

MEDICAL ROBOTIC



Far away from surgical robots in Sci-Fi films – Initiate w/ SELL

January 25, 2022

INVESTMENT SUMMARY

- A surgical robot today is more a mechatronic tool than a smart, information technology-driven or decision capable tool as depicted by the name robot. The expertise gained from today's successful surgical robot product doesn't necessarily translate to competitive advantage of tomorrow;
- The medical benefits of today's surgical robot are moot. Further, the competitive advantages of domestic surgical robot companies against established global players are moot;
- MedBot's leading domestic competitor is likely to launch a price war once its product comes to market. We also believe state procurement will kick in at certain point to accelerate the consolidation of the market.

Research Team



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MedBot (Group) Co., Ltd. Co. (SEHK: 2252)

Prefer to come in after the storm settles

- Surgical robot today is a precursor product of the eventual AI-enabled, decision capable one of the future. Current surgical robot's medical benefit is confined to a narrow set of procedures and a narrow set of matrices;
- Domestic surgical robots have no competitive advantage against global products except price and implicit government support. To fight for install base ahead of state procurement, we believe a price war will erupt soon;
- We initiate with SELL with TP of HK\$19.9. We prefer to come in after the price war.

This robot isn't that robot

Surgical robot today isn't robot per say. Most of them not only requires the surgical doctor's eyes but also his/her hands, to operate. The official Chinese name, endoscopic surgical instrument control system (内窥镜手术器械控制系统), revealed its true nature. It is more expensive to operate, requires additional training, and has advantage over traditional surgery only in a narrow set of procedures. We estimate the China surgical robot market size to be Rmb2.7 bn in 2020. We expect it to grow 38% CAGR to Rmb13.8 bn by 2025.

Surgical robot in China is hard to reach same popularity as US

MediCare and commercial insurance cover most surgical robot costs in US, resulting in reduced invasiveness and faster recovery in some procedures. The cost is harder to justify in China, except in better fiscal-balanced cities.

The competitive moat is shallow for now

In addition to patent infringement uncertainties from the global players, we also found domestic surgical robots relying heavily on imported components. Since surgical robots require extensive doctors training and each product is incompatible with the other, we foresee domestic players offering steep price cuts to build the installed base, especially in laparoscopic robots.

Supply chain migration to China is the key

The key to Intuitive Surgical's (IS) high gross margin is its consumables, which also opens the door for MedBot to overcome IS's competitive moat. We would turn positive on MedBot if it can produce consumable at a much lower cost.

Summary financial data

Highlights	F2019A	F2020A	F2021E	F2022E	F2023E
Revenues (RMB mn)	-	-	4	172	460
Non-IFRS op profit (RMB mn)	-	-	(380)	(305)	(228)
IFRS EPS (RMB)	(0.11)	(0.28)	(0.49)	(0.42)	(0.35)
P/E (BLRI)	(605.0x)	(201.8x)	(88.9x)	(104.0x)	(124.0x)
Free cash flow yield (%)	(0.1%)	(0.3%)	(1.2%)	(1.0%)	(0.7%)

Source: Bloomberg, Blue Lotus (as of Jan 25, 2022)

BUY

HOLD

SELL

Target Price: HK\$ 19.9

Current Price: HK\$50.4

RIC: (SEHK: 2252)

BBG: 2252 HK

Market cap (HK\$ mn)

48,265

Average daily volume (HK\$ mn)

64

Shares out/float (m)

952/225

Source: Bloomberg, Blue Lotus (as of Jan 25, 2022)

Key Changes

	New	Old	Diff
BLRI Recommendation	SELL	-	
BLRI Target Price (HK\$)	19.9	-	
2021E EPADS (HK\$)	(0.60)	-	
2022E EPADS (HK\$)	(0.51)	-	
2023E EPADS (HK\$)	(0.43)	-	

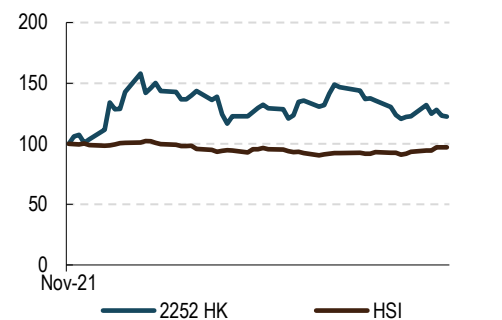
Source: Blue Lotus (as of Jan 25, 2022)

BLRI vs. The Street

No. of Bloomberg Recommendations	3
Target price vs. Bloomberg mean	(71.2%)
1-year-fwd EPS vs. Bloomberg mean	NM
Bloomberg recommendation	4.33

Source: Bloomberg Recommendation, Blue Lotus (1=SELL,5=BUY)(as of Jan 25, 2022)

Price performance and volume data



Source: Bloomberg, Blue Lotus (as of Jan 25, 2022)

Research team



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Blue Lotus Capital Advisors Limited

All prices are those current at the end of the previous trading session unless otherwise indicated. Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Bloomberg, Blue Lotus Capital Advisors Limited and subject companies. Consensus forward estimates are used in analysis. Past performance is not indicative of future results. Investors should consider this report as only a single factor in making their investment decision.

MedBot (Group) Co., Ltd.: Financial Summary

Fiscal year ends-31-Dec

Exhibit 1. Income statement

RMB mn	F2020	F2021E	F2022E
Revenue	0	4	172
Laparoscopic surgical robot	0	0	94
Joint replacement surgical robot	0	0	19
3D Electronic Laparoscope	0	4	59
Others	0	0	0
Cost of sales	0	(2)	(77)
Gross profit	0	2	94
Gross margin	0%	55%	55%
Research and development costs	(135)	(320)	(327)
Selling and marketing expenses	(3)	(32)	(53)
Administrative expenses	(27)	(107)	(116)
Operating profit (loss), IFRS	(158)	(451)	(380)
Operating margin, IFRS	NM	(10072%)	(221%)
Operating profit (loss), non-IFRS	0	(380)	(305)
Operating margin, non-IFRS	NM	(8484%)	(178%)
Profit before tax	(209)	(475)	(406)
Income tax expense	0	0	0
Loss for the period	(209)	(475)	(406)
Loss per share (RMB)	(0.28)	(0.49)	(0.42)

Source: MedBot, Blue Lotus (as of Jan 25, 2022)

Company Description

Founded in 2015, MedBot is a top-tier surgical robot company dedicated to designing, developing, and commercializing surgical robots. The company's core product is Toumai, the laparoscopic surgical robot that is expected to be applied on urologic, gynecologic, thoracic, and general surgeries. MedBot has submitted an NMPA registration application for Toumai in May 2021 and is expected to commercialize in about 1-2 years.

Industry View

The global market size of surgical robots is expected to grow with a CAGR of 31% from 2020 to 2023 to reach US\$18.9bn by 2023, while the laparoscopic robots, which is the dominant type of surgical robot, is expected to grow with a CAGR of 28% from 2020 to 2023 and reach US\$10.9bn. We estimate China's surgical robot market to grow to Rmb10.6bn in 2023.

Exhibit 2. Balance sheet

RMB mn	F2020	F2021E	F2022E
Inventories	0	54	79
Trade and other receivables	17	1	23
Cash and cash equivalents	1,497	2,098	1,690
Total current assets	1,515	2,168	1,807
Property, plant and equipment	39	80	156
Intangible assets	1	1	2
Prepayments	1	5	10
Total non-current assets	189	418	500
Total assets	1,704	2,586	2,307
Trade and other payables	222	242	242
Lease liabilities	19	107	107
Deferred income			
Total liabilities	22	22	22
Total equity attributable to owners	1,441	2,216	1,902
Total Liabilities and equity	1,704	2,586	2,273

Source: MedBot, Blue Lotus (as of Jan 25, 2022)

Exhibit 3. Cash flow statement

RMB mn	F2020	F2021	F2022E
Loss before tax	(209)	(475)	(406)
Amortisation and depreciation	4	23	44
Finance Income/costs (Net)	49	4	6
Equity-settled share-based payment	16	74	86
Changes in working capital	32	(107)	(47)
Net cash used in operating activities	(103)	(464)	(308)
Payments for the purchase of PPE	(15)	(57)	(97)
Net cash generated from investing activities	(15)	(55)	(95)
Capital contributions by investors	61	1,125	0
Capital element of lease rentals paid	(4)	(4)	(4)
Capital contributions by investors with preferred rights	1,509	0	0
Net cash flows generated from financing activities	1,561	1,120	(5)
NET INCREASE IN CASH AND CASH EQUIVALENTS	1,443	601	(408)
Balance b/f	55	1,497	2,098
Balance c/f	1,497	2,098	1,690

Source: MedBot, Blue Lotus (as of Jan 25, 2022)

See the last page of the report for important disclosures

Recent Reports

January 24, 2022: [Blue Lotus Sector Update]: **JDH powered ahead in structurally challenging market**

January 20, 2022: [XD Inc. (2400 HK, HOLD, TP HK\$36.2) Rating Change]: **Downgrade to HOLD as regulation clouds the growth**

January 18, 2022: [ZTO Express (ZTO US, HOLD, TP US\$34) Earnings Preview]: **Profit recovers but share gain stagnates**

January 17, 2022: [Grab Holdings (GRAB US, SELL, TP US\$3) Initiation]: **Caught between a rock and a hard place**

January 14, 2022: [Blue Lotus Sector Update]: **2022 NEV still the best sector**

January 14, 2022: [JD.com (JD US, BUY, TP US\$103) Earnings Preview]: **Solid 4Q performance amid current downturn**

January 12, 2022: [Tencent (700 HK, SELL, TP HK\$409) Target Price Change]: **Net profit is likely to have YoY decline**

January 11, 2022: [Alibaba (BABA US, HOLD, TP US\$155) Earnings Preview]: **eCommerce is still under pressure, reiterate HOLD**

January 11, 2022: [Pinduoduo (PDD US, SELL, TP US\$50) Earnings Preview]: **GMV growth continues to slowdown**

January 10, 2022: [JD Logistics (2618 HK, BUY, TP HK\$34) Target Price Change]: **Expecting modularized logistics capabilities**

January 7, 2022: [Bilibili (BILI US, SELL, TP US\$35.3) Earnings Preview]:

