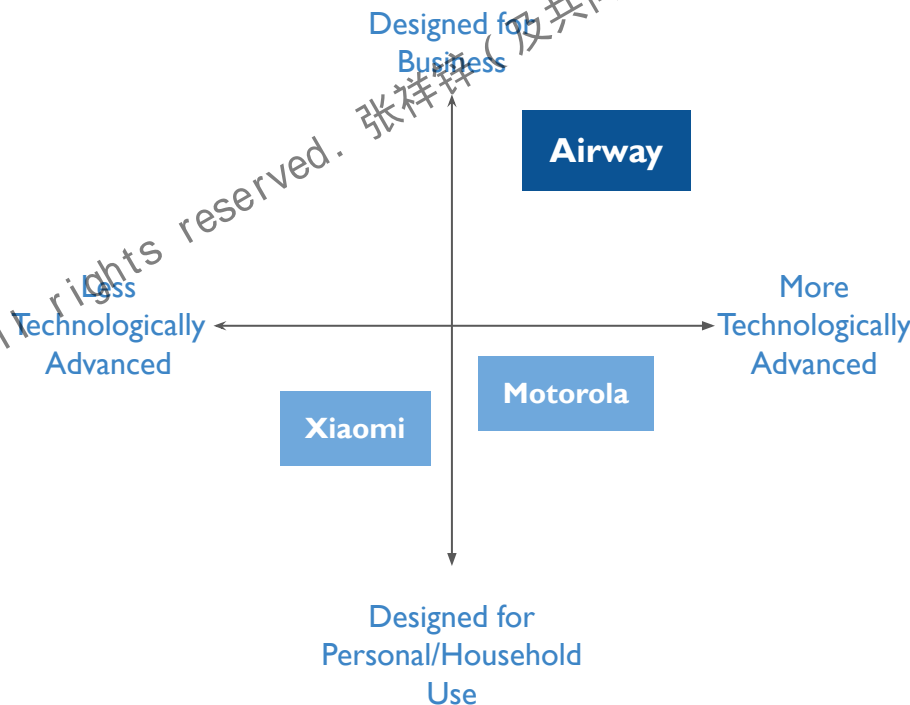
A blank market is under our feet

- We currently do not have competitors in this specific field
- Closest available solutions are for personal uses, not for businesses

Therefore, we positioned ourselves as

- NOT ONLY a solution provider for making cables disappeared
- BUT ALSO a friend of business to help them maintain a better office environment and stay focused on their business goal

Perceptual Map



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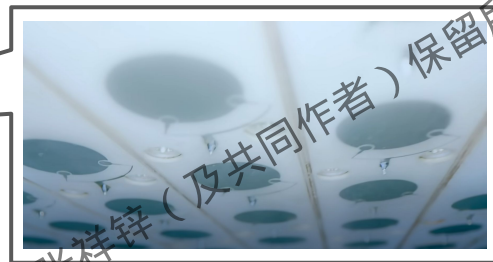
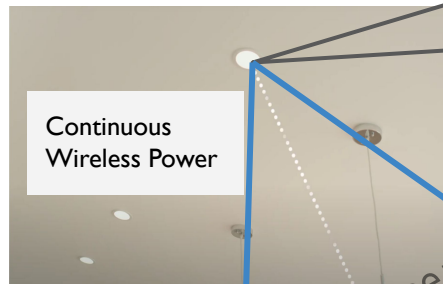
5. Implementation of the Marketing Strategy

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The process

1. Sensors detect and locate devices
2. Sensors intercommunicate
3. Launchers send beams to devices
4. Convert energy within devices



Extremely narrow millimeter wave beams

Marketing Strategy - 4P

Product Characteristics

- Environmentally and economically friendly
 - Partially powered by sun energy
 - Higher conversion rate (5% than traditional)
- Create an immersive experience
 - Installed on the roof, so users will not see it all the time



- Eliminate all charging cables in an office
- Each 1 m²/100 sqft unit can support up to 50 devices to charge at 100 Watts per device simultaneously
- Make devices always full of charge and ready to be used

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	Max. Wattage per device	Max. Conversion Rate	Max. Covering Areas	Max. # of devices to simultaneously charge	# of Antennas
Airway	100W	85%	1000 sqrt.ft	50	10,000
Air Charge (Xiaomi)	5W	80% (assumed)	150 sqrt.ft (assumed)	4	144
Motorola Air Charging	5W	80% (assumed)	300 sqrt.ft (assumed)	4	1,600

