

Name: Singapore Medical Group
Ticker: 5OT
Board: Catalist, Singapore Stock Exchange
Recent Shareprice: 0.235
Recent Market Cap: 34.5m
P/E Trailing 12 Months: 10.44
P/S Trailing 12 Months: 1.11
EV/Sales Trailing 12 Months: 1.02
Tangible Book Value: 20.4



Rating: Speculative Growth

Disclosure: I currently have a small position in this stock. This report was written as part of my due diligence and is meant for my own consumption. I welcome all feedback at raytoei@gmail.com

23rd August 2009: First Draft:

27th August 2009: Corrected for Typo

1. Company description

Singapore Medical Group is specialty healthcare provider focusing on Laser Vision Correction procedures and in the past 18 months has branched into Eye Care, Sports medicine, Aesthetics, Critical Care. The company went public in late July 2009, and is listed on the sponsor-supervised Catalist board in the Singapore Stock Exchange.

Clusters	Eye	Aesthetics	Sports Medicine	Critical Care
Started Since	2005	2008/2009	2008/2009	End 2007
Products and Services	Refractive Surgery. Treatment of Presbyopia, Cataract, Glaucoma.	Breast, facial Fillers, Vaser Liposelection, rejuvenation, Botox and Dental care.	Treatment of sports or exercise-related injuries.	Chemotherapy Targeted Therapy Biological Therapy
Clinics	1. Lasik Surgery Clinic, 2. Premium LSC and 3. The Eye and Cornea Transplant Centre. 4. Singapore Vision Centre Location: Paragon Medical	1. Dental Studio at Paragon 2. Singapore Lipo, Body & Face Centre 3. Singapore Aesthetic Center Location: Novena Medical Center	1. Sports Medicine Center, 2. Sports Orthopedic Surgery Location: Novena Medical Center	1. Cancer Centre at Paragon

Table 1: SMG Services and Clinics

Regarding the EYE cluster which currently contributes 85% of the business, SMG believes that it has the largest marketshare of the refractive surgery. Of which about 30 thousand refractive surgeries are currently performed in a year. The number of procedures by SMG is about 1500 a month, or 16k in 2007 and 18K in 2008. The chief competitors listed in the prospectus are SNEC, Parkway and Tan Tock Seng. The success of SMG is credited by management to the following factors:

- A highly scalable process of letting the doctors focus on the surgical procedure and follow-up, and unencumbered by administrative matters, while letting everything that can outsourced be handled by highly trained professionals. This way, a doctor can handle up to 500 patients in a month unlike the industry norm of 100 ~ 150 per doctor a month. The doctors are employees but are also highly incentivized.
- A focus on higher standard of care provided. To justify the price premium for its service, SMG employs the best doctors in the industry, professional nurses undergo extensive training, and superior top-of-the-line machines are utilized. This has resulted in reducing the number of costly post-op enhancements; SMG claims a rate of 1 in 10,000 post op enhancement versus 1 in 1000 enhancements which is the industry norm.
- A strong focus on branding and marketing. Being a specialty health-care provider, SMG is choosing its sandbox carefully. The two growth areas are the EYE and AESTHETICS clusters, while SPORTS and CRITICAL CARE are diversification strategies with niche addressable market-space. SMG feels that EYE scales vertically within the two clinics, while AESTHETICS is more retail-driven and scaling horizontally across more clinics. The company expects to open 8 more AESTHETICS clinics in 2010, with a minimal staff of a doctor and 2 nurses, and an annual turnover of about 2m per clinic. The competition identified comes mainly from beauty parlors.

2. Industry Peer Analysis

	TLC Vision Corp. (TLCV)	LCA-Vision Inc. (LCAV)	Vision Group LTD (30 June FY)	Shinagawa (Private Company)	SMG (50T:SGX)
Country	Canada & US / USD	US USD	Australia AUD	Japan USD	Singapore SGD
Recent Market cap	13m	94m	A 59.87M	-	35.0m
Rev 2008	276	205	A111.3m	-	30.1m
Rev TTM	255	151	A111.6m	-	30.9m
Gross Margin (Avg 3 yrs)	30	59.47	49.7 %	-	69.3%
Gross Margin (TTM)	27.1	32.7	48.2%	-	57.2%
Oper Margin (Avg 3 yrs)	-8%	11.27%	21.16%	-	32.6%
Oper Margin (TTM)	-33.3%	-21%	18.1%	-	13.1%
Free Cash Flow (Avg 3yrs)	17.3n	21m	A16m	-	5.33m
Free Cash Flow (TTM)	-5m	12m	A10m	-	5.67m
Clinics (Refractive)	68 + 100 other sites	78	7	5 Clinics in Tokyo, 1 in JV in SGP	2 (LSC + Premium) 3 in Phil.

