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New Rec: Molecular Devices (MDCC-\$76.44) Feb. 21, 2001

Position: Sell Target: \$37.50 Timing: 2 (1=aggressive; 5=cautious)

000\$	1Q01e	2Q01e	3Q01e	4Q01e	2001e	2002e
Revs	26,018	30,655	31,202	35,138	123,013	153,269
EPS	0.21	0.27	0.28	0.34	1.10	1.44
Y/Y Gro%	160%	119%	72%	39%	76%	31%
PE					70	54
PSR					10.8	8.7
Consens	0.20	0.27	0.30	0.44	1.23	1.82

Shares Out: 17.2 M

Mkt Cap: \$1.3 B

FYE: Dec.

Summary: MDCC manufactures and sells high performance machinery that is used in the screening and lead optimization phases of the drug compound discovery and development process. These machines are mainly microplate readers. MDCC's high end "Drug Discovery" units, produced for large pharmaceutical and biotechnology companies are very expensive, up to \$425,000 per unit. The lower end units, for "Life Science," can cost as little as \$15,000.

Bullish analysts claim that MDCC targets a \$1.6 billion market that is growing over 20% per year. They correctly assume that MDCC has a very high

market share, about 25% of its target market after its recent acquisition of LJL. Bullish analysts assume that MDCC can grow its top line at 34%, even faster than its target market, through 2004. These analysts tout MDCC as a "picks and shovels" play on genomics, and as such a conservative bet. Never mind that MDCC is awarded a PE of 61 on \$1.23 consensus estimate for 2001 and a PE of 41 on consensus estimates of \$1.82 for 2002, and a PSR of about 11.

There are several problems with the bull story. First, the estimate of the market size appears to be incorrect. The \$1.6 billion market includes types of equipment that are not offered by MDCC. It also includes reagents, services and supplies, in which MDCC has little participation.

In reality, we think that MDCC's market is basically limited to the estimated \$570 million microplate reader market. The microplate reader market can be further broken down into five different types of readers. Of these five types of instruments, MDCC sells the two with the largest shares, fluorescence and absorbance readers. The fluorescence market is estimated at about \$162M in 2000, growing 18% per year, and the absorbance market, estimated at \$151M and growing at 10% per year. Thus, in our opinion, MDCC's market opportunity is only about \$310M. In such a small market, having a 25% share is not exactly an advantage. The competitors in this market are large and sophisticated, and include Perkin-Elmer, Amersham Pharmacia Biotech, Packard Bioscience and Tecan. Thus, significant gains in share, absent a strongly differentiated new technology introduction, should be hard to achieve.

Compounding MDCC's problem is the small size of the customer base for these products. Because of the relatively small number of potential users for high throughput screening devices, the potential for market saturation is a major issue. According to LJL's 1999 10K, there were only about 50 sites with ongoing high throughput screening efforts. These sites are mainly large pharmaceutical and biotechnology companies engaged in combinatorial chemistry or in contract screening. We think there might be about another 100 sites that might use MDCC's equipment for research. MDCC has so far sold about 200 FLIPRs, its main product, to about 100 customers. Only about 50 customers remain. As we explain in much greater detail below, MDCC appears to be close to saturating its target markets. As a result, the high growth rates that are expected to be maintained in the near term and for at least four more years by MDCC appear to be well out of reach.

It is helpful to look at MDCC and LJL separately. An analysis of MDCC's core revenue sales without LJL shows that MDCC's sales growth has slowed over the last year, from 30% in 1999, to about 25% currently. Note that MDCC launched its primary growth product in 1996. The recent slowdown in MDCC sales growth is due to its nearing saturation of its market, in our opinion.

With this impending slowdown due to market saturation in mind, MDCC made a great move by acquiring LJL. Both MDCC and LJL address the same markets, but with slightly different products. LJL's products are used for high throughput binding assays, versus the live cell assays done by MDCC's Drug Discovery products.

Whereas MDCC had launched its major product line in 1996, and experienced its most rapid growth in 1997-1999, LJI launched its product line in 1998. As a result, LJI's growth curve is about two years behind that of MDCC. Thus, MDCC's acquisition of LJI was well timed, since LJI's still robust growth serves to mask the slowdown in MDCC's growth. LJI grew sales 124% year over year, in 1999, and by about 89% in 2000.

However, the beneficial effect of the LJI acquisition is only temporary, in our view, since LJI's sales growth is already slowing. Its slowing growth pattern should closely resemble that of MDCC's very soon, as the market is nearer to saturation in the LJI product line. Q4 00 results of the combined company show the effect of slowing sales growth. Year over year total sales rose 26% in Q4, versus growth of 42% last year in Q4 and 32% in Q3. In addition, DSO rose to 90 days in Q4, from 80 days in Q3 and 80 days in Q4 99.

Bullish analysts expect a re-acceleration of growth in late 2001, due to new product launches. We think the new products expected, which have been described to investors, are really just line extensions of existing products and that they will not have the hoped for impact. Instead, we expect the growth in the combined MDCC/LJI product lines to continue to converge at a much lower rate than is now being reported, and the small market size and the problem of saturation, only hinted at now, should become apparent to investors. The extreme over valuation of MDCC shares will also become apparent.

Many insiders have apparently made up their minds and have been active sellers. Insiders filed to sell about 511,000 shares in February.