Investment Cases at a Glance

Why is it a SELL

- **Surgical robot is neither innovative nor differentiated at the present time:** We believe Chinese government is the largest integrated health care system (医联体) in the world with unprecedented and unparalleled power to influence medical pricing and supply. As noted in our September 15, 2021 initiation <Early stage calls for prudence>, Chinese government controls ~70% of hospital beds, ~80% of healthcare professionals, ~65% of drug sales and ~95% of medical insurance payments in China. As a result, we believe only the truly innovative and irreplaceable technology or capability can withstand the pricing pressure from the government or the competitive environment the government will strive to foster;
- **Surgical robot is not really a robot:** To date, surgical robots cannot replace human surgeons in performing the surgical operation. They cannot *always* shorten the duration of the operation. Surgical robots are mostly tele-manipulators, which use the surgeon's activators to control the "effector" on the remote side. As such, robot assisted surgeries (RAS) are, by design, aimed at providing peripheral benefits like smaller scars and faster recovery, but at the expense of meaningfully higher cost. These, in our view, aren't the top priority in the eyes of China's government-controlled health system;
- **Intuitive Surgical's (ISRG US, NR) *da Vinci* System already handles peripheral yet expensive benefits well. Low cost domestic rivals can meet the 2nd unit demand well:** *da Vinci* System entered China in 2006 and today has 100% market share of ~250 units. MedBot develops its products as a substitution of *da Vinci* and also Stryker's (SYK US, NR) *Mako* orthopaedic robots. Yet the key technologies and components are the same and same sourced. *Da Vinci* and *Mako* benefit from almost a decade of patient use data and doctors' training. We foresee main demand for domestic surgical robot to come from hospitals with a second unit demand or hospitals who cannot obtain the configuration permit (配置证). However, patients willing to pay for high cost in exchange for peripheral benefits aren't likely to be sensitive to price. Domestic competitors with water-down capability (3-arm) but cheap price can be potent competitors for the 2nd unit demand;
- **Configuration permit system is a double-edged sword:** Chinese government requires medical equipment installation priced above Rmb 10 mn to receive budget approval called the configuration permit. While such arrangement does open the possibility of policy support, it also limits the market potential and benefits low priced rivals who do not need configuration permits. We view it unlikely that Chinese government will directly interfere with hospital's choice in order to help domestic copy-cat technology;
- **Quality and patent are risks:** According to FDA, 0.2% of patients who performed robot-assisted surgeries experienced hardware malfunction.

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Regulation and competition are still two concerns

January 7, 2022: [NetEase (NTES US, BUY, TP US\$136) Target Price Change]:

Slightly cut est. of online gaming and maintain BUY

January 6, 2022: [Kuaishou (1024 HK, BUY, TP HK\$140) Earnings Preview]:

Efficiency is improving, maintain TP HK\$ 140

January 5, 2022: [SEA Limited (SE US, BUY, TP US\$280) Target Price Change]:

Still a day-1 company amid eCommerce slowdowns

December 30, 2021: [Blue Lotus Sector Update]:

Domestic pressure pushes companies to go overseas

December 28, 2021: [Blue Lotus Sector Update]:

Cross-border merchants expands to multi-channels

December 20, 2021: [JD Logistics (2618 HK, BUY, TP HK\$37) Initiation]:

Best friend of the best brands

December 17, 2021: [Tencent (700 HK, SELL, TP HK\$431) Target Price Change]:

Online ads. sees more downside

December 16, 2021: [Blue Lotus Sector Update]:

Can Chinese companies learn from <Genshin Impact>?

December 14, 2021: [Xiaomi (1810 HK, HOLD, TP HK\$20) Company Update]:

Intensifying competition likely to dent store expansion

December 13, 2021: [Blue Lotus Sector Update]:

Biopharma's fall is an overkill

Further, such dexterity tools, like Intuitive's *EndoWrist*, are extremely heavily patented. Even MedBot runs the risk of patent infringement;

- **The US does not censor the export of surgical robotic technology to China:** Despite its origin as a battlefield technology, surgical robot is not censored by US government today. Both Intuitive and Stryker have made extensive investment in China for decades;
- **MedBot has no cost advantage against Intuitive and Stryke:** Clinical results shows MedBot *Toumai*'s performance is comparable to the old version of *da Vinci*. Our expert check found that MedBot and its domestic competitors rely on imported hardware components to achieve that performance, which weakens its cost-control potential down the road;
- **Short term market is saturated:** The average number of surgeries performed per laparoscopic surgical system in China declined from 435 in 2018 to 251 in 2020, reflecting the ramp up and doctor training required to put one surgical robot into full capacity use. Additional installation will be scrutinized;
- **Competitor might launch a price war:** According to our channel check, Edge Medical (精鋒) is MedBot's closest competitor which is 12-18 months behind MedBot in commercialization. We learned that there is a high likelihood that Edge Medical might launch a price war at its product introduction;
- **Too many domestic competitors with similar development statuses:** The development of Chinese surgical robots benefited from the expiration of Intuitive Surgical's patents expiration in 2016-2022. However, such benefit can help multiple entrants. We count four competitors rolling out similar product in the next 18 months. By 2024, other domestic companies such as Edge Medical (精鋒), Surgerii (术锐), WEGO (威高), and Kangduo (康多) are expected to launch their laparoscopic robots, all with imported components;
- **State procurement (集采) might curtail the payback period:** *da Vinci*'s *EndoWrist* instruments must be replaced after 10 times use, leading to substantial consumable profitability. Recent state procurement of In-vitro-diagnosis (IVD) agents in Anhui Province also showed exclusive use medical supply can fall into state procurement programs. We believe a price war will erupt to enlarge one's installed base before state procurement kicks in;
- **The future of AI, big data and network enabled surgical robots will not be built on current technology:** We believe the real surgical robots may use computer vision to direct surgical tools, machine learning to train itself and decision support to complete the surgery on spot. Laparoscopic and orthopaedic robots, which today constitute 80% of the market, aren't likely the ones of such robots;
- **MedBot's valuation has exceeded its parent:** Parent MicroPort (853 HK, NR) controls 50.7% of MedBot and yet MicroPort's valuation has fallen below MedBot's.

What are the key catalysts for the next 3-6 months

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December 13, 2021: [Blue Lotus Sector Update]: **Douyin gains strong momentum in eCommerce**

December 9, 2021: [Hua Hong (1347 HK, BUY, TP HK\$60) Initiation]: **Profiting from self-sufficiency with less polit**

December 3, 2021: [Bilibili (BILI US, SELL, TP US\$35.3) Rating Change]: **Adulthood has more annoyances, DG to SELL**

December 2, 2021: [Zai LAB (ZLAB US, BUY, TP US\$152) Company Update]: **A good opportunity for long-term investment**

December 2, 2021: [Li Auto (LI US, BUY, TP US\$48) Target Price Change]: **A long-term winner, but not 2022**

December 2, 2021: [Nayuki Holding (2150 HK, BUY, TP HK\$13.9) Initiation]: **The winning chance is its business model**

December 1, 2021: [Meituan (3690 HK, HOLD, TP HK\$260) Rating Change]: **Douyin is the next swing factor, DG to HOLD**

November 30, 2021: [Pinduoduo (PDD US, SELL, TP US\$50) Rating Change]: **The party is over, DG to SELL**

November 29, 2021: [YIDU (2158 HK, SELL, TP HK\$10) Earnings Review]: **Project based firm hard to have earning leverage**

November 26, 2021: [Kuaishou (1024 HK, BUY, TP HK\$140) Target Price Change]: **Strong user performance– Raise TP to HK\$140**

- **Fast development and commercialization of key products (+):** The urology application of Toumai (图迈) and the total knee arthroplasty (TKA) application of Honghu (鸿鹄) are currently at their registration application stage. We expect both of them to be approved before 2H22 and the selling of *Toumai* and *Honghu* will start at 2H22 and 1H23, respectively, ending MedBot's status as a pre-revenue company;
- **The update of NHC configuration permit plan (+/-):** We estimate National Health Commission (NHC) and provincial health commissions will announce the next configuration permit plan by 2023. NHC may also adjust current configuration permit plan, which is valid for two years;
- **Inclusion by national health insurance scheme (+):** Beijing and Shanghai already covered robot-assisted orthopaedic and laparoscopic surgeries in their health insurance schemes but in the treatment category of “determined but unnecessary”. Further inclusion by other cities might benefit MedBot;
- **IVD collective procurement being promoted to more cities (-):** Consumables are the key driver for margin for surgical robots. Whether exclusive consumables can be procured by the state is heavily watched for. In-vitro diagnostic (IVD) reagents procurement in Anhui is an early indicator. If other cities or provinces follow suite, it will be a potent hit to MedBot;
- **Accelerated commercialisation of other domestic surgical robots (-):** Edge Medical's laparoscopic surgical robot is expected to launch in 2023. The launch of WEGO and Kangduo's products will seize the market of the hospitals with insufficient budgets.

Where can we be wrong?

- **China abolishes configuration permit system:** Abolishing configuration permit system will turn the competition from a race of quality into a race of production capacity and channel effectiveness, which Chinese domestic companies might enjoy some advantage. However, we don't think demand will meaningfully pick up given the peripheral benefit provided by surgical robots today. Regulatory action in other large scale medical equipment also do not support the likelihood;
- **Delay in competitor timeline that gives MedBot additional monetization window:** Currently at the full priced, full quality, proven technology category Edge Medical and MedBot are two front runners. Execution by Edge Medical will impact MedBot's market standing and window for monetization;
- **Success in other products may change investor's perception:** A salient fact of surgical robotics industry is that success in one surgical field doesn't guarantee success in another. MedBot has a broad product portfolio under development, most of which, however, has tiny addressable market.

What can change our view?

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November 25, 2021: [Alibaba Health (241 HK, SELL, TP HK\$2.6) Target Price Change]: **Time of transition will take time...Maintain SELL**

November 25, 2021: [XPeng (XPEV US, BUY, TP US\$63) Target Price Change]: **Raise TP to US\$ 63.0 on optimistic 2022 outlook**

November 25, 2021: [YY (YY US, BUY, TP US\$69) Target Price Change]: **Strong performance with setback, cut TP to USD 69**

November 25, 2021: [Vipshop (VIPS US, HOLD, TP US\$11.5) Target Price Change]: **Slowed revenue growth and limited margin upside**

- **US put surgical robot into a censorship list:** Such undertaking will directly remove Intuitive Surgical and Stryker from the Chinese market and will greatly help domestic champions like MedBot;
- **Strong execution enlarges competitive lead:** MedBot has 12-18 months lead over its nearest competitor which will allow MedBot to sell at a decent price before cutting costs to meet competitor's roll out. We expect MedBot to grab a market share of 10% against Intuitive in this 12-18-month period and sell 16 units by the end of 2023. Performance materially above will materially change our view;
- **Pricing of Toumai is set below Rmb15mn:** We currently expect the price of *Toumai* to be set at 25% below *da Vinci Xi*, which sells at Rmb25mn per installation. While we don't expect the market of surgical robots to be price sensitive, we would interpret MedBot's aggressive market share ambition as a signal for rapid product upgrade to win the market by organization capability, not by technology or single product. We might review our thesis if we deem such strategy is sustainable.

