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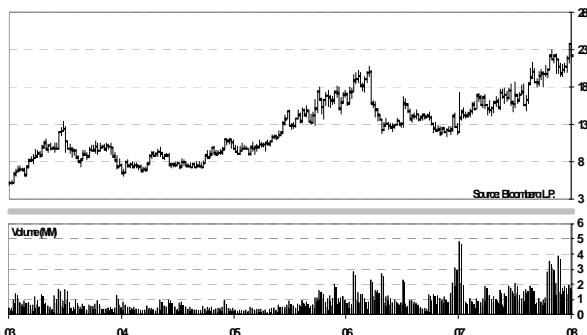
Luminex

Buy

August 8, 2008

LMNX - \$22

Market Cap: \$900 million



Company Description:

Luminex has developed proprietary biological testing technologies used in the life sciences industry. The company's core *xMAP* technology allows simultaneous analysis of up to 100 bioassays from a single drop of fluid by reading biological tests on the surface of microscopic polystyrene beads. The technology is used in drug discovery and development, clinical diagnostics, genetic analysis, protein analysis, and biomedical research.

Operating & Financial Highlights

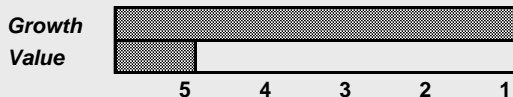
(\$ Millions, Adjusted for Certain Items)

	2008F	2009F	2010F	2011F
Sales	101	140	189	253
Operating Income	3	20	41	65
Diluted Shares	39	44	45	46
EPS	\$0.09	\$0.40	\$0.80	\$1.25
EPS (ex. 123R)	\$0.22	\$0.50	\$0.90	\$1.35
P/E	248	55	28	18
Operating Margins	3%	14%	21%	26%
Capital Employed	25	31	38	46
Pretax ROCE	14%	65%	108%	142%
Pretax ROTCE	14%	65%	108%	142%

2008 Estimated Quarterly Results

	Q1	Q2	Q3F	Q4F
Sales	23	24	25	28
EPS	\$0.01	\$0.03	\$0.02	\$0.03

Proprietary Quintile Ranking System



LMNX scores in GARP's most attractive growth quintile and least attractive valuation quintile. GARP's non-quantitative ratings override is in effect. See disclaimer for additional information.

Summary Points

Growth:

- Revenue may increase from \$75 million in 2007 to over \$250 million in 2011.
- *xMAP* is well entrenched in the research market, and molecular diagnostics sales may account for over half of the top line by 2011.

Quality:

- Luminex's *xMAP* technology is the market leader in the \$800 million multiplex assay market. Its franchise is strengthened by its installed base of 5,400 instruments, a good patent position, and a solid pipeline.
- Instrument placements spur growth in the proprietary consumables used in research and diagnostics.
- With gross margins over 60% and modest capital requirements, we project ROCE above 50% by 2009.

Control of Risk:

- Luminex appears set to pass the break-even point in 2008, producing *pro forma* earnings on its way to 2011 earnings of 25x its current share price.

Recent Developments

Luminex posted 2Q08 sales of \$24 million, a gain of 39% over the prior-year quarter, and the 8th quarter of consecutive revenue increases. We estimate that this growth was almost entirely organic, as the company's LMD division was acquired in March of last year. Using GARP's *pro forma* approach (excluding depreciation, amortization, and one-time events, but including FAS-123R options expenses), net earnings were \$1 million, while 2Q07's losses were \$2 million. On a per-share basis, earnings were 3¢, compared to a loss of 6¢ in the 2nd quarter of 2007 (for this quarter, GARP estimated the fully-diluted share count as being 1.7 million shares above the published basic count). During the quarter, 203 instruments were placed, bringing the installed base to just over 5,400. Gross margin (ex royalties) jumped from 57% in the 2Q07 to 67% this quarter, as Luminex continued to benefit from scale-up of the manufacture of consumables. The current *Respiratory Virus Panel* will be distributed by Fisher Healthcare and Abbott in the upcoming 2009 flu season, and an improved *RVP 2* test is to be readied for 2010. The new flagship bead-analyzing instrument, the *FlexMAP 3D*, debuted at trade shows; the first commercial placements are to take place during 4Q08. In June, Luminex raised \$75 million in a secondary offering of 4 million shares, an 11% dilution of equity. Management has yet to identify a use for this war chest.