- Pricing strategy - Skimming Pricing
- Price basement: Value, not function
- Flexible Prices
 - Basic model = HK\$28,888
 - Customization model: 20% off on orders over 200 m²/2000 sqrt.ft

	Basic Model	Customization Model
Functionalities	100 m ² /1000 sqrt.ft 50 devices	On demand
Output	100-W charging power	100-W charging power
Price	HK\$28,888	(HK\$28,888 * X sqrt.ft)* 80%

Direct selling (disintermediation)

- Sell directly to business customers to compensate costs (eg. R&D)

Tailor products to fit the need

- Customers need to talk to us about what specific requirements first, and we will recommend them best-matching solutions

Online consulting & Offline selling

- Consulting mainly takes place at our website
- Selling will take place at our office



- Advertise in CBDs, especially in those that are still under construction
- Actively reach MLEs to introduce our product and demonstrate the values we can offer
- Work with and get endorsement from environment standard makers to reflect our strength in energy efficiency (eg. LEED)



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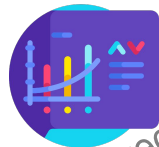
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Advertising

- Outdoor advertising
- Public transportation
- Bus route in CBDs



Direct marketing

- Direct email
- Personal selling



Public relations

- Media relation (e.g. press release)
- Endorsement from environment standard makers



Digital marketing

- SEM & SEO
- Social media website

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Timeline for the first year

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Outdoor Ad - Bus												
Public Relation												
Direct email												
Personal Selling												
SEM												
SEO												
Social media maintenance												

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Implementation of the Marketing Strategy

Timeline for the first year

[illegible]

5

Implementation of the Marketing Strategy

$$\text{Budget} = \text{HK\$}28,888 * 5\% / \text{Unit} * 1357 = \text{HK\$}1,960,050$$

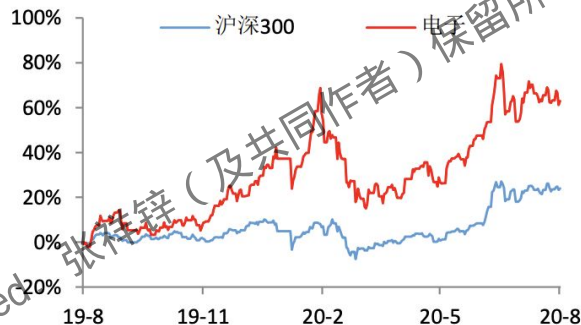
Outdoor ad- Bus (3 months)	HK\$9,200 / 4 weeks *3*5	HK\$27,600
Media Relation (3 pieces / month)	HK\$30,000 *3*12	HK\$360,000
Endorsement	Non-recurring expense	HK\$300,000
Direct email (#MLEs*12m*HK\$0.085 @)	(600+29000)*12 months*0.085	HK\$30,192
SEM (Target Website traffic/conversion rate*keyword price)	186/2%*HK\$5*30*3	HK\$900,000
SEO, social media maintenance, direct marketing	Included in employee salary	/

Keyword (by relevance)	Avg. monthly searches	Competition	Ad impression share	Top of page bid (low range)	Top of page bid (high range)	Account status
Keywords you provided						
<input checked="" type="checkbox"/> wireless char	1K - 10K	High	-	HK\$2.73	HK\$23.47	

Keyword (by relevance)	Avg. monthly searches	Competition	Ad impression share	Top of page bid (low range)	Top of page bid (high range)	Account status
Keywords you provided						
<input type="checkbox"/> space charger	10 - 100	Low	-	-	-	

Background index

- Wireless charging ICs sales growth: 16.7% CARG
- The market trend comparing to CSIndex
- In 2022: Market penetration rate of wireless charging estimation: 60
- Baidu index = 186 per day
- Estimated sales = $186 \times 365 \times 2\%$ (conversion rate) = 1357

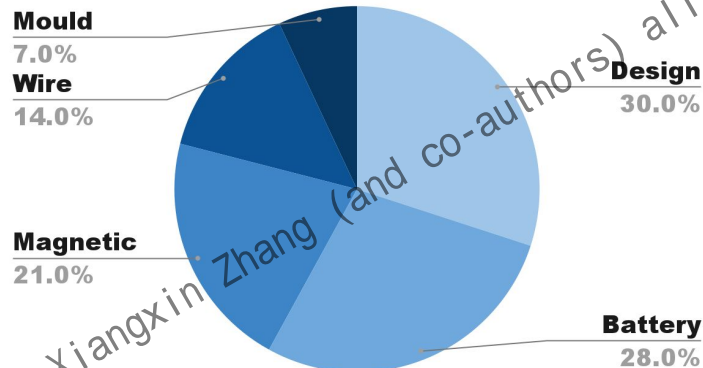


	sales unit x (1+g)		
Launch 2021	1357	16%	Launching period
2022	1574	16%	
2023	1826	16%	growing period
2024	2118	21%	
2025	2563	30%	
2026	3332	20%	mature
2027	3998	10%	
2028	4398	10%	
2029	4838	10%	
2030	5322	8%	