Discussion:

Background:

MDCC's products are microplate readers used in drug discovery and life science research. Microplates contain wells that are like tiny test tubes. Scientists add drug compounds, targets and reagents to the wells, and use microplate readers to measure the results of the experiments. In 1999, 55% of microplate reader sales were made to pharmaceutical and biotechnology companies, 26% to independent testing labs (e.g., clinical diagnostics), and 19% to academic and government laboratories.

MDCC markets several expensive (\$200,000 +) high throughput microplate readers, characterized as "Drug Discovery" products, that are used primarily by large pharmaceutical and biotechnology companies. The company also markets a line of less expensive, lower throughput microplate readers it calls "Life Science" products.

1. Drug Discovery Products:

The market for high throughput microplate readers for drug discovery was created by advances in combinatorial chemistry that allowed for the rapid synthesis of many new compounds. Researchers needed a way to screen these compounds rapidly against disease targets. MDCC and its supporters expect demand for its high throughput instruments to be further enhanced by the discovery of new disease targets resulting from human genome research.

MDCC's drug discovery products include FLIPR, Analyst HT, Analyst AD, Acquest, and CLIPR. These are high throughput screening instruments used primarily by researchers in major pharmaceutical and biotechnology companies who are testing large numbers of potential drug compounds. Some of these instruments can also be found in academic laboratories and smaller biotechnology companies where scientists have specialized research requirements met by these instruments.

a. FLIPR

FLIPR (fluorometric imaging plate reader) is a \$400,000 instrument used to measure changes in the intracellular calcium and membrane potential of live cells in response to test compounds. Its high throughput (up to 50,000 samples per day), its ability to measure effects on live cells, and its sensitivity have made it the industry standard for high throughput intracellular calcium assays.

The instrument was launched in 1996, and a higher throughput version (the FLIPR 384) was introduced in 1998. At present there are 200 FLIPRs in the field at 100 customers, primarily large pharmaceutical and biotechnology companies. According to the company, all of the 20 top pharmaceutical companies own FLIPRs, and some own 5 or more.

Users with whom we spoke rely on FLIPR mostly for high throughput testing of changes in intracellular calcium, though some were beginning to explore using the instrument to measure changes in membrane potential. For high throughput calcium assays, users suggested FLIPR has little competition. The VIPR from Aurora Biosciences is used by some researchers to test changes in membrane potential, but its throughput is lower than the FLIPR, and its adoption has been limited to a few collaborators thus far. Aurora also has an ultra high throughput system that is used by a limited number of collaborators that can do a number of different live cell assays, including ion channels and membrane potential. These collaborators are working on very targeted research areas, and do not appear to be replacing the FLIPR with the Aurora system, or vice versa.

b. Analyst HT, Analyst AD and Acquest

The Analyst and Acquest instruments came to MDCC by way of its merger with LJI Biosciences in August 2000. They are \$75,000-\$225,000 instruments used principally for high throughput binding assays. Their claim to fame is that they are multimodal, meaning they can conduct assays using a variety of different techniques: fluorescence polarization, luminescence,

absorbance, time-resolved fluorescence, and fluorescence intensity. The technology used in each instrument is the same, while the throughput differs. The Analyst HT uses 96 well or 384 well plates, and can process up to 70,000 samples per day, while the Acquest uses 1,536 well plates and can process 200,000 samples per day. The Analyst AD is used for assay development, and has a lower throughput.

The Analyst HT and Acquest are recent products. They were introduced in 1998, and the Analyst AD was launched in 1999. By the end of 1999 there were a total of 110 instruments in the field. Sales have been highly concentrated among large pharmaceutical companies. For example, in 2Q99 sales to two large pharmaceutical companies represented 50% of sales. In 2Q00 sales to two different pharmaceutical companies represented 38% of sales. It appears that LJI's sales representatives have been working their way around the industry, making one or two significant sales per quarter.

Competition for the Analyst and Acquest is intense. Perkin-Elmer, Amersham Pharmacia Biotech, Packard Bioscience, and Tecan all have products that provide high throughput screening with multimodal capabilities. Users speak highly of the Analyst's and Acquest's fluorescence polarization capabilities, but think equipment from competitors is superior for other types of assays.

Company	Product
Perkin-Elmer	Wallac ViewLux ultraHTS multimode microplate reader. Up to 1,536 well plates
Amersham Pharmacia Biotech	LeadSeeker screening system; fluorescent, luminescent, and radioactive detection; up to 1,536 well plates
Packard Bioscience	Fusion multimode microplate reader. Up to 1,536 well plates
Tecan	Ultra Reader multimode microplate reader; up to 1,536 well plates

c. CLIPR

CLIPR (Chemiluminescence Imaging Plate Reader) was launched in 3Q99, and is priced at \$425,000. It provides ultra high throughput live cell analysis using luminescence, and can screen over 200,000 samples per day.

By the company's own admission, adoption of CLIPR has been slower than hoped for. This may be due to significant competition from Applied Biosystems' NorthStar and Amersham Pharmacia Biotech's LEADseeker.

2. Life Science Products

Lower throughput microplate readers are a basic tool of pharmaceutical and life science research. The technology behind these readers is fairly standardized, with four different detection methods available to researchers: absorbance, fluorescence, scintillation, and chemiluminescence. Manufacturers

of these less expensive readers compete in terms of sensitivity, throughput, ease of use, and price.