Clinics Others	300 sites	-	33	-	8
Doctors	11000 affiliates	Total 700 employees	42 + 30 visiting surgeons	144 of which 44 Fulltime	3 (LSC)
Procedure Volume (2008)	73.8k. Incl affiliates: 123k	115k		238k (290k est. for 2009)	18k est.
Procedure Volume (TTM)		87k			1.5k a month
Marketshare	15% (US)	12% (US)	Largest ophthalmic service provider	65% of JP marketshare	65% (30k procedures annually)
Listed Price Listed (both eyes)	Not Listed USD 2,000 onwards	Not Listed USD 2700 ~ 3600 before Disc	A6,500.000 Excluding 20% rebate	USD 2000 ~ 2400 in JP. SGP 2388 in SGP Clinic	SGP 2098 ~ \$3,888 depending on machine.
Promo Price Listed (both eyes)	12 months interest free	\$400 rebate	12 months Interest Free		3yrs Enhancement warranty
Financing Options		Yes	Yes, through GE Care Credit		Yes. 12 months
Insider Ownership	7.4%	18.23%	30% (doctors are partners)	-	83%

Table 2: Major Laser Vision Correction LVC companies world-wide

3. TOWS Analysis

Strengths

a. Strong cash generator with little long term debt

SMG exhibits the characteristics of a micro-cap growth stock: A strong balance sheet with little long term debt and a growing cash position (it increased a million in the past six months to nearly 3m) against a backdrop of lumpy earnings with strong revenue growth. The Tangible Book Value is negligible at \$0.0114 per share or 5% of share price; this gives a huge but somewhat meaningless ROE value of 207.8%

b. A Unique business model with a first mover advantage

SMG isn't the first provider in the premium healthcare segment. However its separation of management and clinic functions is unique. SMG's focus on the more regulatory-relaxed aspects in Refractive Surgery, Aesthetics, Sports medicine allows it to advertise and market it better than most. Its early mover advantage ensures that the branding is intact.

Weaknesses

c. Unknown and untested outside the Lasik Surgery Center, it must execute flawlessly.

As a micro-cap with a market capitalization of roughly 35m, SMG is dwarfed by the other medical groups with bigger resources and deeper pockets. It must continue to pick and define its market and move faster than its competitors. SMG is still not widely known and the operating history is linked mainly to Lasik Surgery Center since 2005, the other clinics were only recently acquired in the past 18 months. According to the prospectus, the Eye Cluster contributed about 85.2% the total 2008 revenue of \$30.1m, while the other medical clusters contributed \$4.4 million.

d. Execution and Ownership issues

According to the prospectus, the Chairman and CEO control about 72% of the company, and all insiders control about 82% of the company leaving about 17+% outstanding to the public. Furthermore, the

Chairman, CEO and an EVP are related. While this aligns the major shareholders to the performance of the company, it nevertheless could cause volatility in the market if the owners were to sell the shares after the restrictive period. Institutional investors may avoid investing in this company due to guidelines on corporate governance and % shares outstanding.

Opportunities

The key opportunities are:

e. Addressable market of the Laser Vision Correction in Asia is underserved

Asia suffers from high rates of myopia, this problem is more acute among Singaporean young adults, where myopia affects 65% to 82.2% of the population (average of 74%) depending on ethnicity. (See Appendix V).

	General Population	Myopic Population	Eligible for LVC	No. of Eligible Procedures (Single Eye)	Est. LVC for 2009	Penetration rate / Pop	Penetration rate / Eligible
US	304.1m	43%	45%	112.46	400k	0.2302%	1.245%
Japan	127.2m	55%	45%	60.17	1400k	0.1572%	0.665%
Singapore	4.6m	74%	45%	2.93	30k	0.3261%	1.025%

LVC: Laser Vision Correction. Eg. LASIK

Procedures refer to Single Eye

The above table is an attempt to calculate the % penetration for those that are eligible. I used the population myopic rate from the “Myopia Manual”, the estimated 2009 Procedures are also drawn from several sources.

Lacking sufficient data for Singapore and Japan eligibility for LVC, I pegged the % as the same to the US rate which is 45% of the myopic population (column 4).