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Recommendation Rationale

Luminex is a development-stage company that is tracking toward profitability in 2008. Revenues (\$75 million in 2007) may exceed \$250 million by 2011. The company invented and owns the bead-based *xMAP* technology, which is the leader in the \$800 million multiplex assay market. *xMAP* assays are used in biomedical research, drug discovery & development, protein analysis, genetic analysis, and clinical diagnostics. Luminex is the sole supplier of the reagents and readout instruments required for all *xMAP* tests. Over half of the company's revenues are recurring, consisting of beads, supplies, and complete assay kits, as well as royalties from *xMAP* assays developed and sold by partners. Since switching costs are high once the bead readers are in place, we expect that recurring revenues will continue to grow briskly. The company already has an installed base of 5,000 instruments in research and clinical laboratories throughout the world. Meanwhile, competitors in assay multiplexing are years behind, giving Luminex a significant first-mover advantage. With the company's gross margins over 60% and modest capital requirements, we project a return on capital employed exceeding 50% ROCE in 2009, with that metric rising rapidly in subsequent years.

Luminex licenses *xMAP* to its assay-development partners, receiving royalty payments that average about 6.5% of the price of their tests and kits. In 2007, the total end market for *xMAP* assays was about \$170 million, mostly in the research market, where scientists use Luminex reagents to design their own unique assays. In addition, bead-based methods have been making inroads into diagnostics. Thirty-six *xMAP* multiplex assays have already been approved for clinical use by the Food and Drug Administration (FDA). Most are adaptations of tests that quantitate a single protein, relying on the specific binding of antibody to antigen. However, five of the 36 are molecular diagnostics—the analysis of nucleic acids to aid the practice of medicine. GARP projects that revenue from molecular diagnostics may reach \$150 million by 2011, becoming Luminex's primary growth driver. In this regard, the company has developed labeling procedures that allow PCR-based tests of DNA and RNA sequence to be ported to beads. The *Luminex 100* and *Luminex 200* are the only multiplexing instruments with Device Master Files (DMFs) at the FDA, easing the formidable regulatory hurdles that developers of all new diagnostic test must overcome.

Operations

While Luminex is still a development-stage company, it enjoys high gross margins, employs modest capital and is on the cusp of turning profitable. In fact, the company was able to turn a modest *pro forma* profit of \$3 million on \$52 million in sales during 2006. However, Luminex acquired molecular diagnostics developer Tm Biosciences in 2007. The resulting increases in operating expenses pushed the company slightly into the red in 2007. We forecast a return to profitability in 2008, with about \$3 million of *pro forma* operating income on \$25 million of capital employed.

Luminex has developed several revenue streams, all related to the performance of "multiplexed" assays — tests that involve the simultaneous quantitation of multiple analytes. Luminex holds patents on many aspects of its *xMAP* bead production and analysis, and has developed significant process engineering knowledge as well. *xMAP* is based on the ability to perform key chemical steps on the surface of microscopic polystyrene beads. This beads-in-suspension approach is in marked contrast to having reactions take place in solution, as is the case for traditional formats. The company's sophisticated *Luminex 100* and *Luminex 200* bead-reading instruments can run assays on dozens of analytes from a single test tube, saving considerable time and labor expense. The format is suitable for diagnostic uses; 36 *xMAP* multiplex assays have already been approved for clinical use by the FDA. As of June 2008, over 5,400 instrument systems had been placed worldwide, 875 of them in the prior 12 months. Luminex generates revenues from instrument sales, and then benefits in following years from sustained sales of consumables to the installed base. The company's gross margin reached 62% in 2007. SG&A expenses as a proportion of revenue stood at 54%, while R&D spending topped 20% of revenue. Over the next three years, rapidly rising revenues may lead to steady improvements in these margins.

