Meet the Manager: John O. Barr

What led you to work at Needham Funds?
I rejoined Needham in 2009 to co-manage the mutual funds. I was attracted by Needham Funds' track record of building wealth over the long-term for investors. My interest is to find companies that may compound returns over many years and that are for sale at a reasonable price. My interests match the firm's experience.

I was also attracted by Needham's expertise with growth companies. Needham & Company has taken growth companies public and followed them with research since 1985. The Firm is unique in its independence, history and focus on growth companies.

I say rejoined, as I started my Wall Street career at Needham & Company as a sell-side research analyst following technical software companies in 1995.

What is it like working for an employee-owned asset manager?
Needham is the type of company that I look to invest in. George Needham remains active in management as Chairman of the Board, President & CEO of Needham Asset Management and Chairman & CEO of The Needham Group, Inc. The Firm is owned by its employees and other long-term shareholders. The Firm's motivation is to build a business to last.

What draws you to fundamental investing?
The opportunity to create wealth for long-term investors. The Needham Funds were created as an investment vehicle for Needham employees, friends and family. It is a pleasure to speak to former and current Needham employees who invested at the beginning and have seen their investments grow.

I also love the challenge of identifying businesses with compounding characteristics and getting to know them over a course of years. It takes me back to my interest in venture capital upon graduation from business school.

You spent 14 years in sales and marketing roles in the semiconductor design software industry. How does this unique background inform your investment process?
Wall Street is my second career. After graduating from the Harvard Business School, I was fortunate to land a position with Communications Satellite Corporation in Washington, DC on the new ventures staff for the unregulated businesses. I worked on direct broadcast satellite television, weather and remote-sensing satellites and data services, maritime satellite communications equipment, competitive local exchanges carriers and shared communications infrastructure and finally, electronic design automation (EDA) for semiconductors and printed circuit boards.

With COMSAT, I moved to Austin to do marketing for a newly created EDA subsidiary. I had responsibilities for distribution in Japan, product marketing and sales support. After co-founding an EDA start-up that didn't get off the ground, I moved to New Jersey to join HHB Systems, a well-funded venture backed start-up. I had various sales and marketing responsibilities, including living in Tokyo and establishing Asian distribution.

My industry experience helps me understand the issues and decisions facing a company. I know what it's like to make strategic decisions, to work with R&D to introduce new products, to close a quarter and make or not make quota and to manage a sales organization, including the pain of major layoffs. I've been in the shoes of the managers of the companies we invest in.

I look to invest in companies that I would like to be part of. My view of the importance of CEOs in technology companies that have a technology background and that are founders, family or long-tenured is formed by my experience. My views of reinvestment opportunities and compounding are formed by the new product and distribution decisions that I was part of. Working in these small companies made me think like an owner and to look for that trait in my investments. I recognize that growth companies results are unpredictable in the short-term, and that is fine. I recognize there's nothing easy about being CEO or working in an early stage company.

How does your Wall Street experience inform your investment process?
I started my Wall Street career at Needham & Company in 1995 as a sell-side analyst researching technical software companies. I enjoyed taking public and following a generation of entrepreneurial EDA companies. In 2000, I joined Robertson Stephens during the tech bubble and had a chance to take the next generation public. Over half of the top-performing IPOs of the crash years of 2001-2002 were EDA companies, which we'd taken public. These were real businesses, with great customers, revenue and strong balance sheets. I also learned about finding companies with flawed business models and short-selling.

I spent most of the 2000s as a portfolio manager of a long/short, diversified industry hedge fund at Buckingham Capital. In 2009, I launched my own hedge fund, Oliver Investment Management, to invest in special situation small caps and mining companies and to short.

In late 2009, Needham approached me about rejoining to co-manage the mutual funds. Needham survived the 2008-2009 financial crisis and the mutual funds had strong long-term records thanks to my predecessors, Jim Kloppenburg and Bernard Lirola, whom I know well. Most importantly, I was attracted back by the culture, which lives and breathes growth companies. I became the manager of the Needham Aggressive Growth Fund and co-manager, with Chris Retzler, of the Needham Growth Fund.

What is your investment style?
I am on the hunt for compounders, which are companies that have reinvestment opportunities, strong returns on capital and are led by founders or long-tenured management. I also love the hunt for a stock going to $0.

You've managed the Needham Aggressive Growth Fund since 2010, and the Fund has historically been heavily invested in various technology sectors. Why the concentration? Do you foresee this Fund always having a ballast in technology investments?
The Needham Funds are growth funds. We generally invest in sectors that are growing faster than the economy. We generally do not invest in financials, commodities, cyclical stocks, or other GDP-level growth sectors. However, technology has become pervasive and in that regard, provides exposure to a wide variety of industries. Many of the Fund's technology investments use technology to solve problems in other industries.

Historically, Needham Aggressive Growth Fund has been very invested in the semiconductor/semiconductor equipment sector. I view the need for advanced, low-power semiconductors as a secular trend and am not concerned with the cyclical aspects of this business. My industry background gives a good perspective to understanding semiconductor equipment.

What is your all-time favorite investment and why?
PDF Solutions (PDFS) is my favorite all-time investment and as of September 30, 2018, it was the fifth largest holding of the Needham Aggressive Growth fund at 5.97% of net assets, and was 4.14% of the Needham Growth Fund's net assets.

PDF supplies software and services used by semiconductor companies to improve manufacturing yields. I got to know the company when it was private and I was a sell-side analyst at Robertson Stephens. Co-founders John Kibarian, CEO, and Kimon Michaels, VP Products, already had over a decade of researching and commercializing technology to analyze semiconductor designs for manufacturability. Robertson Stephens led PDF Solutions' IPO in July 2001 and I was one of the analysts to follow the company.

PDF was the first company I added to the Needham Funds when I began as Portfolio Manager in January 2010. Drs. Kibarian and Michaels had been investing in research and development for a number of years. I believed that they were committed to profitability and that they could succeed in growing their customer base after several years of investment. At the time, PDF had a market cap of about $100 million, $35 million of cash and was only followed by one Wall Street analyst.

In 2010, Needham Growth Fund and Needham Aggressive Growth Fund built positions with purchase prices between $4 and $5 per share. In 2011, Samsung emerged as a major customer. The stock reached a high of $27 in January 2014, only to fall to $12 per share in October as Samsung delayed their contract renewal.

In early 2015, PDF began to speak about its investment in Design-for-Inspection on its conference calls. I believed that this new technology had the potential to more than double the size of the company, however there were few details. The stock declined throughout 2015, reaching a low of $9 per share in January 2016 and we bought additional stock at $9-11. In early 2016, PDF disclosed more details about the Design-for-Inspection and our confidence was reinforced. In addition to DFI, PDF has invested in the Exsensio Big Data Analytics solution and in yield ramping services for the nascent Chinese semiconductor manufacturing industry. We believe all three initiatives position PDF for its next phases of growth over a number of years.

What do you like to do for fun?
Spend time with my family including my wife, our three grown daughters and new grandson. Investing is fun. I love researching companies and reading. I'm currently reading Jared Diamond's, *The World before Yesterday*, *Hillbilly Elegy* by J.D. Vance, *Poor Charlie's Almanack, The Wit and Wisdom of Charles T. Munger,* edited by Peter Kaufman and *Sugar Nation* by Jeff O'Connell. I also enjoy all types of exercise and sports and am interested in wellness.