Variable Cost

- Variable Manufacturing Cost
 - HK\$8,000 / Unit
- Variable Sales Overheads
 - Promotion costs
 - HK\$28,888 * 5% / Unit

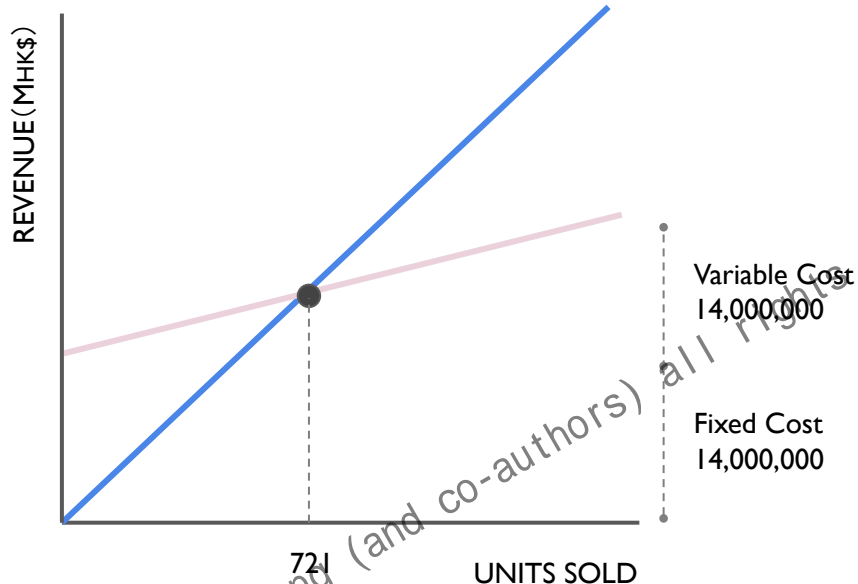
Manufacturing Cost Composition



Fixed Cost

- Fixed manufacturing overheads
 - Factory rent, factory equipments, factory electricity etc
 - HK\$8,000,000
- Fixed administrative overheads
 - Office rent, salary*, insurance, office fixture and fittings, etc
 - HK\$6,000,000

Notes: salary* only count employees in the office



Key assumptions

- All customers buy the basic model
- Cost can be all divided into variable and fixed costs
- Constant variable cost per unit
- Constant selling price
- No closing inventory



Industry Cyclical Volatility Risk

- Move towards low cost because of fierce competition
- The regulation of national policies



Gross Margin Stability Risk

- Market competition can affect product pricing



Exchange Rate Fluctuation Risk

- Inevitable, as we will step into foreign markets
- Makes it hard for us to track financial performance



Reduce the cost

- Variable cost: Lower than HK\$8,000 per unit
 - Fixed cost: reduce the manufacture cost to HK\$12,000,000
- eg. When XiaoMi or MOTOROLA launches the new product



Priced based on break even point

- Profitable: keep the cost, expand the market share, focus on R&D
- Unprofitable: pricing lower than HK\$8,000, reduce the output less than 721 units



Foreign exchange risk management

- Forward FX sales and purchase, Options and other Foreign exchange derivatives.



Thank You !

Q&A Time

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References

- <https://www.ucl.ac.uk/procurement/suppliers/smes>:
- <https://www.indiatoday.in/technology/news/story/motorola-s-air-charger-can-charge-up-to-4-devices-at-a-time-1851038-2021-09-09>
- <https://blog.mi.com/en/2021/01/29/forget-about-cables-and-charging-stands-with-revolutionary-mi-air-charge-technology/>
- <https://www.researchandmarkets.com/reports/5118750/wireless-charging-market-by-technology-and>
- <https://www.einfochips.com/blog/wireless-charging-technology-of-the-future-and-its-applications/>
- <https://www.alliedmarketresearch.com/wireless-charging-market>
- <https://www.techradar.com/in/best/best-wireless-chargers>