Operating Metrics

Exhibit 4. Revenue table

	1H20	2H20	1H21	2H21	1H22	2H22
Revenue	-	-	-	4	28	81
Cost of revenue	-	-	-	(2)	(13)	(36)
Gross profit	-	-	-	2	16	44
Gross margin	-	-	-	1	1	1
Research & Development	(41)	(95)	(160)	(160)	(162)	(165)
Sales & marketing	(1)	(2)	(15)	(18)	(21)	(32)
Administrative	(8)	(19)	(52)	(55)	(57)	(59)
Operating income, GAAP	(49)	(110)	(231)	(219)	(213)	(201)
Operating margin, GAAP	NM	NM	NM	(4900%)	(752%)	(248%)
Operating income, non-GAAP	-	-	(195)	(184)	(177)	(162)
Operating margin, non-GAAP	NM	NM	NM	(4121%)	(625%)	(200%)
Loss before tax	(49)	(160)	(243)	(233)	(227)	(214)
Income tax (credit)	-	-	-	-	-	-
Loss for the period	(49)	(160)	(243)	(233)	(227)	(214)

Source: MedBot, Blue Lotus (as of Jan 25, 2022)

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Laparoscopic robot today = tele-manipulator

Mainstream surgical robots nowadays are non-intelligent tools that reduces the fatigue of doctors and bring mainly short-term benefits to the patients. The long-term effect of robot-assisted surgeries (RAS) is controversial. We expect that the Chinese market of surgical robots to grow at a CAGR of 38.3% to Rmb13.8 bn from 2020 to 2025. We expect China laparoscopic surgical robot to maintain its dominance of 65-70% of the market during this period.

The surgical equipment control system is not a robotic doctor

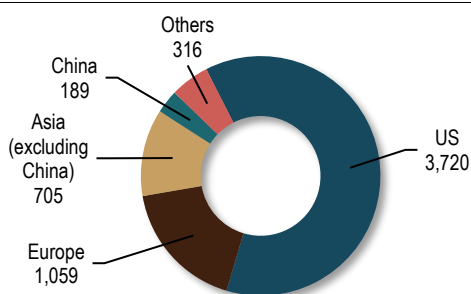
As its name suggests, the laparoscopic surgical system can assist surgeons to perform endoscopic surgeries. The system is also known as the Endoscopic Surgical Instrument Control System (内窥镜手术器械控制系统), which is a more appropriate name because of what the system can do is to accurately repeat what the surgeon operates on the controller, rather than performing the surgery automatically and intelligently. This suggests that the laparoscopic surgical system cannot replace human surgeons.

Laparoscopic surgical robot is the dominant type of surgical robot, Intuitive Surgical is the monopoly laparoscopic surgical robot company.

To date, Intuitive Surgical has a monopoly on the global laparoscopic surgical system market. In 2020, its main product, *da Vinci System*, has an installed base of 5,989 units worldwide, of which 62% (3,720) were installed in the US and 3.1% (189) systems were installed in China (Exhibit 5). Exhibit 6 shows the three key components of *da Vinci Xi*, the 4th generation of Intuitive's laparoscopic system: (1) a patient cart with robotic arms and instruments, (2) a surgeon console for doctor to operate and (3) a vision cart for the doctor to view. As such a *de Vinci System* functions as a doctor's eyes and hands. A *da Vinci System* is typically priced between Rmb20-30 mn in China (depending on configuration). One robot-assisted surgery (RAS) using *da Vinci Systems* typically charges the patient Rmb 30-40K for the use of robots, on top of other costs, such as the surgeon's fee.

Using da Vinci System to assist laparoscopic surgery will cost an extra Rmb30-40K for using the robot.

Exhibit 5. Installation by region



Source: Intuitive Surgical, Blue Lotus (2022/1/25)

Exhibit 6. da Vinci Xi System



Source: Intuitive Surgical, Blue Lotus (2022/1/25)

The advantage is shorter recovery and smaller scar size

An RAS can neither free the surgeons nor make independent surgical decision. So, what is the benefit? RAS's are typically minimal invasive, which refers to a method that avoids long cuts by operating on the body through small (usually 1-3 cm) entry incisions. Using tele-manipulators like surgical robots, average surgeons can perform complex surgeries with superb quality. The flexible robotic arms can access the sites where traditional minimal invasive surgeries cannot reach easily. It can also filter out the operator inherent hand tremor due to nervousness or fatigue. The system

Urological surgery is the most common application of RAS.

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usually offers the surgeon a 3D view of the operation site, reducing radiation exposure and protect the doctor's health.

For patients, RAS may reduce blood loss, cause less pain, and leave smaller scars, resulting in shorter hospital stay post the surgery. However, these advantages tend to vary among different surgeries, with urology surgery being the type with the most pronounced advantage, thanks to the concentrated nerves, organs and arteries around the abdominal area. An RAS surgery in the abdominal area can improve the average surgical quality.

Exhibit 7 compares the common types of RAS performed by laparoscopic surgical system.

RAS may reduce patient's blood losses, analgesic uses and the sizes of scar. It also improve the average quality of the surgery.

Exhibit 7. Some of typical RAS performed by the laparoscopic surgical system

Department	Typical surgery	Avg. price of conventional (K RMB)	Avg. price of RAS (K RMB)*
Urologic (泌尿科)	Prostatectomy (前列腺切除)	20-40	50-80
	Cystectomy (膀胱切除)	30-50	60-90
	Nephrectomy (肾切除)	20-30	40-100
Gynecologic (妇科)	Hysterectomy (子宫切除)	5-15	No data
	Myomectomy (子宫肌瘤切除)	5-15	No data
	Sacro colpopexy (阴道-骶骨固定术)	No data	No data
General (普外科)	Hernia Repair (疝修补)	5-20	No data
	Colorectal Surgery (结直肠外科手术)	30-50	60-70
	Cholecystectomy (胆囊切除术)	8-20	No data
	Bariatric Surgery (减肥手术)	30-60	70-90
Cardiothoracic (心血管)	Coronary artery bypass grafting (冠脉搭桥)	80-11	No data

Source: Blue Lotus (2022/1/25) *The price of surgery varies by region, level of hospital, and the patient's condition.

The medical benefit of RAS is controversial

However, the medical benefit of RAS has been controversial, albeit RAS significantly increase the cost of the surgery. Several studies on the most commonly and successfully used laparoscopic surgery, Robotic-Assisted Laparoscopic Radical Prostatectomy (RALRP), showed no or insignificant improvement in therapeutic benefits.

A research with a sample size of 4,003, published on <European Urology> in 2021 (Source: Lantz et al., <European Urology>, November 2021) showed that eight years after the RALRP surgery, the probability that a patient has urinary incontinence, erectile dysfunction and cancer mortality were 29% vs. 27%, 70% vs. 66%, and 2.8% vs. 1.5% against conventional surgeries. Another study with a sample size of 37,645 concluded that RALRP has only improved 0.17% of the 5-year all-cause mortality of patients (Source: Wang et al., <Annals of Surgery>, December 2021). Other studies and reports from <American Cancer Society>, <Nature> and others concluded that RALRP does not have any significant long-term advantages. It actually makes sense, as all RAS's are performed by doctors. A country which only allows qualified doctors to perform surgery keeps an acceptable surgical quality level.

The therapeutic outcome of RAS remains controversial. Some stated that the long-term benefit of using surgical robot is insignificant, or even worse.

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Other applications of the laparoscopic surgical system are also being questioned. FDA issued a warning in 2019 stating that the safety and effectiveness for the use of surgical robots in breast and gynecologic surgeries have not established. FDA further stipulated that preliminary data showed long-term survival rate of RAS appeared to be lower than conventional open surgeries.

US FDA hasn't approved the therapeutic benefit of RAS overweighing its additional risks.

An RAS introduces additional mechatronic complexity on top of human hand complexity, which may actually increase risk of the operation. Exhibit 8 summarizes the FDA reports on RAS equipment malfunctions. In 2015-2020 there are 7,979 *da Vinci System* related adverse events reported, accounting for 0.2% of all *da Vinci* surgeries performed in that period. There have been cases that resulted in patients' death or injuries.

In China, laparoscopic surgical robots are classified as large medical equipment that needs state or provincial budget approval for public hospitals to purchase. In the quota list, laparoscopic RAS like *da Vinci* is called laparoscopic surgical instrument control system, which depicts its true nature (Exhibit 9).

Laparoscopic RAS isn't called a robot by Chinese regulator.

Exhibit 8. Adverse events related to the da Vinci system reported by FDA

	2015	2016	2017	2018	2019	2020
No. of RA Laparoscopic surgeries in the US (K)	499	563	644	753	883	876
No. of related FDA adverse events reports (K)	1.7	1.1	1.1	1.2	1.2	1.7
Adverse events%	0.35%	0.20%	0.17%	0.15%	0.14%	0.19%
Events that resulted in injury	134	182	196	187	229	224
Events that resulted in death	34	15	14	13	17	38

Source: FDA, Blue Lotus (2022/1/18)

Exhibit 9. Chinese regulator classifies Da Vinci as a control system

附件

2018—2020 年大型医用设备配置规划数量分布表
(调整后)

单位: 台

区域	省(区、市)	甲类						乙类											
		质子放射治疗系统		正电子发射型磁共振成像系统(PET/MR)		高端放射治疗类设备		X线正电子发射断层扫描仪(PET/CT)		内窥镜手术器械控制系统(手术机器人)		64排及以上X线计算机断层扫描仪(64排及以上CT)		1.5T及以上磁共振成像系统(1.5T及以上MR)		直线加速器(含X刀)		伽马射线立体定向放射治疗系统	
		规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数	规划总数	其中: 2018—2020年规划数
西南	重庆					5	4	18	15	6	5	201	105	254	130	75	35	10	5
	四川					9	9	34	24	11	9	439	255	539	270	173	82	20	9
	贵州	3	3	7	6	4	4	12	10	5	5	233	140	243	125	51	31	5	2
	云南					5	5	16	14	5	4	300	218	272	145	45	25	10	9
	西藏					1	1	2	2	1	1	19	14	14	10	3	3	1	1
西北	陕西					6	6	27	20	9	8	298	175	333	195	83	46	13	12
	甘肃					2	2	9	7	4	3	166	100	145	80	33	15	1	1
	青海					2	2	4	2	2	2	42	20	42	20	15	10	1	1
	宁夏	1	1	3	3	2	2	4	3	2	2	56	35	57	30	16	11	2	2
	新疆					2	2	9	5	3	3	150	80	172	80	38	15	3	2
	新疆生产建设兵团					1	1	3	2	1	1	55	38	47	30	10	5	2	1
合计					216	188	884	551	268	225	9338	4754	10713	5318	3405	1451	296	188	

Source: NMPA

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Single-port laparoscopic is the future

Besides, at the end of 2021, MedBot announced that it is developing the single-port laparoscopic surgical system, which is the counterpart of Intuitive's da Vinci SP system. The single-port laparoscopic surgical system can pass its instruments to the patient's cancer site through one incision only. While the multi-port system is usually accessed by multiple incisions. Although multi-port laparoscopic robot can also be programmed to operate with one port, such port is significantly bigger than a true single-port robot. The advantage of single-port is to further reduce the blood loss, recovery time, and lesions. But currently single-port systems cannot always replace multi-port systems, such as in some thoracic surgeries.