MDCC markets several different fluorescence and absorbance microplate readers. The products target the top end of each segment, and prices range from \$12,000-\$40,000. The premium characteristics of MDCC's products suggest that customers are very much the same as those for its drug discovery products: large pharmaceutical and biotechnology companies.

Selected MDCC Life Science Microplate Readers

Product	Technique	Average Price
Gemini XS	Fluorescence	\$35,000
Spectramax 340 PC	Absorbance	\$15,000
Spectramax 190	Absorbance	\$20,000
Spectramax PLUS 384	Absorbance	\$25,000

Competition in the absorbance and fluorescence markets is intense. In the fluorescence market, Perkin-Elmer, Packard Bioscience, and Thermo Electron each offer products comparable to the GEMINI. In the absorbance market, competitors include Thermo Electron, Packard Bioscience, and Tecan.

3. Other Products

In addition to microplate readers, MDCC markets several other small products: the Skatron liquid handling system (an auxiliary product for the microplate reader market), the Cytosensor microphysiometer, and the Threshold quality control system. Sales of the Cytosensor and Threshold are declining, while sales of the Skatron seem to be limited.

4. MDCC addresses a \$313M market growing at 14% per year

"Street" analysts suggest that MDCC is competing in the \$1.6 B biological screening market, and that this market is growing about 20% per year. A closer look at MDCC's products shows that it actually competes in the \$313 M market for fluorescence and absorbance microplate readers. According to industry consultants who specialize in market research in this industry, this combined market is growing at about 14% per year, as the table below details.

The \$1.6 B market cited by MDCC bulls when discussing the potential for the shares includes screening techniques not offered by MDCC. It also includes reagents, an area only recently entered into by MDCC, and in which it has limited sales. We think MDCC is actually competing in two segments of the \$570 M microplate market, described in the following table.

Microplate Reader Market

Segment	2000 Revenue (M)*	1999-2004 CAGR
Fluorescence	\$162	18%
Absorbance	\$151	10%
Luminescence	\$95	13%
Scintillation	\$56	4%
Auxiliary	\$107	11%
Total	\$570	13%

Source: Strategic Directions International

*Includes equipment, consumables, and service

MDCC has very limited offerings in the luminescence and auxiliary segments, and does not participate at all in the scintillation segment. Thus, we think MDCC is actually competing in just the \$313 M fluorescence and absorbance microplate reader markets, which together generated about 80% of MDCC's revenue in 2000. These markets are growing at a combined rate of 14% per year.

MDCC is the market share leader in the \$162 M fluorescence segment, with 30% share. Its product offerings in this segment include FLIPR, Gemini XS, Analyst, and Acquest. This market is growing faster than the overall microplate reader market, at about 18% per year. This faster growth is due to a shift away from other screening modalities (e.g., absorbance and scintillation), to fluorescence, and to the introduction of high priced instruments such as the FLIPR.

MDCC is also the market share leader in the \$151 M absorbance segment, with about a 19% share. However, the absorbance segment is growing at only about 10% per year, and the absorbance share of the microplate market is shrinking due to cannibalization from fluorescence products.

5. Understanding why the market for high throughput systems is limited:

The market for high throughput instruments is limited in terms of the number of sites conducting screening and the amount of screening instrumentation each site needs. This is why MDCC's drug discovery revenue growth is unlikely to continue.

According to LJL's 1999 10-K, there are about 50 sites with ongoing high throughput screening efforts. These sites are primarily at large pharmaceutical companies, and at biotechnology companies engaged in combinatorial chemistry or contract screening. Perhaps another 100 biotechnology or academic/government sites could use MDCC's drug discovery equipment for their research, though not necessarily as a high throughput tool. MDCC has so far sold 200 FLIPRs to 100 customers, suggesting perhaps 50 potential customers remain.

How many FLIPRs can a customer use? MDCC and its supporters argue that the number of high throughput screens its customers will want to run will continue to grow, therefore requiring them to purchase more equipment. They

speculate that this growth will come from both an increased number of potential drug compounds resulting from combinatorial chemistry efforts, and the discovery of new targets from the human genome.

However, this argument fails to consider the impact of increased screening potential on downstream activities in the drug development process. Prior to the availability of high throughput instruments such as MDCC's, compound screening was a major bottleneck in the drug discovery process. Now, high throughput screening is generating many leads that need to move on to the preclinical study phase, where drug candidates are tested to ensure their safety, absorption into the body, distribution to the target site in the body, therapeutic activity, and manufacturability. High throughput methods do not exist for many parts of the preclinical process, and so a new bottleneck has been created. Why, we wonder, will a pharmaceutical company continue to buy equipment to screen more compounds if it cannot manage the development of the leads it has already generated? Instead, researchers at both large pharmaceutical and biotechnology companies suggest they are now focusing their resources on the alleviating the preclinical development bottleneck rather than expanding their high throughput screening efforts.

6. Past growth tied to sales of high throughput systems, but is unlikely to continue.

MDCC was able to grow total revenue year over year by 38% in 1999 and by 34% in 2000, well in excess of the growth in its primary markets. As shown in the table below, this growth was driven by the Drug Discovery product line, which includes revenue from the successful launch of several expensive high throughput screening products. In particular, the FLIPR was the primary growth driver prior to the LJI acquisition. The 2000 merger with LJI provided two other products, the Analyst and the Acquest, that are growing rapidly off of small bases.

