

Hippocratic Growth

The rate of change and the regulatory overhang can make investing in health-care vexing. Forty years into it, Sam Isaly continues to rise to the challenge.

With some \$4.5 billion invested in healthcare-related equities and venture capital, OrbiMed Advisors' Sam Isaly allows himself a certain satisfaction from his chosen calling: "Allocating capital does serve some sort of purpose in this world," he says. "In our small way, we're contributing to the advancement of people's health."

Isaly has also done very well in advancing the health of his investors' portfolios. Since he took over the Eaton Vance Worldwide Health Sciences Fund in 1989, it has earned a net annualized 13.6%, vs. 8.1% for the S&P 500.

Alternatively betting on high growth and deep value, he's finding opportunity today in such areas as big pharma, biotech, generics and DNA sequencing. [See page 2](#)

INVESTOR INSIGHT



Sam Isaly
OrbiMed Advisors

Investment Focus: Seeks companies in which uncertainty about future prospects is clouding the market's judgment of value to a greater extent than it is his own.



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Investor Insight: Sam Isaly

OrbiMed Advisors' Sam Isaly, Geoff Hsu, Richard Klemm, Trevor Polischuk and Will Sawyer describe why they don't fear binary events that other investors shun, why half their portfolio companies are likely acquisition targets, how they would simplify healthcare reform, and what they think the market is missing in Roche, Mylan, BioMarin and Illumina.

Healthcare investing would appear to have gotten more difficult in recent years. Would you agree?

Sam Isaly: People seem to think that, but it's never *not* been difficult. The continuous product and technological change is a challenge. The regulatory overhang is a challenge. But the fact is that has always been the case, and we see those things as key reasons there's so much opportunity. That and the fact that healthcare makes up 15% of the U.S. economy – and growing – providing a great number of ways to be financially involved.

That's not to say there haven't been negative trends in the industry. The rate of new-drug discovery has fallen off over the past decade, at large and small companies alike. Had there not been big improvements in the genetic understanding of humans, productivity would have declined even more. Couple that productivity decline with the large number of branded drugs going off patent in the next few years and you're seeing one-time industry stars starting to shrink. Eli Lilly had a big shrink. AstraZeneca has had and will continue to have a big shrink. Pfizer buys Wyeth and now says earnings will be flat from 2010 to 2014. None of that makes for an easy investing climate.

Describe how you're allocating capital today across the various healthcare sectors.

SI: Roughly half of our long-only portfolio is in biotechnology, including both emerging and well-established companies. Biotech is much less about distribution and more about people in laboratories trying to discover new things. In general, we're most likely to get interested in companies with pipeline compounds that have been tested on a sufficient number of patients and have to that point been shown to work. Where we've most added

value over time is in handicapping from that point whether those compounds will make it to market and, if so, what the commercial potential will be.

Around 25% of our portfolio is in big pharmaceutical companies, which tend to be more traditional value-investing plays. The discovery pipeline matters, but we're more apt to see opportunity when we don't think we're paying anything for it. With big pharma, the analysis is weighted elsewhere: How are patent expirations going to affect cash flows? What's happening to the cost structure? Is the stock cheap for some temporary reason? An example of a company we like today is Johnson & Johnson [JNJ], which is largely through its patent expirations, has demonstrated over more than 100 years that it can create shareholder value, and which has a stock that's cheap on a historical and relative basis.

Another 15% of the portfolio is in generics and specialty pharmaceuticals. We have made a fairly new and significant bet on generic manufacturers, who we believe have strong secular growth opportunities, especially outside the U.S. We own several companies worldwide, including Hospira [HSP], Teva [TEVA], Mylan [MYL] and three players in Japan. At the individual-company level we're making bets on those with scale and sustainable cost advantages, often from best-in-class supply chains.

The rest of the portfolio is in medical technology and devices. Here the emphasis is also on discovery and identifying game-changing technologies. Geoff will speak later about Illumina [ILMN], which we think is extremely well-positioned to take advantage of high growth in the incidence of DNA sequencing. We also often own smaller companies that were originally in our venture portfolio before going public. One neat one today is Given Imaging [GIVN], which makes



Sam Isaly

Rx for Success

Having graduated with an economics degree from Princeton and from the London School of Economics on a Fulbright scholarship, Sam Isaly decided to abandon his goal of being an economics professor and took his first job in 1968 at what was then Chase Manhattan Bank. "In those days, you either went to the trust department or the loan department, and personnel decided to send me to the trust department," he says. "When I got there, they said they didn't have a drug analyst, so that's what I did. The rest is history."