The penetration rate is still quite low for Singapore, only 1% of the Eligible procedures are performed. Since there is an annual replacement rate, I would regard the 30K for Singapore to be at least stable or growing as Lasik becomes more popular.

The US topped out at 1.4m procedures in the year 2000 and variances around the 1.4m depended on consumer sentiments. From this simple indicator, it would suggest that Japan at 0.67% still has a higher growth prospect than Singapore 1.02%, since Singapore could approach the US saturation rate of 1.245% sooner than Japan.

Key factors affecting this eligibility rate would be (a) population age group since Singapore has a younger population than the US or Japan, and the recommended age for the Laser Vision Correction is between 20 to 40yrs old, though in the US the average patient is about 40 yrs old, presumably due to (b) higher disposable income.

According to the often quoted Market-Scope, the global demand for Laser Vision Correction is expected to grow at a Compound annual growth rate of 5.4% till 2013; this is taking into consideration of the 2008/2009 decline and a quick rebound afterwards.

Fueling the growth will come from Japan and emerging markets, including China and India.

http://dev.market-scope.com/market_reports/2008/12/2008-comprehensive-report-on-t-2.html

Threats

F. Threat of Increased competition and a spiraling Price War

Please refer to the Appendix I for a 2008 late-May article in Business Times. In that article, no less than eight Lasik centers were mentioned about a looming price war that threatened to compress margins and steal away potential customers.

The business of refractive surgery has high fixed and operating costs that make it expensive to start and operate. According to the 1999 book “Refractive Surgery” by Helen Wu et al, a small practice will need 400 procedures to break-even (see table below), this is before considering a profit or doctor’s fees. What is interesting about the table below is that while the cost per eye has dropped below USD\$1500 a procedure since it was published, the rate of inflation has increased the costs, pushing the breakeven point to > 400 procedures. (In addition, for the popular Intralase Lasik procedure, two machines are required, one for bladeless cutting and the other excimer machine for reshaping the cornea are required)

TABLE 34-3. Arthur D. Little Financial Model for PRK

Items	Proformas		
	Small	Medium	Large
Annual procedures @\$1,500	240	600	3,600
Packs/disp./mask @\$100	\$24,000	\$60,000	\$360,000
Gas @ \$11/procedure	\$2,640	\$6,600	\$39,600
Pillar Point @\$250	\$60,000	\$150,000	\$900,000
Marketing	\$50,000	\$150,000	\$500,000
Lease (5 yr, 450 K 12%)	\$125,000	\$125,000	\$125,000
Misc. G&A, rent, utilities	\$50,000	\$75,000	\$125,000
Staffing	\$125,000	\$200,000	\$300,000
Annual maintenance fee	\$40,000	\$40,000	\$40,000
Optics upgrades	\$40,000	\$40,000	\$40,000
Total costs	\$516,640	\$846,600	\$2,429,600
Gross revenues (20% OD)	\$345,600	\$864,000	\$5,184,000
Co-management			
Net pre-tax revenue	(\$171,040)	\$17,400	\$2,754,400

This business is about economies of scale; it is also self-reinforcing, the highest paid in-demand surgeons also have the most experience. New entrants will have to pool resources while creating brand awareness for their service.

The biggest threat will come not from small practices but established ones who can scale, in this aspect, Shinagawa Lasik (A joint venture with SNEC) is probably a bigger threat than the other identified competitors listed in SMG’s prospectus (Parkway Eye Centre and Tan Tock Seng Hospital). Shinagawa Lasik is the market leader in Japan with 237k procedures performed in 2008 in Japan. While it is a late entrant in

Singapore, it is polished in marketing as well as providing an overall pleasant patient experience which is important since word-of-mouth referral and reputation are the key marketing strategy. Anecdotal evidence from the net suggests high customer satisfaction for the Shinagawa Lasik clinic. Shinagawa has a stated aim of achieving 2,000 procedures monthly and capturing half of the 30,000 procedures done locally. (Source: <http://www.shinagawa.com.sg>)