MDCC Revenue (includes LJI Products)

	1998	1999	2000
Drug Discovery	21,165	33,093	48,978
Y-Y % Growth	19%	56%	48%
Life Science	31,069	38,890	47,057
Y-Y % Growth	21%	25%	21%
Total Revenue	52,234	71,902	96,035
Y-Y % Growth	20%	38%	34%

7. MDCC core products growth is slowing without LJI.

This slowdown appears to already be underway for MDCC's core products. As shown in the table below, if we remove revenue from LJI products, Drug Discovery revenue growth declined dramatically in 2000, from 41% in 1999 to 28% in 2000. This slowdown occurred almost entirely in the second half of 2000. In 3Q00 and 4Q00, Drug Discovery revenue (not including LJI) grew only 13% year over year in Q3 and 23% in Q4, by our estimate.

Core MDCC Revenue (not including LJL products)

	1998	1999	3Q00	4Q00*	2000*
Drug Discovery	16,729	23,554	7,201	7,638	30,241
Y-Y % Growth	32%	41%	13%	23%	28%

*OWS estimate

Why would Drug Discovery revenue growth stall so abruptly in 2H00? As we discuss below, the slowdown may be mostly due to slowing sales of FLIPR.

Following its rapid adoption in 1996-1998, new FLIPR placements appear to have slowed dramatically. As shown in the table below, new FLIPR installations declined in 1999 and 2000. Between the product's launch in 1996 and the end of 1998, 138 instruments had been installed. Just 37 more installations occurred in 1999, and only 25 in 2000.

	Installed base end of period	Incremental Installations
1996-1998	138	138
1999	175	37
2000	200	25

We think the slowdown in FLIPR placements took a while to appear in the revenue numbers because slowing new installation revenue was being replaced by upgrade revenue. System upgrades to the FLIPR 384 can generate as much as 75% of the revenue that a new FLIPR 384 can generate, but upgrades do not count as a new piece of equipment. Assuming that the majority of these upgrades were completed by the first half of 2000, and few new placements occurred in 2H00, then we would expect the rapid drop in drug discovery revenue growth seen in 2H00.

Further evidence of saturation comes from company statements about the number of customers that own FLIPRs. According to MDCC, 70 customers owned FLIPRs in 1999, versus 100 in 2000. This suggests that all of the 25 new installations in 2000 were made to customers who did not have FLIPRs (with the 5 extra placements representing a reduced number of customers in 2000 due to mergers among big pharmaceutical companies). These placements were most likely to biotechnology and lower tier pharmaceutical companies coming late to the FLIPR party. In our view, it is likely that these companies will need only one instrument for the foreseeable future, since they do not have the resources to mount a larger scale screening effort.

We think the big players have already purchased as many FLIPRs as they need, forcing MDCC to look for sales with lower tier companies. Such sales will likely be more difficult to make, and require a larger expenditure of sales management time and resources. Moreover, the company seems to be dropping the price of FLIPRs to close the sales it is getting. In its 3Q00 10-Q, the company cites "an increased volume of lower-margin FLIPR products" as the primary reason for margin deterioration versus 3Q99.

Discussions with FLIPR users also suggest that fewer FLIPR purchases will be made in 2001 and beyond. Nearly all of the users with whom we spoke

said they are not using their current systems at capacity, and that they would not need to purchase a new FLIPR in the next year or two. Of 12 FLIPR sites we contacted, only 2 said they were planning a purchase or upgrade in 2001.

8. LJL acquisition masks slowdown in MDCC products

As shown in the table below, the August 2000 merger with LJL brought rapid revenue growth, allowing the MDCC to show revenue growth well above what it would have recognized on its core revenue alone. LJL 3Q00 revenue was disclosed in MDCC's 3Q 10-Q, but Q4 was not disclosed separately in the company's 4Q conference call. Management did confirm that MDCC's revenue increased sequentially versus 3Q00, but would not provide specifics. This helps us arrive at an estimate for LJL in Q4. In the table below, we assume that LJL revenue grew 75% year over year in the fourth quarter, which would mean that revenues for MDCC grew only 15%.

MDCC and LJL Revenue

	1Q99	2Q99	3Q99	4Q99
MDCC Revenue	13,507	14,801	15,818	17,859
LJL Revenue	1,359	2,018	2,583	3,957
Total Revenue	14,866	16,819	18,401	21,816

	1Q00	2Q00	3Q00	4Q00
MDCC Revenue	17,068	20,307	19,371	20,552*
LJL Revenue	3,111	3,731	4,970	6,925*
Total Revenue	20,179	24,038	24,341	27,477

*OWS estimate

Y-Y % Growth

	1Q99	2Q99	3Q99	4Q99
MDCC Revenue	31%	25%	33%	31%
LJL Revenue	325%	90%	81%	143%
Total Revenue	39%	30%	38%	42%

	1Q00	2Q00	3Q00	4Q00e
MDCC Revenue	26%	37%	22%	15%*
LJL Revenue	129%	85%	92%	75%*
Total Revenue	36%	43%	32%	26%

*OWS estimate

LJL growth has been robust, but its growth has come at a high cost. At LJL, SG&A as a percent of sales was 83% in 1999 and 72% in 2Q00. As MDCC fulfills its promise to lower SG&A spending for the combined company to about 25% of sales, it is not certain that LJL sales growth will be unaffected.

8. LJL products are also likely to rapidly saturate their market.

More importantly, however, the Analyst and Acquest products sell into the same market of high throughput screening laboratories as the FLIPR, and so have the same problem of rapid market saturation.