Focusing on healthcare as an analyst and investor ever since, Isaly started the predecessor to his current firm, OrbiMed Advisors, in 1989. OrbiMed now manages around \$4.5 billion, spread relatively equally across venture capital, long-equity and hedge fund strategies.

"I got started in this by chance, but there have been many times when I could have stepped out and didn't," he says. "It's exciting to be exposed to the cutting edge of science in general, and to the biological sciences in particular. One of our companies makes a pill you swallow that takes pictures of your gut all the way through. How cool is that?"

capsule endoscopy products that basically allow you to swallow a pill and have it take pictures of your gut all the way through. Another is Volcano [VOLC], which produces a tiny intravenous ultrasound device that actually goes into your heart to capture what's going on.

No mention of hospitals or health insurers. Is that by design?

SI: We have owned them in the past, but it's not at the center of what we do. These types of companies aren't product-oriented, and we believe our greatest strengths are in assessing product potential.

What makes the ideas that you find attractive mispriced?

SI: A lot of our research is driven by what we call our "hot list." This is our master list of specific – usually binary – events that will affect individual stocks in our universe. It could be an FDA approval date. It could be the expected release date for results of a Phase-2 trial. It could be the ruling date for a patent-infringement case. Investors in general stay away from high-risk binary events, but we actually seek them out and selectively embrace them. They are usually not priced efficiently, so if we're on the right side of them more often than not, we can make outsized returns.

For example, there's a hearing date coming up soon where we'll learn whether the patent on Lovenox, a deep-vein thrombosis drug currently marketed by Sanofi-aventis, will remain enforceable. Momenta [MNTA], which we own, is challenging the patent. If the results go in Momenta's favor, the shares should substantially rise.

Here's a more classic example of the type of opportunity that attracts us: Vertex Pharmaceuticals [VRTX] for some time has had in development an oral hepatitis C protease inhibitor called Telaprevir. Three years ago early trial results – on only 20 or so humans – came out showing a remarkable reduction in the circulating virus count of the disease by taking Telaprevir. It was early in the

testing process, but we felt such results for an anti-infective were highly predictive that the drug worked, so we started buying the stock, which had jumped on the announcement from \$12 to \$18. The drug has since worked through the process as we expected and is likely to be approved by the FDA late this year or in 2011. As the probability of success has risen, Vertex stock today trades around \$39, and we still own it.

One other inefficiency that crops up fairly often is when the market overreacts

ON SHORT IDEAS:

We're looking at companies whose fortunes have been tied to swine flu. This is rapidly becoming yesterday's story.

to manufacturing problems that disrupt sales of a key drug. I hesitate to speak in absolutes, but manufacturing – especially when you're dealing with products with 90% gross margins – always gets fixed.

We're assuming you can't be good at this without a high level of scientific and/or technological expertise.

SI: It's not sufficient, but it is necessary. I don't pretend to be an expert to the extent we need to be experts in the hard sciences we follow, so we have medical doctors on staff who two years ago were treating a full range of cancer patients. We have researchers on staff who have made their own breakthroughs in the labs. We get outside help when we need it, including to understand Washington and which way the winds are blowing there.

Like with a lot of investing, you need to constantly turn over stones – going to scientific conferences, reading trade journals, meeting with researchers. The fact that we have a large venture capital business helps us a great deal to stay on top of technologies and continually expand our network of experts and industry players. That's indispensable in this industry.

All that said, we wouldn't be successful if we weren't also competent financial analysts who know financial statements back and forth and how to value businesses. That has to be a given as well.

On the subject of valuation, would you consider yourself a value investor?

SI: That's an interesting question. We don't follow dictums like only buying if the P/E is less than 10x or if intrinsic value is twice the current market price. But we're certainly very focused on what we're paying for what we're getting. Given the nature of most of the businesses we invest in, the unappreciated value we see often comes from future growth potential. Our portfolio companies, on average, are typically growing at what we expect to be 15-20% annually.

Given the binary nature of your "hot list," does your turnover tend to be high?

SI: We will trade on news, but very often our investment theses – as in the case I mentioned with Vertex – play out over years. Our long strategy's turnover tends to be 25-40% per year.

