Where We Are Finding Growth
Next-Generation Data Analytics

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Insights

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Where We Are Finding Growth

Artisan Partners Growth Team is committed to finding accelerating profit cycles around the world and investing in reasonably valued companies that are positioned for long-term growth. The team's experience and broad knowledge of the global economy are key attributes that help them identify growth opportunities, wherever they occur, for the four portfolios it manages—Artisan Global Discovery Fund, Artisan Global Opportunities Fund, Artisan Mid Cap Fund and Artisan Small Cap Fund.

Currently, the team has identified a number of compelling secular trends that it believes are catalysts for profit acceleration and that will drive growth for some time to come. In this article, the team discusses one of those trends—next-generation data analytics.

The Rise of "Big Data"

Data generation has been growing at explosive rates bolstered by ever-increasing computational power, keeping up with the pace predicted under Moore's Law. That trend likely persists for some time as users demand faster, more powerful computing, particularly from now ubiquitous mobile devices.

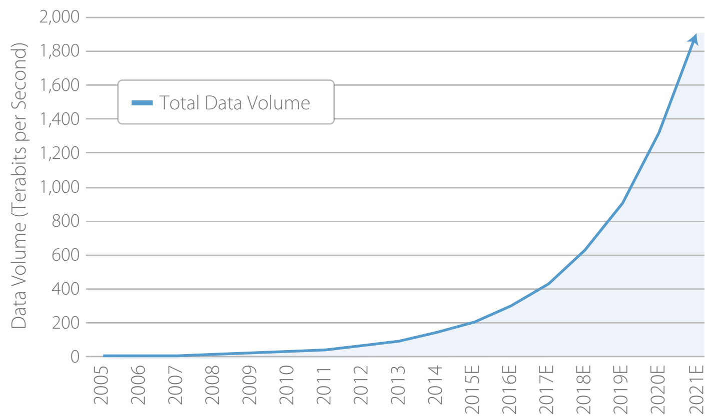
Technology is a powerful deflator—as computational power increases, data storage costs fall. Also contributing to rising power and falling costs has been the shift to the cloud from client-server models. Firms no longer necessarily need to buy and manage massive server farms. Instead, they can rent space in the cloud as needed, more cost effectively and often times with superior functionality and security than traditional data storage could offer.

Open sourcing has also played a role, moving the industry toward commoditized rather than specialized hardware and software—lowering the cost of data infrastructure leading to increased use, leading to lower costs, and so on in a virtuous cycle. And the more cheap data storage is used, the more use cases firms can find.

We've also witnessed an evolution in data types generated. Beyond traditional enterprise data on clients, competitors, vendors, and so on, we now have masses of Web-based data providing real-time insight into online behavior. And as Web-enabled sensors have become commonplace in everything from watches to cars to home appliances to heavy industrial equipment, machine-generated data has rapidly expanded.

Already, 50% of Internet connections come from the "Web of things." Some estimates put total connected devices growth at 35% annually, resulting in 50 billion by 2020. Data volume has already been growing approximately 40% a year—a figure that is likely accelerating. With all those nodes from the industrial Web creating potentially valuable data, the total digital data universe could reach 40 zettabytes by 2020. (Some perspective: Every person currently living would need approximately 41 128GB iPads® to hold that much data—see Exhibit 1.)

Exhibit 1: Total Data Volume Growing at Fast Rates



Source: Artisan Partners. McKinsey Global Institute, as of March 2016.

Yet it's still possible those projections prove too modest—particularly as data generation and storage get continually cheaper.

Next-Generation Data Analysis

More data on its own isn't necessarily helpful and could in fact prove a hindrance. Fortunately, rising computational power and falling data storage costs have also enabled greater and more flexible analytical tools and services.

Not long ago, repeatedly querying large, diverse and unstructured databases was prohibitively expensive for most users—never mind programming software to do any analytical heavy lifting. Now, next-generation analytical tools can increasingly be asked to find and identify patterns, form hypotheses and present conclusions—connecting dots across vast, dissimilar data sets, even if the users are uncertain which questions should be asked. *Cognitive computing*, once the stuff of science fiction, now comes standard as Siri or Cortana on a range of affordable smartphones.

Alphabet (a holding in the Global Opportunities Fund) is an example of an early mover in modern data analytics. The firm quickly compiled massive databases of proprietary user data it then scoured and analyzed to improve user experiences, anticipate shifting preferences, launch new products, upsell and cross-sell—cementing its competitive advantages.