Other domestic companies such as Edge Medical (精鋒) and Surgerii (术锐) are also developing single-port laparoscopic surgical system. Edge Medical's single-port system has been admitted to the NMPA Approval Green Path, which accelerates its approval process. Currently it is in pre-clinical trial stage, which is slightly later than MedBot. Surgerii was invested by Medtronic, its single-port system will launch later than MedBot and Edge Medical.

Single port laparoscopic robot is not a completely proven product yet.

MedBot has a lead over peers but facing da Vinci is a tall order

MedBot's laparoscopic robot, Toumai (图迈) has admitted to the NMPA Green Path and expected to pass NMPA license in 1H22. We expect it to launch 2H22, sell 4 units at a price of Rmb 20 mn per system in the first year. As a result, we expect Toumai to generate a revenue of 94 mn (including consumables and maintenance services) in 2022, followed by revenue of Rmb 305 mn in 2023 and 609 mn in 2024. We expect the gross margin of Toumai to be 55%.

We expect the main customers of *Toumai* to be 3A hospitals who want to have its second laparoscopic robot. The hospitals that fit this criteria must be those who have already become capacitated with their first ones.

As the latecomer, the question that raises to MedBot is to gain market from relatively matured existing players, such as Intuitive surgical. We believe that currently MedBot cannot surpass them in terms of technology and effectiveness of products, and it is difficult for MedBot to establish an advantage by reducing cost. RAS using *da Vinci* systems has been developed in China for more than 10 years. With extensive sales and training, the doctors, hospitals and patients have been familiar with *da Vinci* systems. In our opinion, when competing with Intuitive and Stryker, the main competitive advantage is MedBot's domestic identity and the policy advantage; but there are uncertainties with it.

The performance gap between Toumai and da Vinci

Exhibit 10. Clinical trial results of Toumai

	Study group (Toumai)	Control Group (da Vinci Si)	P-value
Primary Efficacy Endpoint	n=51	n=51	
Overall surgery success rate	50 (98.04%)	51 (100.0%)	p = 0.317
No conversion to open surgery or conventional MIS	50 (98.04%)	51 (100.0%)	p = 1.000
No second surgery within 24 hours	51 (100.0%)	51 (100.0%)	N/A
Secondary Efficiency endpoint			
Average blood loss (ml)	123.33 ± 168.63	75.29 ± 43.19	p = 0.100
Average operative time (min)	167.82 ± 53.67	110.39 ± 31.39	p < 0.001
Average hospital stay-in time (day)	4.88 ± 1.03	4.63 ± 1.20	p = 0.065

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PSA level normal rate	94.59%	89.74%	p = 0.675
Intraoperative complication rate	1.96%	1.96%	p = 1.000
AE occurrence rate within one month	47.06%	58.82%	p = 0.234

Source: MedBot

In the clinical trial of Toumai, da Vinci Si (3rd gen) had been selected as the counterpart. Si was not the most advanced generation of the da Vinci system when Toumai was performing clinical trials in 2019. Si system was selected to perform the control group surgery because it was the dominant type of surgical robot that was available in China by that time. But now the dominant type of surgical system in China is the better-performing da Vinci Xi (4th gen). Because since Intuitive has suspended the production of Si, all the da Vinci systems imported from 2019 are Xi, and the rapid growth in the surgical robot in China was also in 2019.

Clinical trial result shows Toumai's performance is not better than older version of da Vinci.

From the clinical trial result published by MedBot, it can be found that the performance of Toumai is not better than Si. The overall success rate of the surgeries is similar. There is significant evidence ($p < 0.001$) that the average operation time of Toumai is longer than Si (168 vs 110 min). Also, blood loss is higher (123 vs 75 ml) and hospital stay-in time is longer (4.88 vs 4.63 days) but the evidence is relatively weaker ($p = 0.1$, $p = 0.065$, respectively). This is worth taking into consideration as shortening operation time and reducing blood loss are important advantages of using laparoscopic systems. There are also some aspects where Toumai performed better, such as PSA Level normal rate (94.59% vs 89.7%), but the evidence is very weak ($p = 0.675$). As the performance of Toumai is not better than Si, we believe that it cannot compete with Xi in terms of performance. As the top-tier hospitals in China usually not concerning about funding when purchasing medical equipment, the performance of surgical robots is seen as the most important factor. As long as they are eligible to buy, the best performed surgical robot will be preferred.

A patent war is a real possibility

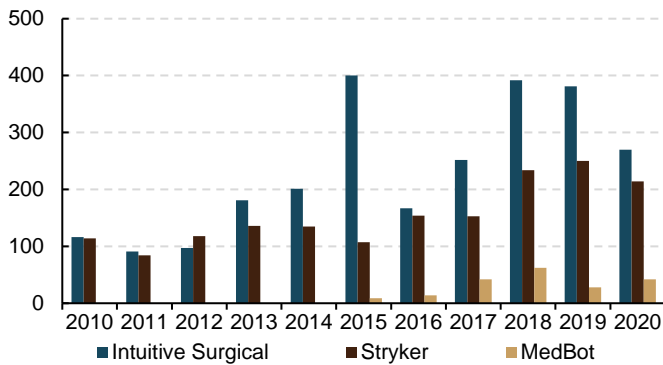
Many domestic laparoscopic systems, such as MedBot Toumai and Edge Medical (精鋒), are very similar to da Vinci Si/Xi in terms of application, operation, structure, and working principle (such as the way they drive the robotic arms), which is benefited from the expiration of Intuitive Surgical's related patents. Intuitive surgical applied for a batch of patents in the 1990s, which was the key for it to maintain its monopoly, but in 2016-2022 these patents gradually expired, which left space for competitors to grow, such as MedBot. However, Toumai's similarities with da Vinci systems can also lead to the risk of patent infringement.

MedBot and other laparoscopic surgical robot companies benefited from the expiration of Intuitive's patents. But Intuitive remains strong in patents.

Intuitive surgical is accelerating its patent applications. As shown in Exhibit 11, the number of patent applications filed by Intuitive Surgical per year was nearly tripled in the last five years. While MedBot is relatively weak in terms of patents, there are 141 registered patents as of June 2021, 38 are appearance designs, 71 are invention patents and 9 patents are utility models (实用新型专利, the second-class invention in China). And there are also 280 pending patent applications. But MedBot's 103 key patents includes all five types of surgical robots, while Intuitive surgical only has laparoscopic surgical systems and trans-bronchial surgical robots (Ion). So, in terms of laparoscopic systems, MedBot is in a disadvantageous position. Further development of Toumai could be limited by Intuitive and other competitors' patents, and the risk of patent infringement litigations may increase over time.

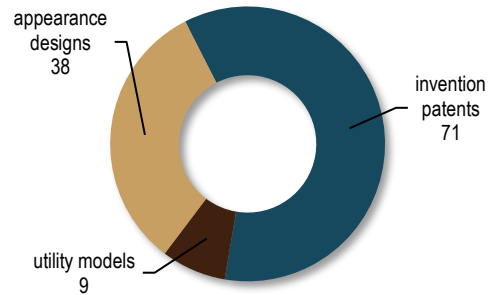
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Exhibit 11. No. of filed patent application



Source: Google Patents, Blue lotus (2022/1/18)

Exhibit 12. MedBot's registered patents in China



Source: MedBot, as of June 2021

Difficult to establish advantage through cost

The cost of surgical robots mainly arises from their hardware components, labour cost and the cost of development. In terms of hardware, key components of surgical robots include servomotor, decelerator, motivator, position sensor, controller, bearing, rail, and chip. Each robot may use multiple variants of each type of component from multiple brands. Currently the domestic components are behind those that are imported in terms of techniques, many components of precise equipment rely on import, especially servomotor, motivator, bearing, and chips. As the performance of Toumai is comparable with da Vinci Si, the components used in Toumai must not be significantly cheaper than da Vinci. At least 50% of the total cost of domestic surgical robots comes from the cost of imported components, which weakens MedBot's ability to control its costs. MedBot is also smaller in scale compared with existing mature companies, such as Intuitive and Stryker. We believe that MedBot will have weaker bargaining power compared with its overseas competitors. As the products are homogeneous, currently the hardware cost of Toumai and Honghu will not be lower than their competitors. As Intuitive Surgical has established global supply chain, it can also reduce labour cost by assembling in the countries where the labour price is low.

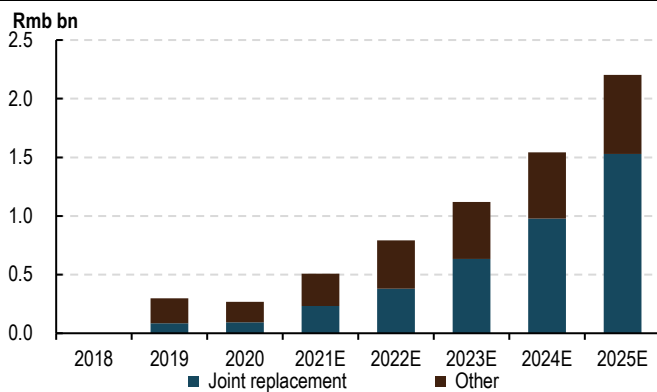
Domestic components can hardly meet the requirement of high-performance surgical robots. Relying on imported components weakens MedBot's cost-control. The relatively small scale of production reduces MedBot's bargaining power.