Assuming that MDCC is able to place these instruments with the same 100 customers who own FLIPRs, and that these customers buy 200 of each of these instruments, the market for the \$225,000 Acquest is about \$45 M, and for the \$125,000 Analyst HT and the \$70,000 Analyst AD about \$39 M. By the end of 1999, LJL had placed 110 instruments. If we assume all of these were Analyst HT instruments, then the remaining potential equipment sales at the end of 1999 was \$70 M. In 2000, LJL sales were \$19 M, suggesting that only \$51 M in LJL equipment sales are left to be made.

Thus, if LJL product sales grow at 74% year over year in 2001, and another \$34 M in instruments is sold, the market for these products would be saturated by 2002.

Even this assessment may be overly generous when we consider that, unlike the FLIPR, the LJL products face significant competition. Since products from Perkin-Elmer, Amersham Pharmacia Biotech, Packard Bioscience, and Tecan are all competing for the same sales as the Analyst and Acquest, saturation could occur much more rapidly.

8. LJL's failure to get to the public market last year drove its sale to MDCC.

On March 3, 2000, during the run-up in biotechnology/genomics stocks that occurred in February/March 2000, LJL's share price rose to an all-time high of \$44.63, giving the company a market capitalization of \$662 M. LJL management saw the financing opportunity, and on March 14 filed to sell 2.5 M shares. Given the excitement surrounding genomics at that time, LJL seemed well positioned for a successful offering. Bankers likely planned to highlight the company's rapid revenue growth (123% year over year in 1999) and its "picks and shovels" business model to woo investors.

Unfortunately, the rally in LJL shares ended, and by April 10, when the offering was withdrawn, the shares had fallen to \$15.75. While the optimist may argue that the withdrawal suggests management did not view this as a fair price for the shares, a realist might conclude that it could not get the offering done, even at that price. Indeed, with just \$23 M in cash at the end of 2Q00 (thirteen months of cash at 2Q00's burn rate), LJL needed the money.

Two months later LJL management accepted \$17.72 a share, or \$263 M, from MDCC. We think LJL management was well aware of the challenges it would soon face as its products reached saturation, and its growth began to slow.

Insider selling by LJL management after the merger is also quite interesting. Lev Leytes, former Chairman of LJL and now a member of MDCC's board, sold 426,900 shares in November 2000, 31% of the MDCC shares he received as a result of the merger.

9. To achieve near term expected growth MDCC would need to increase market share.

Another way to look at MDCC's problem is to see what MDCC would have to do to achieve bullish estimates for 34% year over year revenue growth for years to come. The current slowdown in core MDCC sales to 24%, along with the 14% growth of the fluorescence/absorbance microplate reader market already indicates that it will be difficult for MDCC to meet these expectations.

As shown in the table below, to attain 34% revenue growth in its fluorescence/absorbance product line, we estimate MDCC must increase its market share from about 25% in 2000 to about a 34% share of the fluorescence and absorbance market by 2002. There is no indication that this can happen.

Market Share Gains Assuming 34% Y-Y Growth

	2000	2001	2002
MDCC Fluor/Absorb Sales	\$77	\$104	\$139
Fluor/Absorb Mkt	\$313	\$358	\$409
MDCC Share	25%	29%	34%

In order to achieve this type of growth MDCC would have to rely on its fluorescence products (FLIPR, LJI Products, and the Gemini) to generate most of this growth, since the fluorescence market is growing at 18% versus 10% for the absorbance market. In the table below, we assume that MDCC's sales in the absorbance market grow faster than the market, at 20%. This higher rate is conceivable because MDCC has introduced new products into the segment over the past couple of years.

However, we think that MDCC would have to grow its fluorescence revenue by over 40% each year to attain the 34% total growth expected by the "street." With the market for FLIPR and LJI products approaching saturation, this growth seems impossible to achieve.

What MDCC needs to achieve in 2001 and 2002 to meet estimates; unlikely to happen.

	2000	2001e	2002e
Fluorescence Sales	49	69	98
Y-Y Growth		42%	41%
Absorbance Sales	29	34	41
Y-Y Growth		20%	20%
Total Fluor/Absorb Sales	77	104	139
Y-Y Growth		34%	34%
MDC Fluor Mkt Share	30%	36%	43%

In addition, given the competitors facing MDCC (i.e., Amersham Pharmacia Biotech, Applera, and Perkin-Elmer) and the rapid pace of change in this market, such a stellar performance is even less likely, in our view. To keep up, the company must continue to successfully launch new products, or make more acquisitions. As we will discuss below, MDCC's efforts to expand into the reagent business appear to be floundering. Moreover, new equipment offerings planned for 2001 are not new technologies, but instead repackaged versions of existing MDCC products. Thus, we think MDCC will have a difficult time meeting investor expectations in 2001 and beyond.

10. Evolving market needs might not be met by FLIPR.

FLIPR may face other issues in attempting to gain share. While FLIPR seems likely to maintain control of its market niche, expansion beyond current applications may be limited due to the system's slow data acquisition rate of one data point per second. Users tell us this rate is fine for measuring calcium ion channels, where changes take place in tens of seconds. However, other channels of increasing interest to researchers (e.g., voltage gated sodium channels) are much faster, with changes taking place in milliseconds. Several users with whom we spoke suggested that without significant changes, the FLIPR will not be useful for screening the effect of compounds on this channel. Instead, fast fluorescence microscopes, such as those marketed by Perkin-Elmer and Amersham Pharmacia Biotech, could be adapted to meet this need.