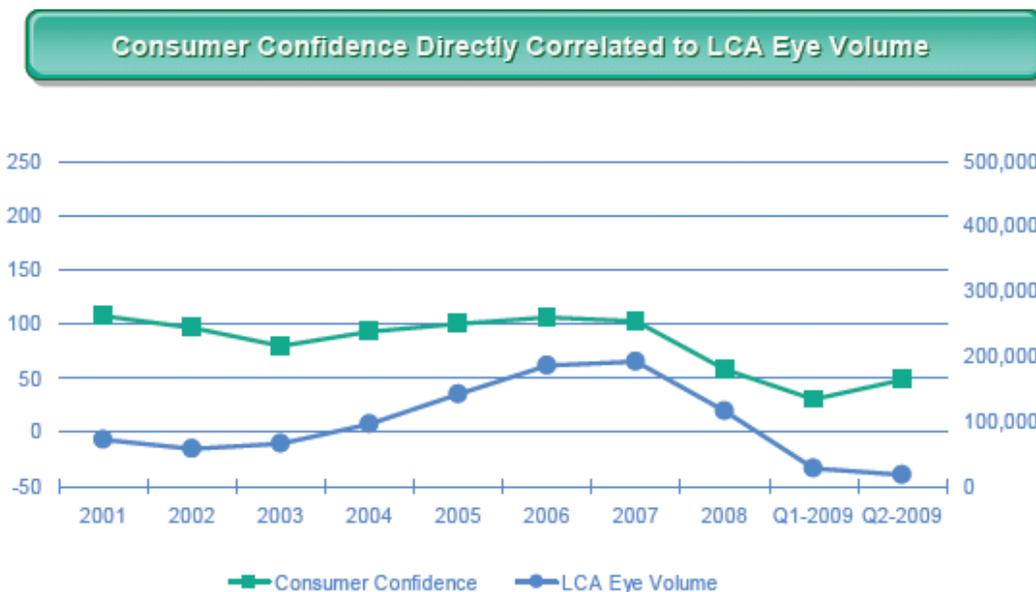
Please refer to Appendix II & III on the patient costs of a Lasik procedure in Singapore and the US. The prices among the clinics in Singapore are competitive, and the differences are within \$200 ~ 400 for both eyes for the most popular procedure, IntraLase Lasik. The prices in Singapore are some of the lowest in developed countries.

In countries such as the US, the prices has risen steadily, See Appendix IV. This can be attributed to customers choosing more expensive but better technology, eg. Blade versus Non-Blade (IntraLase) procedures. Wavefront versus Custom procedures. So while the threat of price discounting is real, this is off-set by customer trading up to better technology to reduce the rate of enhancements or infection.

G. Threat of a Recession

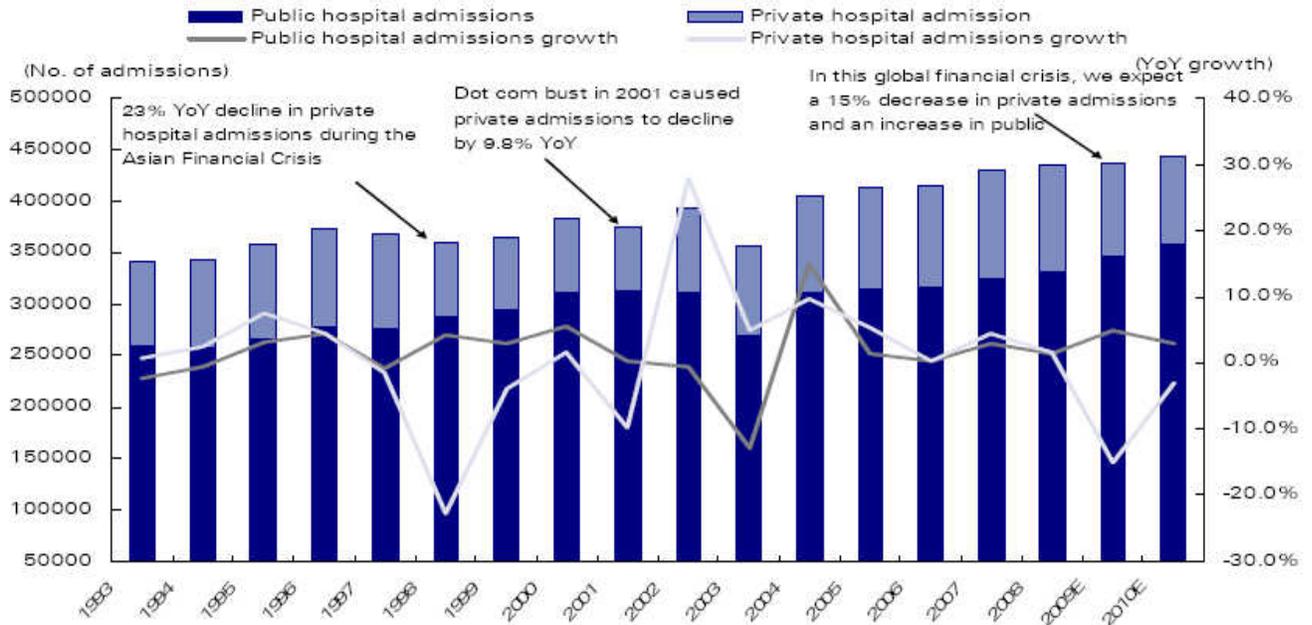
Despite the recession-resistant nature of healthcare industry, not all providers are coping well with the downturn. For example, Pacific Healthcare is similar to SMG in that it is focused entirely on the ambulatory, outpatient specialist services in cosmetic surgery, dentistry and aesthetic medicine. It is also asset light with low capex and high ROE. However, since its aggressive expansion in 2007, it is increasingly cash-constrained in this downturn, it has cancelled a dividend payout, and has stated that it intends to issue 15% more shares to shore up working capital; investors have fled in the past year.