While Luminex benefits from sales of consumables and royalty revenues that are generated by its partners, in March of 2007 it acquired development-stage Tm Biosciences for \$50 million. By bringing this partner in-house, Luminex gained the ability to internally develop molecular diagnostic assays. Tm's FDA-cleared *Tag-It Cystic Fibrosis Kits* detect the common mutations that cause muscular dystrophy, providing an immediate foothold in one of the larger market niches. Tm also had its *Respiratory Virus Panel (RVP)* under review. In January 2008 the FDA issued a 510(k) clearance for the *RVP Panel*, which immediately went on sale. Each kit brings in about \$50 to Luminex, at gross margins well above the corporate average.

The *FlexMAP 3D* is Luminex's next-generation bead reader. Development was completed in early 2008, and the first commercial sales are slated to take place in 4Q08. While the instrument is backwards-compatible with all *xMAP* reagents and assays, it introduces two innovations. First, beads that are dedicated for use with *FlexMAP 3D* are dyed with three rather than two fluorophores, yielding 1,000 "addresses" (in practice, it will have a maximum plexity of 500). Second, *FlexMAP 3D* works with the new *MagPlex* microspheres. Rather than being solid polystyrene, each

MagPlex bead is a plastic sphere that encapsulates a fragment of magnetite, a mineral with paramagnetic qualities. This makes the beads responsive to external magnetic fields. When a test tube is placed next to a strong magnet, it will attract paramagnetic beads to the sidewall, enabling more complete rinsing. Paramagnetic particles are especially advantageous for automated procedures. Many sample-handling robots have been designed to work with magnetic particles, incorporating electromagnets for this purpose.

Competition

While *xMAP* is the leading format for bioassays that are performed in a multiplexed format, each component of a multi-part assay can be run on its own, with results compiled once the laboratory work is complete. In fact, this remains the most common tactic for many scientific and medical procedures. This piecemeal approach is workable in the research setting, since immunoassays are versatile and don't rely on a purpose-built instrument. However, these soak up skilled technicians' time, and are vulnerable to a host of problems, such as the drift that can be caused by inaccurate hand-pipetting. A more sophisticated approach is to automate a multi-analyte assay, performing the analysis of each component sequentially and independently. This is the principle underlying immunoassay systems such as Beckman Coulter's (BEC - Neutral) *UniCell* and Abbott Laboratories' *Architect* series of clinical analyzers. Each of dozens of assays is performed on the basis of a separate "sip" from the sample tube.

The most direct competition to *xMAP* comes from the *BeadXpress* line of instruments and reagents that Illumina (ILMN - Buy) debuted in mid-2007. As with *xMAP*, a *BeadXpress* panel combines dedicated beads from many distinct assays in a single tube. While Luminex uses a mixture of two (*Luminex 100/200*) or three (*FlexMap 3D*) embedded dyes to unambiguously assign each bead to its proper address, Illumina employs a digital approach. During manufacture, all *BeadXpress* beads of a given batch are laser-imprinted with the same holographic code. At 16 bits (2^{16}), 64,000 different codes are possible. However, *BeadXpress* cannot use the flow-cytometry approach. Instead, a few hundred beads are slotted into a tray, and then scanned. The scanning laser excites the reporting fluorescent molecule at the surface of the bead under interrogation, and then decodes the embedded hologram. The profile and size of the *BeadXpress* beads and the use of a tray instead of a cytometer are disadvantages in getting high-sensitivity data from immunoassays. While Illumina sold more than 100 instruments in 2007, its installed base is far smaller than that of Luminex. At \$80,000, the *BeadXpress* is about double the cost of a *Luminex 200*. While Illumina is a formidable competitor, GARP believes that *BeadXpress'* modest installed base, the small number of available off-the-shelf assays, and concerns about signal-to-noise ratios, make an upset over Luminex unlikely.