Orthopaedic robots today = navigator

Orthopaedic robot (骨科机器人) is the 2nd largest RAS category after laparoscopic robot, constituting 15.5% of the global surgical robot market by value, as of 2021. We believe a robot must perform and replace human tasks. Orthopaedic robot actually does that while laparoscopic robot does not. However, orthopaedic robot is technically simple and therefore the entry barrier is low.

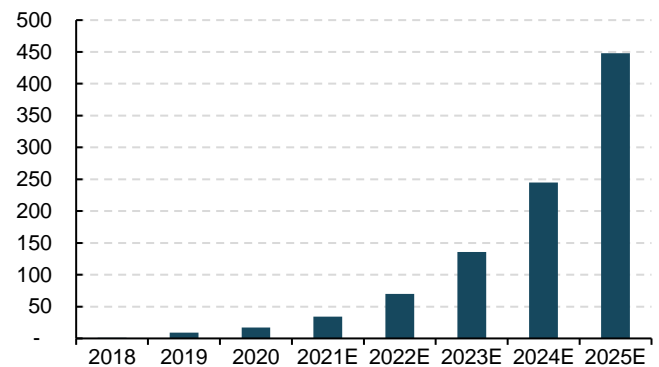
According to Frost & Sullivan, the application of orthopaedic robot in China started from 2019. The market is expected to grow at CAGR 52% from Rmb 0.3 bn in 2020 to Rmb 2.2 bn in 2025. Joint replacement will be 50%-70% of the orthopaedic market by value.

Exhibit 13. Orthopaedic robot market in China



Source: Frost & Sullivan

Exhibit 14. No. of joint replacement robot in China



Source: Frost & Sullivan

MedBot faces a totally different set of competitors in orthopaedic

Orthopaedic robots can mainly assist the surgeons in performing spinal (脊椎手术), joint replacement (关节置换), and orthopaedic trauma (创伤骨科) surgeries. It is a relatively simple and standardized surgery comparing to laparoscopic surgeries. It follows the surgeon's preoperative planning to navigate the bone cutting and implant placement procedures during the surgery. The use of orthopaedic robots reduces the probability of implant misplacement or inaccurate bone cutting.

MedBot is currently developing a joint replacement robot, Honghu (鸿鹄), to perform Total Knee Arthroplasty (TKA, 全膝关节置换) and Total Hip Arthroplasty (THA, 全髋关节置换) surgeries. Global leader of orthopaedic robot is Stryker (SYK US, NR) and the Chinese leader is TINAVI (688277 CH, NR). We estimate Stryker's global revenue market share to be 9% and TINAVI's Chinese market share to be 80%.

TKA robots can be classified as active, semi-active, and passive (Exhibit 15). After the surgeon calculates the optimal bony resection and implant placement and alignment, active TKA robots can automatically perform the procedure without surgeon's intervention. Semi-active robot requires surgeon's operation but offers visual, audial and tactile feedback to the surgeon, as well as slowing or stopping the instrument when surgeon's operation deviates from the preoperational plan. The passive robots only offer guidance to the surgeon with the work performed completely by the surgeon.

Stryker's market leading *Mako* orthopaedic robot is semi-active. New startups like Think Surgical, is now offering fully active orthopaedic robots. Others, like Johnson & Johnson's VELYS system, can assist doctors to perform preoperational planning.

Orthopaedic robots can be more automatic and intelligent. But MedBot Honghu is currently not.

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Exhibit 15. Joint replacement robots

Manufacturer	Product Name	Type	FDA clearance	Technique	Imaging
Think Surgical	Tsolution-One	Active	2019	Milling	CT
Stryker	Mako	Semiactive	2015	Saw or Burr	CT
Johnson & Johnson	Orthotaxy	Semiactive	2021	Saw	CT
Smith & Nephew	Navio	Semiactive	2017	Burr	Imageless
Smith & Nephew	CORI	Semiactive	2021	Burr	Imageless
Zimmer Biomet	ROSA	Semiactive/Passive	2019	Cutting Guide	XR or Imageless
Corin	OMNIbotic	Passive	2017	Cutting Guide	CT

Source: Company websites, FDA, Blue lotus (2022/1/25)

Research shows that patients who receive robot-assisted TKA require less analgesic and stay in hospitals shorter than conventional TKA. But it remains controversial as to whether RAS in orthopaedic is a medical necessity.

More competition and more state involvement

We believe China's healthcare market has a unique state monopoly which combines hospital, doctor, pharmacy and insurance. Chinese government is the largest integrated health care system in the world which gives it unparalleled power to influence pricing and manipulate supply. As noted in our September 15, 2021 initiation <Early stage calls for prudence>, Chinese government controls ~70% of hospital beds, ~80% of healthcare professionals, ~65% of drug sales and ~95% of medical insurance payments in China. Our investment thesis in healthcare is therefore to look for companies who can offer unique and irreplaceable value that is also not subject to the command of the government.

We believe only private companies offering unique and irreplaceable value can be good investment choices in China's healthcare market.

Exhibit 16. Laparoscopic robot market size in China

	2018	2019	2020	2021E	2022E	2023E	2024E	2025E
Total No. of laparoscopic robot	75	134	189	246	333	456	625	854
No. of hospitals with laparo. robot	75	134	189	246	328	427	571	768
hospitals with more than 1 robot	-	-	-	-	5	25	45	71
Market shares								
Intuitive	100%	100%	100%	100%	95.2%	80.5%	73.5%	69.8%
MedBot	-	-	-	-	4.0%	9.5%	12.5%	15.0%
EdgeMedical	-	-	-	-	-	2.4%	5.3%	7.1%

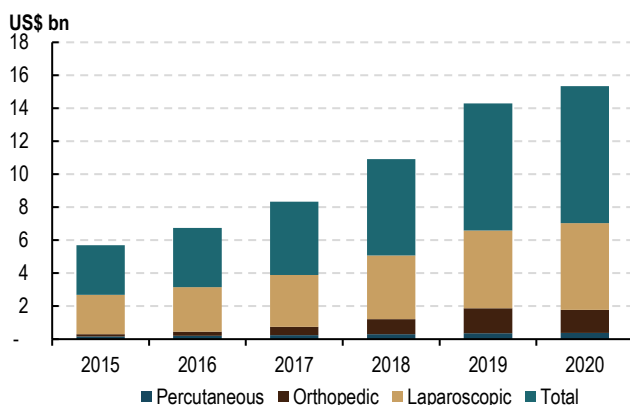
Source: NHC, Frost & Sullivan, Blue Lotus (2022/1/25)

PET/CT offers a glimpse of what might happen

The global market size of surgical robots reached US\$8.3 bn in 2020. Laparoscopic and orthopaedic robots contributed 63% and 17% of the market by value. The remaining 20% was divided by percutaneous, natural orifice and panvascular robots. We expect that the Chinese market for surgical robots to grow at a CAGR of 38% from Rmb2.72 in 2020 to Rmb13.8 bn in 2025, with laparoscopic robots maintaining is 65-70% market share.

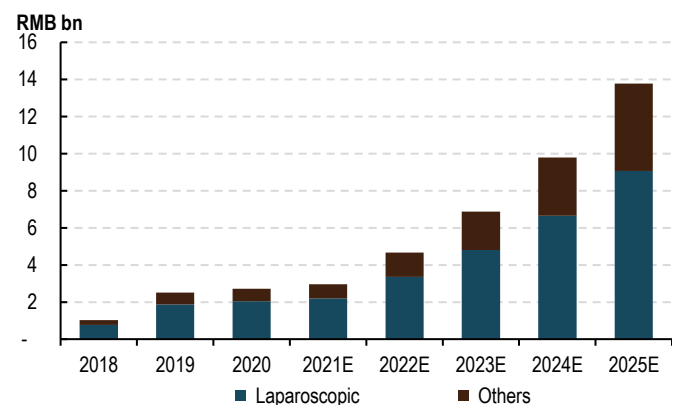
This estimate is based on the assumption that the laparoscopic robot will follow a similar growth pattern of Positron Emission Tomography/Computed Tomography (PET/CT) in China. PET/CT is the medical imaging equipment that combines the function of PET and CT. It has a similar price range and configuration requirement as a laparoscopic robot. It is also classified as Class B large-scale medical equipment, with its total installation restricted by the government budget approval.

Exhibit 17. Global surgical robot market size



Source: Frost & Sullivan

Exhibit 18. China surgical robot market size



Source: Frost & Sullivan, Blue lotus (2022/1/25)

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According to NHC, there were 333 PET/CT installed in China before 2018, comparing to 189 laparoscopic robots installed in 2020. In the most recent configuration plan (2018-20), the planned PET/CT installation has increased to 884. We expect that similar growth can be achieved with laparoscopic robot in the next three-year horizon of 2021-23 to 333 and in the following three year horizon of 2023-25 to ~850 units by 2025. This would translate to a Class III Grade A hospital penetration rate of 40% in 2025, a level which we deem high.

The development of PET/CT in China could be seen as precedent of surgical robots. We expect the total planned number of surgical robots in 2025 will be about 850.

MedBot's strategy is to compete in all surgical robot fields

As noted above, global market size of surgical robots at US\$8.3 bn in 2020 is actually not a very big market. Neither is a Chinese market size of Rmb2.8bn in 2020 occupied almost completely by Intuitive Surgical. Surgical robot actually has a very broad spectrum with each in a specific field having different working mechanisms. A laparoscopic and an orthopaedic robot are completely different, which is why MedBot is simultaneously developing five class of robots targeting different fields of Natural Orifice, Percutaneous and Panvascular Surgery.

Exhibit 19. MedBot product roadmap

Surgical Speciality	Product	Indicated Application	Development Stage				
			Design Development	Design Validation	Registrational Clinical Trial	Reistration Application	
Self Development	Laparoscopic Surgery	Urologic Surgery	█	█	█	█	
		Toumai (图迈) Laparoscopic Surgical Robot ("Toumai")	█	█	█	█	
		Gynecologic Surgery	█	█	█	█	
		Thoracic Surgery	█	█	█	█	
	Orthopedic Surgery	DFVision (蜻蜓眼) 3D Electronic Laparoscope ("DFVision")	Laparoscopic Surgeries for abdominal, thoracic and pelvic	█	█	█	█
		Honghu (鸿鹤) Orthopedic Surgical Robot ("Honghu")	Total knee arthroplasty	█	█	█	█
			Total hip arthroplasty	█	█	█	█
	Spine Surgical Robot	Spine surgery	█	█	█	█	
	Natural Orifice Surgery	Trans-bronchial Surgical Robot	Trans-bronchial diagnosis and treatment	█	█	█	█
	Panvascular Surgery	TAVR Surgical Robot	Heart valve replacement surgery	█	█	█	█
R-One Vascular Interventional Surgical Robot ("R-One")		Coronary angioplasty	█	█	█	█	
Percutaneous Surgery		Automated Needle Targeting Robotics System ("ANT")	percutaneous lung biopsy	█	█	█	█
	iSR'obot Mona Lisa Robotic Transperineal Prostate Biopsy	percutaneous nephrolithotomy	█	█	█	█	
International Collaboration		Transperineal prostate biopsy	█	█	█	█	

Source: MedBot, as of October 13, 2021

However, we believe that these new fields aren't likely to develop into a mature market within five years, as most of these robots are single-purpose and in early stage of application.

