

**TODAY, WE ARE GOING TO  
SOLVE  
A BIG  
PROBLEM.....**

**TEAM LARKS**

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# The Problem: 400 million men are looking for proper, private and satisfactory help on Impotency or Erectile Dysfunction (ED).

1 in 5



1 in 5 men suffer from ED

60%

of affected men don't see a doctor

## Concerns for ED patients



### Embarrassment

doing test in public hospital



### Privacy

confidential concern for test result



### Inconvenience & Inconclusive

70% patients are not satisfied with diagnosis and treatment process

\* source: Internal meta-analysis of global ED prevalence studies



Problem

Solution

Target Market

Strategy

Financial

Conclusion

**Tumeter** is a home-based erectile dysfunction device providing specific nocturnal penile tumescence (NPT) test.



- Light weight
- Skin-friendly material
- Non-invasive experience
- Easy to use

- Real-time monitor for every erection;
- Profound analysis data e.g. strength, blood flow
- **Data interaction with clinics**

## Awards & Recognition



Ranked among the top 10% of all applicants for **Y-combinator's** s2019 (marked promising and invited to apply for the w2020 cohort)



## Patent Information

Pub. No.:	WO/2019/239277	International Application No.:	PCT/IB2019/054801
Publication Date:	19.12.2019	International Filing Date:	10.06.2019
IPC:	G16H 50/20 (2018.01) (?)		

\* [https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2019239277&\\_cid=P21-K60JLW-47116-1](https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2019239277&_cid=P21-K60JLW-47116-1)



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**Competition:** Home-based, high accuracy and affordable price set Tumeter out from similar products currently in the market.

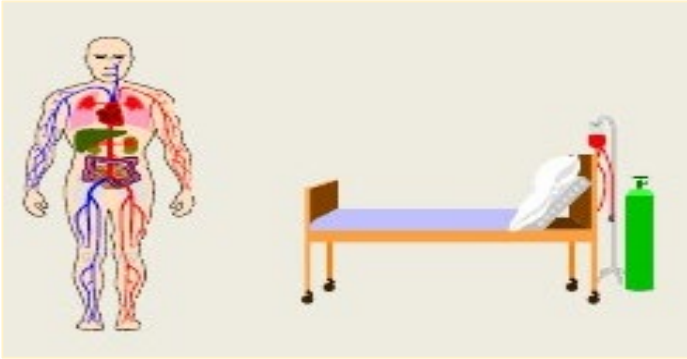
	 Sanwe	 Rigiscan	 Hiensor	 Tumeter
Accuracy	Very High 95%	High 88%	Medium Unknown	High 85%+
Diagnostic principle	NPT + PSG	NPT	NPT	NPT+EOG+EEG
Convenience	Low Hospital-based	Low Hospital-based	High Home-based	High Home-based
Business model	B2B Product Selling	B2B Product Selling	B2C Product Selling	B2B Product renting
Price	High 10,000SGD	High 200SGD/Once	TBD	Medium 60 USD/Once
AI adopted	No	No	No	In progress



# The Solution:

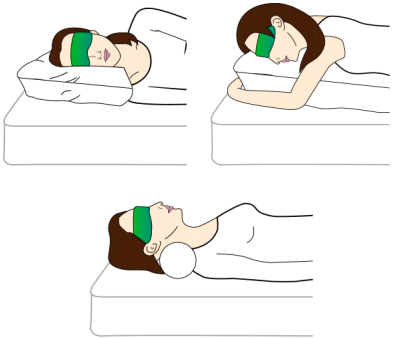
Tumeter is a home-based erectile dysfunction device providing diagnostic parameters by applying multiple tests.

## Nocturnal Penile Tumescence (NPT) Test



- ✓ Stay in clinic ward
- ✓ Wait for 2-3 days for results
- ✓ Expensive in terms of total expense

## Electrooculography (EOG) & Electroencephalography (EEG) Test



- ✓ Monitoring during sleep
- ✓ Patient to wear eye mask
- ✓ Detecting parameters related to sleep activities

NPT



tumeter™

Combinatorial Innovation

EOG&EEG



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# Target Market (1/2):

While ED is a global issue and Tumeter is applicable across geographies, the target market for the first phase is Taiwan.