Market

We estimate that medical diagnostics accounted for about \$30 billion in worldwide sales in 2007, inclusive of \$20 billion in the U.S. \$30 to \$40 billion more is spent on Life Sciences research. That year, sales of assays based on Luminex technology totaled about \$180 million. GARP estimates that this represents about 9% of the potentially multiplexable portions of these two fields (~\$600 million in diagnostics and ~\$900 million in research). In diagnostics, Luminex has its highest rate of penetration in immunodiagnostics and HLA-typing. This area's revenues stood near \$750 million; *xMAP* reagents and kits may have accounted for 10% to 12% of that. Estimates of the size of the U.S. molecular diagnostics market—that is, assays based on nucleic acids rather than proteins—range from \$2 billion to \$4 billion for 2008, growing at about 15% per year. Roughly 350 molecular diagnostic labs are in operation today, but we expect this number to swell over the next five years. CLIA high-complexity labs still perform most molecular diagnostics assays as homebrews; the company's penetration in that sector stands at a modest 1%.

Risks

xMAP is widely used in the research lab, and its penetration into clinical diagnostics is increasing. Luminex's future depends on the continued adherence of assay developers and laboratories to its platform. For immunoassays of protein analytes, the capabilities of the current generation of beads and readers are proven. Increasing the range of multiplexing from 100 to 500 with the *FlexMAP 3D* system may be crucial for research applications involving nucleic acids. Delays in submission of the Device Master File for *FlexMAP 3D* would slow its adoption; other hiccups in the rollout of *FlexMAP 3D* and *MagPlex* beads could also turn development scientists away from Luminex in molecular diagnostics. Similarly, the runaway success of an alternative platform could impact Luminex's market share. The molecular diagnostic market will continue to grow at double-digit paces into the foreseeable future, we believe. However, for fundamental technological reasons, the dynamic range offered by quantitative real-time PCR is much greater than what a bead-based approach can achieve. Thus, despite Q-RT-PCR's disadvantages in ease-of-use and increased risk of cross-contamination, it will gain traction in certain applications. While PCR can be combined with *xMAP's* detection process, it cannot be done in a "closed-tube" fashion—a significant hindrance. Luminex has a formidable competitor in Illumina; a sweeping success by *BeadXpress* would come at *xMAP's* expense.

Luminex

Fiscal Year December 31

Operating & Financial Highlights

(\$ Millions, Adjusted for Certain Items)

