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OPPORTUNITY TO CATCH A SMALL-CAP NEARING AN INFLECTION POINT

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MARKET DATA (C\$)

Price	\$0.40
Ticker	ASTI-CDN
2018E Revenue	\$0.5M
2018E EPS	-\$0.08
2019E Revenue (Company Est.)	\$4.4M
Shares O/S (M)	19.6
Options/Warrants	4.3
Shares FD (M)	23.9
Market Cap (M)	\$7.8
Short Interest	N/A
Cash & Equiv. (M)	\$0.2
Debt (M)	\$0.8

PRICE CHART



COMPANY DESCRIPTION

Aquarius Surgical Technologies Inc. manufactures medical and surgical supplies. The company offers medical laser systems and consumables. Aquarius Surgical Technologies serves customers in Canada and the United States.

HIGHLIGHTS

- Aquarius Surgical Technologies Inc. is making the transition from product development and proof of concept to commercial sales.
- Asset-light model (outsourced manufacturing and sales) reduces risks as most expenses are tied to sales.
- Biggest key to success is the successful rolling out of an effective distributor network.



SUMMARY

Aquarius Surgical Technologies Inc. (ASTI) represents an opportunity for adventurous investors to get in on the ground floor on an emerging growth story that appears near an inflection point for several reasons:

- The company has begun to gain traction in the market by offering a compelling value proposition for urologists.
- ASTI has diversified its product lines into new indications, such as kidney stones and female incontinence.
- The revenue model is based on an initial sale followed by repeat sales of high-margin disposables which, over time, will reduce lumpiness and increase profitability.
- Finally, the company intends to expand its distributor network significantly (>30 new distributors), which should allow for broad coverage across the U.S. and increase sales penetration.

OVERVIEW

ASTI, as it currently operates, is the result of the acquisition of Surgical Lasers Inc. (SLI) in late 2016. Prior to the acquisition, the company operated as a distributor of industrial and consumer protective coatings. That business was divested in 2014, although royalties continued to be paid until September 2017.

According to the company, “SLI is an exclusive provider of innovative, minimally invasive medical laser systems and consumables for multiple medical disciplines, principally in the field of urology, and specifically treatment of benign prostatic hyperplasia (BPH). Solutions comprise multiple laser systems, consumables, clinical education, service, support, and maintenance and focus on increasing the availability of services for patients, enhancing the quality of patient care, improving operational efficiencies, and reducing total operational costs.”

The attraction of ASTI lies in the “razor blade” model of revenue growth. Essentially, this is similar to the SaaS model in software. Once deployed, users are required to purchase high-margin consumables from the company on a per-procedure basis. The company sells its lasers on the basis of improved performance and lower cost. This argument is two pronged. The lasers offer greater operating parameters and portability compared to competing products. In some indications, this means that the lasers can be deployed in a physician’s office on an outpatient basis rather than at an outpatient clinic or in a hospital. In the U.S., this means the physician can capture a greater share of the treatment dollars. It also reduces the overall costs to the system by reducing the number of overnight stays for some procedures. In addition, the company designs its own laser fibers and can sell those direct to the users, thereby reducing distributor fees and lowering costs for the end users. This makes for a compelling total cost of ownership (TCO) argument during sales pitches.



ASTI is now transitioning into sales growth mode from several years of development and proof of concept. All the devices are now FDA approved and have undergone considerable real world deployment testing at reference sites to demonstrate their function and utility. As such, management sees sales volumes increasing significantly going forward. The company has guided for revenue of \$4.4M for fiscal 2020 (March 2020 year-end) with positive EBITDA for the year. This is based on the expectation of 43 lasers deployed by year-end with 987 disposable fibers sold. This is an average of two procedures per month per laser. Management sees a ramp up to 85 lasers and nearly 7,000 fibers for fiscal 2021 (seven procedures per month). Management has indicated that there is plenty of room for upside to these estimates if it can establish effective distributor relationships.