LCA-Vision, one of the largest refractive surgery providers in the US reported a 38.4% dip in the number procedures in 1H 2009. From a recent presentation, they highlighted a direct correlation of consumer confidence and the nos. of procedures performed.



In Singapore, a Feb 2009 report by Deutsche Bank on the patient admission rates in Singapore shows a steeper decline in private admissions during the previous 2 recessions with a drop of 23% and 8% during the Asian Financial Crisis and Dot com bust respectively. They foresee a drop of 15% during this current crisis.

Figure 2: Singapore yearly patient admission data: 1993-2010E



Source: Deutsche Bank, Singstats, MOH

4. How much is SMG worth?

	Recent Price	Market Cap	P/S TTM	EV/REV TTM	P/FCF	EV/FCF	P/E
Parkway	1.860	2,097m	2.140	2.770	57.230	74.800	37.165
Raffles	1.190	617m	2.970	2.820	15.540	14.730	17.917
Healthway	0.130	178.5m	1.853	1.999	7.866	8.489	13.536
Pacific	0.105	29.48m	0.370	0.290	N/A	N/A	N/A
Average			1.83x	1.970x			
SMG	0.235	34.2m	1.110	1.020	9.150	8.440	10.440

Table 5: Sector Comparison in Singapore

For valuation, rather than compare SMG with the worldwide peers, I chose to compare SMG against healthcare companies in Singapore as there is a higher correlation of stock performance to local sentiments towards the healthcare sector.

Since SMG is a fast grower with inconsistent earnings and a short operating history, it is more appropriate to measure SMG based on a Revenue multiple. Also, whole firm Enterprise Value is used rather than just

the Price (or Market cap), as whole firm valuation takes into consideration the cash and debt position of the company. (EV is measured by market cap + debt less cash).

To account for the latest reported performance, trailing 12 months (TTM) data is calculated from the latest 1H2009 results and re-constructed 2H2008 figures for sales, earnings and free cash flow. (Free Cash Flow (FCF) is commonly defined as Operating Cash Flow less Capital Expenditure).

The average sector multiple is a 1.97 times revenue. This gives an implied value of \$0.43 per share for SMG. This is 85% above the recent price of 0.235.

Calculation:

Implied Enterprise value of $1.97 \times \text{TTM Revenue} = 60.78\text{m}$

Implied Market cap = $60.78\text{m} + \text{Cash of } 2.93\text{m} - \text{LT Debt of } 0.291\text{m} = 63.43\text{m}$

Implied Price per share = $63.43 / 145.73\text{m} = \0.435

5. How to think about the current and implied price and the catalysts.

As a newly listed company, SMG is trading at only a small premium to its IPO price, in my opinion the share price is weighed down by 1. investor neglect, 2. concerns about the economy and the healthcare sector, and 3. a perception that the lack of strong tangible book value will provide little downside protection to investors.

As a fast grower, SMG is a game changer in this industry. While other players strives to be an one-stop shop, SMG is picking its niche carefully and has chosen to put its growth in EYE and AESTHETICS, and SPORTS & CRITICAL ILLNESS as diversification strategies.