	2004	2005	2006	2007	2008F	2009F	2010F	2011F
Revenue	35.9	42.3	53.0	75.0	101.0	140.0	189.0	253.0
Operating Income	(3.3)	(2.5)	0.9	(5.0)	3.4	19.8	40.5	65.1
Net Income	(2.8)	(1.8)	3.0	(3.5)	3.5	18.2	36.5	58.0
Avg Shares Outstanding- Diluted	30.7	31.0	33.0	34.4	39.4	44.0	45.0	46.0
EPS - Diluted	(\$0.09)	(\$0.06)	\$0.09	(\$0.10)	\$0.09	\$0.40	\$0.80	\$1.25
Diluted EPS Without FAS 123R			\$0.20	(\$0.00)	\$0.22	\$0.50	\$0.90	\$1.35
<i>Capital Employed</i>								
Property Plant & Equipment	1.4	3.2	5.0	12.7	5.5	6.0	6.5	7.0
Operating Working Capital	5.7	(1.3)	2.2	2.1	9.0	12.5	17.5	24.0
Other / Intangibles	5.3	6.6	8.6	57.5	10.5	12.0	13.5	15.0
total	12.4	8.6	15.8	72.3	25.0	30.5	37.5	46.0
<i>Financing</i>								
Debt	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Shareholders Equity	44.5	44.7	54.2	103.5	183.0	204.2	244.7	306.7
(Less: Cash)	(32.1)	(36.2)	(38.4)	(34.2)	(158.0)	(173.7)	(207.2)	(260.7)
total	12.4	8.6	15.8	72.3	25.0	30.5	37.5	46.0
<i>Ratios (%)</i>								
Operating Margin	n/a	n/a	1.7%	n/a	3.4%	14.1%	21.4%	25.7%
Return on Capital Employed	n/a	n/a	5.7%	n/a	13.6%	64.9%	108.0%	141.5%
Return on Tangible Capital	n/a	n/a	5.7%	n/a	13.6%	64.9%	108.0%	141.5%
Shareholders Equity / Capital	358.8%	522.5%	343.0%	143.2%	731.9%	669.4%	652.5%	666.7%
<i>Valuation</i>								
Price Earnings Multiple					247.7	55.0	27.5	17.6
<i>Segment Estimates</i>								
Revenue								
Systems	19.0	18.8	20.6	24.4	28.5	38.0	51.0	68.0
Consumables	9.0	13.1	15.7	19.2	30.3	36.5	48.0	62.0
Reagents/Assays (incl. LMD)	0.0	0.0	0.0	11.3	17.0	31.0	42.0	56.0
Service	1.6	2.4	3.5	4.4	5.3	7.5	10.0	13.0
Other	3.1	2.7	5.0	5.4	5.5	6.0	6.0	7.0
Royalties	3.2	5.3	8.2	10.2	14.0	21.0	32.0	47.0
Misc.	0.0	0.0	0.0	(0.0)	0.4	0.0	0.0	0.0
Total	35.9	42.3	53.0	75.0	101.0	140.0	189.0	253.0

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Ratings Matrix			
Earnings Growth*	Growth Score	Out-Year P/E**	Value Score
>17%	1	<10x	1
14-17%	2	10-12x	2
12-14%	3	12-14x	3
9-12%	4	14-16x	4
<9%	5	>16x	5
*Annualized earnings growth over a two to four year time horizon.			
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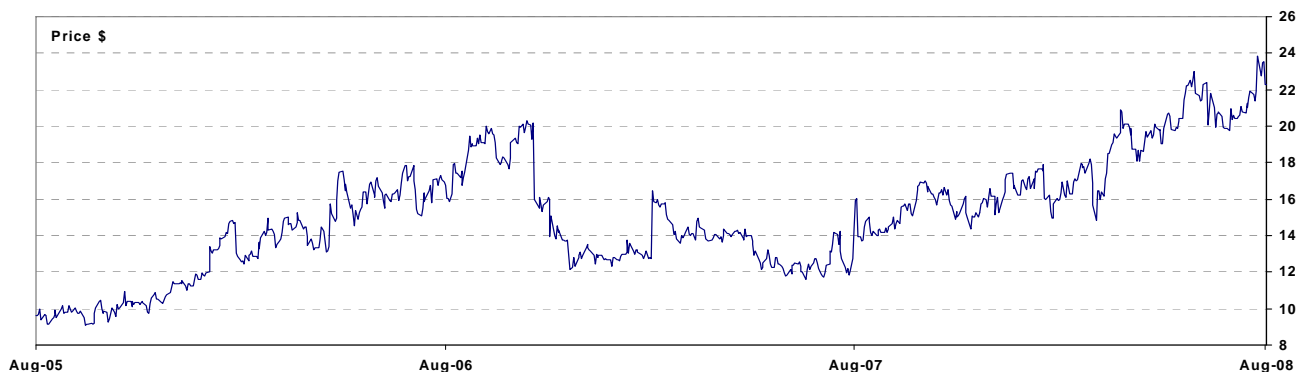
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-Alastair Mackay

LUMINEX CORP, Daily

August 08, 2008



Source: Bloomberg L.P.

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