We'll make mistakes or something will hit full value, but most of the time our selling is driven by something getting pushed out by a better idea. If our portfolio has been well-assembled in the first place, that won't happen terribly often.

You also run a large hedge fund. Are you finding any fertile areas for shorts today?

SI: We rarely find themes we can short against, but one we've acted on lately is looking at companies whose fortunes and share prices have been tied to the swine flu. This is rapidly becoming yesterday's story and an area of excess capacity.

On an individual-stock basis, our ideal short has a lot of zero-coupon debt, is burning a lot of cash, and has a big product we expect to fail. That full combination is rare, but as on the long side, our shorts usually involve our assessment of a key product's potential – in this case, that it will be a bust.

Starting with one of your top big-pharma holdings, describe the investment case for Roche [RO:SW].

Trevor Polischuk: One key aspect of the thesis is the company's global focus and leadership in oncology, which is important for a few reasons. First, the pricing flexibility for cancer treatments – even in a world focused on cost-containment – is quite good and we expect it to remain so. Point two is that the preponderance of Roche's oncology products are biologics, which makes them less susceptible to generics, both from a scientific and regulatory standpoint. Third, the oncology focus allows additional margin advantage from not needing the giant salesforce others need to sell products that are more appropriate for the primary-care-physi-

cian community. Having so much of Roche's revenues tied to a specialty area provides a big structural advantage.

Another important factor here: When I look over my models for large-cap pharmaceutical companies, branded drugs with something on the order of \$100 billion in annual sales are going off patent from 2011 to 2013. Over that same period, Roche has none that will go generic. That gives it a growth profile that is unparalleled in the industry.

Describe the growth potential.

TP: Just from currently marketed products, based on where they are in their life-cycles and where they're positioned in their markets, we believe annual top-line growth over the next few years should be

10-12%, while bottom-line growth should be in the mid to upper teens.

That includes nothing from the company's product pipeline, which we consider to be one of the most attractive in the industry. Sam spoke about trying to handicap a drug's development potential fairly early on with emerging biotech companies, but in companies like Roche we focus most of our due diligence on drugs in Phase-3 testing or that have already been filed with the FDA for approval. In particular, we're looking for compounds that are novel, innovative, and are being developed for major, unmet medical needs, where pricing is likely to be relatively unconstrained. Roche has several promising drugs that fit that bill in its core oncology markets, but we also see blockbuster potential in novel treatments for rheumatoid arthritis, diabetes and cardiovascular disease.

Has Genentech, acquired in full last year, been well assimilated?

TP: There have been no glitches so far and we expect qualitative improvement as discovery and business development efforts are combined. In many ways the two companies worked at cross purposes in those areas prior to last year – now the barriers are gone and we expect cost and revenue synergies as a result.

How inexpensive are the shares, now trading at around 187 Swiss francs?

TP: The stock, at just under 14x consensus 2010 EPS estimates of around 13.50 Swiss francs, trades at the high end of the peer P/E range. For all the reasons we've mentioned, we think that's fully justified. The upside therefore comes from earnings growth, which on existing products is likely to be well over 15% per year. With anything at all from the pipeline, this can compound at a high rate for some time.

What we like to see in any big-pharma investment – which is the case here – is an exciting new-product pipeline for which we think we're paying nothing. A big miss should have little or no impact on the share price. We talk about having stocks

INVESTMENT SNAPSHOT

Roche
(Switzerland: RO:SW)

Business: Swiss-based developer and manufacturer of pharmaceutical and diagnostic products. Through ownership of Genentech, now world's largest biotech firm.

Share Information
(@1/28/09, Exchange Rate: \$1 = CHF 1.05):

Price	CHF 187.20
52-Week Range	CHF 127.00 – CHF 194.00
Dividend Yield	2.7%
Market Cap	CHF 157.05 billion

Financials (Thru 6/30/09, annualized)

Revenue	CHF 48.01 billion
Operating Margin	33.2%
Net Profit Margin	16.9%

Valuation Metrics
(Current Price vs. TTM):

	RO	S&P 500
P/E	21.1	47.0

RO PRICE HISTORY

THE BOTTOM LINE

The company's focus on the oncology market and the fact that it has no drugs going off patent in the next few years gives it a growth profile "unparalleled in the industry," says Trevor Polischuk. He expects share-price growth to mirror estimated annual EPS growth of at least 15%, with an attractive product pipeline providing upside from there.

Sources: Company reports, other publicly available information

in the portfolio that allow us to sleep well at night, and this is definitely one.

