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**New Rec: Adv. Micro Devices (AMD: \$13.75) September 26, 2007**

**Position: Sell**

**Target: \$ 7.25**

\$MM	Q3 07e	Q4 07e	Q1 08e	Q2 08e	F2007e	F2008e
Revs	1,411	1,568	1,246	1,288	5,591	5,334
EPS \$	(0.83)	(0.60)	(0.54)	(0.43)	(3.62)	(1.58)
Y/Y Gr	n/a	n/a	n/a	n/a	n/a	n/a
PE	n/a	n/a	n/a	n/a	n/a	n/a
PSR	n/a	n/a	n/a	n/a	1.4	1.4
Consens	(0.59)	(0.31)	(0.32)	(0.26)	(2.71)	(0.67)

**Shares Out: 552M**

**Market Cap: \$7.6B**

**FYE: December**

Summary: AMD is the second largest producer of microprocessors after Intel. From 2004 to 2006, AMD gained 10 points of microprocessor unit share (from 16% to 26%) at Intel's expense. This is because it's Opteron (server) and Athlon (desktop) processors beat Intel processors in performance while running cooler

(saving customers energy costs). AMD was also the first to offer dual core processors in 2005, six months before Intel.

However, since the launch of Intel's next generation Core processors in Q3 06, the tables have turned. Intel's Core2 Duo processors have relegated AMD desktop processors to the low end (i.e. ASP < \$100). Intel launched quad core processors in November 2006, reclaiming its leadership mantle in servers. AMD responded nearly a year later with its own quad core Barcelona processor, but the introduction has been patchy and Barcelona systems are not yet available from any Tier 1 OEMs.

AMD also appears to be having current leakage problems with its 65 nm manufacturing process, and its fastest Athlon processors (3.2 GHz) are manufactured in the older 90 nm process rather than the 65 nm process. Such a situation is detrimental to AMD's profitability, since a 300 mm wafer can yield as many as 538 65 nm Athlons but only half as many 90 nm Athlon processors. The 65 nm problems also appear to have limited Barcelona's frequency at launch. Industry observers expected Barcelona to be launched at 2.5GHz, but the highest frequency part available at launch was 2 GHz. Intel's competing Xeon server processor is available at 3 GHz.

In addition, we expect AMD's competitive position to erode even further with the announced launch of Intel's 45 nm (Harpertown) Xeon processor on November 12. This product was demonstrated at the recent Intel Development Forum in San Francisco last week and beat the fastest Barcelona by 31%, winning 23 of 25 benchmarks. Harpertown consists of two chips, each of which is roughly a third of Barcelona's size. Everything else being equal, smaller chip sizes result in higher yields, and, thus, Intel's cost to produce a Harpertown processor should be well below what it would cost AMD to produce Barcelona.

As a result, from a pricing standpoint, AMD is at a decided disadvantage both because of larger die size and inferior performance. AMD has only one 65 nm fab, and Barcelona production, which AMD needs to shore up its server market share, will displace production of smaller Athlon processors. This should also affect AMD's margins. Furthermore, AMD also manufactures all of its processors in Germany, whereas Intel manufactures most of its processors in the US. The decline of the dollar thus confers more manufacturing cost benefits on Intel.

We estimate that AMD is at least one year behind Intel in developing its own 45 nm process. Given the troubled state of its 65 nm process, we think the lag may increase significantly. AMD has lost \$1.2B in H1 07 and trimmed its 2007 capital expenditure budget by \$700M so far (to \$1.8B). It shoulders \$4B in net debt and a half billion-dollar annual interest burden. Since state of the art fabs cost

at least \$4B and given that AMD has had \$1.6B of net cash outflow so far in 2007, we think AMD's position will continue to deteriorate in 2008. We note that Intel had \$13B in net cash as of Q2 07, and generated \$1.4B of free cash in H1 07.

Despite these difficulties, the "street" expects AMD to increase unit share, ASP and gross margin in 2008. The "street" consensus calls for Y/Y revenue increases of 2% in 2007 and 18% in 2008. Many on the "street" forecast profitability by 2008, although the average "street" EPS estimate for 2008 is a loss of 67 cents. We think these estimates are far too optimistic and we project sales flat with 2007 and a loss of \$1.64 in 2008.