MARKET OVERVIEW

The markets that ASTI serves are large and growing as a result of an aging population and improvements in medical diagnoses treatment options. Looking at each primary market demonstrates a significant market opportunity:

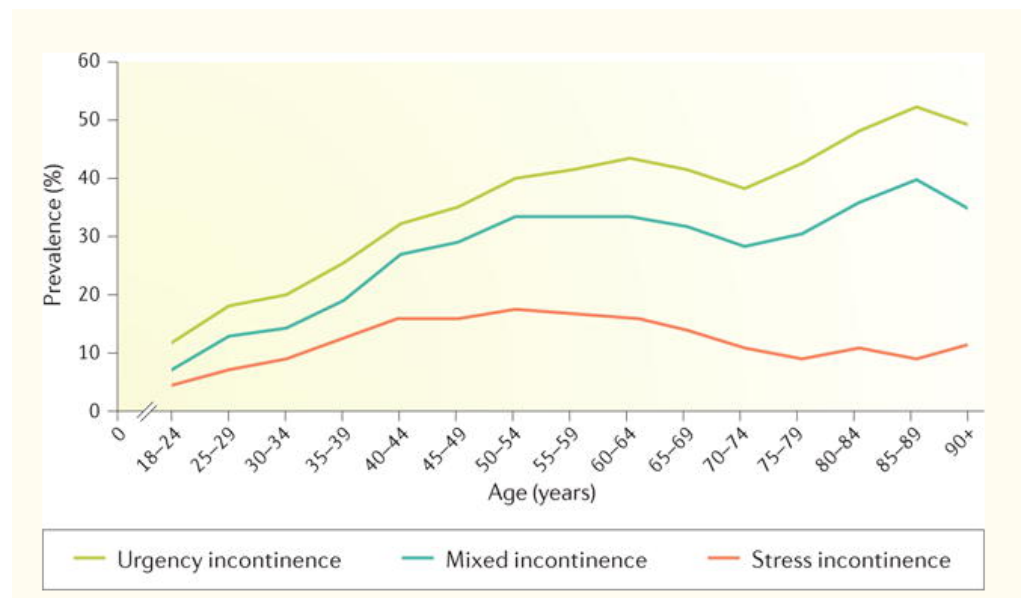
Benign Prostatic Hyperplasia (BPH): It is estimated that over 50% of men between the ages of 51 and 60 years of age suffer from symptoms suggestive of BPH, with the number rising to 90% in men over 80. Treatment options vary depending on the severity of the condition — from drugs to surgical. ASTI is focused on the laser surgery segment of the market. Recent market research suggests that this market is growing at >7% annually. It is estimated that 600-million men over 40 suffer from BPH worldwide. The majority are treated with drugs at present but there are a number of factors that point to surgical intervention and laser therapy in particular as an effective, permanent solution to BPH. Surgical intervention offers a permanent solution for most patients and in the long run lower costs versus drug therapy. The company estimates the size of this market to be \$5.5 billion.

Kidney Stones: It is estimated that more than 10% of people between 20 and 60 years of age are affected by kidney stones. Of those, a significant number will require interventional therapy such as lithotripsy. Market research suggests that this is a multi-billion-dollar market.

Female Incontinence: The Global Incontinence market is vast. It is estimated that 30% of women will suffer from incontinence, although the variation between studies is large ([here](#)). There is a correlation with age as well. The company's focus is on Stress Incontinence as laser surgery has been demonstrated to be effective. ASTI estimates the total addressable market at \$16 billion.



Figure 1: Female Incontinence



Source: Incontinence Frequency ([here](#))

WHAT HAS CHANGED TO MAKE ASTI INTERESTING?

Quite simply, after several years of development and proving out the product’s capabilities at leading reference sites, management feels the time for broad market acceptance has arrived. The process for generating meaningful sales for a medical device can be arduous. Even after a product has received FDA approval, it can be quite some time before doctors feel comfortable using it in a clinical setting. This is even more so the case when there are established alternatives in the market. ASTI’s lead products have had to undergo rigorous field testing at reference sites in order to demonstrate their capabilities and value proposition to the medical community. It is only now that these products have begun to generate sales traction.

