

May 2018

Dear Shareholders, Friends of Needham and Prospective Shareholders,

We are reporting results for the quarter ending March 31, 2018 for the Needham Growth Fund, Needham Aggressive Growth Fund, and Needham Small Cap Growth Fund. Our mission is to create wealth for long-term investors.

### **Needham Funds' First Quarter 2018 Results**

In the first quarter, the Needham Growth Fund Institutional and Retail classes returned -0.90% and -1.00%, respectively; and the Needham Aggressive Growth Fund Institutional and Retail classes returned -0.60% and -0.74%, respectively. The Needham Small Cap Growth Fund Institutional and Retail classes were positive, returning 0.70% and 0.57%, respectively. The Russell 2000 Total Return Index returned -0.08% and the S&P 500 Total Return Index returned -0.76%.

### **Review of the First Quarter 2018**

The first few weeks of 2018 were a continuation of the dream market of the last three years. Through January 23, the S&P 500 returned 6.19%, the Russell 2000 returned 4.90%, and the Needham Funds were positive. The Tax Cut and Jobs Act of 2017 became law and established an internationally competitive corporate tax structure with the first sweeping overhaul to the U.S. tax code in over 30 years. The market and the Needham Funds responded positively.

The beginning of February brought a different story. On Friday, February 2, the Dow Jones Industrial Average fell 666 points and the decline continued through the following week. As of February 8, the S&P 500 was down 3.46% year to date, the Russell 2000 was down 4.67%, and the Needham Funds were also down for 2018. We point to two factors: first, the Federal Reserve is raising interest rates, as it views the economy at full employment and inflation at its 2% target. Second, there is \$1.5 trillion in "risk parity" trades, which are short the market's volatility. [Grant's Interest Rate Observer](#) did a great write-up on risk parity in its March 10, 2017 issue. According to [Barron's](#), the Credit Suisse Velocity Shares Daily Inverse VIX Short-Term ETN (XIV) and ProShares Short VIX Short-Term Futures ETF (SVXY) fell from \$3 billion to \$150 million of net asset value, creating significant losses for retail investors. Credit Suisse liquidated its fund on February 21. Trading volatility is so far from our investment philosophy. We look to create wealth for long-term investors by investing in companies with strong management teams and attractive valuations.

February ended with the DJIA down another 680 points in two days. The markets and the Needham Funds ended down for the month; however, it was mostly a retracement of the January gains. In March, the Needham Funds and the Russell 2000 were near even, while the S&P 500 fell 2.54%.

Our outlook for 2018 remains positive, with the possibilities of stronger economic growth and reward of value recognition in our small cap companies that lagged in 2017. We look forward to a year of patience rewarded.

### **Needham Growth Fund (NEEGX/NEEIX)**

In the first quarter, the Needham Growth Fund Institutional class returned -0.90% and the Retail class returned -1.00%, compared with the S&P 500 Total Return Index, which returned -0.76%.

For the first quarter, the Fund's largest position, Thermo Fisher Scientific, Inc. (TMO), was the top performer and returned 8.8%. The company develops instruments and consumables used in life science and other research-oriented industries. Thermo Fisher has a record of mid-single-digit revenue growth and mid-teens earnings growth. In January, Thermo Fisher reported 8% organic revenue growth for the fourth quarter of 2017, well above the 4-6% Street expectations. We see continued organic growth and acquisition opportunities in its life sciences tools market. Thermo Fisher is an 18-year holding of the Fund, and has compounded at a near 18% annual rate.

Amber Road, Inc. (AMBR) was the Fund's second-leading contributor and returned 21.3%. Amber Road provides cloud-based global trade management software, trade content and training that helps companies realize value in their global supply chains. In February, private company E2Open made an unsolicited, and as it turns out, unwanted offer to

purchase Amber Road for \$10.50 per share. E2Open sees Amber Road's trade management database as a value-added adjunct to its own trade management offerings. The Board of Amber Road declined E2Open's offer. In April, E2Open walked away. We believe this offer shows the value of Amber Road's offering. We believe Amber Road will either accomplish its business plan in 2018 or E2Open or another acquirer will succeed. Either way, we see value in Amber Road.

Entegris, Inc. (ENTG) was the Fund's third-leading contributor and returned 14.5%. Entegris supplies filters and chemicals used in semiconductor advanced manufacturing processes. Semiconductor plants require the equivalent of capturing one contaminated drop of water in a day's worth of water flowing over Niagara Falls. Advanced manufacturing is necessary to make low power semiconductors, which are necessary to extend battery life in mobile phones. In February, Entegris reported a strong fourth quarter and guided positively to 8-10% full-year 2018 revenue growth. This earnings report showed that the company is winning new business with memory manufacturers.