AMD's share count is up nearly 50% since the beginning of 2005, and we see further dilution as AMD tries to fund its R&D and fabs. The company's chief sales and marketing officer quit just before the Barcelona introduction to assume a similar position at Freescale, another struggling chipmaker, an action that does not show confidence in AMD's prospects. Bulls on the "street" place a 9.3X enterprise value on their estimated 2008 EBITDA of \$1.6B to reach their target price of \$20. We use an 8X EV/EBITDA multiple on our 2008 EBITDA estimate of \$1B to set a target price of \$7.25.

We note that AMD's weak financial condition and inferior technological positions in both processors and graphics could, eventually, lead to bankruptcy. The company has been able to convince investors to buy convertible notes twice this year, but we expect future investors to shy away if the company continues to post dismal results, as we expect.

#### Background:

Advanced Micro Devices (AMD), based in Sunnyvale, California, is a global semiconductor supplier serving the computing, graphics, and consumer electronics markets. AMD is the second largest manufacturer, behind Intel Corporation, of microprocessors based on the x86 architecture. Jerry Sanders, a flamboyant salesman who worked at Fairchild semiconductor with Intel co-founders Bob Noyce and Gordon Moore, founded AMD in 1969.

AMD served as a second source of x86 processors after IBM chose that family to power its PC in 1982. From 1987 to 1995, AMD and Intel were involved in legal disputes regarding AMD's right to use Intel's intellectual property to produce copies of the 386 and 486 processors. In 1995, the two companies settled and proceeded to independently develop processor architectures in the future.

In 1994, Intel and HP announced that they would jointly develop a 64-bit processor architecture called Itanium. Intel's original plans were to develop x86-

based 32-bit products and Itanium-based 64-bit products. However, Itanium was delayed several years and AMD, in the meantime, redesigned its Athlon 32-bit architecture to incorporate 64-bit addressing. The first AMD 64-bit product, Opteron, was introduced in April 2003 for use in servers.

Opteron and the Athlon PC chips that followed were more efficient than the competing Xeon and Pentium 4 microprocessors that Intel offered at the time. As a result, AMD gained share from 2003 to the end of 2006. In mid-2006, Intel introduced its next generation Core processor architecture, which was far more energy efficient and powerful than the previous generation of its processors. Intel has regained share over the past few quarters. Table 1 shows unit market share since the beginning of 2005.

Table 1: AMD and Intel unit shares of the x86 microprocessor market

	Q1 05	Q2 05	Q3 05	Q4 05	Q1 06	Q2 06	Q3 06	Q4 06	Q1 07	Q2 07
AMD unit share	16.9%	16.2%	17.8%	21.4%	21.1%	21.6%	23.3%	25.5%	18.7%	22.9%
Intel unit share	81.7%	82.3%	80.8%	77.0%	74.3%	72.9%	76.0%	74.4%	80.5%	76.3%

Sources: Mercury Research, “street” reports

Small shares are held by other minor producers such as VIA

In October 2006, AMD acquired ATI Technologies Inc. (ATI), a supplier of 3D graphics and consumer electronics chips. AMD paid \$5.6B for ATI, with cash accounting for three-quarters of the purchase price. As a result, AMD went from having \$1.7B in net cash at the end of Q3 06 to having \$2.3B of net debt at the end of the year. ATI had approximately \$2.3B in sales in the twelve months prior to its acquisition.

AMD manufactures its processors in two fabrication facilities (fabs) located in Dresden, Germany. Due to poor financial results in the last two quarters, the company has delayed conversion of the older facility, Fab 30, which manufactures chips on older 200 mm wafer technology, to a 300 mm facility. The company also outsources some of its processor manufacturing to Chartered Semiconductor. ATI uses Taiwan Semiconductor Manufacturing Company (TSMC) and United Microelectronics Corporation (UMC) to produce its products.

#### Discussion:

1. AMD shares are up 20% from its lows of August and trade at 26X 2009 consensus EPS. While the “street” forecasts a hefty loss in 2007 and a smaller one in 2008, a quarter of the 30 analysts that follow the company rate it the shares a “buy” and another 60% have a “neutral” rating. The bulls think that the September 10 launch of Barcelona will enable the company to stabilize its plummeting ASPs and regain share in the server market. They also note that industry observers

forecast healthy growth for the world PC market in H2 07, which should benefit AMD.