SMG as a high quality micro-cap that is undervalued. Without a long operating history, I rate it as a **Speculative Growth** stock because much of its value comes from its ability to grow in the future and translate those growths into free cash flow. The catalysts which will unlock the price are:

- Institutional coverage and ownership of the shares. SMG is below the radar of most brokerage houses, this will change as SMG continue to execute its unique business plan and expand in the other clusters, especially Aesthetics, and start taking marketshare away from the other players.
- Economic recovery and improved market sentiments towards the healthcare industry. As Laser Vision Correction is an elective surgery, refractive surgeries will rise when the economy picks up and consumer discretionary spending increases. Back in 2005, 2006 and 2007, the market was more upbeat about the sector, and sold at multiples between 50% ~ 100% higher from today's levels. (see table 6)

EV/Sales	2005	2006	2007	Current TTM
Parkway	5.3	3.4	3.4	2.78
Raffles	7.2	6.0	4.9	2.82
Thomson	4.6	4.1	3.6	-
Pacific	2.4	1.8	-	0.37
Healthway	3.0	2.9	2.7	1.99
Simple Average	4.5	3.64	3.65	1.99
Average w/o Pacific Health	5.025	4.1	3.65	2.53
SMG	-	-	-	1.02

Table 6: Historical Valuation, Source: 2005 ~ 2007 data from CaseNove, Nov 2007

6. Conclusion

SMG is a fast grower in a healthcare industry with a business model that is highly focused on marketing. Its two main key pillars are the the EYE Cluster and AESTHETIC cluster. It is high quality and targets the premium segment, it is also undervalued with an implied intrinsic value of \$0.43. As a growth stock, much of the value is derived from its ability to execute and generate future cash flows. SMG has a SPECULATIVE GROWTH rating.

Other areas not covered in this report include the Dividend policy, Aesthetic medicine opportunities in Asia, other EYE cluster opportunities eg. presbyopia.

Appendix I:

Lasik prices slide, with eye on competition

By Chen Huifen

31 May 2008

Business Times Singapore

Hints of price war, ad blitz as new players burst onto the scene

(SINGAPORE) Competition in the Lasik surgery sector seems to have intensified recently with the entry of new players and eye-popping promotional rates tied to marketing campaigns.

In the past month alone, there have been weekly advertisements by eye clinics in various media, with some displaying their prices and add-on services. Industry observers noted that a price war may be underway, though the players involved are denying this.

Parkway Eye Centre, for instance, started publicizing in end-April its \$995-per-eye package for standard Lasik surgery. The fee, before GST, includes an evaluation and three post-operation reviews. According to centre medical director Lee Hung Ming, it would have cost about \$1,600 per eye without the promotion.

'Parkway sees the potential in the Lasik market in Singapore,' said Dr Lee. 'Price adjustment is one of our strategies to expand the Lasik market and to allow more people to enjoy the benefits of Lasik in a premier hospital at an affordable price.'

The Lasik Surgery Clinic followed suit in mid-May with a package of \$2,188 for both eyes. The new rate is about 21 per cent lower than its last publicized price of \$2,780. On top of that, it boasts of installment payment plans and no-waiting list, and is open 365 days.

'Over time economies of scale, operational cost efficiencies and advances in technology have provided us with cost savings, which we readily pass to our patients by reducing the cost of procedures,' said Cheryl Baumann, president of the Singapore Medical Group, parent company of The Lasik Surgery Clinic.

Meanwhile, at least two new practices offering Lasik surgery have opened in the last two months.

Shinagawa Lasik Centre, a tie-up between Japan's Shinagawa, Capitol Optical and SNEC Eye Associates, launched a \$4 million, 6,000-sq-ft facility last month, offering a price of \$2,388, before GST, for an IntraLase blade-free procedure on both eyes.

Another new outfit, Singapore Eye & Vision, has also opened at the Paragon. Fronted by three doctors – Francis Oen, Wee Tze Lin and Bobby Cheng – who left the Singapore National Eye Centre recently to set up the private practice, the group placed advertisements in the local media without indicating its price, saying that it is merely an exercise to inform their patients that they have moved.

Asiamedic chairman Low Cze Hong said his group may consider offering a one-off Lasik promotion in the coming months in response to the market situation.

'We will certainly look at it, depending on which angle the market is moving,' added Dr Low. 'We will respond accordingly. If necessary, we will have a package that is outstanding to get attention for a while.'

Those who are not taking part sensed that the avalanche of publicity and promotion could be a strategy for the bigger set-ups to gain market share. It is also a reflection of relaxed advertising rules for medical practitioners, as they keep up with the trend in the region.

Even Tan Tock Seng Hospital Lasik Centre started publishing its price (\$1,190 per eye), and Eagle Eye Centre, a smaller ophthalmology outfit, also made known the availability of a new machine through an advertisement earlier this month.