11. New product launches will not provide much help.

Perhaps aware of this future slowdown, MDCC management has promised many new product launches that will add to future growth. As we discuss below, these products are really just repackaging of existing MDCC technology, and so will not likely ignite growth like the FLIPR and LJI products have done.

a. FlexStation: In 1Q 2001, MDCC launched FlexStation. This product uses technology from the company's Gemini microplate reader, and according to management has the capability of doing "FLIPR-type assays." This product has a price tag below \$100,000, versus the \$400,000 charged for a FLIPR. The product may appeal to medical and academic laboratories that could not afford a full blown FLIPR. While perhaps opening up a new market for FLIPR technology, the FlexStation may also cannibalize sales of FLIPRs. Some groups now under utilize one or more FLIPRs because they are using them for research that does not require high throughput capabilities. If they purchase a FlexStation, they could use their existing FLIPRs more efficiently, avoiding the need to purchase another FLIPR to increase their screening capacity.

b. ScreenStation: The ScreenStation is a highly automated version of LJI's Acquest, priced at \$300,000. It was first supposed to launch in September 1999. Then launch was pushed back to 3Q or 4Q00. Now, MDC says launch will occur in 2Q01.

Again, the ScreenStation is a repackaging of LJI's technology. Its market is the same 50 high throughput labs targeted by LJI for the Analyst and Acquest products. Competition for the product will include the same players that compete with Acquest.

c. Reagent Kits: The company has made much of its efforts to drive growth with sales of reagent kits for use with its equipment. Five such kits have been launched to date. The most significant kits are the calcium assay kit and the membrane potential assay kit. Though the company claims they have been very successful so far, the vast majority of the FLIPR users we spoke to do not use the kits.

MDCC faces an uphill battle in gaining widespread adoption of its kits. First, by launching kits five years after the FLIPR was first introduced, it must compete with its users own in-house methods. Many users we spoke to view their own methods as superior to and lower cost than the MDCC version. Second, there is a high switching cost for users, who must spend considerable time validating the new kit. Third, MDCC has no proprietary reagents it can leverage to force users to buy its kits.

Perhaps recognizing this last problem, in January MDCC signed a reagent development deal with Upstate Biotechnology. We do not expect reagents from this agreement to result in significant sales in 2001. The company doesn't seem to expect much either, since it projects that consumables (not just assay kits) will increase from 9% of total revenue in 4Q00 to just 10% of total revenue in 2001.

12. Insider Selling: In addition to selling by the former CEO of LJI, a number of other insiders are active sellers. In November 2000, insiders sold a total of 689,000 shares. Notably, Joseph Keegan, Pres and CEO of MDCC, sold 61,250 shares in November 2000. By our calculations, this represented 53% of his vested stock grant and stock options.

With the stock price back up in February, many of the November sellers have filed to sell. In total, insiders filed to sell 511,000 shares so far in February.

13. Financial analysis:

Y-Y revenue growth of 26% in 4Q00 was achieved with an increase in DSO from 80 to 90 days. The increased DSO is especially surprising given that LJI has much lower historical DSO than MDC.

	4Q99	1Q00	2Q00	3Q00	4Q00
MDCC	87.8	98.5	87.9		
LJI	46.6	38.7	52.2		
Total DSO	80.3	83.4	74.3	79.8	90.3

DSO is running higher than some comparable companies. Waters DSO is around 58, Packard Bioscience around 76, ABI around 83, Agilent around 58, Affymetrix around 67.

Gross margins have deteriorated from 65% in 4Q99 to 63% in 4Q00, despite the fact that higher margin LJI products represented 27% of revenues in 4Q00 versus 18% in 4Q99. This suggests that MDCC margins are continuing to decline, or that MDCC has cut LJI prices in order to stimulate demand

GM%	3Q99	4Q99	1Q00	2Q00	3Q00	4Q00
MDCC	63.8%	63.7%	63.4%	62.1%		
LJI	68.8%	70.5%	64.3%	65.6%		
Total GM	64.5%	65.0%	63.5%	62.6%	62.8%	63.0%

14. Financial projections:

We assume that the Cell Analysis component (FLIPR and CLIPR) of the Drug Discovery business grows at 19%-20% year-over-year through 2002, down from 30% year over year growth in 2000, due to market saturation. We also assume that the LJI component (Analyst/Acquest) of Drug Discovery slows from 89% growth in 2000 to 66% in 2001 and 40% in 2002, as these products begin to saturate their market. We project growth for overall Drug Discovery revenue of 37% in 2001 (in line with company guidance of 30% + growth). We assume Life Science revenue grows 19%, again in line with management guidance of "near 20% growth." "street" analysts have projected a huge 38% year over year increase in revenues in 4Q01 (versus our still healthy 28% increase), which seems to be tied to several product launches scheduled for the second half of 2001. As we discussed above, at present, from what has been revealed about these products they appear to be repackaged versions of MDCC's existing products and as such should not provide the expected increase in revenue. There is also a risk that any major product changes scheduled for Q3 and for Q4 would cause buyers to delay purchases until the upgraded versions are available.