We think that the bulls are overlooking serious competitive and financial challenges the company will face over the next year that could lead to significant diminution of shareholder value. We detail our research and analysis below.

2. Intel demonstrated its 45 nm Harpertown quad core processor at last week's Intel Development Forum (IDF) in San Francisco. Industry analysts such as The Tech Report and AnandTech compared the performance of Harpertown processors with those of Barcelona and Intel's fastest currently available 65 nm Clovertown processors. Harpertown beat the fastest Barcelona (a 2.5 GHz engineering sample) by 31%, and even Clovertown beat this AMD processor by 20%. We show the benchmarking results in Table 2.

Table 2: Harpertown and Clovertown performance vs. Barcelona

Benchmark	Harpertown		Clovertown		Harpertown	Clovertown
	3 GHz	2.5 GHz	3 GHz	vs. Barcelona	vs. Barcelona	
Sandra cache & memory bandwidth (MB/sec)	7,243	11,534	5,179	-37%	-55%	
CPU-Z memory access latency (nanosec)	92	83	90	-11%	-8%	
SPECjbb2005 Peak throughput (business operations per sec)	102,652	98,303	93,325	4%	-5%	
VRAD map build time (sec)	73	100	78	27%	22%	
Cinebench 3D rendering score (single threaded)	3,555	2,385	3,426	49%	44%	
Cinebench 3D rendering score (multi threaded)	22,178	16,546	20,852	34%	26%	
Multithread POV-Ray rendering 1024x768 (sec)	52	62	53	16%	15%	
Multithread POV-Ray rendering 512x384 (sec)	677	1,023	677	34%	34%	
MyriMatch multithreading (one thread) (sec)	545	656	568	17%	13%	
MyriMatch multithreading (2 threads) (sec)	330	373	364	12%	2%	
MyriMatch multithreading (4 threads) (sec)	205	234	247	12%	-6%	
MyriMatch multithreading (6 threads) (sec)	201	252	249	20%	1%	
MyriMatch multithreading (8 threads) (sec)	301	344	354	13%	-3%	
Computation fluid dynamics cycle (one thread) (Hz)	0.91	0.54	0.83	69%	54%	
Computation fluid dynamics cycle (2 threads) (Hz)	1.66	0.96	1.49	73%	55%	
Computation fluid dynamics cycle (4 threads) (Hz)	2.49	1.70	2.24	46%	32%	
Computation fluid dynamics cycle (6 threads) (Hz)	3.13	2.19	2.71	43%	24%	
Computation fluid dynamics cycle (8 threads) (Hz)	3.58	2.64	3.00	36%	14%	
Panorama Factory Image Processing (sec)	15.27	19.79	17.23	23%	13%	
picCOLOR image analysis (score)	15.23	9.86	13.96	54%	42%	
Windows Media video encoder (sec)	356.5	447.0	376.3	20%	16%	
SiSoft multimedia extension integer (iterations/sec)	657,604	285,238	655,991	131%	130%	
SiSoft multimedia extension floating point (iterations/sec)	509,759	370,494	502,831	38%	36%	
Render energy (Joules)	15,696	20,345	21,582	23%	-6%	
<b>Average</b>				<b>31%</b>	<b>20%</b>	

Source: The Tech Report

Given this level of underperformance, we find it difficult to accept the bulls' argument that Barcelona will prevent further market share and ASP erosion for AMD. On the contrary, we think the company's process problems, discussed in the next section, are likely to result in larger performance disadvantages for Barcelona in 2008, which should lead to further market share and ASP degradation.

3. AMD appears to be having leakage problems with its 65 nm process. As a result, Barcelona was introduced at a lower than expected frequency of 2.0 GHz. Indications are that AMD's leakage problems are also affecting development of its next generation 45 nm process, which could lead to delays in process introduction.

