SMART PARKING "SMALL AND MEDIUM-SIZED CITY PARKING EXPERTS"

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ABSTRACT

The purpose of this paper is to provide a business plan for starting an IoT smart parking company in Qingdao, Shandong Province. The attractiveness of the business will include the provision of smart parking services, service booking, and service delivery. Smart Parking App is an automotive after-market service platform with parking navigation service as its core. The company has four independent departments to manage the business, "Smart Parking" start-up capital is 1 million RMB, the project's first year return on investment is 19.16%, which shows that the economic benefits of the project are significant. The financial analysis shows that the net sales margin is 8.33%, the net asset margin is 4.34%, the current ratio is 2.22, the gearing ratio is 29.10%, the NPV is 150,000,

Keywords: parking difficulty, internet of things, APP, city management, business plan

COMPANY DESCRIPTION

"Smart Parking is an IOT smart parking company. Smart Parking provides unattended, automatic charging, cloud-based billing, automatic space finding, parking reservation, peak parking, shared parking, VIP parking, reverse car search and other services for users. The company's business is located in Ji Mo, Qingdao, which has a more developed economy and is conducive to the promotion and sales of its products.

Mission Statement：With the mission of "improving the city parking experience", we focus on the integrated on and off-road smart city parking platform, with the slogan of "integrity, mission, embracing change and customer focused". To achieve the vision of "enriching people's communication and life".

Relying on the spirit of entrepreneurship and employment of college students, the company is committed to solving the problem of difficult parking in various cities in China, promoting industrial development through project promotion, achieving the goal of mutual benefit and win-win situation, and better inheriting and developing the culture of Chinese characteristics.

INDUSTRY ANALYSIS

The demand for smart parking app is expanding at a high speed and the competition in the industry is fierce. The software developed by our company should be diversified, multi-functional and low consumption to attract customers. The future of the smart parking industry

depends on the support of the government and the state. The operation of parking big data will also become an important development direction for the future parking management industry.

Smart parking industry market size forecast, in 2017, China's smart parking industry market size reached 7.9 billion yuan, smart parking in China as a new industry, the development rate is very rapid, the market size has shown a rapid growth trend. It is expected that by 2023, the market size of China's smart parking industry will reach RMB 30.1 billion, and the country will still strongly support the development of the smart parking industry in the future, and the development prospect of the smart parking industry will be bright.

MARKET ANALYSIS & MARKETING PLAN

3.1 **Market Analysis**

Our Company the target customers are mainly parking lots, car owners, and the automotive aftermarket, and we have a mutually beneficial and win-win relationship with parking lots. Car owners are the main consumer group of our products. There is also a mutually beneficial and win-win relationship between us and the automotive aftermarket. Only with rich after-market resources can we provide better and more comprehensive services to our users.

Table 1 Competitor Analysis

	Publishing Company	Go-live time	Function profile	Software Advantages	Items to be improved
Micro parking	Xi'an Meng zhen Digital Technology Co	29 April 2015 (no IOS version)	Features:Collecting the remaining parking spaces in the car park, releasing the remaining parking spaces in real time, navigating the entrance of the car park, reverse car search (sweeping the QR code to remember the parking space, the parking code intelligently generates the car search route), paying the parking fee online	None	Does not support reservation function; 10 minutes free exit time is slightly short; Android Market download only
Xi'an Parking App	Xi'an Motor Vehicle Parking Service Centre	July 25, 2016	Search for empty parking spaces near you and at your destination, and support online payment for parking on your mobile phone	Issued by the Xi'an Motor Vehicle Management Centre, with strong government support, all car parks managed by the road authorities can be displayed	The operation process is cumbersome and requires the car park manager to manually enter the license plate information with a POS machine; the parking area is limited to municipal street parking spaces; the software does not have internal navigation operation,... It is inconvenient to jump around and does not support reservation function.
Xi'an Parking-Palm Walk	Mipo Parking	December 11, 2015	Empty space search, parking guidance, online payment of parking fees, purchase of monthly rentals	Xi'an Motor Vehicle Parking Service Centre official app	No support for reservation function, poor experience of using the software (when you click on "Where do you want to go" and enter your destination, you return to the home page instead of the "Where do you want to go" page when you make a mistake), poor interface settings (only payment related issues in the FAQ)

3.2 Marketing Plan

Marketing of our company Based on localization, Parking Expert provides users with free information on nearby vacant parking spaces, locates and navigates to users' current locations.Revenue is realized through third-party payments, merchant value-added services, advertising services, market data sales, and franchise cooperation.Provide life services, offering reservation and online payment for restaurants, beauty care, coffee and other leisure activities. Check the violation of the law, fast and convenient.