Sam spoke earlier about your increased appetite for generic drug companies. Expand on that general interest, as well as on your specific interest in Mylan [MYL].

Will Sawyer: The basic theme is that generic utilization is likely to increase, both within and outside the U.S., because it's an easy mechanism for cost containment. Generic penetration in the U.S. – based on subscription volume – is around 70%, but it's far lower in developed and developing countries in Europe and Asia.

In Japan, for example, generic utilization is growing, but it still accounts for less than 20% of all subscriptions. Over the next five years, we expect penetration levels in many markets to increase significantly.

Mylan is based in the U.S., but is also after its acquisition of the German Merck's generic division a large player in Asia and Europe. Their primary business is marketing generic versions of branded pharmaceuticals, but they also have an innovative unit called Dey Labs, which accounts for close to 10% of total sales and focuses on respiratory treatments, with products like the EpiPen epinephrine injector and Perforomist inhalers.

In an industry where this is critically important, we consider Mylan one of the premier operators. Their supply-chain management is excellent, due to in-house capabilities for producing the active pharmaceutical ingredients used to manufacture generic drugs. That allows them to move more quickly than many competitors in developing drugs, as well as to produce in a more-controlled and cost-efficient manner.

Being global is also an advantage. Mylan can develop a drug and then file it for approval around the world at the same time, which again, saves money and time and provides incremental growth potential. We also appreciate that in our conversations with their customers, like the chain pharmacies, the company is consistently cited as a great brand and a highly reliable supplier.

Is there any incremental advantage from choosing the right drugs to replicate?

WS: I wouldn't make a big distinction there. If a product doesn't involve specialized drug-delivery technology, there can be ten or more generic versions. Pricing in these cases gets driven to 5% or less of branded pricing, resulting in significantly depressed margins. The most-efficient players like Mylan can still generate modest profits in these situations. But Mylan also competes in less-commoditized markets, for example, where it has certain patch technologies and controlled-release technologies that others can't offer.

With the shares trading at around \$17.90, how are you looking at valuation?

WS: Estimated 2010 EPS is around \$1.50, so the shares trade at just under a 12x multiple, which is a bit lower than some of the other big generic players like Watson and Teva. But we believe Mylan's annual EPS growth over the next three years can be 15-20%, driven by multiple launches – including generic versions of heartburn drug Prevacid and cancer treatment Femara. Launches of these higher-margin products should offset pricing and margin erosion on Mylan's base product

INVESTMENT SNAPSHOT

Mylan

(Nasdaq: MYL)

Business: Global developer, manufacturer and marketer of generic and branded pharmaceutical products and active pharmaceutical ingredients.

Share Information

(@1/28/10):

Price	17.93
52-Week Range	11.06 – 19.21
Dividend Yield	0.0%
Market Cap	\$5.48 billion

Financials (TTM):

Revenue	\$4.92 billion
Operating Profit Margin	13.5%
Net Profit Margin	3.8%

Valuation Metrics

(@1/28/10):

	MYL	Nasdaq
Trailing P/E	110.0	39.1
Forward P/E Est.	11.7	17.9

Largest Institutional Owners

(@9/30/09):

Company	% Owned
Jennison Assoc	6.9%
Vanguard Group	5.5%
D.E. Shaw	4.8%
Barclays Global Inv	4.8%
Deutsche Bank	3.9%

Short Interest (as of 12/31/09):

Shares Short/Float	25.7%
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MYL PRICE HISTORY



THE BOTTOM LINE

With global scale, a highly developed supply chain and excellent customer relationships, the company is well-positioned to capitalize on increased secular demand for generics, says Will Sawyer. Even if the earnings multiple stays at its current 12x, he says, the shares should benefit from annual 15-20% EPS growth over the next few years.

Sources: Company reports, other publicly available information

portfolio. So we are not relying on multiple expansion to earn an attractive return on the stock.

We also believe there's potential upside to that as the company continues to deleverage. They took on a lot of debt to buy the Merck business, but management has been focused on paying that down and we expect a material decrease in interest costs over the next few years.

The short interest here is very high, over 25%. Why?

WS: Given that I disagree, I can't articulate exactly what the short thesis is. There is a decent amount of convertible debt out there, so some arbitrage bet may account for a portion of the short selling.