	US	Mainland China	Taiwan
<b>Sex Ratio (Males)</b>	49.50%	51.30%	49.70%
<b>Population ratio by age group</b>			
25-54	39.10%	46.30%	45.20%
55-64	12.80%	12.20%	14.90%
65+	16.60%	12.00%	15.80%
<b>Complexity of medical market entrance</b>	Medium	High	Low
requirement	FDA Approval (510K)	CFDA Approval (Additional local test)	TFDA Approval
Lead time	200 days	400 days	200 days
<b>Requirement of set-up resources</b>	High	Medium	Low

\* source: Worldometer



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# Target Market (2/2): Taiwan has multiple advantages for start-up entry.



## ➤ Lean Startup:

- ✓ Small capital required
- ✓ Open multiple business models



## ➤ Accessibility to patients

- ✓ 19 medical centers with close proximity
- ✓ 82%+ of NHI reimbursement funding
- ✓ 70% of total patients



## ➤ Strategic Location

- ✓ Close to Mainland China
- ✓ Beneficial for business expansion



## ➤ Contract Manufacture Partner

- ✓ More than 781 medical device manufacturers.
- ✓ Capability for medical device production at low cost.





# Addressable Market Segment: Taiwan provides a variety of medical segments for validating commercialization strategies.



	Medical Center	Regional Hospital	Clinics	Medical Laboratories	Medical Device Retailer
Pain point	<ul style="list-style-type: none"> <li>High admission fee</li> <li>Lack of data base for ED</li> </ul>	High admission fee	Current device is unaffordable	No hospital bed and ward for NPT test	Low guarantee for privacy, affordable cost and convenience
Service focus	1. Accurate diagnosis and high-quality medical treatment 2. Advanced research	High-quality medical treatment at low cost	Mature and affordable technology & device for daily medical service	Prompt & Accurate 3rd-party diagnosis test	Home-based diagnosis & monitoring solution
Quantity	19	77	11,580	210	34,593
Market Size	US\$ 16B – 20B	US\$ 1.2B –1.6B	US\$ 4.5B – 4.55B	US\$ 500M – 600M	US\$ 1.9B – 2.0B



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# Solution vs Market Segment Matrix: A deep dive on the pain points and benefits of Tumeter® to segments provides direction insights.

Customer		Patient (End user)				For Doctor (Sales Target)	
Feature Market		Time Saving	Affordability	Long-term Follow-up	Easy to Use	Diagnosis Accuracy Rate	Medical Resource Saving
	Medical Center ✓						
	Regional Hospital ✓						
	Clinics ○						
	Medical Laboratories ○						
	Medical Device Retailer ○						



# Target Customer:

Potential customers are middle-class men who are suffering ED and aging between 40 and 64.

		Male Patients' Age (years old)		
		30 - 39	40 - 49	50 - 64
Income	> middle class	<ul style="list-style-type: none"><li>Population: 0.53M</li><li>Estimated ED pt': 132,500</li><li>Budget: High</li><li>Incentive: High</li><li>Prefer Channel: Medical Center</li><li>Convenience required: High</li></ul>	<ul style="list-style-type: none"><li>Population: 0.64M</li><li>Estimated ED pt': 160,000</li><li>Budget: High</li><li>Incentive: High</li><li>Prefer Channel: <b>Medical Center</b></li><li>Convenience required: High</li></ul>	<ul style="list-style-type: none"><li>Population: 1.03M</li><li>Estimated ED pt': 266,770</li><li>Budget: High</li><li>Incentive: High</li><li>Prefer Channel: <b>Medical Center</b></li><li>Convenience required: High</li></ul>
	< middle class	<ul style="list-style-type: none"><li>Population: 1.25M</li><li>Estimated ED pt': 312,500</li><li>Budget: Medium</li><li>Incentive: High</li><li>Prefer Channel: Regional Hospital</li><li>Convenience required: Medium</li></ul>	<ul style="list-style-type: none"><li>Population: 1.20M</li><li>Estimated ED pt': 300,000</li><li>Budget: Medium</li><li>Incentive: Medium</li><li>Prefer Channel: Regional Hospital</li><li>Convenience required: Medium</li></ul>	<ul style="list-style-type: none"><li>Population: 1.55M</li><li>Estimated ED pt': 401,450</li><li>Budget: Low</li><li>Incentive: Low</li><li>Prefer Channel: Clinics</li><li>Convenience required: Low</li></ul>