Pricing strategy using short-term profit model: short-term profit model is not considered, short-term mainly to establish the product brand image, so that it further expand

market share, for the product after the perfect further penetration of the people to do pavement.medium-term profit model: advertising service charges and product sales, car park to join the cooperation (O2O), through the APP inflow to the cooperation of parking, hardware technical support; auto repair shops and 4S shops to cooperate with appropriate charge a certain amount of publicity costs or on behalf of the sale of partner products; can use GPRS and other services to generate a certain amount of traffic costs, cooperation with mobile operators to extract certain fees.long-term profit model: membership fees - users can register for free as APP members, through the introduction of more updated service content, from which the development of VIP members, and charge a certain fee; application services - in the application to provide free vehicle chauffeur service, maintenance, insurance and other services.

MANAGEMENT TEAM AND COMPANY STRUCTURE

Our company now consists of 9 people, 1 product manager, 1 art worker, 1 architect, 3 R&D staff and 3 testers.The company has a linear-functional Organizational structure and will have four separate functional departments to manage the business, namely artwork, architecture, R&D and testing departments. Quick, flexible, low maintenance costs and clear responsibilities between departments, Centralized and unified command, a fine division of labour and a focus on professional management will help to improve the efficiency of management.

OPERATIONS & PRODUCTION PLAN

The business model and procedures are Method 1 Traditional sale and purchase,Mode 2: Joint investment between local enterprises and Smart Parking,Mode 3 Full investment by Smart Parking.The company is opened in Jimo District, Qingdao, and mainly adopts an online + offline sales model, mainly for drivers, car parks, libraries, shopping malls, hospitals and other public places.

The concept of smart parking has been developing rapidly since 2014, driven by capital and supported by policies, with over 200 companies participating in the construction of smart parking. These enterprises can be broadly divided into four patterns: traditional parking equipment suppliers, car park operators, municipal traffic management departments and Internet enterprises.

(a) Parking equipment suppliers:With their long-term market and customer accumulation in the parking field, parking equipment suppliers have gradually transformed from simple parking management hardware providers to full solution providers of "intelligent parking equipment + information integration platform + APP", providing parking management hardware and systems for car parks and parking resources for car owners. Information services. This part has innate resource advantages, but because its enterprise is based on equipment production and sales as the core, the foothold and development strategy and target direction of the whole enterprise system operation determines its lack of late-stage advantages, which can form a platform with certain influence in local areas, but it is difficult to grow into a national platform system due to the constraints of enterprise strategy, business model, talents, marketing and capital operation.

(b) Parking lot (space) operators:This part of the car park (space) operators are mainly

property, small-scale parking contractors, They have small scale weak financial strength, lack of platform thinking and Internet thinking, business scattered. They do not have the advantages of technology, platform, capital and model.

(c) Municipal traffic management department:Municipal traffic management departments hold roadside parking spaces and public parking resources, and have the advantages of resources, policies and funds. However, due to the low level of intelligence of roadside parking spaces and public car parks, the distribution is scattered, and there is a greater difficulty in integrating management. This part belongs to the resource owners and does not have the pattern and ability of the schemer, so it cannot form a national platform system.

(d) Internet enterprises:Internet enterprises with mature Internet business model and traffic advantages are also involved in the field of intelligent parking.Among them, Alipay, WeChat by virtue of payment advantage joint offline parking through the cashless payment model, Baidu map, Gaode map (Ali system) rely on the mature navigation system into the smart parking.