AMD has stated that it started manufacturing 65 nm processors in December 2006. Normally, the latest process enables introduction of the speediest processors. However, in the case of AMD, the faster Athlon 64 processors (3.2 GHz) are produced on the older 90 nm process while the fastest processors produced on the

65 nm process operate at just 2.6 GHz. An analysis of AMD processor data sheets suggests that AMD's 65 nm process has high variability with respect to leakage current. This means that the process cannot be expected to produce high frequency parts on a consistent basis that would meet power specifications.

The inability to produce higher performing parts on the latest process also has significant financial consequences. For instance, the size of the 90 nm Athlon X2 processor is 220 sq. mm, whereas 65 nm version is just 118 sq. mm. in area. On a 300 mm wafer, AMD can produce as many as 535 65 nm Athlon X2 processors versus just about half as many 90 nm processors. Thus, having to rely on the older process for higher performing (and thus higher ASP) parts is deleterious to gross margins, especially when the ASPs themselves are plummeting.

The 65 nm leakage issue also appears to be the reason Barcelona parts are scarce. Although the processor was introduced on September 10, no Tier 1 OEMs have available systems at the present time. In fact, HP distributors are unable to tell us when Barcelona systems would be available from HP. Bulls think that AMD will be able to produce and sell 3.0GHz Barcelona processors by early or mid-2008, but based on the aforementioned data points, we are skeptical that this will occur.

Moreover, AMD's attempts to develop a low leakage 45 nm process appear to be failing. The company announced on its Analyst Day in July that it does not plan to implement a Hi-K/metal gate process in its first 45 nm iteration. A Hi-K dielectric and metal gate can significantly reduce leakage current in small geometries, and thus reduce power consumption. The fact that AMD, which aims for a mid-2008 introduction of its 45 nm process, appears to be unable to incorporate such a vital step leads us to think that it may fall well behind Intel in performance.

4. Another point that the "street" appears to have glossed over is the significant chip size and yield disadvantage AMD should experience when Barcelona ramps up in volume. In semiconductor processing, it is a significant advantage to have smaller chip sizes (or die sizes, in fab processing terminology) for two reasons. One, small die size implies more chips per wafer, which lowers the cost to produce a chip. Two, chip yield per wafer is lower for larger die sizes since the probability of a defect affecting a chip is higher.

In Table 3, we show the die sizes for current Intel and AMD processors, as well as those likely to be introduced in the near future. We note that the Opteron to Barcelona transition would reduce the amount of available chips per wafer by 24%. In addition, the higher die size of Barcelona versus that of Opteron should result in an even higher reduction in chip output. Given the underperformance of Barcelona

versus its Intel counterparts, noted above, it is unlikely that AMD would be able to raise ASPs to offset this reduction.

Table 3: Comparison of AMD and Intel processor die sizes

Processor	Process	Die size (sq. mm.)	Potential chips per 300 mm wafer
AMD Opteron	90 nm	220	276
AMD Athlon X2 (3.2 GHz)	90 nm	220	276
AMD Athlon X2 (2.6 GHz)	65 nm	118	538
AMD Barcelona	65 nm	283	210
Intel Clovertown*	65 nm	143	438
Intel Harpertown*	45 nm	107	596

Source: Company reports, OWS estimates

\* Intel uses two interconnected dual core chips in a package to create its quad core processor

Intel, by contrast, gets more chips per wafer for Harpertown than for Clovertown by moving to 45 nm. This should give Intel pricing flexibility to increase share. This dynamic should add to AMD's gross margin woes in 2008.

5. ATI's chipset share declined from 12.4% in Q2 06 to 9.2% in Q2 07 due to share loss to Intel (+4.8 points Y/Y) and Nvidia (+2.9 points Y/Y). The market share loss resulted from both loss of chipset share for Intel processors as well as underperformance versus Nvidia products. Intel is unlikely to share processor designs in advance with ATI, now owned by its primary competitor, which should lead to further share loss in the Intel processor space to Nvidia and others.

Recent benchmark analyses of AMD/ATI's Radeon HP 2900 graphics cards suggest that they trail the performance of Nvidia's GeForce 8800 series by 10%. In the consumer electronics market, ATI's Imageon media application processor was incorporated in Motorola's RAZR mobile phone. Recent sales of the RAZR phones have been disappointing, which has resulted in a decline in ATI's consumer electronics segment sales.