## Stage 1

Middle class men with age between 40 – 64 who mainly go to medical center for ED treatment is our target customers.

## Stage 2

Through well-built channels, to expand customers into 2<sup>nd</sup> tier.

## Stage 3

Elderly men with lower income will be our optional customer group.



# Persona: Lim is a banker occasionally suffering from impotency and looking for proper help.



Name: **Lim**

Age: **46**

Occupation:

**Director in bank**

Annual Income:

**US\$200K**

## Characteristics

- Smoking habit
- Has one daughter while planning to have a son
- Previously sexually active every week
- Has friends working as urology doctor
- Working almost everyday, including at home or in office
- Travel for business frequently (avg. 4 times per month)

## Pain Points

- ED occurs unregularly (avg. 30% in terms of frequency)
- Not sure if it is caused by psychological or physical problem
- Has consulted doctor (friend) privately but do not have time for further test
- Reluctant to discuss with wife and let her down

## Value Proposition

- ✓ **Save time** with home-based device and short-time test
- ✓ **Prompt conclusion** with data connection back to hospital
- ✓ **Positive communication** with his wife based on available ED solution



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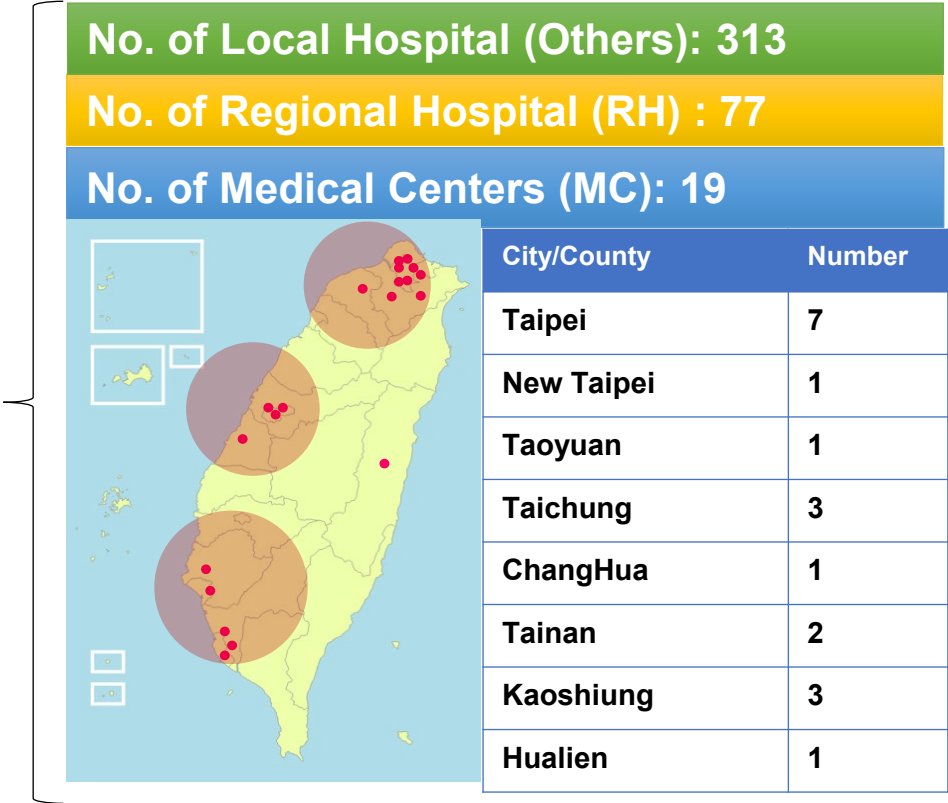
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# Go-to Market Strategy(1/3):

We propose to focus on medical centers and regional hospitals in Taipei region first, and then expand our business in Central and Kao-pin regions.