MKS Instruments, Inc. (MKSI) was the fourth-leading contributor and returned 22.6%. MKS provides instruments, subsystems, and process control solutions that manage critical parameters of semiconductor advanced manufacturing processes. MKS exceeded estimates for the fourth quarter and guided to 21% year-over-year revenue growth for the first quarter of 2018. MKS' 2016 acquisition of Newport Corp. (a holding of the Needham Funds at the time) has been a big success. MKS' Light and Motion division consists primarily of Newport businesses. MKS has seen strong revenue growth and operating margins as Light and Motion benefits from being part of MKS.

The leading detractor in the first quarter was PDF Solutions, Inc. (PDFS), down 25.7%. This quarter was similar to other recent quarters. The company made continued progress on its new initiatives, but this progress was masked by the outlook for PDF's Integrated Yield Ramp services. PDF announced that its Exensio Big Data Analytics platform now has 130 customers across the semiconductor design, manufacturing, and test industries. The Design-for-Inspection (DFI) initiative made progress with the Gen-2 eProbe 250 DFI tool, which provides an order of magnitude greater performance than the Gen-1 eProbe 150. DFI machines are used by customers to detect electrical failures on semiconductors during the manufacturing process. PDF's business model is to provide these machines, the Exensio platform and software-applications-as-a-service, which results in recurring revenue for PDF. We think that in the next quarter or two, PDF will renew its agreement with its lead customer, which we believe to be Taiwan Semiconductor Manufacturing Co., Ltd (TSM), including the new software and Gen-2 capabilities. Exensio and DFI address markets that might be much larger than PDF's current market. We own the stock in anticipation of addressing these markets and being a much larger company over the years ahead. Investments like PDF take patience.

ViaSat, Inc. (VSAT) was the second-leading detractor, down 12.2%. ViaSat provides high-speed satellite broadband and secure networking systems to the military and commercial markets. In February, the company reported a mixed quarter and launched the ViaSat 2 high-throughput satellite. In April, Eutelsat Communications S.A. (ETL Paris Euronext) announced that it was withdrawing from its partnership with ViaSat and ordering a satellite from the Thales Group HO-Euronext Paris). We note that both Thales and Eutelsat are partially owned by the French Government. They have yet to build a high-throughput satellite and have no experience offering consumer/business broadband service to the masses. We believe ViaSat will find another, even more attractive partner.

The short position in Medallion Financial Corporation (MFIN) was also a leading detractor, as the stock was up 31.7%. We continue to believe that the company overstates the value of the taxi medallions that it owns and its taxi medallion loans, and that it is only a matter of time before the aggressive consumer lending of its Medallion Bank subsidiary causes visible trouble. Several Medallion Financial subsidiaries remain in default on a bank loan that we believe they will have difficulty repaying. Their bank sued in 2016, and the case drags on. This is a basic case of, "They didn't pay and the bank wants its money back." I believe the parent company has access to little cash that has not been pledged as collateral. Nonetheless, the stock roared higher in the first quarter of 2018.

The short position in Ubiquiti Networks, Inc. (UBNT) contributed positively to the Fund's performance, as the stock was down 3.1% in the first quarter. However, the stock took quite a round trip. On February 20, the company announced that on February 13, "The Securities and Exchange Commission (the "SEC") issued subpoenas to Ubiquiti Networks, Inc. (the "Company") and certain of the Company's officers requesting documents and information relating to a range of topics, including metrics relating to the Ubiquiti Community, accounting practices, financial information, auditors, international trade practices, and relationships with distributors and various other third parties. The Company is in the

process of responding to the requests and intends to cooperate fully with the SEC.” The stock fell 21% that day. Usually a company in this circumstance would act conservatively in the public eye. However, Ubiquiti continued to execute the \$150 million stock buyback announced on February 6. On March 13, Ubiquiti announced a new \$200 million stock repurchase plan. As of December 30, Ubiquiti had \$467 million of debt from a syndicate led by Wells Fargo. We wonder how they view buying back stock in the face of an SEC investigation.

In the first quarter, the Needham Growth Fund completed the exit of its long-term successful holding of Express Scripts, Inc. (ESRX). We previously saw Express Scripts contributing to lowering costs in the U.S. healthcare system. Throughout 2017, that view became murkier and it appeared that Express Scripts was acting more as a rent-seeking middleman than an efficient delivery mechanism for prescription drugs. The Fund also exited its positions in Pure Storage, Inc. (PSTG), as it hit our price target, and Financial Engines, Inc. (FNGN) over concern it was facing fee pressures for its management of 401(k) assets.