We estimate that ATI's annual revenue run rate since the acquisition is roughly \$1.6B, compared to \$2.4B prior to the acquisition.

6. We think AMD's purchase of ATI, along with significant losses and cash outflow, has significantly affected the company's ability to compete with Intel, especially in silicon process technology. As noted earlier, AMD spent \$4.3B in cash (and \$1.2B in stock) to purchase ATI. AMD paid 20X recent peak EBITDA for ATI, an astonishingly high multiple for a chip company with a history of erratic financial performance.

The company was also surprised by Intel’s flawless introduction of its Core architecture products, especially for servers. Specifically, Intel introduced a quad core server chip called Clovertown, which consisted of two connected dual core chips in a single package, which surpassed AMD’s Opteron processor on most benchmarks. This caught AMD flatfooted. Compounding the problem, AMD’s own quad core Barcelona product, which the company intended to launch in summer 2007, was significantly delayed because of product and process problems.

While AMD’s overall market share declined only slightly as a result of the Core introduction in Q3 06 (Table 1), the reason for this was that AMD slashed prices to maintain share. The ASP declines were especially steep in desktops and servers. The ASP cuts did not help in the case of server chips, where purchase decisions are more often performance related, and AMD lost almost ten points of share from Q2 06 (26%) to Q2 07 (16%). This resulted in an adverse mix shift from an ASP standpoint (Table 4).

Table 4: AMD ASP trend over the last six quarters

(Amounts in \$)	Q1 06	Q2 06	Q3 06	Q4 06	Q1 07	Q2 07
Average server ASP	412	434	452	315	329	384
Average desktop ASP	85	72	63	61	54	49
Average notebook ASP	69	68	70	70	66	63
Average ASP	99	93	86	75	69	62

Sources: Mercury Research, “street” reports

The ASP declines have been catastrophic for AMD’s gross margins, as shown in Table 5. Because of the sharp declines in gross margin, AMD posted net losses of \$611M and \$600M, respectively, in Q1 07 and Q2 07. The company’s cash outflow in the first half of 2007 was \$1.6B.

Table 5: AMD gross margin performance

	Q1 06	Q2 06	Q3 06	Q4 06	Q1 07	Q2 07
Gross margin	58.5%	56.7%	51.4%	36.2%	28.1%	33.5%

Source: Company reports

AMD has had to sell two convertible offerings this year: a \$2.2B offering in April and a \$1.5 offering in August. It has delayed conversion of Feb 30. While Intel will introduce its 45 nm server processors on November 12, AMD, by its own admission is at least nine months away. Its financial difficulties only promise to lengthen this gap by which it lags Intel.

## 7. Recent results.

AMD reported a net loss of \$1.09 per share in Q2 07. Revenue improved 12% Q/Q to \$1.4B. Revenue was down 19% Y/Y, taking into account the fact that

Q2 07 revenues included revenues from sales of ATI products whereas Q2 06 revenues did not.

Gross margin improved 5.4 percentage points sequentially to 33.5%, due to higher revenues, but was down 23.2 percentage points Y/Y due to market share loss and mix shift away from servers, as noted earlier.

DSO of 42 days was flat Y/Y. Inventory days, however, have increased sharply from 69 days in Q2 06 to 88 days in Q2 07. Inventory days declined by 7 days Q/Q, largely because of a \$30M inventory write-down. We suspect that AMD may either have to write down inventory again or slash prices on products in inventory due to the imminent arrival of 45 nm processors from Intel.

AMD's book value and tangible book value at the end of Q2 07 were \$8.10 and 41 cents, respectively. ATI-related goodwill and intangibles account for the difference between book value and tangible book. If ATI's business doesn't recover from current revenue run rates, we think AMD would be forced to write down goodwill from the transaction.

Table 6 shows historical cash flow. We note that the company did not generate cash even when things were going its way in 2004 and 2005.