## 1. Aggregated in Three Regions

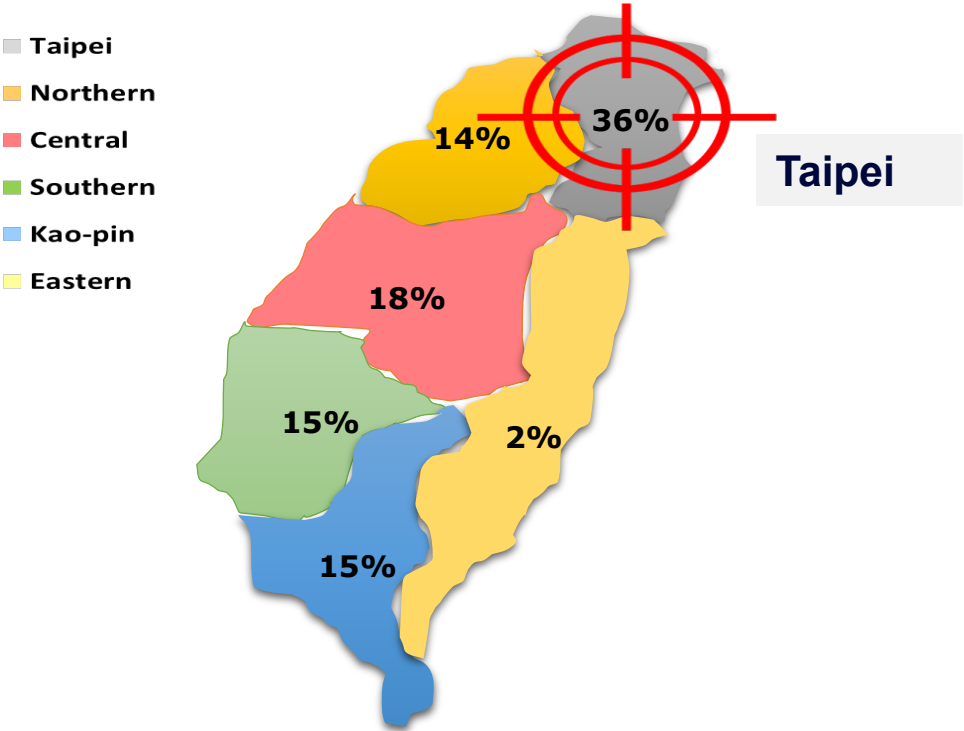
In Taiwan, the largest three medical resources clusters are *Taipei*, *Central*, and *Kao-pin* regions. It would be easy to focus on those three regions to maximize the cost-efficiency.



## 2. Start with Taipei

in order to keep lean and minimize initial start-up capital.

### Geographic Share of Medical Expenditure



Taipei has **7 medical centers**, **20% of Urology doctors** and takes up **36%** of medical expenditure.



# Go-to-Market Strategy (2/3):

based on our market insights generated from the medical professions in Taiwan, we will conduct **Quadro 2** Strategies to enter Taipei region.

## Two Key Opinion Leaders

MD. PU and MD. Huang are the most influential leaders among Urology doctors in Taipei.



YEONG-SHIAU PU,  
Chairman of TUA  
Professor of NTUH



William J. Huang,  
Chairman of TAA  
Chief Physician of  
Andrology Division

## Two Core Medical Centers

The most famous urologic medical centers in Taiwan.



National  
Taiwan  
University  
Hospital  
(NTUH)



Taipei  
Veterans  
General  
Hospital  
(VGHTPE)

## Two Medical Associations

in order to include the device for diagnosis in the **treatment guideline**.