Scale can still be an advantage to data giants. But firms of all sizes are acknowledging the critical nature of both data and data analytics as they aim to improve strategic decision making—whether to make R&D more fruitful, offer more compelling ROI to advertisers, improve profit margins, etc. That is translating into rising demand for firms who aggregate proprietary data and/or provide insight and information services—increasingly delivered cost effectively via the cloud.

The Potential to Disrupt

Deployed correctly, next-generation data analytics can widen moats, accelerate profits and allow firms to take market share. As such, we are seeing data generated and analyzed in fairly unexpected ways with the potential to be disruptive across a number of industries, including advertising, banking, energy, insurance, manufacturing, software, consulting and online and traditional retail.

For example, global payments technology firm Visa (a holding in the Global Opportunities Fund) is using advanced analytics to combat fraud at gas stations. Its Visa Transaction Advisor analyzes over 500 pieces of data—including past transactions and whether the account has been involved in a data compromise, among others—in a real-time process that allows merchants to identify transactions with a higher risk of fraud before gas is pumped. Data show the 35,000 gas stations actively using the service have benefited from a 54% decline in counterfeit fraud rates and a 51% decline in lost and stolen fraud chargeback rates.

Guidewire Software (a holding in the Global Discovery, Small and Mid Cap Funds), a market leader in next-generation software for property and casualty insurance companies, is disrupting an industry that for many years had run largely on internally developed software and was slow to adopt new technology. Guidewire Software's offerings allow the P&C insurance industry to transition from mainframe to modern technology systems, enabling insurance carriers to reduce legacy systems and waste costs and improve time to market for new insurance products and services in new markets. Further, Guidewire's early 2016 acquisition of EagleEye Analytics, a predictive analytics vendor, has allowed it to support a more complete predictive analytics process for its customers, further differentiating Guidewire's core platform.

We anticipate this trend, still in very early stages, will continue evolving. However, we currently see firms that can generate accelerating profits most directly from increased demand for data and advanced analytics falling into three general areas, with some firms naturally overlapping.

First, we have *data providers*—firms making sensors or digital systems enabling data generation from the Web of things and elsewhere. Then we have *owners of high-value, proprietary data sets* than can generate high levels of predictable, subscription-based income. And there are those *providers of data-analysis tools and services*—often delivered via the cloud—that should experience increased usage as a result of lower-cost data collection and storage.

Where We Are Finding Growth

We believe there's tremendous promise here as a force for future profit acceleration. For many firms, data analytics is their number one IT spending priority. Yet, of the massive amount of digital data created, only about 0.05% is being captured for analysis—providing a massive runway for future growth in data aggregation and the insight it allows.

The trend isn't without risks. In our view, firms can get into trouble by investing heavily in an inferior platform—one that is insufficiently flexible and cannot respond to rapidly changing technology. There is also risk in investing too little or not at all and seeing share taken by more nimble peers.

To mitigate the risk of firms making poor investment choices, we start where we always do. We want to identify solid franchises led by management teams we believe can make smart, growth-oriented investments in the best interests of shareholders. We also want to identify clear catalysts for growth and a profit cycle that appears in early stages still. And we want to buy into accelerating profit cycles at reasonable valuations we can understand.

We believe we have identified such firms across all the portfolios we manage. Here we highlight a selection:

IHS Markit (a holding in the Global Discovery, Global Opportunities and Mid Cap Funds), a leading global provider of data, decision-support tools and consulting services to companies in a wide range industries.

IHS and Markit announced a merger of equals in Q1 2016. As standalone companies, one of IHS's key competitive advantages is its immense database—we believe unmatched in the industry—of information mission-critical to its clients. For example, IHS's clients rely on its data and consulting to optimize siting of chemical plants and refineries, understand sourcing of materials, cost effectively comply with complex regulation, etc. Effectively, what Bloomberg or Factset is to the financial and money management world, IHS is in the energy and engineering space.

IHS's database is massive, but also fairly unique. IHS procures data from public entities, but it also has an extensive scouting network looking for data, reading technical papers, going to conferences and so on. Often, IHS will get data by talking directly to producers, who will exchange high-value field data for other data IHS can provide. As such, IHS has built a powerful network effect that makes it extremely difficult for anyone to replicate.

Because of the unique and critical nature of IHS's proprietary data, over 75% of its business is subscription-based, and the firm retains over 90% of its clients annually, leading to a high level of recurring, predictable income.