Table 6: AMD cash flow performance

(Amounts in \$MM)	2001	2002	2003	2004	2005	2006	H1 07
Net income	(61)	(1,303)	(274)	91	165	(166)	(1,211)
D&A	623	756	996	1,225	1,219	837	640
Cash flow from operations	168	(120)	296	1,087	1,483	1,287	(594)
Capex	679	705	570	1,440	1,513	1,857	1,000
Free cash flow	(511)	(825)	(274)	(353)	(30)	(570)	(1,594)
Diluted shares	332	342	347	371	441	492	552
Free cash flow per share	(1.54)	(2.41)	(0.79)	(0.95)	(0.07)	(1.16)	(2.89)

Source: Company reports

While we estimate that the company has about \$5B in debt after the August \$1.5B convertible offering, most of the debt is not due until 2012. Thus, the company does not face an immediate liquidity crunch. However, we expect continued cash outflows from operations in both 2007 and 2008, and think that the company will be unable to develop next generation processors and process technologies without additional debt (which would increase interest expense) or equity funding (which would dilute existing shareholders).

## 8. Financial assumptions.

### a. Revenues.

Industry analysts expect Y/Y PC unit growth of 10% in Q3 07, 12% in Q4 07 and 12% in 2008. We use the same estimates for overall microprocessor unit growth. We expect AMD's share to decline to 20% in 2008 from Q2 07's level of 22.9% as a result of uncompetitive products. We think that to retain such share, AMD would have to slash prices in all segments, and, thus, we forecast Y/Y ASP declines of 25% in H2 07 and 15% in 2008. Intel has stated that it would be comfortable with market share in the 80%-85% range, which we think could provide some relief for AMD in 2008 unlike in 2007 when Intel was trying to regain its lost share.

We project some recovery in ATI graphics revenues from new products launched in summer and fall of 2007, and estimate Y/Y revenue increase of 25% in 2008.

We do not expect chipset and consumer electronics revenues to improve from current levels. Further market share erosion in Intel chipsets should limit gains for chipsets and the consumer electronics segment has not had any significant design wins since RAZR.

b. Expenses.

We expect some gross margin improvement in H2 07 due to cost cutting. Our estimate for H2 07 gross margin is 37%. We forecast slight gross margin improvement to 38% in 2008, as lower depreciation resulting from the cut in 2007 capital expenditures is mostly offset by ASP declines.

AMD said on the Q1 07 call that it would trim discretionary expenses by \$100M annually, going forward, but that maintenance of R&D and marketing efforts is critical for product innovation and customer maintenance. We think AMD will be forced to make far deeper cuts than it anticipates due to lower sales. We anticipate about \$800M of operating expense reduction from 2007 to 2008.

c. Other items.

We anticipate interest expense to increase going forward because of continuing cash outflows and the need to fund product and process development. The company identified \$1B of potential cash sources on its Q1 07 call, but these include outdated 200 mm manufacturing equipment and declining Spansion stock. We think the company will be lucky to realize half of what it thought it could get.

We forecast that AMD will not pay any income taxes in the foreseeable future as a result of continued losses, and anticipate average diluted share count of 573M in 2008, versus 552M today.

## 9. Valuation.

Table 7 shows our revenue, earnings and EBITDA estimates for 2007 and 2008, compared to consensus. The primary differences between our estimates and consensus arise from our assumption that market share and ASP will continue to decline (versus the “street” assumption that both will increase), and our gross margin assumption of 38% for 2008 versus “street” estimates in the mid- to high forty percent range.

Table 7: Comparison of OWS and “street” estimates for AMD

	OWS estimate	“Street” consensus
2007 revenues (\$M)	5,591	5,785
2007 EPS (\$)	(3.62)	(2.71)
2007 EBITDA (\$M)	(231)	156
2008 revenues (\$M)	5,334	6,838
2008 EPS (\$)	(1.58)	(0.67)
2008 EBITDA (\$M)	1,005	1,284

Source: OWS estimates, “street” reports

Valuing AMD is difficult since the company has rarely made money. The company has traded at 0.3X to 5.5X book over the past five years with an average of 2.1X. However, as noted previously, there is a large discrepancy between book value and tangible book, which makes it difficult to use this metric.