1. Taiwan Urological Association (TUA)
2. Taiwanese Association of Andrology (TAA)



台灣泌尿科醫學會  
Taiwan Urological Association



台灣男性學醫學會  
The Taiwanese Association of Andrology

## Two Medical Conferences

1. International Section of Annual Urology Conference
2. Annual Andrology Conference



# Go-to-Market Strategy (3/3):

Five years implementation plan is made based on economic level and medical resource concentration level.

	Year 1	Year 2	Year 3	Year 4	Year 5
Market Segment	Medical Center	Medical Center	Medical Center	<ul style="list-style-type: none"><li>Medical Centre</li><li>Regional Hospital</li></ul>	<ul style="list-style-type: none"><li>Medical Centre</li><li>Regional Hospital</li></ul>
Cluster	Taipei	Taipei	Taipei, Central	Taipei, Central, Kao-pin	Taipei, Central, Kao-pin
Quantity	2 medical centers	5 medical centers	10 medical center	11 medical center 12 regional hospital	13 medical center 24 regional hospital
Total Market Share	0.27%	0.87%	1.99%	5.10%	8.66%
Total Revenue	\$87,437	\$288,367	\$670,140	\$1,753,799	\$3,035,767



# Business & Revenue Model:

Based on recycling model, revenue will be charged by one-time usage and long-term rental fee.



- 1 Device fee: \$40**
  - Deliver by bulk
  - Refund of commission fee
- 2 Service fee: \$20**
  - Diagnosis test : 1-2 days
  - Expected margin: 80%
- 3 Further subscription fee: \$20 per week**
  - Monitoring : 8 weeks
  - Expected margin: 20%





**Financial Projection:** Expected breakeven time is 2.68 years with 52% profit rate after tax.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Total Revenue		\$87,437	\$288,367	\$670,140	\$1,753,799	\$3,035,767
Total Cost		\$113,705	\$186,180	\$307,314	\$695,375	\$1,072,997
EBIT		\$(26,268)	\$102,186	\$362,827	\$1,058,424	\$1,962,770
Present Value (20% discount rate)		\$(21,890)	\$56,770	\$167,975	\$408,343	\$631,035
Accumulative NPV	\$(150,000)	\$(171,890)	\$(115,120)	\$52,855	\$461,198	\$1,092,233

### *Optimistic Scenario*

Breakeven time: **2.01** years  
 Revenue in year 5: US\$ 3,455,042  
 Profit Margin in year 5: **54%**

### *Realistic Scenario*

Breakeven time: **2.68** years  
 Revenue in year 5: US\$ 3,035,767  
 Profit Margin in year 5: **52%**

### *Not as expected*

Breakeven time: **3.10** years  
 Revenue in year 5: US\$ 2,961,313  
 Profit Margin in year 5: **50%**



# Risk Mitigation

Risk & Challenges		Impact	Mitigation
1	➤ Technology – Breach of <b>Personal Data</b>	HIGH	<ul style="list-style-type: none"> <li>➤ Constantly seek to work with platforms that have high credibility</li> <li>➤ Take note of offline breach of data through contracts and company policies.</li> </ul>
2	➤ Competitors – Many (big) <b>companies enter the playing field</b>	MEDIUM	<ul style="list-style-type: none"> <li>➤ Instead of competing, establish partnerships</li> <li>➤ Focus on the service portion that our product seeks to provide.</li> </ul>
3	➤ Economics of Scale – Problems with scaling facilities leading to <b>production delays</b>	LOW	<ul style="list-style-type: none"> <li>➤ Continuous checks to ensure production quality is maintained</li> <li>➤ Establish close contact with suppliers to ensure sufficient components</li> </ul>
4	➤ Market Entry – Obstacles entering market due to <b>medical testing requirements.</b>	MEDIUM	<ul style="list-style-type: none"> <li>➤ Keep track of any changes to Taiwan's medical devices policies.</li> <li>➤ Perform due diligence and ensure that all necessary tests are done in advance.</li> </ul>





THANK YOU