The key to this traction has been, and will continue to be, the demonstration that identical clinical outcomes are achievable in office-based procedures and outpatient settings versus in a hospital. The value to practitioners is two-fold: 1) patients are happier with office-based/outpatient procedures as they cause less anxiety and consume less time; and 2) doctors can make more money. They can perform more procedures per day as there is less clean-up required between procedures (i.e., an entire operating room does not need to be cleaned) and they make better margins because they do not need to share the revenue with the hospitals. The company estimates that urologists can make \$1,800+ per BPH case using its office-based solution versus \$715 in a hospital setting. In the urinary stone market, hospitals can save significant money overall using ASTI’s solution. It involves a less expensive laser, less expensive fibers and offers lower maintenance costs. Similarly, for female incontinence, a newly developing market, the company offers a compelling TCO option for physicians.



PRODUCT OVERVIEW

ASTI works with laser manufacturers to design and build custom products for their end markets. In addition, the company has developed a line of proprietary laser fibers that are sold on a single-use basis for the appropriate lasers.

Figure 2: BPH Lasers – Pathfinder Laser (Diode Laser)



Source: ASTI

SLI's Pathfinder Laser is currently the only compact and portable laser on the market, offering doctors an office-based alternative for treatment. It has been shown to be as clinically effective as the current standard-of-care treatment Transurethral resection of the prostate (TURP). TURP has traditionally been considered the most effective treatment for an enlarged prostate, but with the improvement in techniques and laser equipment it is now being surpassed, primarily because laser treatment offers quicker recovery times and fewer complications such as bleeding. The Pathfinder Laser is designed to be maintenance free and offers numerous benefits to the doctor:

- Greater income per procedure
- More attractive alternative for patients, hence patient acceptance increases leading to more procedures
- Rooms turned faster versus operating rooms, hence more patients per day
- Frees up limited operating room time to perform other procedures sooner



Use of the Pathfinder is covered under existing insurance reimbursement codes, which reduces any hesitancy toward adoption. The financial incentive for urologists to use the Pathfinder is clear (Figure 3).

Figure 3: Financial Incentive for Urologists

Income Increase for Private Practice In-office Urologist				
2015 CPT Code	Brief Description	Physical Reimbursement In-office Setting	Physician Reimbursement Hospital or ASC	Hospital Reimbursement
52648	Laser Vaporization	\$1,852.00	\$708.00	\$3,113.00
		↓		
	SLI Fiber Price.....	\$ 495.00		
	Urologist Makes	\$1,357.00		
	Versus \$708 performing the procedure in the hospital			Also without the requirement to schedule limited hospital resources, typically more in-office procedures can be performed per day.

Source: ASTI

A physician can almost double his/her revenue per procedure and perform more procedures per day by using the Pathfinder. Not surprisingly, this is proving to be a valuable selling point. The urologist can also finance the purchase of the laser with payments being made over 2–3 years on a per-procedure basis, which eliminates the upfront capital expenditure. Furthermore, when compared to the leading competitor, the Pathfinder offers some clear performance and pricing advantages (Figure 4).



Figure 4: Pathfinder Advantages

Pathfinder vs. Greenlight XPS		
	Pathfinder	Greenlight XPS
Maximum Output Power	200W	180W
Fiber Delivery	Contact, Side fire & End	Side-fire Only
Dimensions	23"x11"x18"	20"x36"x43"
Weight	66 lbs (Portable)	420 lbs
Power Supply	110V	220V
Vaporization	Excellent	Excellent
Coagulation	Excellent	Adequate
Fibrous Tissue	Excellent	Not effective
Anesthetic	Local or General	Recommended General
Office/Out-patient	Office or Hospital	Hospital
Laser Cost	\$65,000	\$100,000 - \$125,000
Fiber Cost	\$495 - \$695	\$1,000 - \$1,800
Maintenance	Free (Annual PM Only)	\$350+/Month
Placement vs. Mobilize	Placement \$900/Case	Mobilize \$2,000 – \$2,300/case

Source: ASTI

Figure 5: Kidney Stones – HYPHO Laser (Holmium Laser)



Source: ASTI



The company’s HYPHO laser is designed to be the highest-performing compact laser on the market. It offers the highest and widest output and longest pulse duration of any compact laser available. This allows physicians to perform dusting of renal stones which can reduce costs and surgical times versus basketing (Figure 6). This added flexibility is a key selling feature of the HYPHO Laser.