Government support can come in two different flavours

Da Vinci's surgical robots use a razor-cartridge product strategy. Its robotic arm, with patented *EndoWrist* set of tools, must be replaced after ten surgeries and each surgery uses 3-4 arms. Intuitive Surgical inserted a computer chip to ensure the enforcement on the condition of surgical safety.

Our channel checks suggest that MedBot is likely to follow *Da Vinci's* product strategy, usage matrix and pricing model. Since *Da Vinci's* robot arm is controlled by steel cable, we see its product strategy as not only profit driven, but also build on real scientific fundamentals to avoid material fatigue-resulted surgical deficiencies. We estimate *Da Vinci's* consumable revenue, 60% of its total in C3Q21, carries a gross margin of 70%.

Because laparoscopic robots sell for more than Rmb 10 mn, it is qualified as "large scale medical equipment" and must be budget approved before state hospitals can purchase. The robots are mainly

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bought by state hospitals as most of Class III Grade A hospitals in China are state-owned, and only those top-tier hospitals can meet the configuration requirement of surgical robots. Exhibit 20 listed the relevant government policies affecting surgical robots.

Exhibit 20. Surgical robot related policies

Policy	Year	Main content
"Made in China (2025)"	2015	For the field of high-performance medical equipment, focus on the development of high-performance surgical robots and other diagnosis and treatment equipment.
"Guiding Opinions on Promoting the Sound Development of the Medical Industry"	2016	Encourage domestic medical device companies to innovate, develop high-end medical devices, such as surgical robots , and substitutes imported equipment.
"The Guiding Catalog of Key Products and Services in Strategic Emerging Industries"	2017	The laparoscopic, orthopaedic , and other interventional surgical robots and their instruments are recognized as key products for strategic emerging industries.
"Three-Year Action Plan for Enhancing the Core Competitiveness of Manufacturing Industry (2018-2020)"	2017	Accelerate the development of advanced manufacturing and ensure the industrialization of key technologies for high-end medical devices. Surgical robots are supported as high-end treatment equipment.
"Implementation Plan for the Industrialization of Key Technology of High-end Medical Devices and Drugs (2018-2020)"	2017	Encourage the industrialization of innovative equipment, such as laparoscopic surgical robots and neurosurgery robots , and promote the upgrading and quality performance improvement of orthopaedic surgical robots and other products.
"Three-Year Action Plan to Promote the Development of the New Generation of AI Industry (2018-2020)"	2017	Support the research and development of surgical robot operating systems and promote the application of surgical robots in clinical medicine.
"The Notice for Adjusting the Allocation of Large-Scale Medical Devices Between 2018 and 2020"	2018	By the end of 2020, 197 endoscopic surgical instrument control systems (laparoscopic surgical robots) are planned to be installed nationwide.
"Implementation Opinions on Promoting the In-depth Integrated Development of Advanced Manufacturing and Modern Service Industry"	2019	Promote the innovation and integration of key areas of consumer services and manufacturing, focusing on the development of high-end medical equipment, such as surgical robots , medical imaging, and remote diagnosis and treatment.
"Outline of the 14th Five-Year Plan for National Economic and Social Development, and the outlook for 2035"	2021	Promote the reform of the collective procurement on drugs and consumables, develop high-end medical equipment. Speed up the review and approval of medical devices that are clinically needed.
"Notice of the State Council on Deepening the Reform of Separation of Licenses to Stimulate the Development Vitality of Market Entities"	2021	The allocation of large-scale medical equipment of Class B medical equipment in non-public medical institutions implements the notification and commitment system; the allocation of Class B large-scale medical equipment in non-public medical institutions in the free-trade pilot zone is changed from application and approval to record management.
"14th Five-Year Plan for the Development of Medical Equipment Industry"	2021	Surgical robots are included in the key development fields. Improve the performance of laparoscopic surgical robots, orthopaedic surgical robots, and other surgical robots.
"14th Five-Year Plan for the Development of Robot Industry"	2021	Speed up technological breakthroughs in high-performance decelerator, servo motor and controllers. Surgical robots are included in the list of innovative service robot products.

Source: The State Council, NHC, Ministry of Industry and Information Technology

As seen above, Chinese government encourages the development and selling of domestically made surgical robots and their key components and technologies to substitute the imported ones.

Exhibit 21. List of large scale medical equipment defined by NHC

Class	Name	Total planned number as of 2020
Class A	Proton beam-based radiotherapy system	16
	Positron emission tomography-magnetic resonance imaging system (PET/MR)	82
	Other high-end radiotherapy devices	216
Class B	X-ray positron emission tomography system (PET/CT)	884
	Endoscopic surgical instrument control system (Surgical robot)	268
	X-ray computed tomography (CT) with higher than 64-detector-row	9338
	Magnetic resonance imaging system (MRI)	10713
	Medical linear accelerator (including X-Knife)	3405
	Gamma-ray stereotactic radiation therapy system	296

Source: NHC

Medical equipment priced between Rmb10 to 30mn are shown in Exhibit 21 as Class B large scale medical equipment (乙类大型医疗器械). When purchasing Class A and B equipment, the hospital

NHC sets the number of laparoscopic surgical robots that can be installed in each period.

NHC uses CPC system to influence the purchasing behavior of public hospitals.

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must apply to the corresponding provincial health commission for the Configuration Permission Certificate (CPC, 配置证). The total number of CPC that can be issued in each period is set by NHC. The government uses the CPC system to rein in the purchasing behaviour of public hospitals, some of which are capable of buying more and more expensive equipment than others. <Management measures for the configuration and use of large-scale medical equipment 2018> (大型医用设备配置与使用管理办法2018) stated that hospitals should submit documents that prove their technological, infrastructural, and personnel qualification for the purchase, and select the class of model that matches their clinical demand and development level, instead of pursuing imported or high-end equipment.

Surgeon's inertia is to purchase da Vinci, which is distributed in China by FOSUN Pharmaceuticals (600196 CH, NR), a privately owned conglomerate as da Vinci system has years of operational data, doctor's training and operational/maintenance support. Without a sufficient discount, we can't see a major reason for doctors to prefer MedBot.

In fact, the number of surgeries performed by each Da Vinci system per year dropped from 435 in 2018 to 251 in 2020, now in line with global averages. We believe there can be two reasons behind: (1) A digestion period must exist for doctor training and operation support to pick up after the number of installations sharply increased in 2019, (2) COVID-19 curtailed the surgical procedures that would normally occur after the installation. Nevertheless, the low utilization rate will likely hamper the number in the next configuration plan and make MedBot's *Toumai* more difficult to achieve a sale with the doctors.

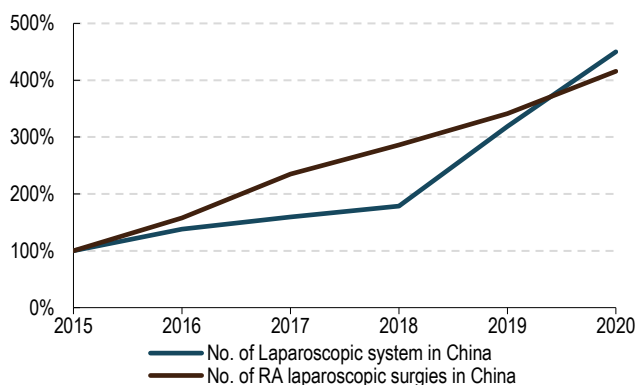
Average number of surgeries performed per robot per year has reduced in the recent two years.

Exhibit 22. No. of surgeries performed per laparoscopic system in China

	2015	2016	2017	2018	2019	2020
Laparo. system installed	42	58	67	75	134	189
No. of RA Laparo. surgeries	11,400	18,000	26,800	32,600	38,900	47,400
No. of surgeries per system	271	310	400	435	290	251

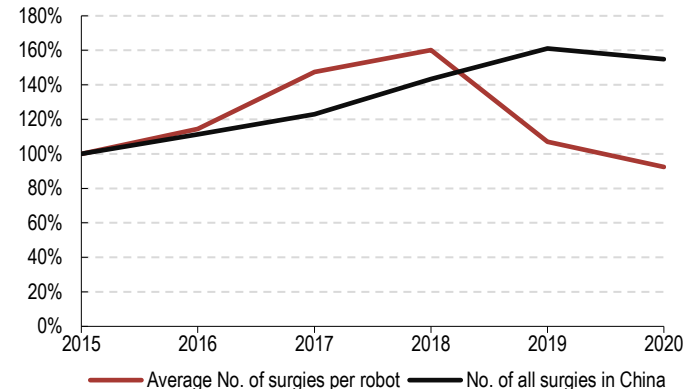
Source: Frost & Sullivan, Blue Lotus (2022/1/25)

Exhibit 23. Systems/RA surgeries compare to 2015



Source: Frost & Sullivan, Blue lotus (2022/1/25)

Exhibit 24. No. of RA/total surgeries compare to 2015



Source: Frost & Sullivan, Blue lotus (2022/1/25)

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We believe government policies will certainly favour domestically made surgical robots, especially in a case when a normal application to purchase *da Vinci* will NOT be granted in a given year. Government might persuade the hospital to buy a domestic substitute instead. In 2019, Guangdong Province Health Commission stipulated in <Guangdong Province 2018-2020 Class B large-scale medical equipment configuration planning and technical evaluation standards> (广东省2018-2020年乙类大型医用设备配置规划和技术评估标准) that the public hospitals were encouraged to give priority to the allocation of Class B large scale equipment to domestic vendors. We have seen similar requirements in Hainan, Yunnan, and Zhejiang provinces.

It might be easier for hospitals to apply for a configuration certificate for a domestic surgical robot, comparing with a da Vinci system.