We assume that gross margins stabilize at 62%, while R&D spending declines from 15% of sales in 4Q00 to 13% in 4Q01, in line with company guidance that R&D will be 12%-13% of sales by 4Q01. We further assume that G&A declines from 29% of sales in 4Q00 to 26% of sales in 4Q01, again in keeping with management promises to bring SG&A as a percent of sales into the mid-20s% range. Our projected operating margin of 20% in 2001 and 23% in 2002, though management's stated goal is to achieve a 25% operating margin by 2002. Finally, our tax rate of 38.5% comes from company guidance in its 3Q00 10-Q.

The income statements below reflect the combined operations of MDCC and LJI.

Income Statement	1998	1999	2000	2001e	2002e
Drug Discovery	n/a	33,093	48,978	67,165	86,811
Life Science	<u>n/a</u>	<u>38,890</u>	<u>47,057</u>	<u>55,848</u>	<u>66,459</u>
Revenue	52,234	71,902	96,035	123,013	153,269
Cost of Revenue	<u>20,203</u>	<u>26,299</u>	<u>35,583</u>	<u>46,485</u>	<u>58,242</u>
Gross Profit	32,031	45,603	60,452	76,528	95,027
R&D	11,158	14,150	16,796	17,300	25,000
Merger/In Process R&D	876	2,037	15,181	-	-
SG&A	19,386	25,630	31,906	34,050	35,000
Op Inc	1,487	5,823	11,750	25,178	35,027
Other, Net	2,213	1,921	4,912	6,180	6,600
Interest Exp	<u>(35)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Income Before Tax	3,665	7,744	16,662	31,358	41,627
Taxes	<u>956</u>	<u>2,790</u>	<u>6,415</u>	<u>12,073</u>	<u>16,026</u>
Net Income	2,709	4,954	10,247	19,285	25,601
Diluted EPS	0.20	0.35	0.62	1.10	1.44
Diluted Shares	13,556	14,149	16,409	17,560	17,800
Y-Y % change	1998	1999	2000	2001e	2002e
Drug Discovery	n/a	n/a	48%	37%	29%
Life Science	n/a	n/a	21%	19%	19%
Revenue	20%	38%	34%	28%	25%
Cost of Revenue	21%	30%	35%	31%	25%
Gross Profit	20%	42%	33%	27%	24%
R&D	36%	27%	19%	3%	45%
Merger/In Process R&D		133%	645%	-100%	
SG&A	38%	32%	24%	7%	3%
Op Inc	-67%	292%	102%	114%	39%
Other, Net	52%	-13%	156%	26%	7%
Interest Exp	289%	-100%	n/a	n/a	n/a
Income Before Tax	-38%	111%	115%	88%	33%
Taxes	-53%	192%	130%	88%	33%
Net Income	-31%	83%	107%	88%	33%
Diluted EPS	n/a	75%	78%	76%	31%
% Net Sales	1998	1999	2000	2001e	2002e
Drug Discovery	n/a	46%	51%	55%	57%
Life Science	n/a	54%	49%	45%	43%
Revenue	100%	100%	100%	100%	100%
Cost of Revenue	39%	37%	37%	38%	38%
Gross Profit	61%	63%	63%	62%	62%
R&D	21%	20%	17%	14%	16%
Merger/In Process R&D	2%	3%	16%	0%	0%
SG&A	37%	36%	33%	28%	23%
Op Inc	3%	8%	12%	20%	23%
Other, Net	4%	3%	5%	5%	4%
Interest Exp	0%	0%	0%	0%	0%
Income Before Tax	7%	11%	17%	25%	27%
Taxes	2%	4%	7%	10%	10%
Net Income	5%	7%	11%	16%	17%

Income Statement	1Q99	2Q99	3Q99	4Q99
Drug Discovery	n/a	n/a	8,958	10,184
Life Science	n/a	n/a	9,443	11,634
Revenue	14,866	16,819	18,401	21,816
Cost of Revenue	5,962	6,165	6,526	7,646
Gross Profit	8,904	10,654	11,875	14,170
R&D	3,073	3,555	3,621	3,901
Merger/In Process R&D	-	2,037	-	-
SG&A	5,554	6,318	6,788	6,970
Op Inc	277	781	1,466	3,299
Other, Net	601	525	443	417
Interest Exp	(20)	(22)	(23)	(25)
Income Before Tax	858	1,284	1,886	3,691
Taxes	309	462	679	1,431
Net Income	549	822	1,207	2,260
Diluted EPS	0.04	0.06	0.08	0.16
Diluted Shares	13,900	14,066	14,235	14,400
Y-Y % Change	1Q99	2Q99	3Q99	4Q99
Drug Discovery	n/a	n/a	n/a	n/a
Life Science	n/a	n/a	n/a	n/a
Revenue	39%	30%	38%	42%
Cost of Revenue	49%	54%	26%	33%
Gross Profit	34%	39%	46%	48%
R&D	10%	25%	32%	42%
Merger/In Process R&D	n/m	n/m	n/m	n/m
SG&A	38%	44%	32%	19%
Op Inc	n/m	76%	506%	242%
Other, Net	40%	-14%	-33%	-19%
Interest Exp	n/m	n/m	n/m	n/m
Income Before Tax	224%	21%	113%	153%
Taxes	224%	21%	113%	173%
Net Income	224%	21%	113%	142%
Diluted EPS	211%	16%	104%	131%
% Net Sales	1Q99	2Q99	3Q99	4Q99
Drug Discovery	0%	0%	49%	47%
Life Science	0%	0%	51%	53%
Revenue	100%	100%	100%	100%
Cost of Revenue	40%	37%	35%	35%
Gross Profit	60%	63%	65%	65%
R&D	21%	21%	20%	18%
Merger/In Process R&D	0%	12%	0%	0%
SG&A	37%	38%	37%	32%
Op Inc	2%	5%	8%	15%
Other, Net	4%	3%	2%	2%
Interest Exp				
Income Before Tax	6%	8%	10%	17%
Taxes	2%	3%	4%	7%
Net Income	4%	5%	7%	10%
Income Statement	1Q00	2Q00	3Q00	4Q00
Drug Discovery	10,089	11,883	12,171	14,563
Life Science	10,089	12,155	12,171	12,914