The primary risk with Mylan is execution. It has dozens of products lined up for launch that are at various stages of the development and approval process. If in too many cases approvals are delayed, due to legal, regulatory or operational issues, growth could fall short of expectations. That said, these are systemic risks affecting all generic companies and historically Mylan has been able to manage these issues quite well.

How are you handicapping regulatory risk in the case of generic companies?

WS: There are several situations that remain fluid. Increased emphasis on cost containment is obviously good for generic companies. Expanded insurance coverage is also positive. Legislation under discussion that would discourage or prohibit patent-litigation settlements would be a net negative. [Note: In such settlements a generic manufacturer agrees to drop its legal challenge to a patent for a period of time, in return for compensation from the branded manufacturer of the product.] We consider these types of agreements to be a smart way for companies to address the uncertainties and expenses related to patent litigation, but Congress has targeted them as something more sinister.

Another issue is potential change in regulation over generic biopharmaceuticals. We expect this market to emerge as

another engine of growth for generic players in coming years. There is legislation under debate that would grant 12-year exclusivity periods for some branded biologics – this could limit generic penetration to some degree.

What non-U.S. players are also well-positioned to take advantage of increased generic penetration?

TP: We own a few generic companies in Japan, where we think the shift to generics will be particularly aggressive. The

ON GENERICS IN JAPAN:

The market has been slow to embrace generics, but aggressive government policies are starting to change that.

percentage of the population that is 75 or over in Japan is the highest in the developed world, and the increased medical cost associated with that has left the government with no choice but to push as many cost-containment policies as possible. So while the market has historically been very brand-focused and slow to embrace generics, new policies are starting to change that. The government is changing in favor of generics how hospitals are reimbursed. It is paying pharmacies to fill more generic orders. It has even pushed through a change in the design of prescription pads, to make it easier for a doctor to prescribe a generic. In the past couple of years generic penetration has increased by about a third, to the high teens. We believe there's still a lot of room for that to grow.

One of the stocks we own is Nichi-Iko [4541:JP], which [at ¥2,760] currently trades at a high-teens multiple of estimated earnings. That may not sound cheap, but we think it is against our expectation that it can increase earnings at least 20% per year. You'd be hard pressed to find a similar company elsewhere that is growing that fast and is that inexpensive.

Describe how you handicap the potential of an emerging-biotech idea like BioMarin [BMRN].

Richard Klemm: This is a somewhat more mature emerging biotech, in that it already has three approved drugs on the market. Its strategy is to focus on treatments for rare chronic disorders that often require high-cost treatment from a very young age. Aldurazyme – developed through a joint venture with Genzyme – is used to treat what is called MPS I, an inherited disorder in which patients can't break down certain complex carbohydrates in cells. Naglazyme, 100% owned by BioMarin, treats another MPS disease, called MPS VI. The newest product, Kuvan, is an approved treatment for phenylketonuria (PKU), one of the most common metabolic disorders.

The stock has underperformed over the past couple of years after the launch of Kuvan was slower than expected and the market seemed to lose interest. But we especially like the company now because important new test data should be out soon on two key pipeline products, each of which has ultimate revenue potential of at least \$500 million.

The first product is GALNS, another enzyme replacement therapy for an MPS disease called Morquio Syndrome. Proof-of-concept results for it are due in the second quarter and we're optimistic the treatment will be shown to work. Because the goal is to replace enzymes that are deficient in these patients, there's a higher probability of success for this type of therapy than for other drugs that may work through less direct mechanisms, and there is a much lower chance that the drug will cause off-target side effects.

The second pipeline product is called PEG-PAL, which like Kuvan treats PKU, but unlike Kuvan is meant for use by more than just a subset of PKU sufferers. Early trials based on single doses have shown promising results on efficacy, and Phase-2 data due mid-year will cover repeat doses. The focus for investors will be more on safety and potential immunogenicity [i.e., the risk of provoking an immune response], because PEG-

PAL is a foreign protein. As with GALNS, we expect the trial results to be positive and to generate increased interest in the stock.

Walk through how you value a company like this, with the shares recently trading at \$19.50.

RK: The current revenue run rate from existing products is around \$400 million, which we expect to grow some 20% per year. If we take out R&D spending not related to these products, we estimate they'll produce 80-85 cents per share in earnings this year. Put a reasonable 20x

multiple on that and the current business is worth probably \$16-17 per share.