We expect the domestic laparoscopic surgical system to reach a 30% market share in 2025. We benchmark this estimate against the development of domestic Magnetic Resonance Imaging (MRI) market. MRI ($\geq 1.5T$) is also classified as Class B large-scale medical equipment and is also limited by the configuration plan. The first domestic 1.5T MRI was installed in 2010. In 2020, top 4 domestic 1.5T MRI vendors have a revenue market share of 28% and unit market share of 30%. (Source: Neusoft). We expect laparoscopic robot to reach the same level in half of the time. We further expect MedBot to occupy half of the domestic vendor market share by 2025, which means 15% of total.

Public health insurance inclusion and state procurement are next

We don't expect the government support of domestic surgical robot maker to be one way. In fact, while the outcome of government promotion and doctors' inertia is uncertain, the inclusion of surgical robot and its consumables in state procurement, which often result in price reduction of 50-90%, is certain.

Some of RAS has been included in the public health insurance in Shanghai and Beijing. We expect that more cities will cover RAS in their public insurance.

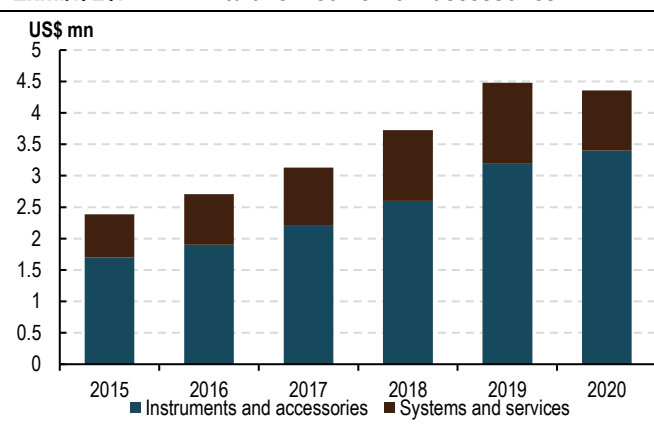
The current price of robot-assisted laparoscopic surgery is usually Rmb30-40K higher than conventional surgeries. Inclusion in public health insurance can significantly reduce the burden on patients and make it scalable. Four types of robotic-assisted laparoscopic surgeries have been included in Shanghai public medical insurance's Class II coverage. Class II (乙类) means the effect of the treatment is determined, but the treatment is not necessary. As such the use should be controlled. Class II items are not always fully reimbursed. In Shanghai public health insurance covers 80% of Class II treatment spending. On the other hand, orthopaedic surgery is approved in Beijing as a Class I reimbursable item which is 100% reimbursed (Exhibit 25).

Exhibit 25. RAS included in public health insurance

Date	City	Name	Payment Type	Range
06-04-21	Shanghai	Robot-assisted laparoscopic surgeries	Class II (80%)	Prostatectomy (前列腺切除) Partial nephrectomy (部分肾切除) Hysterectomy (子宫切除) Rectal resection (直肠切除)
25-08-21	Beijing	Robot-assisted orthopaedic surgeries	Class I (100%)	RA surgeries orthopaedic

Source: Shanghai & Beijing municipal medical insurance bureau.

Exhibit 26. Intuitive income from accessories



Source: Intuitive Surgical

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Inclusion in public health insurance can reach more patients. But in a razor-cartridge model that cartridges aren't compatible. Da Vinci even goes so far to embed a computer chip to enable/disable its robotic arm consumables. We believe this will lead to government encouraging the consolidation of surgical robots into a few major players so that collective bargaining can be implemented to cut cost. This might mean the price war ahead of the consolidation point will be cut-throat.

To this end we are observant of the inclusion of In Vitro Diagnosis (IVD) reagent into state procurement program by Anhui province in August 2021. It showed dedicated disposables can be included in the state procurement program. The winning bid of Anhui IVD procurement was from Abbott (ABT US, NR), Siemens (SIEGY US, NR), MicroPort (853 HK, NR) and others while the losing bid came from Roche (RHHBY US, NR), Beckman Coulter (BEC US, NR), Autobio (603658 CH, NR), Tellgen (300642 CH, NR) and others. There is no clear pattern on which and who can escape the touch of state procurement.

Edge Medical is likely MedBot's biggest domestic competitor

In a relatively small market of surgical robots, several Chinese companies are using undifferentiable technology to pursue an alike growth strategy. In laparoscopic surgical systems, MedBot's domestic competitors are Edge Medical (精锋), Surgerii (术锐), WEGO (威高), and Kangduo (康多).

Edge Medical is the most credible competitor to MedBot. It has a similar product portfolio. Edge Medical's multi-port laparoscopic system is expected to launch in 2023, 12-18 months later than MedBot's *Toumai*. Clinical trial results have not yet been published, but according to our channel check, results have shown performance on par with *da Vinci Si*, which means it will be slightly better than *Toumai*. Further, we learned from channel check that EdgeMedical might likely pursue an aggressive pricing strategy when it launches, which means MedBot's normal price window might be less than a year.

Surgerii specializes in the single-port laparoscopic robot, which through the use of one port, instead of four, maximizes the benefit of RAS. Surgerii's single port robot is expected to launch in 2023, and is expected to compete with the single-port version of *Toumai* and EdgeMedical. The development risk of single-port robot is equally distributed among domestic robot makers and Intuitive alike.

The product of WEGO and Kangduo are both laparoscopic surgical systems with only three robotic arms, comparing to Intuitive, MedBot and Edge's four. Three-arm systems have relatively limited application. For example, many urology surgeries can only be performed by four-arm systems. We believe that WEGO and Kangduo might target lower-class hospitals at a much lower prices. However, if the end game is to persuade hospitals to take in a second surgical robot next to Intuitive, three arm might be just enough. As a result, we believe the competitive outlook for MedBot is a challenging one.

In order to gain top market share to be qualified into state procurement, surgical robot makers might engage in price wars sooner than investors' expectation.

MedBot's normal price window for Toumai might be shorter than a year.

Valuation and peer analysis

We expect MedBot to release its core product Laparoscopic surgical robot Toumai at the end of 2022, and expected to achieve 15% market share in 2025. We expect the company to return positive free cash flow in 2026. We assumed that the margin of MedBot will be lower than Intuitive Surgical due to its relatively weak cost-control and potential price war. We value the company by DCF with WACC=14.0% and Terminal growth rate=4.0%, calculated a target price of HK\$18.3 with SELL rating.

Exhibit 27. DCF valuation table

RMB million	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
Revenue	4	172	460	929	1,569	2,400	3,333	4,744	6,681	9,433	12,605	16,929	20,462	24,588	27,079
EBIT	(451)	(380)	(314)	(337)	(128)	105	304	673	1,237	2,063	3,185	4,558	5,648	6,709	7,305
NOPAT	(451)	(380)	(314)	(337)	(128)	105	304	673	1,082	1,806	2,787	3,419	4,236	5,032	5,479
Capex, net and acquisitions	(57)	(97)	(116)	(128)	(141)	(155)	(170)	(187)	(206)	(226)	(249)	(274)	(301)	(331)	(365)
Depreciation & amortization	23	44	68	93	119	147	176	207	240	274	309	347	386	427	470
Change in working capital	(18)	(47)	(13)	72	57	(51)	(174)	(289)	126	(87)	6	(149)	140	(237)	306
Free operating CF (FoCF)	(502)	(479)	(375)	(299)	(92)	46	137	405	1,242	1,765	2,853	3,343	4,461	4,890	5,890
Terminal Growth rate	4%														
WACC	14.0%														
Terminal FCF	5,890														
Terminal Value	61,497														
Discount Factor	14%														
NPV of Terminal Value	8,736														
NPV of FOCF (Enterprise Value)	13,643														
- Net debt (cash), current	(2,007)														
- Minorities (Market value)	-														
= Equity value	15,650														
Number of shares (mn)	959														
Target price (HK\$)	19.91														

Source: MedBot, Blue lotus (2022/1/25)

Exhibit 28. Comparison table

Sector	Ticker	Price	Mkt Cap	PE (cons)			PEG	PS (cons)			EV/EBITDA (cons)	
		(Local)	(US\$m)	2022E	2023E	2023E	2022E	2022E	2023E	2022E	2023E	
China medical equipment												
	Shanghai MicroPort MedBot Group Co Ltd	2252 HK Equity	53	6,547	(102)	(122)	(115)	NM	243	91	(136)	(177)
	Shenzhen Mindray Bio-Medical Electronics Co Ltd	300760 CH Equity	323	61,832	39	33	25	2	13	11	215	178
	Microport Scientific Corp	853 HK Equity	28	6,428	(50)	(91)	NM	NM	7	5	(113)	2,096
	Shandong Weigao Orthopaedic Device Co Ltd	688161 CH Equity	65	4,099	29	23	NM	NM	NM	NM	NM	NM
	Tinavi Medical Technologies Co Ltd	688277 CH Equity	25	1,632	2,604	336	NM	NM	32	23	(16,032)	2,567
	Lepu Medical Technology Beijing Co Ltd	300003 CH Equity	24	6,880	16	13	NM	NM	4	3	75	67
	Double Medical Technology Inc	002901 CH Equity	51	3,265	24	18	NM	NM	9	7	NM	NM
	Average			90,683	74	25	17	1	10	8	(144)	321
China biopharma												
	Remegen Co Ltd	9995 HK Equity	75	4,691	(69)	(632)	NM	NM	25	12	(506)	4,815
	Zai Lab Ltd	ZLAB US Equity	56	5,428	(14)	(25)	19	NM	16	9	(9)	(12)

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Healthcare | MedBot | (SEHK: 2252) | SELL Initiation