The Fund added a new 0.5% position in Cryoport, Inc. (CYRX), which has been a one-year holding of the Needham Aggressive Growth Fund.

The Fund added to its positions in PDF Solutions, Invuity, Inc. (IVTY), and Super Micro Computer (SMCI) on price weaknesses. The Fund trimmed several positions, including many long-term contributors, such as Thermo Fisher Scientific, Inc.; Becton Dickinson & Co. (BDX); Entegris, Inc.; FormFactor, Inc. (FORM); Akamai Technologies, Inc. (AKAM); MKS Instruments, Inc. (MKS); Dick’s Sporting Goods (DKS); and FLIR Systems (FLIR).

As of March 31, 2018, the top 10 positions were 53.41% of net assets. Trailing 12-month turnover was just 7% and the Fund’s Active Share vs. the S&P 500 was 105.7%. The Fund was short 5.1% of total investments. Once again, the Fund looks nothing like the S&P 500 and its performance is not correlated.

#### **Needham Aggressive Growth Fund (NEAGX/NEAIX)**

Needham Aggressive Growth Fund Institutional class returned -0.60% in the first quarter and the Retail class -0.74%, compared to the Russell 2000 Total Return Index, which returned -0.08%, and the S&P 500 Total Return Index, which returned -0.76%.

Once again, Entegris, now the largest position in the Fund at 10.31% of net assets as of March 31, 2018, was the top contributor. Continuing with the semiconductor capital equipment holdings, MKS Instruments was the second-leading contributor. In February 2016, MKS announced what became the transformative acquisition of Newport Corporation. At the time, MKS was valued at \$32 per share and estimated to earn \$2.50 per share in 2017. With Newport, MKS earned \$5.96 per share in 2017 and the stock has appreciated to \$116; it is now the sixth-largest holding in the Fund at 5.14% of net assets.

The Fund’s third-largest contributor was Vicor Corp. (VICR), which returned 36.6% during the quarter and has become the tenth-largest holding of the Fund as of March 31, 2018. Vicor is a great example of a successful investment for the Fund. Vicor makes sophisticated modular power converters used in data centers, on servers and in transportation systems, including automobiles. We first bought the stock in May 2014 at \$7 per share and in the second quarter 2014 letter, I wrote, “We also added starter positions in Vishay Precision Group, Inc. (VPG), Vicor Corporation (VICR) and GSE Systems, Inc. (GVP). There’s not a single analyst following any of these three companies; we love the lack of interest.” Vicor has continued its investment in a new series of products over the last four years. In letters to shareholders, I wrote that we increased our position in the first and second quarters of 2015, the first and second quarters of 2016, and the second quarter of 2017.

As it turns out, Vicor’s most important commercial advance to date was in the second quarter of 2016, when I wrote, “The Fund also added (to) Vicor Corporation (VICR). Vicor has worked with Alphabet Inc.’s Google (GOOGL) on its Open Compute data centers to distribute DC (direct current) power throughout the data center rather than go through the inefficient conversions to AC (alternating current) and back again to DC.” We believe Vicor’s approach is now being adopted by a number of data center customers. In March 2018, Vicor and NVIDIA (NVDA) [announced](#) that they were working together. Many of today’s computing needs require sophisticated power conversion and Vicor is uniquely positioned to meet these conversion needs. It took three years to build our position. Big markets, strong potential return on capital, founder-run, no analyst coverage—this is my kind of company.

The Fund's leading detractor was PDF Solutions, Inc. The second-leading detractor was WageWorks, Inc. (WAGE), which returned -27.1%. In early March, WageWorks announced a delay in filing its 10-K year-end report. Delays in filing can lead to significant accounting and legal costs, and can sometimes stretch into years. Within a month, WageWorks quantified the amount to be restated as between \$6.5 million and \$9.5 million out of the previously reported \$365 million of 2016 revenue and announced significant management changes. CEO Joe Jackson will become Executive Chairman, while President Edgar Montes will become CEO and Director. CFO Colm Callan resigned, but will remain with the company for 90 days to support the transition. General Counsel Kimberly Wilford also resigned. WageWorks identified a material weakness in its controls. We believe the Board's response was a bit severe for what appears to be a less than material restatement.