At the current share price, the EV/EBITDA multiple on 2008 “street” estimates is 9X. The target of many bulls is \$20, which translates to an EV/EBITDA multiple of 9.3X on their \$1.6B 2008 EBITDA estimate. We think an EV/EBITDA multiple of 8X on our 2008 EBITDA projection of \$1B is generous, given that Intel trades at 8.2X 2008 EBITDA. Subtracting the \$4B in net debt, this implies an equity valuation of \$4B or \$7.25 per share. This is our initial price target. Longer term, we are not convinced that AMD, with its weak financial condition and huge cash needs to compete with Intel, will survive as an independent entity, and could face a liquidity crisis.

## 10. Financial projections.

a. Quarterly projections.

(Amounts in \$MM)	Q1 07	Q2 07	Q3 07e	Q4 07e	Q1 08e	Q2 08e	Q3 08e	Q4 08e
Net revenue	1,233	1,378	1,411	1,568	1,246	1,288	1,351	1,449
Gross profit	347	461	508	589	450	455	517	590
R&D	432	475	423	408	318	270	270	275
MG&A	335	365	339	345	274	258	257	304
In process R&D	-	-	-	-	-	-	-	-
Amort. intangibles	71	71	71	71	63	63	63	63
Integration charges	13	7	14	-	-	-	-	-
Operating income	(504)	(457)	(339)	(235)	(204)	(136)	(72)	(53)
Interest income	16	19	15	15	15	15	15	15
Interest expense	(78)	(99)	(95)	(100)	(105)	(110)	(115)	(120)
Other inc (exp), net	2	(9)	(2)	(2)	(3)	(4)	(2)	(3)
Pretax income	(564)	(546)	(421)	(322)	(297)	(235)	(175)	(160)
Minority interest	(8)	(9)	(8)	(8)	(8)	(8)	(8)	(8)
SPSN earnings (losses)	(16)	(13)	(7)	(4)	(2)	-	-	-
Income before taxes	(588)	(568)	(436)	(334)	(307)	(244)	(183)	(169)
Income taxes	23	32	25	-	-	-	-	-
Net income	(611)	(600)	(461)	(334)	(307)	(244)	(183)	(169)
Diluted shares	549	552	555	560	565	570	575	580
Diluted EPS	(1.11)	(1.09)	(0.83)	(0.60)	(0.54)	(0.43)	(0.32)	(0.29)

Y/Y change

	Q1 07	Q2 07	Q3 07e	Q4 07e	Q1 08e	Q2 08e	Q3 08e	Q4 08e
Net revenue	-7%	13%	6%	-12%	1%	-7%	-4%	-8%
Gross profit	-55%	-33%	-26%	-8%	30%	-1%	2%	0%
R&D	64%	70%	53%	6%	-26%	-43%	-36%	-32%
MG&A	31%	18%	21%	17%	-18%	-29%	-24%	-12%
Operating income	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Interest income	-43%	-46%	-52%	-32%	-6%	-21%	0%	0%
Interest expense	239%	450%	428%	49%	35%	11%	21%	20%
Other inc (exp), net	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pretax income	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Minority interest	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
SPSN earnings (losses)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Income before taxes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Income taxes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net income	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Diluted shares	11%	10%	12%	5%	3%	3%	4%	4%
Diluted EPS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

## As % revenue

	Q1 07	Q2 07	Q3 07e	Q4 07e	Q1 08e	Q2 08e	Q3 08e	Q4 08e
Net revenue	100%	100%	100%	100%	100%	100%	100%	100%
Gross profit	28%	33%	36%	38%	36%	35%	38%	41%
R&D	35%	34%	30%	26%	26%	21%	20%	19%
MG&A	27%	26%	24%	22%	22%	20%	19%	21%
In process R&D	0%	0%	0%	0%	0%	0%	0%	0%
Amort. intangibles	6%	5%	5%	5%	5%	5%	5%	4%
Integration charges	1%	1%	1%	0%	0%	0%	0%	0%
Operating income	-41%	-33%	-24%	-15%	-16%	-11%	-5%	-4%
Interest income	1%	1%	1%	1%	1%	1%	1%	1%
Interest expense	-6%	-7%	-7%	-6%	-8%	-9%	-9%	-8%
Other inc (exp), net	0%	-1%	0%	0%	0%	0%	0%	0%
Pretax income	-46%	-40%	-30%	-21%	-24%	-18%	-13%	-11%
Minority interest	-1%	-1%	-1%	-1%	-1%	-1%	-1%	-1%
SPSN earnings (losses)	-1%	-1%	0%	0%	0%	0%	0%	0%
Income before taxes	-48%	-41%	-31%	-21%	-25%	-19%	-14%	-12%
Income taxes	2%	2%	2%	0%	0%	0%	0%	0%
Net income	-50%	-44%	-33%	-21%	-25%	-19%	-14%	-12%

b. Annual projections.