If the test results later this year are positive for GALNS and PEG-PAL, they could be ready for commercial launch by 2014. Factoring in our estimates of the new products' profit potential, we arrive at a 2015 EPS estimate for the entire company of around \$2.25. One nice thing from a margin perspective is that neither of the new products would require much incremental marketing spending, given that each serves a customer base the company already addresses.

Similar emerging-biotech companies usually trade at a 35x multiple, but at

30x, the share price looking four to five years out if we're right on earnings would exceed \$60. If we discount that back and risk-adjust for the chance the products don't get commercial approval – we assume a 70% probability of success with proof of concept this year – we get a target value for the shares today of at least \$27.50.

Is this a likely acquisition candidate?

SI: The work we do in assessing the probability of approval and commercial viability of important pipeline products is not at all dissimilar to what the business development staffs of larger pharmaceutical companies are doing. I think we're at least as good as they are, so I would imagine that BioMarin – which isn't small, but certainly swallowable – is on the radar of a significant number of those companies. In general, I'd say roughly half the companies in our portfolio are reasonable acquisition targets.

RK: One thing I'd add is that the most likely acquirers of BioMarin are firms, like Genzyme or Shire, that follow a somewhat similar strategy. BioMarin's products are very expensive, so some of the largest pharma companies may shy away from the political risk attached to selling new products that can cost several hundreds of thousands of dollars per year.

Turning to a medical technology idea, explain the upside you currently see in Illumina [ILMN].

Geoff Hsu: The company's basic business is producing chips and machines used in the screening of DNA samples and in DNA sequencing. Roughly 70-80% of total revenues come from government or academic researchers, with 20-30% from private industry. Broadly speaking, the research in which its products are used is focused on studying the genetic bases of varying diseases in an effort to isolate causative factors.

Our thesis here revolves around Illumina's sequencing business, which we believe will be at the center of medical

INVESTMENT SNAPSHOT

BioMarin

(Nasdaq: BMRN)

Business: Develops and markets biopharmaceuticals primarily focused on treating rare chronic genetic diseases that often require treatment from a young age.

Share Information

(@1/28/10):

Price	19.49
52-Week Range	9.93 – 21.50
Dividend Yield	0.0%
Market Cap	\$1.96 billion

Financials (TTM):

Revenue	\$336.8 million
Operating Profit Margin	12.5%
Net Profit Margin	5.7%

Valuation Metrics

(@1/28/10):

	BMRN	Nasdaq
Trailing P/E	104.8	39.1
Forward P/E Est.	88.6	17.9

Largest Institutional Owners

(@9/30/09):

Company	% Owned
Primecap Mgmt	8.7%
T. Rowe Price	8.1%
Sectoral Asset Mgmt	5.8%
HealthCor Mgmt	4.9%
Columbia Wanger Asst Mgmt	4.7%

Short Interest (as of 12/31/09):

Shares Short/Float	9.8%
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BMRN PRICE HISTORY



THE BOTTOM LINE

Richard Klemm believes test results due soon on two of the company's pipeline products will be positive, and will result in its shares being revalued upward by the market. Based on his risk-adjusted assessment of earnings if the pipeline drugs became commercial, he believes the value of the shares today is 40% higher than the current price.

Sources: Company reports, other publicly available information

research in the future. For research purposes, it's frequently very useful to sequence whatever genetic material you happen to be looking at. Historically the sequencing process has been very slow and methodical, but Illumina's sequencing machines are the leader in what's called next-generation sequencing, which is much faster and more efficient.

There are really only two competitors with comparable technology, Life Technologies [LIFE] and Roche, but Illumina is by far the leader. That means it is very well positioned to benefit from what we believe will be explosive demand growth in next-generation sequencing. At

some point every patient is likely to have his or her DNA sequenced, which is particularly important as we move towards personalized medicine. For example, XYZ drug may only traditionally work in 70% of the patients that take it, but with individual genetic information you may be able to determine with great certainty for whom which treatment will work. That would improve the effectiveness and cost-efficiency of healthcare, and it's not possible without the type of information Illumina's technology provides.

A shorter-term part of the thesis is that we expect significant revenue growth in 2010 due to stimulus money that has

gone to the National Institutes of Health, an important portion of which is expected to go to the types of sequencing machines Illumina sells. A lot of the related grant requests are still being processed, but the impact for the company should be quite material.

We imagine the big risk with taking a longer-term view here is technological obsolescence. How do you get comfortable with that?