'I know there have been a lot of ads coming around because of the competition, even pre-empting the competition,' said Julian Theng, a consultant ophthalmologist and medical director of Eagle Eye Centre. 'It's probably, in a way, like a panic reaction, knowing that a player is coming up with low cost. So others are coming up with low-cost packages as well.'

However, Asiamedic's Dr Low warns that downward price adjustments by his group, if any, will only be temporary as competition based on price alone will not be sustainable in the long run. With laser machines costing some \$1 million to \$1.5 million each, doctors would have to do higher volumes to justify the costs.

Already, margins for Lasik surgery have been coming down in the past few years, with falling prices resulting from a combination of better technology and competition in Singapore and from the region.

That also explains why the number of Lasik procedures carried out in Singapore is on the rise. Official growth statistics are not available, but The Lasik Surgery Clinic carried out Lasik procedures on 16,089 eyes last year, up from 2,771 in 2006. Anecdotal accounts from private sector eye doctors here put the proportion of foreign patients undergoing those procedures at between 5 per cent and 20 per cent.

'There is still potential for growth as about half of the Singaporean population has myopia,' added Parkway Eye Centre's Dr Lee.

Jerry Tan of Jerry Tan Eye Surgery said the ongoing competition gives consumers more options, much like how budget airlines can co-exist with full-service airlines. But he cautioned against going down the US route, where aggressive advertising and irresponsible claims have led the authorities to clamp down on physicians. Besides, every eye is different and consumers should do extensive research on the quality of healthcare delivery, the experience of the surgeon, and the type of technologies available at each centre before making up their minds.

'Competition is good to a certain extent,' said Dr Tan. 'But when people start to do things like up selling, then it becomes unsavory.'

If price competition continues, it may also contradict Singapore's approach in its positioning as a medical tourism hub. The medical fraternity here has always prided itself on placing greater emphasis on quality of care rather than price, in response to emerging medical tourism cities in the region that offer cheaper alternatives. 'I would be wary if it's really too cheap,' he said. 'They are either going to upsell you or they are going to cut lots of corners . . . So do your homework - go down and see the place.'

Cost of LASIK in Singapore

The purpose of the table below is to give our readers an idea about the cost of LASIK and how much they differ between the clinics. It is based on information published on the respective websites (the other clinics did not publish any prices) and shows the cost of LASIK per eye. Note: LASIK is considered "cosmetic", hence, not eligible for government subsidies or [Medisave](#).

Legends:

R - the number of post-op reviews.

E - cost of enhancement (if necessary, due to overcorrection or undercorrection).

M - cost of medication.

Clinic	Service	Cost	R	E	M
The Lasik Surgery Clinic	Custom Lasik (Microkeratome)	S\$1,094	3	S\$275	S\$45
	Wavefront Lasik (Microkeratome)	S\$1,444			
	Custom Lasik (IntraLase)	S\$1,294			
	Wavefront Lasik (IntraLase)	S\$1,944			
	Epi-Lasik (Mikrokeratome)	S\$1,889			
Shinagawa LASIK Centre	Lasik (IntraLase)	S\$1,198	3	3 yrs	S\$30
SINGLASIK Centre	Standard Lasik (Microkeratome)	S\$975	4	2 yrs	N/A
	Standard Lasik (IntraLase)	S\$1,195			
ClearVision Eye Clinic	Standard Lasik	S\$838	3	3 yrs	Incl.
	Wavefront Lasik	\$1,188			
	Epi-Lasik	\$1,388			

Additional Information:

1. Most clinics offer Lasik with a choice of Microkeratome or IntraLase. The difference between them is the former uses an oscillating blade to create the corneal flap while the latter uses laser, which is a more precise method that is known to result in less complications and patients reporting better overall vision quality. From the above, IntraLase Lasik costs 30% more than standard Lasik on average.

2. Wavefront is an advanced measurement system that creates a 3-D map of how your eye processes images to guide the laser in reshaping the cornea. This allows the treatment of potential problems like glare, shadows and halos, that standard Lasik cannot. From the above, Wavefront Lasik costs up to 50% more than standard LASIK.