Along similar lines, Super Micro Computer, Inc. was the third-leading detractor. Super Micro supplies servers and network equipment and has many leading storage and data center customers. It supplies a critical part of the Internet's infrastructure. In August 2017, Super Micro announced that it was unable to file its 10K for the June 2017 fiscal year. As of May 2018, it has yet to file. In February 2018, the company announced management changes, including the appointment of a new CFO, Kevin Bauer, whom we've known from previous companies. Apart from the accounting, Super Micro's business is strong. Its customers, particularly next-generation storage providers such as Nutanix, Inc. (NTNX), are growing rapidly. We believe Super Micro's growth in fiscal year 2018 could reach 12% with expanding gross margins. The Fund has owned Super Micro for over eight years, and we believe in the company's long-term vision to reach \$5 billion of server and network equipment sales, up from \$500 million when we first invested. We believe recovery of the stock requires that the company file financial statements, which we believe should be within the next quarter or two.

Like the Needham Growth Fund, the Aggressive Growth Fund's short position in Ubiquiti Networks, Inc. was a contributor, while the position in Medallion Financial Corp. was a leading detractor.

The Fund added a starter position in Clean Harbors, Inc. (CLH) and doubled its position to 200,000 shares of DIRTT (Do It Right This Time) Environmental Solutions, Ltd. (DRT-TSE), which supplies semi-custom manufactured office interiors designed using DIRTT's [incredible ICE VR CAD](#) (computer-aided design) system. We also added 32,500 shares of Cryoport, Inc. (CYRX), ending the quarter with 105,000 shares.

We exited our positions in Corium International, Inc. (CORI), ChannelAdvisor Corporation (ECOM), Dick's Sporting Goods (DKS) and FLIR Systems, Inc. (FLIR). We reduced our position in Akamai Technologies, Inc. (AKAM) by one-third on news that it hired Morgan Stanley as a strategic advisor in response to the Elliott Management activist position, and reduced our position in comScore, Inc. (SCOR) by one-third. We trimmed positions in Entegris and MKS Instruments.

At March 31, 2018, the Fund's top 10 positions were 58.35% of net assets. The Fund had an Active Share of 110.1% versus the Russell 2000 and had trailing 12-month turnover of 10%.

#### **Needham Small Cap Growth Fund (NESGX/NESIX)**

The Needham Small Cap Growth Fund Institutional class returned 0.70% and the Retail class returned 0.57% in the quarter ended March 31, 2018. This compares with -0.08% for the small cap Russell 2000 Total Return Index, and -0.76% for the broader market S&P 500 Total Return Index.

We were pleased with the Fund's performance as headline and market volatility returned. We were able to reduce specific positions that achieved our price targets while deploying capital into new and existing positions. While volatility may seem to be a bad word for the overall markets, it is a great chance for active managers to find buying opportunities. It is in these volatile markets when a cash position is truly strategic for small cap fund managers. Many small cap investment opportunities "trade by appointment" and we like to capitalize on these opportunities when liquidity is available to both buy and sell stock positions. The Fund continued its lean toward a concentrated portfolio of stocks, with the top 10 holdings representing 48.63% of net assets at March 31, 2018.

Top holdings at March 31, 2018 included Amber Road (AMBR), PDF Solutions (PDFS), Invuity (IVTY), Photonics (PLAB), and NeoPhotonics (NPTN). The Fund's top first quarter contributors included PureStorage (PSTG), Amber Road, Nutanix (NTNX), FireEYE (FEYE), Corium International (CORI), and Twilio (TWLO). The Fund's largest first quarter

detractors were PDF Solutions, Invuity, Super Micro Computer, and Aspen Aerogels (ASPN). With regard to PDF Solutions, the company continues to move through a product transition, and we expect this story to become clearer over the course of the year. This has been a painful long-term holding, but we believe in the management team and its long-term goals. Super Micro Computer is another long-term holding that has had tremendous fundamental achievements as it builds out its business; however, it has had difficulty filing its financial reports over the past year. We remain confident that it will file and continue to monitor its financial updates, which continue to suggest the core business is doing very well.

We added a substantial number of new small positions to the Fund, including Cryoport (CYRX), EMCORE Corp. (EMKR), II-VI, Inc. (IIVI), Quantenna Communications (QTNA), and Ultra Clean Holdings (UCTT), to name a few. There were no significant deletions from the portfolio, but we trimmed some of our holdings as they achieved our price targets after significant appreciation. The Fund ended the quarter with a cash position of 16.2% and we will remain patient as we deploy that capital.

We continue to believe that a good environment remains for investment in equities. Three themes we are focused on include: 1) continuation of the growth in the semiconductor capital equipment industry; 2) cyber-security; and 3) military and defense modernization. These three areas of investment impact much of our portfolio, and we believe that long term, they should create shareholder value.