FINANCIAL PROJECTIONS

Table 2 Financial projections

Income statement for the start-up year												
	January	February	March	April	May	June	July	August	September	October	November	December
Income												
Platform service fee income	12,000.00	18,000.00	20,000.00	24,000.00	36,000.00	40,000.00	45,000.00	50,000.00	55,000.00	60,000.00	60,000.00	80,000.00
Platform advertising fee income	4,000.00	6,000.00	10,000.00	11,000.00	14,000.00	15,000.00	15,500.00	16,000.00	18,500.00	20,000.00	31,000.00	39,000.00
Income from installation of equipment	6,000.00	11,000.00	13,000.00	15,000.00	16,000.00	19,000.00	16,000.00	18,000.00	16,000.00	20,000.00	22,000.00	28,000.00
Other	2,000.00	3,000.00	5,000.00	5,000.00	6,000.00	9,000.00	7,500.00	9,500.00	8,000.00	12,000.00	13,000.00	20,000.00
Total revenue	24,000.00	38,000.00	48,000.00	55,000.00	72,000.00	83,000.00	84,000.00	93,500.00	97,500.00	112,000.00	126,000.00	167,000.00
Costs	10,000.00	12,000.00	18,000.00	20,000.00	24,000.00	26,000.00	27,000.00	29,000.00	34,000.00	40,000.00	50,000.00	60,000.00
Operating costs	6,000.00	11,000.00	13,000.00	14,000.00	16,000.00	20,000.00	19,000.00	20,000.00	21,000.00	25,000.00	27,000.00	28,000.00
Selling expenses	2,000.00	3,000.00	5,000.00	4,000.00	6,000.00	10,000.00	9,000.00	10,000.00	11,000.00	12,000.00	13,000.00	15,000.00
Maintenance	2,000.00	3,000.00	5,000.00	6,000.00	7,000.00	7,000.00	5,500.00	7,500.00	7,000.00	8,000.00	10,000.00	12,000.00
Depreciation	600.00	1,100.00	1,300.00	1,200.00	1,800.00	2,000.00	1,800.00	2,000.00	2,200.00	2,000.00	2,200.00	1,800.00
Training	1,000.00	1,200.00	1,800.00	2,000.00	2,400.00	2,600.00	2,700.00	3,000.00	3,300.00	3,200.00	3,300.00	3,500.00
Total operating expenses	21,600.00	31,300.00	44,100.00	47,200.00	57,200.00	67,600.00	65,000.00	71,500.00	78,500.00	90,200.00	105,500.00	120,300.00
Operating profit	2,400.00	6,700.00	3,900.00	7,800.00	14,800.00	15,400.00	19,000.00	22,000.00	19,000.00	21,800.00	20,500.00	46,700.00
Taxes	600.00	1,675.00	975.00	1,950.00	3,700.00	3,850.00	4,750.00	5,500.00	4,750.00	5,450.00	5,125.00	11,675.00
Net profit	1,800.00	5,025.00	2,925.00	5,850.00	11,100.00	11,550.00	14,250.00	16,500.00	14,250.00	16,350.00	15,375.00	35,025.00

Income statement forecast					
	2022	2023	2024	2025	2026
Income					
Platform service fee income	500,000.00	700,000.00	1,000,000.00	1,500,000.00	1,700,000.00
Platform advertising fee income	200,000.00	350,000.00	500,000.00	600,000.00	800,000.00
Income from installation of equipment	200,000.00	300,000.00	400,000.00	500,000.00	600,000.00
Other	100,000.00	150,000.00	300,000.00	400,000.00	500,000.00
Total revenue	900,000.00	1,500,000.00	2,200,000.00	3,000,000.00	3,600,000.00
Costs	350,000.00	400,000.00	500,000.00	690,000.00	750,000.00
Operating costs	220,000.00	250,000.00	270,000.00	290,000.00	310,000.00
Selling expenses	100,000.00	150,000.00	170,000.00	190,000.00	200,000.00
Maintenance	80,000.00	110,000.00	130,000.00	170,000.00	200,000.00
Depreciation	20,000.00	40,000.00	60,000.00	70,000.00	90,000.00
Training	30,000.00	50,000.00	70,000.00	90,000.00	100,000.00
Total operating expenses	800,000.00	1,000,000.00	1,200,000.00	1,500,000.00	1,650,000.00
Operating profit	100,000.00	500,000.00	1,000,000.00	1,500,000.00	1,950,000.00
Taxes	25,000.00	125,000.00	250,000.00	375,000.00	487,500.00
Net profit	75,000.00	375,000.00	750,000.00	1,125,000.00	1,462,500.00