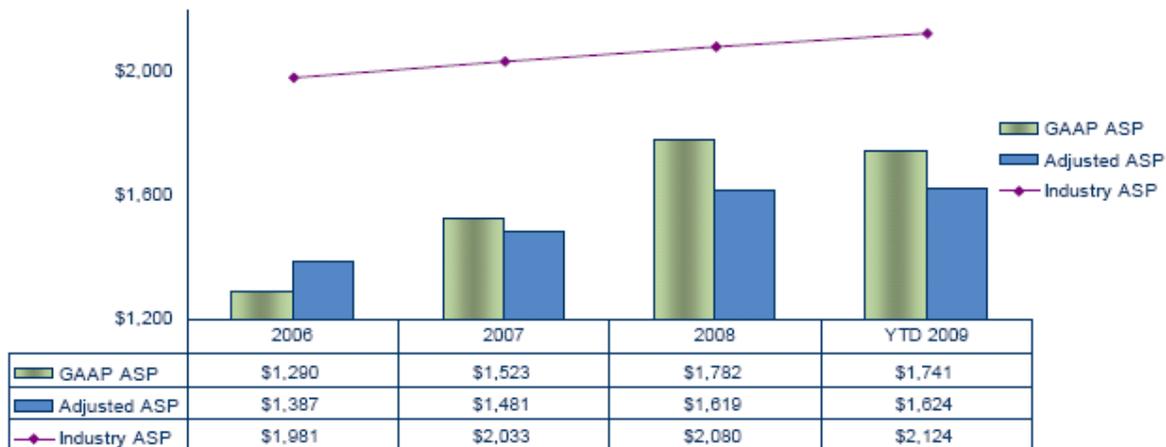
3. Epi-Lasik is a modification of PRK, where a blunt separator is used to make a superficial flap. This method may be recommended to some patients but the disadvantages are there is more pain, higher chances of haze and scarring, and recovery is slower.

Appendix III: Average costs per eye in the US.

Average LASIK Costs Per Eye				
	PRODUCT TYPE			
	One Price for Laser-Based Procedures Including LASIK	LASIK With Bladed Microkeratome	Wavefront LASIK With Laser Flap	Average Laser-Based
Average	\$ 2,140	\$ 1,748	\$ 2,314	\$ 2,124
Standard Deviation	\$ 467	\$ 607	\$ 531	\$ 549
PERCENTAGE OF SURGEONS				
\$1,000 or less	1.3%	10.5%	0.0%	2.4%
\$1,001 to \$1,500	5.3%	26.3%	1.1%	12.6%
\$1,501 to \$2,000	43.3%	47.4%	31.5%	44.9%
\$2,001 to \$2,500	38.7%	10.5%	50.0%	30.1%
\$2,501 to \$3,000	8.7%	2.1%	13.0%	7.9%
More than \$3,000	2.7%	3.2%	4.3%	2.1%
Single Price for All Laser Procedures: 47.2%				
Multiple Prices Based on Technology/Refractive Error: 52.8%				
LASIK pricing information provided to AllAboutVision.com in 2009 through special arrangement with a leading industry analyst. Typical charges for the majority of refractive surgeons are highlighted in yellow.				

Source: <http://www.allaboutvision.com/visionsurgery/cost.htm>

Appendix IV: Rising procedure costs in the US



Source: Marketscope, part of LCAV July 29 Analyst Presentation

Appendix V: Myopia rates in Asia.

- Data about the degree of myopia in various populations¹¹⁰ are shown in Table 3.

Population		Low myopia -1.00 to -5.00 D	High myopia -5.10 to -10.00 D	Extreme myopia more than -10.00 D
Asia, age 5 to 65 ¹¹¹	Chinese	41%	14.7%	0.8%
	Malays	37.8%	8.5%	3.0%
	Indians	34.3%	7.7%	0.9%
USA, age 4 to 74 ¹¹⁰		43%	3.2%	0.2%
North America, Sioux Indians, age 3 to adult ¹¹²		32.4%	4.1%	

Table 3 Percentage of myopes among various populations

- A study from 2001¹¹³, giving the percentage of myopic males (at least -0.5 D) between age 16 and 25 in Singapore:

82.2 % Chinese

68.7% Indians

65.0% Malays

- Another statistic from USA (children, age 5-17 years)¹¹⁴ is shown in Table 4.

Ethnicity	Myopes (shortsighted)	Hyperopes (farsighted)
Asians	18,5%	6,3%
Hispanics	13,2%	12,7%
Whites	4,4%	19,3%
African Americans	6,6%	6,4%

Table 4 Percentage of myopes among various populations in the USA

- Typical childhood progression rates were found to be between - 0.2 D and - 0.6 D in Europe and USA, and between - 0.5 D and - 0.8 D in Japan¹¹⁵.

Appendix VI: Population Age Distribution