We expect the increased volatility to continue throughout 2018, as we saw in the first week of February. The Federal Reserve continues to raise short-term interest rates, but at a gradual pace. We expect more rate increases this year. The expectation of pro-growth policies has boosted confidence for both individuals and corporations, and this should ultimately translate into higher economic activity for many of our portfolio companies. The high-yield markets remain strong, which is also supportive of the small cap asset class valuations. We reiterate from our last quarterly letter that mergers and acquisitions continued in the small cap universe, but have slowed since 2016. We believe this trend is a pause, and we expect to see increased M&A activity in 2018. We expect economic growth to improve and benefit our portfolio of stocks in 2018.

### **Closing**

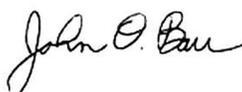
We believe the U.S. remains the best place in the world to be investing, and we continue to see an opportunity to invest in small and mid-cap stocks. Most importantly, we see a revolution happening in technology that has created and continues to create investment opportunities. We see opportunity in our strategy of investing in companies that we know well and that we believe are positioned with secular growth drivers.

We welcome our new investors and thank all of our investors for their continued support. If you have any questions, thoughts or concerns, please contact us at (800) 625-7071 or at [cretzler@needhamco.com](mailto:cretzler@needhamco.com) or [jbarr@needhamco.com](mailto:jbarr@needhamco.com). For information about the funds, please visit our website at [www.needhamfunds.com](http://www.needhamfunds.com).

Sincerely,



Chris Retzler  
Portfolio Manager



John O. Barr  
Portfolio Manager

Needham Funds Fact Sheet Links:

[Needham Growth Fund](#)

[Needham Aggressive Growth Fund](#)

[Needham Small Cap Growth Fund](#)

*The information presented in this commentary is not intended as personalized investment advice and does not constitute a recommendation to buy or sell a particular security or other investments. Past performance is no guarantee of future results. Not all investments have been profitable.*

*This message is not an offer of the Needham Growth Fund, the Needham Aggressive Growth Fund or the Needham Small Cap Growth Fund. Shares are sold only through the currently effective prospectus. Please read the prospectus carefully and consider the investment objectives, risks, and charges and expenses of the Fund carefully before you invest. The prospectus contains this and other information about the Fund. A copy of the prospectus is available at [www.needhamfunds.com](http://www.needhamfunds.com) or by contacting the Fund's transfer agent, U.S. Bancorp Fund Services, LLC at 1-800-625-7071.*

*All three of the Needham Funds have substantial exposure to small and micro capitalized companies. Funds holding smaller capitalized companies are subject to greater price fluctuation than those of larger companies.*

Needham & Company, LLC, member FINRA/SIPC, is the distributor of The Needham Funds, Inc.

*Portfolio holdings are subject to change. The Needham Funds ownership as a percentage of net assets in the stated securities as of 3/31/18:*

SECURITY	NEEGX	NEAGX	NESGX	SECURITY	NEEGX	NEAGX	NESGX
AMBR	3.85%	2.54%	7.74%	VICR	0.55%	3.41%	0.00%
ENTG	5.02%	10.31%	0.00%	GVP	0.00%	6.35%	0.00%
MKSI	3.11%	5.14%	0.00%	VPG	0.00%	0.43%	1.71%
PDFS	4.39%	6.66%	6.68%	WAGE	0.98%	2.21%	0.00%
TSM	0.00%	0.00%	0.00%	NTNX	0.19%	0.00%	0.79%
VSAT	5.24%	1.95%	0.00%	CLH	0.09%	0.17%	0.00%
MFIN	-1.12%	-2.23%	0.00%	DRTTF	0.00%	1.34%	0.00%
UBNT	-3.31%	-3.00%	0.00%	CORI	0.83%	0.00%	2.22%
ESRX	0.00%	0.00%	0.00%	ECOM	0.00%	0.00%	1.32%
PSTG	0.00%	0.00%	1.29%	SCOR	1.57%	1.18%	3.34%
FNGN	0.00%	0.00%	0.00%	PLAB	1.27%	1.41%	4.93%
CYRX	0.52%	1.57%	0.55%	NPTN	0.00%	0.00%	4.86%
IVTY	0.80%	0.11%	4.96%	FEYE	0.00%	0.00%	2.73%
SMCI	3.43%	2.59%	3.97%	TWLO	0.00%	0.00%	0.98%
BDX	5.00%	1.06%	0.00%	ASPN	0.69%	0.95%	3.77%
FORM	4.53%	4.05%	0.44%	EMKR	0.00%	0.00%	1.10%
AKAM	3.00%	4.95%	0.00%	IIVI	0.00%	0.00%	0.26%
DKS	0.42%	0.00%	0.00%	QTNA	0.00%	0.00%	0.22%
FLIR	0.41%	0.00%	0.00%	UCTT	0.00%	0.00%	1.24%