(Amounts in \$MM)	2005	2006	2007e	2008e
Net revenue	5,848	5,649	5,591	5,334
Gross profit	2,392	2,793	1,905	2,012
R&D	1,144	1,205	1,738	1,134
MG&A	1,016	1,141	1,384	1,093
In process R&D	-	416	-	-
Amort. intangibles	-	47	284	252
Integration charges	-	32	34	-
Operating income	232	(48)	(1,535)	(466)
Interest income	38	116	65	60
Interest expense	(105)	(126)	(372)	(450)
Other inc (exp), net	(23)	(13)	(10)	(11)
Income before MI, SPSN & taxes	142	(71)	(1,852)	(868)
Minority interest	125	(28)	(33)	(33)
Equity in SPSN earnings (losses)	(107)	(45)	(40)	(2)
Income before taxes	160	(144)	(1,926)	(903)
Income taxes	(7)	23	80	-
Net income	167	(167)	(2,006)	(903)
Diluted shares	424	506	554	573
Diluted EPS	0.39	(0.33)	(3.62)	(1.58)
Y/Y change	2005	2006	2007e	2008e
Net revenue	17%	-3%	-1%	-5%
Gross profit	22%	17%	-32%	6%
R&D	22%	5%	44%	-35%
MG&A	25%	12%	21%	-21%
Operating income	5%	n/a	n/a	n/a
Interest income	111%	205%	-44%	-8%
Interest expense	-6%	20%	195%	21%
Other inc (exp), net	-53%	-43%	-20%	10%
Income before MI, SPSN & taxes	n/a	n/a	n/a	n/a
Minority interest	n/a	-122%	19%	0%
Equity in SPSN earnings (losses)	n/a	n/a	n/a	n/a
Income before taxes	65%	n/a	n/a	n/a
Income taxes	n/a	n/a	n/a	n/a
Net income	84%	n/a	n/a	n/a
Diluted shares	14%	19%	10%	3%
Diluted EPS	61%	n/a	n/a	n/a

As % of revenue

	2005	2006	2007e	2008e
Net revenue	100%	100%	100%	100%
COGS	59%	51%	0%	0%
Gross profit	41%	49%	34%	38%
R&D	20%	21%	31%	21%
MG&A	17%	20%	25%	20%
In process R&D	0%	7%	0%	0%
Amort. intangibles	0%	1%	5%	5%
Integration charges	0%	1%	1%	0%
Operating income	4%	-1%	-27%	-9%
Interest income	1%	2%	1%	1%
Interest expense	-2%	-2%	-7%	-8%
Other inc (exp), net	0%	0%	0%	0%
Income before MI, SPSN & taxes	2%	-1%	-33%	-16%
Minority interest	2%	0%	-1%	-1%
Equity in SPSN earnings (losses)	-2%	-1%	-1%	0%
Income before taxes	3%	-3%	-34%	-17%
Income taxes	0%	0%	1%	0%
Net income	3%	-3%	-36%	-17%

### c. Financial metrics.

(Amounts in \$MM)

Current debt	5,537
Current equity	4,472
Current tangible book value	\$0.41
Current market value	7,590
Current cash	1,594
Current DSO	42
Current DIO	88

	2006	2007e	2008e
EBIT (excluding nonrecurring items)	447	(1,217)	(214)
EBITDA	1,120	(231)	1,005
Free cash flow	(570)	(2,703)	(938)
Surplus cash flow (net income+D&A-capex)	(1,232)	(2,703)	(938)
Capex	1,856	1,800	1,300
EV/EBITDA	10.3	n/a	11.5
EV/(EBITDA-capex)	n/a	n/a	n/a