Figure 6: Dusting vs. Basketing

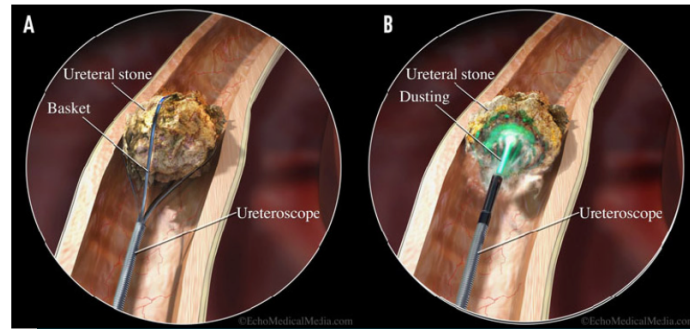


Figure 1: Dusting vs. Basketing

During the basketing procedure, a high-power, low-frequency laser fragments the stone, which is then removed with a basket retrieval device (a). In a new protocol called dusting, however, surgeons use low-power, high-frequency laser settings to ablate the stone into dustlike particles that pass naturally (b).

Source: Massachusetts General Hospital

As with ASTP’s other products, financing is available on a lease or per-use basis. The company supplies the fibers direct to the facility, reducing cost per fiber. As shown in Figure 7, the HYPHO has numerous performance advantages over the existing competition.

Figure 7: HYPHO Advantages

Feature	HYPHO	AMS		
		Stonelight	Lumenis 20	Quanta
Max. Output Power	35W	30W	20W	30W
Max. Output Energy	8.0 j	3.0 j	2.5 j	4.0 j
Pulse Length	95 - 1900µs	150 - 800µs	Up to 500µs	95 - 1500µs
Pulse Rate/Frequen	3 - 30 Hz	5 - 20 Hz	5 - 15 Hz	3 - 25 Hz
Electrical	115 V 50/60 Hz	200/240 V 50/60 Hz	100 - 230V 50/60 Hz	115 - 230 V 50/60 Hz
Dimensions (w/d/h)	50 x 54 x 40 cm	49 x 94 x 54 cm	52 x 57 x 33 cm	26 x 84 x 92 cm
Weight	100 lbs	174 lbs	88 lbs	189 lbs

Source: ASTI



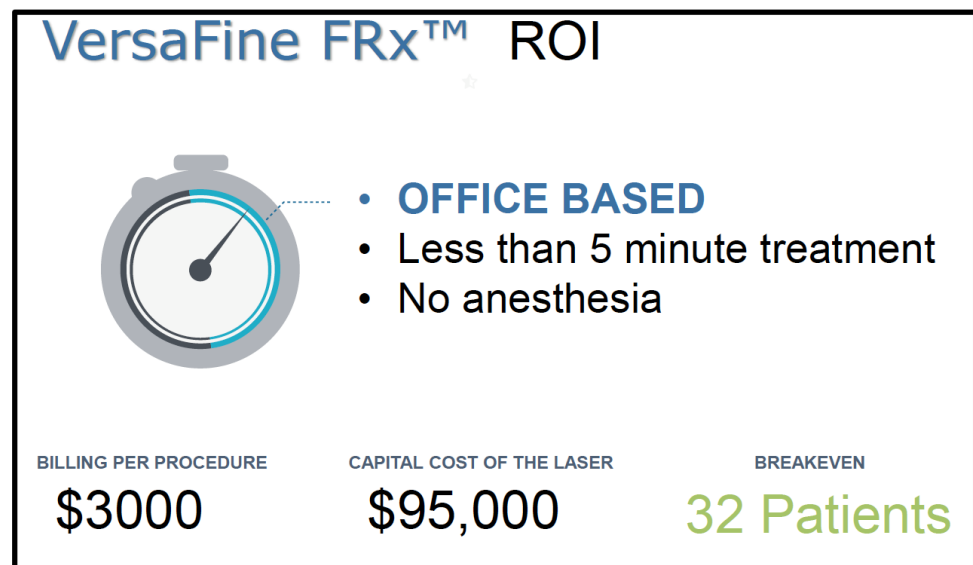
Figure 8: Female Incontinence – Versafine FRx Laser (CO2 Laser)