GH: That is the big risk. Companies exist which are working on third-generation technology that promises to be that much faster and cost-efficient than what Illumina provides. We're very well acquainted with that technology, both because Illumina has entered a partnership to help develop it, and because in our venture capital business we're invested in a company also developing third-generation technology, Complete Genomics.

Our basic feeling is that third-generation technology is a few years away from putting Illumina's growth at risk, and that the overall market is potentially so large that it can accommodate providers of various technologies at various price points. It's obviously a subject we're keeping very close track of.

The stock, now at \$36.30, nosedived last October before recovering sharply. What happened?

GH: This is a high-multiple stock with a tradition of beating estimates, but they missed in the second and third quarters of 2009 and the stock got hit. The third-quarter miss had to do with a slowdown in their gene-array non-sequencing business, with NIH funding not translating as quickly into sales as expected, and from reagent manufacturing issues we expected to be temporary. All that actually provided a nice opportunity to buy – we started buying around \$29.

What upside do you see from here?

GH: Illumina's technology continues to be readily adopted, which we believe will

INVESTMENT SNAPSHOT

Illumina

(Nasdaq: ILMN)

Business: Manufacturer and marketer of equipment and consumables used in genetic analysis. High % of revenue from government and academic customers.

Share Information

(@1/28/10):

Price	36.30
52-Week Range	25.59 – 44.07
Dividend Yield	0.0%
Market Cap	\$4.54 billion

Financials (TTM):

Revenue	\$646.7 million
Operating Profit Margin	21.5%
Net Profit Margin	15.1%

Valuation Metrics

(@1/28/10):

	ILMN	Nasdaq
Trailing P/E	50.5	39.1
Forward P/E Est.	35.9	17.9

Largest Institutional Owners

(@9/30/09):

Company	% Owned
Fidelity Mgmt & Research	14.5%
Morgan Stanley	11.5%
T. Rowe Price	7.2%
Capital Research Global Inv	5.3%
Barclays Global Inv	3.9%

Short Interest (as of 12/31/09):

Shares Short/Float	18.9%
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ILMN PRICE HISTORY



THE BOTTOM LINE

As the leading provider of "next-generation" DNA sequencing machines, the company is ideally positioned to benefit from explosive demand for its products, says Geoff Hsu. If – as he expects – the current lofty share-price multiple is maintained while earnings grow at a 35% annual clip, "the stock should do very well from here," he says.

Sources: Company reports, other publicly available information

translate into revenue growth in excess of 20% over the next few years and annual earnings per share growth of 35%. That's a bit higher than consensus Street EPS-growth estimates of 25-30% per year over the next five years. On consensus estimated 2010 EPS, the stock currently trades at a 36x multiple, which is obviously high in absolute terms, but not relative to the growth we believe the company will generate.

Our variant perception when we first bought the stock was that the NIH-related spending, though delayed, would come through, and that the manufacturing problems they were having would be quickly fixed. We're still in the stock because we believe the high growth is probably more sustainable than expected. We don't expect the multiple to expand, but it's also not unreasonable that it stays where it is with the company growing 35% per year. If we're right about the earnings growth, the stock should do very well from here.

We've spoken about aspects of healthcare reform, but we're curious about your general opinion of the effort to date.

SI: The legislation became way too expansive and complicated. I believe reform is necessary, but I'd recast the conversation to focus more on protecting larger numbers of people primarily from extreme or catastrophic loss. That doesn't play because people have come to believe healthcare is a sort of divine right, but my general feeling is why insert bureaucrats, except in unusual circumstances, when the market can sort it out just fine?

If I wanted to really stir up trouble, I'd propose knocking out the tax deduction for employer-provided health insurance. The loss to the Treasury from that deduction is on the same order of magnitude as the home-mortgage deduction, and a credible case can be made that the evolution of employer-paid insurance is one root cause of many of the U.S. system's problems.

Can you generalize about where you've made mistakes?

SI: We make plenty of mistakes, but they tend to be more case specific. Relevant to your question earlier about value investing, I would say that our worst mistakes have been far more likely a result of our being a follower rather than a leader. We've been much less successful buying into stories that are out there already than ones that we're anticipating in advance.

Are any macro views impacting how you're positioned today?

SI: One I do pay attention to is the level of interest rates, which in my opinion are almost sure to increase in 2010. That's always a difficult scenario for stocks, particularly smaller growth stocks. As a result, we've been tilting the portfolio more toward bigger-cap companies. We're not at all in the mood for a whole lot of risk. VII