Innovent Biologics Inc	1801 HK Equity	43	8,024	(70)	112	39	NM	8	6	(486)	392
Wuxi Biologics Cayman Inc	2269 HK Equity	91	49,903	69	48	35	2	22	16	325	233
BeiGene Ltd	6160 HK Equity	149	27,818	(22)	(25)	(43)	NM	20	8	(22)	(21)
Genscript Biotech Corp	1548 HK Equity	32	8,701	(68)	(162)	NM	NM	11	8	(678)	79
Akeso Inc	9926 HK Equity	29	3,021	(27)	(81)	(12)	NM	14	7	(157)	1,635
HUTCHMED China Ltd	HCM US Equity	34	5,870	(21)	(32)	(392)	NM	13	9	(16)	(24)
I-Mab	IMAB US Equity	41	3,161	(22)	(21)	(37)	NM	20	17	(21)	(20)
Average			116,617	9	(20)	(13)	1	19	12	24	361
China health information systems											
Alibaba Health Information Technology Ltd	241 HK Equity	7	11,742	(437)	(838)	400	NM	3	2	(1,089)	(1,061)
JD Health International Inc	6618 HK Equity	65	26,494	153	89	53	2	4	3	1,915	625
Ping An Healthcare and Technology Co Ltd	1833 HK Equity	28	4,065	(24)	(39)	(257)	NM	3	2	(96)	(154)
Yidu Tech Inc	2158 HK Equity	21	2,686	(18)	(13)	NM	NM	8	5	(110)	(147)
China Medical System Holdings Ltd	867 HK Equity	14	4,455	9	8	NM	NM	3	3	46	43
Average			49,442	(24)	(155)	102	1	4	3	758	66
Global medical equipment											
Intuitive Surgical Inc	ISRG US Equity	323	115,445	56	49	41	3	18	16	41	35
Medtronic PLC	MDT US Equity	109	146,490	18	16	15	2	4	4	15	14
Stryker Corp	SYK US Equity	268	101,112	26	24	22	3	6	5	21	19
Zimmer Biomet Holdings Inc	ZBH US Equity	126	26,235	15	14	13	2	3	3	12	11
Titan Medical Inc	TMDI US Equity	1	67	(3)	NM	NM	NM	NM	NM	NM	NM
Dexcom Inc	DXCM US Equity	490	47,529	135	98	72	4	16	13	69	53
Insulet Corp	PODD US Equity	243	16,744	186	121	80	4	13	11	76	59
Penumbra Inc	PEN US Equity	259	9,668	205	125	111	6	11	10	99	75
Glaukos Corp	GKOS US Equity	51	2,372	(31)	(37)	(93)	NM	9	8	(2,641)	111
Average			465,660	51	40	32	3	10	8	18	28
Global biopharma											
Amgen Inc	AMGN US Equity	232	130,543	13	12	12	3	5	5	10	10
Biogen Inc	BIIB US Equity	225	33,101	16	14	13	1	3	3	9	9
BioNTech SE	BNTX US Equity	221	53,565	6	6	10	(0)	3	3	3	3
Gilead Sciences Inc	GILD US Equity	72	90,629	11	10	10	3	4	4	9	8
Incyte Corp	INCY US Equity	74	16,262	17	13	10	1	5	4	13	9
Moderna Inc	MRNA US Equity	223	90,371	8	8	14	(0)	5	4	7	6
Regeneron Pharmaceuticals Inc	REGN US Equity	631	67,907	12	12	13	(5)	5	5	8	8
Vertex Pharmaceuticals Inc	VRTX US Equity	226	57,497	16	15	14	2	7	6	11	10
Average			539,873	12	11	12	1	5	4	8	8

*2252HK has no cons. as of Jan 16, 2022. PE,PEG,PS,EV/EBITDA was calculated based on our estimation.

Source: Bloomberg, Blue lotus (2022/1/16)

Annual Income Statement

Fiscal year ends-31-Dec

Exhibit 29. Annual income statement

(RMB mn)	2019A	2020A	2021E	2022E	2023E	2024E	2025E	2026E
Revenue	-	-	4	172	460	929	1,569	2,400
Cost of sales	-	-	(2)	(77)	(224)	(479)	(855)	(1,356)
Gross profit	-	-	2	94	236	451	714	1,044
Gross margin	-	-	1	55%	52%	49%	46%	44%
Change%				0%	-3%	-3%	-3%	-2%
Research and development costs	(62)	(135)	(320)	(327)	(347)	(465)	(471)	(480)
As % of revenue				190%	75%	50%	30%	20%
Selling and marketing expenses	-	(3)	(32)	(53)	(100)	(186)	(235)	(312)
As % of revenue				31%	22%	20%	15%	13%
Administrative expenses	(11)	(27)	(107)	(116)	(125)	(158)	(157)	(168)
As % of revenue				67%	27%	17%	10%	7%
Other net income	3	10	32	32	32	32	32	32
Fair value changes in financial instruments	-	(3)	(10)	(10)	(10)	(10)	(10)	(10)
Other operating costs	-	-	(15)	-	-	-	-	-
Loss from operations-IFRS	(69)	(158)	(451)	(380)	(314)	(337)	(128)	105
Loss from operations-Non-IFRS	-	-	(380)	(305)	(228)	(215)	2	249
Finance costs	(1)	(49)	(4)	(6)	(6)	(6)	(6)	(6)
Share of losses of equity-accounted investees	-	(2)	(21)	(21)	(21)	(21)	(21)	(21)
Loss before taxation	(70)	(209)	(475)	(406)	(341)	(363)	(155)	78
Income tax	-	-	-	-	-	-	-	-
Effective tax rate	0%	0%	0%	0%	0%	0%	0%	0%
Loss for the year/period	(70)	(209)	(475)	(406)	(341)	(363)	(155)	78
Attributable to Equity shareholders	(70)	(209)	(474)	(405)	(339)	(362)	(153)	80
Attributable to Non-controlling interests	-	(0)	(1)	(1)	(1)	(1)	(1)	(1)
No. of shares (mn)	618	756	959	969	979	989	999	1,009
Change (mn)						10	10	10
Loss per share: Basic and diluted (RMB)	(0.11)	(0.28)	(0.49)	(0.42)	(0.35)	(0.37)	(0.15)	0.08

Source: MedBot, Blue Lotus (2022/1/25)

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Annual Balance Sheet

Fiscal year ends-31-Dec

Exhibit 30. Annual Balance Sheet

(RMB mn)	2019A	2020A	2021E	2022E	2023E	2024E	2025E	2026E
Property, plant and equipment	14	39	80	156	249	351	465	592
Intangible assets	0	1	1	2	3	4	5	6
Prepayments	0	1	5	10	45	96	171	271
Goodwill	-	1	1	1	1	1	1	1
Equity-accounted investees	-	85	130	130	130	130	130	130
Derivative financial assets	-	13	-	-	-	-	-	-
Other financial assets	-	38	100	100	100	100	100	100
Other non-current assets	7	11	100	100	100	100	100	100
Total non-current assets	22	189	418	500	628	783	973	1,201
Derivative financial assets	-	-	10	10	10	10	10	10
Inventories	-	-	54	79	101	215	385	610
Trade and other receivables	1	17	1	23	40	87	128	201
Pledged deposits	0	1	5	5	5	5	5	5
Cash and cash equivalents	55	1,497	2,098	1,690	1,398	1,217	1,252	1,439
Total current assets	56	1,515	2,168	1,807	1,554	1,535	1,779	2,265
Trade and other payables	36	222	242	242	268	503	770	1,017
Lease liabilities	6	7	15	15	15	15	15	15
Total current liabilities	41	229	257	257	283	518	785	1,032
Net current assets	15	1,286	1,911	1,550	1,270	1,017	995	1,233
Total assets less current liabilities	37	1,475	2,329	2,050	1,899	1,800	1,968	2,434
Lease liabilities	6	12	92	92	92	92	92	92
Deferred income	4	22	22	22	22	22	22	22
Total non-current liabilities	11	34	114	114	114	114	114	114
NET ASSETS	26	1,441	2,216	1,937	1,785	1,686	1,854	2,321
Paid-in capital	35	-	-	-	-	-	-	-
Share capital	-	900	950	950	950	950	950	950
Reserves	(9)	543	1,267	954	717	657	820	1,262
Equity attributable to equity shareholders	26	1,443	2,217	1,904	1,667	1,607	1,770	2,212
Non-controlling interests	-	(1)	(1)	(1)	(1)	(1)	(1)	(1)
TOTAL EQUITY	26	1,441	2,216	1,902	1,666	1,606	1,768	2,210

Source: MedBot, Blue Lotus (2022/1/25)

See the last page of the report for important disclosures

Annual Cash Flow Statement

Fiscal year ends-31-Dec

Exhibit 31. Annual Cash Flow Statement

(RMB mn)	2019A	2020A	2021E	2022E	2023E	2024E	2025E	2026E
Operating activities								
Profit/loss before taxation	(70)	(209)	(475)	(406)	(341)	(363)	(155)	78
Adjustments for:								
Amortisation and depreciation	3	4	23	44	68	93	119	147
Finance Income/costs (Net)	(1)	49	4	6	6	6	6	6
Changes in fair value of financial instruments at fair value through profit or loss	-	3	-	-	-	-	-	-
Net loss on disposal of PPE	-	0	-	-	-	-	-	-
Share of losses of equity-accounted investees	-	2	21	21	21	21	21	21
Equity-settled share-based payment	3	16	71	74	86	121	129	144
Changes in working capital:								
Increase in inventories	-	-	(54)	(24)	(22)	(115)	(169)	(225)
(Increase)/decrease in other receivables	(1)	(16)	16	(22)	(17)	(47)	(41)	(73)
Increase in trade and other payables	17	34	20	-	26	234	267	247
Increase in deferred income	2	18	(0)	-	-	-	-	-
(Increase)/decrease in other non-current assets	(3)	(4)	(89)	-	-	-	-	-
Net cash used in operating activities	(49)	(103)	(464)	(308)	(173)	(50)	178	345
Investing activities								
Payments for the purchase of PPE	(4)	(15)	(57)	(97)	(116)	(128)	(141)	(155)
Payments for intangible assets	(0)	(0)	2	2	2	2	2	2
Interest received	0	0	-	-	-	-	-	-
Payments for the investments in equity-accounted investees	-	-	-	-	-	-	-	-
Payments for the investments in other financial assets	-	-	-	-	-	-	-	-
Net changes to loans to related party	30	-	-	-	-	-	-	-
Net cash generated from/(used in) investing activities	27	(15)	(55)	(95)	(114)	(126)	(139)	(153)
Financing activities								
Capital element of lease rentals paid	-	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Interest element of lease rentals paid	-	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Lease deposits paid	-	-	-	-	-	-	-	-
Loans from related parties	0	-	-	-	-	-	-	-
Repayments of interest-bearing borrowings and loans from related parties	(10)	(4)	-	-	-	-	-	-
Interest paid for interest-bearing borrowings and loans from related parties	(0)	(0)	-	-	-	-	-	-
Capital contributions by investors	80	61	1,125	-	-	-	-	-
Capital contributions by investors with preferred rights	-	1,509	-	-	-	-	-	-
Interest received	1	-	-	-	-	-	-	-
Net cash generated from / (used in) financing activities	71	1,561	1,120	(5)	(5)	(5)	(5)	(5)

Source: MedBot, Blue Lotus (2022/1/25)

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Blue Lotus rating system:

Buy: The stock is expected to have an absolute return of more than 15-20% within 12 months

Hold: The stock is expected to have an absolute return of between 0-15% within 12 months

Sell: The stock is expected to have negative absolute return within 12 months

Blue Lotus equity research rating system is a relative system indicating expected performance against a specific benchmark identified for each individual stock.

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