Source: ASTI

The Versafine is designed for “Minimally invasive CO2 laser treatments applied in an office-based setting without the requirement for local anesthetic, to address vaginal health-related conditions typically associated with menopause, including vaginal atrophy and incontinence.” The primary market for this laser is the treatment of female incontinence. There is an increasing body of evidence to suggest that laser treatments for incontinence are safe and effective (75–80% success rate has been reported across numerous small-scale studies; [Fractional CO2 laser for treatment of stress urinary incontinence](#)). The use of lasers is new to the market and ASTI is well positioned to become an early mover. The market leader in the space, Cynosure, was acquired by Hologic for \$1.6 billion in 2017 (it made other devices for women’s aesthetics as well).

Figure 9: Economics of VersaFine



Source: ASTI



As can be seen above, the economics for the physician (typically an OB/GYN) can be compelling. For the patient, it may eliminate the need for drugs or incontinence pads. At present, this procedure is not covered by insurance, but given the distress that incontinence can cause many women are willing to pay upfront to avoid the physical and social issues associated with the condition. The low breakeven number (actually 43 patients at current pricing) provides an attractive selling point for doctors.

In addition to the existing product lines, the company has indicated that it is working with its manufacturing partners to develop products for the ENT, ophthalmology, lung surgery, dermatology and neurosurgery markets. It is expected that it will initially focus on establishing a presence in its core markets before branching into these potentially high-value indications.

FINANCIAL FORECAST

The following financial forecast is based on company projections from its spring 2019 corporate presentation ([here](#)). It should be noted that our forecast corresponds to years from funding as opposed to calendar years since the timing of funding is uncertain. As such, our model is more conservative than the company's published forecast. Regardless, the challenge that any potential investor has is understanding how the company could transition from a development stage to a revenue generator. In the case of ASTI, there are two key hurdles that have to be passed. The first, which has already been accomplished, is the demonstration that the product delivers on its claims in a real-world setting. This has been demonstrated through extensive testing in reference centres with key opinion leaders. The second is the always daunting task of getting products to market appropriately. The company has quite sensibly chosen to utilize a specialty distributor network rather than to build out its own salesforce, which would be costly and time consuming.

Distributor Economics

At present, management has indicated that it will begin its market outreach with a network of at least 10 experienced urology-focused distributors. These distributors currently sell in regionally disparate sections of the U.S. and offer a wide variety of urology-based devices on behalf of manufacturers (scopes, sensors, disposables, etc.). Of note, management has indicated that none of its favoured distributors currently sell a competing product and are thus excited by the prospect of having new products to push through their networks. The advantage to a distributor network for a small company such as ASTI is that the distributors work on a 100% commission basis. They receive a 15–20% cut of all items sold (laser and fibers). The company does not have to pay any salary or benefits to the sales teams. Typically, each distributor would have a small group of specialized sales reps covering their specific geography. At a list price of \$55,000–\$160,000 per unit, the distributor can make a substantial reward for each unit sold (\$8.3–\$32,000). In addition, fiber sales will continue to generate commissions (\$30–\$60) for the life of the machine (10–15 years). Even at fairly low usage rates, this commission could add up to substantial recurring revenue for the distributor. The one



issue the company faces with this model is that it will have to front the costs of demonstration units for each distributor. All in all, however, this a much more cost-efficient strategy as it provides the company with experienced sales people from the outset.