Revenue	20,179	24,038	24,341	27,477
Cost of Revenue	7,361	8,985	9,067	10,170
Gross Profit	12,818	15,053	15,274	17,307
R&D	3,987	4,438	4,292	4,079
Merger/In Process R&D	-	-	15,181	-
SG&A	7,478	8,315	8,186	7,927
Op Inc	1,353	2,300	2,796	5,301
Other, Net	627	1,009	1,734	1,590
Interest Exp	(25)	(23)	-	-
Income Before Tax	1,955	3,286	4,530	6,891
Taxes	753	1,265	1,744	2,653
Net Income	1,202	2,021	2,786	4,238
Diluted EPS	0.08	0.13	0.16	0.25
Diluted Shares	15,205	16,100	17,283	17,217
Y-Y % Growth	1Q00	2Q00	3Q00	4Q00
Drug Discovery	n/a	n/a	36%	43%
Life Science	n/a	n/a	29%	11%
Revenue	36%	43%	32%	26%
Cost of Revenue	23%	46%	39%	33%
Gross Profit	44%	41%	29%	22%
R&D	30%	25%	19%	5%
Merger/In Process R&D	n/m	n/m	n/m	n/m
SG&A	35%	32%	21%	14%
Op Inc	388%	194%	91%	61%
Other, Net	4%	92%	291%	281%
Interest Exp	n/m	n/m	n/m	n/m
Income Before Tax	128%	156%	140%	87%
Taxes	144%	174%	157%	85%
Net Income	119%	146%	131%	88%
Diluted EPS	100%	115%	90%	57%
% Net Sales	1Q00	2Q00	3Q00	4Q00
Drug Discovery	50%	49%	50%	53%
Life Science	50%	51%	50%	47%
Revenue	100%	100%	100%	100%
Cost of Revenue	36%	37%	37%	37%
Gross Profit	64%	63%	63%	63%
R&D	20%	18%	18%	15%
Merger/In Process R&D	0%	0%	62%	0%
SG&A	37%	35%	34%	29%
Op Inc	7%	10%	11%	19%
Other, Net	3%	4%	7%	6%
Interest Exp	0%	0%	0%	0%
Income Before Tax	10%	14%	19%	25%
Taxes	4%	5%	7%	10%
Net Income	6%	8%	11%	15%

Income Statement	1Q01	2Q01	3Q01	4Q01
Drug Discovery	14,113	16,312	16,841	19,899
Life Science	11,905	14,343	14,361	15,239
Revenue	26,018	30,655	31,202	35,138
Cost of Revenue	9,627	11,649	11,857	13,352
Gross Profit	16,391	19,006	19,345	21,785
R&D	4,200	4,300	4,400	4,400
Merger/In Process R&D	-	-	-	-
SG&A	7,850	8,400	8,600	9,200
Op Inc	4,341	6,306	6,345	8,185
Other, Net	1,500	1,530	1,560	1,590
Interest Exp	-	-	-	-
Income Before Tax	5,841	7,836	7,905	9,775
Taxes	2,249	3,017	3,044	3,764
Net Income	3,592	4,819	4,862	6,012
Diluted EPS	0.21	0.27	0.28	0.34
Diluted Shares	17,500	17,540	17,581	17,621
Y-Y % Growth	1Q01	2Q01	3Q01	4Q01
Drug Discovery	40%	37%	38%	37%
Life Science	18%	18%	18%	18%
Revenue	29%	28%	28%	28%
Cost of Revenue	31%	30%	31%	31%
Gross Profit	28%	26%	27%	26%
R&D	5%	-3%	3%	8%
Merger/In Process R&D	n/m	n/m	n/m	n/m
SG&A	5%	1%	5%	16%
Op Inc	221%	174%	127%	54%
Other, Net	139%	52%	-10%	0%
Interest Exp	n/m	n/m	n/m	n/m
Income Before Tax	199%	138%	75%	42%
Taxes	199%	138%	75%	42%
Net Income	199%	138%	75%	42%
Diluted EPS	160%	119%	72%	39%
% Net Sales	1Q01	2Q01	3Q01	4Q01
Drug Discovery	54%	53%	54%	57%
Life Science	46%	47%	46%	43%
Revenue	100%	100%	100%	100%
Cost of Revenue	37%	38%	38%	38%
Gross Profit	63%	62%	62%	62%
R&D	16%	14%	14%	13%
Merger/In Process R&D	0%	0%	0%	0%
SG&A	30%	27%	28%	26%
Op Inc	17%	21%	20%	23%
Other, Net	6%	5%	5%	5%
Interest Exp	0%	0%	0%	0%
Income Before Tax	22%	26%	25%	28%
Taxes	9%	10%	10%	11%
Net Income	14%	16%	16%	17%