Statement of Preliminary Assets and Liabilities					
Prepared by:Smart Parking		Date of preparation.	31 December 2022		Unit: RMB Yuan
Assets	At the beginning of the year	Year-end figures	Liabilities and owners' equity	At the beginning of the year	Year-end figures
Current assets.			**Current liabilities.**		
Monetary funds	1,035,000.00	937,300.00	Short-term borrowings		100,000.00
Short-term investments			Notes payable		0.00
Notes receivable		145,000.00	Accounts payable	300,000.00	300,000.00
Accounts receivable	15,000.00	37,500.00	Prepayments received		0.00
Less: Provision for bad debts			Other payables		35,800.00
Net receivables			Dividends payable		
Prepayments		0.00	Payable wages	0.00	42,000.00
Other receivables		0.00	Taxes not paid	0.00	25,000.00
Inventory		0.00	Other payables	0.00	0.00
Costs to be assessed			Withholding costs	0.00	0.00
Losses on current assets held for disposal			Benefits payable		
Total current assets	1,050,000.00	1,119,800.00	Total current liabilities	300,000.00	502,800.00
Long-term investments.					
Long-term investments			**Long-term liabilities.**		
Fixed assets.			Long-term borrowings		
Original cost of fixed assets	400,000.00	400,000.00	Bonds payable		
Less: accumulated depreciation	0.00	20,000.00	Other long-term liabilities		
Net fixed assets	400,000.00	380,000.00	Total long-term liabilities	0.00	0.00
Fixed asset liquidation					
Total fixed assets	400,000.00	380,000.00			
Construction work in progress			Total liabilities	300,000.00	502,800.00
Intangible assets and deferred assets.					
Deferred assets					
Intangible assets		228,000.00			
Total intangible assets and deferred assets		228,000.00	**Ownership interests.**		
Other long-term assets.			Paid-in capital	1,000,000.00	1,000,000.00
Other long-term assets			Capital surplus		
Deferred taxation			Unallocated profit	150,000.00	225,000.00
Deferred tax debits			Total Owner's Equity	1,150,000.00	1,225,000.00
Total assets	1,450,000.00	1,727,800.00	Total liabilities and owners' equity	1,450,000.00	1,727,800.00

The financial analysis shows that the net sales margin is 8.33%, the net asset margin is 4.34%, the current ratio is 2.22, the gearing ratio is 29.10%, the NPV is 150,000, the ROI is 19.16%, the 2022 NCF is 95,000, and the IRR is 1/95,000.

CONCLUSION

This article is a business plan for the construction of a smart parking platform, based on the introduction of the concept of the Internet of Things and the introduction of core technologies, through the analysis of the market environment, user demand, product design and operation process description, analysis of the economic benefits of the product, summarize the risks and countermeasures in the development process, hope that through the introduction of

this business plan, for the"Zhi Ting" smart parking Through the introduction of this business plan, we hope to finance the "Zhi Ting" smart parking platform project, to continue to improve the product features and increase the market share of the product, and ultimately provide investors with a significant return. The ""Zhi Ting"" smart parking platform project is proposed against the background of the widespread application of Internet of Things technology in the field of intelligent transportation, the strong support of national policies for smart transportation and smart city projects, and the increasingly prominent contradiction between car ownership and parking resources. The purpose of the project is to build a set of smart parking service platform for each city, which can significantly improve the utilization rate of existing socially provided parking spaces, and thus promote the construction of urban intelligent transportation. The initial investment of the project is 1 million yuan, the project implementation company in the intelligent transportation industry, leading technology, competitive products, but due to the bulk purchase of terminal equipment requires a lot of money and marketing costs, research and development costs, management costs and other expenses on the high requirements of cash flow, it requires a large amount of financial support. According to the calculation, the return on investment in the first year of the project is 19.16%, which shows that the economic benefits of the project are significant. This paper combines qualitative and quantitative research, using literature research, questionnaire survey methods, using theories of management, marketing, software development theory and other disciplines to propose the urgency and rationality of building the ""Zhi Ting"" smart parking platform. The final conclusion of this paper is that the ""Zhi Ting"" smart parking platform project proposes a new technical means of parking lot management and has a feasible profit model, while the project has a high return on investment, a strong profitability and a small investment risk. Therefore, the investment in this project has good social and economic value.

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