Model Economics

In building our model, we have made the following assumptions:

PRICING

BPH Laser (MP200): Selling price of US\$59,000; fiber cost of US\$495 per fiber. We have assumed the number of procedures per month (as measured by fiber consumption) averages five in the first year, seven in the second and 10 in the third year. This assumption may prove to be overly conservative as management has highlighted that one of its reference sites can perform 10 procedures per day with its equipment.

Kidney Stone laser (HYPHO): Selling price of US\$55,000; re-usable fiber cost of US\$200 per fiber. We have assumed the number of procedures per month averages three in the first year, four in the second and five in the third.

Female Incontinence (VersaFine FRx): Selling price of US\$130,000 for the first year and US\$160,000 thereafter, as per management indications. It is not assumed that there will be significant ongoing consumable sales with this device.

GROSS MARGINS

It is assumed that gross margins remain relatively stable over time, as per existing manufacturing agreements with exception of Years 2 and 3 VersaFine FRx product which reflects a price increase.

EXPENSES

As should be expected for a company in the “go-to-market” stage of development, the bulk of the expenses are toward sales & marketing and commissions. Given the company’s high level of expenses on sales & marketing, there should be a reasonable amount of flexibility to generate profits earlier if necessary as long as a base level of systems are deployed.

DISTRIBUTOR ACTIVITY

An essential element of ASTI’s revenue buildout is the development of an effective distributor network. To this end, we have assumed the company will add 10 new distributors per year starting in Year 1. Management has already indicated that it has identified at least 30 potential distributors for the products and many have already agreed on some level to become active. Further, we have assumed that each distributor will sell units (on average) as follows:



Product	Year 1 of Sales	Year 2 of Sales	Year 3 of Sales
Number of Distributors	10	10	10
MP200	1.5	2.5	2.5
HYPHO	1.0	1.5	1.5
VersaFine FRx	1.0	1.5	2.0

This schedule assumes that it will take a year for each distributor to reach full productivity. Further, it assumes that because the VersaFine FRx market is less developed there is more room for growth over time. By Year 3, a distributor would be making in excess of US\$125,000 (run rate) per year in commissions between unit sales and fiber sales. This would be in addition to any income a distributor is already generating from its current business.

Figure 10: Financial Projections

ASTI Forecast		Exchange Rate		1.306		
Sales	Year 1	Qty.	Year 2	Qty.	Year 3	Qty.
MP200 BPH Laser	\$1,006,325	10	\$3,082,160	40	\$5,008,510	65
Single Use Fiber Optic	\$387,882	600	\$2,094,563	3240	\$5,469,136	8460
HyPho HO:Yag Lithotripsy Laser	\$1,292,940	18	\$1,795,750	25	\$2,873,200	40
Re-usable Fiber Optic	\$169,258	648	\$460,757	1764	\$971,664	3720
VersaFine FRx Incontinence Laser	\$1,018,680	6	\$5,224,000	25	\$9,403,200	45
Total Sales	\$3,875,085		\$12,657,230		\$23,725,710	
Cost Of Goods Sold						
MP200 Laser System	\$489,750		\$1,959,000		\$3,183,375	
Single Use Fiber Optic	\$176,310		\$952,074		\$2,485,971	
HyPho HO:Yag Lithotripsy Laser	\$705,240		\$979,500		\$1,567,200	
Re-usable Fiber Optic	\$93,092		\$253,416		\$534,415	
VersaFine FRx Incontinence Laser	\$313,440		\$1,306,000		\$2,350,800	
Total COGS	\$1,777,832		\$5,449,990		\$10,121,761	
Gross Margin						
MP200 Laser System	\$516,575	51.3%	\$1,123,160	36.4%	\$1,825,135	36.4%
Single Use Fiber Optic	\$211,572	54.5%	\$1,142,489	54.5%	\$2,983,165	54.5%
HyPho HO:Yag Lithotripsy Laser	\$587,700	45.5%	\$816,250	45.5%	\$1,306,000	45.5%
Re-usable Fiber Optic	\$76,166	45.0%	\$207,341	45.0%	\$437,249	45.0%
VersaFine FRx Incontinence Laser	\$705,240	69.2%	\$3,918,000	75.0%	\$7,052,400	75.0%
Total GM	\$2,097,253		\$7,207,239		\$13,603,949	
Expenses						
Commissions	\$759,129	20%	\$2,409,027	19%	\$4,577,343	19%
Sales & Marketing	\$916,551	24%	\$1,239,776	10%	\$1,455,032	6%
General & Administrative	\$1,299,147	34%	\$1,633,566	13%	\$2,079,136	9%
Total Expenses	\$2,974,827		\$5,282,369		\$8,111,510	
EBITDA	-\$877,574	-23%	\$1,924,870	15%	\$5,492,439	23%

Source: ASTI



Variations from Company Forecast

ASTI has projected 2019 calendar year sales of \$4.4 million with slightly positive EBITDA, followed by \$11.5 million and ~\$2.5 million in 2020 and \$20 million and \$6 million in 2021. In contrast, we have modeled sales to be \$3.9 million, \$12.6 million and \$23.7 million through years 1 to 3 and likewise EBITDA of (\$877,000), \$1.9 million and \$5.5 million. It should be noted that this model lags management's forecast by 6–9 months and thus is more conservative than the numbers may seem at first glance. Of note, as modelled, by Year 3 ASTI would be generating over \$6 million in recurring fiber revenue, with that number expected to increase as the product base matures. In fact, over a 10-year lifespan at an average of 10 procedures per month, each MP200 unit would generate almost US\$600,000 in fiber revenue. Similarly, each HYPHO unit would generate US\$120,000 (based on five procedures per month).

KEY METRICS

1. **Distribution Partners:** ASTI's revenue model is clearly dependent on the number and productivity of its distribution partners. If the company can successfully identify and close on productive distribution partners, sales growth should follow. Watching the growth of distribution partners as well as the average sales per partner gives a clear indication of the company's value proposition. The distribution partners have a significant financial incentive in pushing the company's products, so it would be useful to measure/track how sales progress.
2. **Procedures per Unit:** Significant upside potential exists if users utilize the units at much higher rates than has been modelled here. Anecdotally, the company has observed that reference sites can perform upward of 10 procedures per day using the MP200. Thus, an active clinic could generate revenue far in excess of what is modelled. Higher fiber sales per unit would give a clear indication of the product's success and long-term revenue growth potential.
3. **New Product Introductions:** Over the longer term, watching for the successful development of new products should allow for a significant uptick in revenue. It is not expected that any new products will be introduced until they demonstrate a foothold in current markets.

ADDITIONAL RISKS

1. **Balance Sheet Risks:** In order to effectively seed the distribution network, ASTI must provide distributors with demonstration units that they can take with them on calls to the urologists. This requires a significant upfront capital commitment. It is estimated to be over US\$110,000 per distributor (to purchase one of each machine at cost plus fibers). While the company's revenue model does not require it to pay retainers to the distributors, it must provide product.
2. **Competition:** At present, the company has the lead in offering unique, mobile devices. The space does, however, contain numerous well-capitalized



competitors. If ASTI is successful in gaining market traction, it is likely that many of these competitors will look to upgrade their product capabilities. On the plus side, this is not a quick process as FDA approval is required.

3. **Dependence on Distribution Partners:** With the good there is the bad. The distribution partners must deliver on sales in order for the company to succeed in the long run.
4. **Product Differentiation:** Management states that the product has been well received in the marketplace to date and that the advantages/benefits of it are clear. It remains to be seen, however, whether these factors are important across the industry or primarily with high-volume opinion leaders. This distinction can be important in separating reasonable success from a home run.
5. **Liquidity:** At present, the shares are tightly held by insiders, which has led to thin trading volumes. The company will need to execute well in order to increase interest in the stock and improve trading volumes.



Disclaimer

Pennock Idea Hub received a fee from the company for producing this report. The intention of the report is to give interested parties an overview and better understanding of the company so that they can make an informed decision. As noted above, the financial forecast is based on a publicly available, company-produced forecast.

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