The merger's other half, Markit, is a global provider of financial information and technology services with deep expertise in areas including bank loans, fixed income and derivatives. Markit provides clients with the highest quality data on indices and pricing and reference data. It also provides information services to a broad set of customers that operate in less transparent areas of the securities market. Like IHS, it has high recurring revenue and better than 90% renewal rates.

As a combined entity, we believe IHS Markit is capable of capitalizing on meaningful cost synergies and helping big financial institutions solve administrative problems tied to an increasingly complex global regulatory framework.

Tableau Software (a holding in the Global Discovery, Mid Cap and Small Cap Funds) is a leading provider of business intelligence software aimed at helping customers analyze and interpret critical business data in an easily digestible, visual way—a powerful secular trend that is aided by the rapidly growing availability and demand for data.

Tableau's business momentum slowed markedly in early 2016 as the company experienced growing pains and increased competition from Microsoft. As it entered 2017, the company took several encouraging steps—including hiring a new CEO from Amazon Web Services and beginning to shift to a subscription-based revenue model, which should allow it to drive steadier revenue growth. We believe there is a high likelihood of years of strong growth ahead for Tableau as it capitalizes on its strong positioning, aided by a powerful secular tailwind.

Investment Process Highlights

We seek to invest in companies with franchise characteristics that are benefiting from an accelerating profit cycle and are trading at a discount to private market value.

Security Selection

We seek to identify companies with franchise characteristics that are selling at attractive valuations and are benefiting from an accelerating profit cycle. We look for companies that are well positioned for long-term growth, driven by demand for their products and services, at an early enough stage in their profit cycle to benefit from the increased cash flows produced by the emerging profit cycle.

Capital Allocation

Based on our fundamental analysis of a company's profit cycle, we divide the portfolio into three parts. Garden℠ investments are small positions in the early part of their profit cycle that will warrant a more sizeable allocation once their profit cycle accelerates. Crop℠ investments are positions that are being increased to a full weight because they are moving through the strongest part of their profit cycle. Harvest℠ investments are positions that are being reduced as they near our estimate of full valuation or their profit cycle begins to decelerate. We believe that adhering to this process increases the likelihood of delivering upside participation with downside protection.

Broad Knowledge

We overlay security selection and capital allocation with the capability to invest opportunistically across the entire global equity spectrum. It is our goal to have broad knowledge of the global economy to ensure that we are able to find growth wherever it occurs. This capability extends from the design of our team, which leverages the broad experience of the portfolio managers and the deep expertise of the analysts on the team.

Team Overview

We believe deep industry expertise, broad investment knowledge, a highly collaborative decision-making process and individual accountability are a powerful combination. Since the inception of the team in 1997, we have been committed to building a team of growth investors that retains these attributes and is solely dedicated to our process and approach.

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Carefully consider the Fund's investment objective, risks and charges and expenses. This and other important information is contained in the Fund's prospectus and summary prospectus, which can be obtained by calling 800.344.1770. Read carefully before investing.

International investments involve special risks, including currency fluctuation, lower liquidity, different accounting methods and economic and political systems, and higher transaction costs. These risks typically are greater in emerging markets. Securities of small- and medium-sized companies tend to have a shorter history of operations, be more volatile and less liquid and may have underperformed securities of large companies during some periods. Growth securities may underperform other asset types during a given period.

The views and opinions expressed are based on current market conditions as of 30 Jun 2018, which will fluctuate and those views are subject to change without notice. While the information contained herein is believed to be reliable, there no guarantee to the accuracy or completeness of any statement in the discussion. This material is for informational purposes only and should not be considered as investment advice or a recommendation of any investment service, product or individual security. Any forecasts contained herein are for illustrative purposes only and are not to be relied upon as advice or interpreted as a recommendation.

For the purpose of determining portfolio holdings, securities of the same issuer are aggregated to determine the weight in the Fund. The holdings mentioned above comprise the following percentages of the Funds' total net assets (including all share classes) as of 30 Sep 2018: Artisan Small Cap Fund—Tableau Software Inc 2.4%, Guidewire Software Inc 3.3%. Artisan Mid Cap Fund—Tableau Software Inc 2.9%, IHS Markit Ltd 3.6%, Guidewire Software Inc 2.3%. Artisan Global Opportunities Fund—Alphabet Inc 2.7%, Visa Inc 6.9%, IHS Markit Ltd 6.7%. Artisan Global Discovery Fund—Tableau Software Inc 2.9%, Guidewire Software Inc 4.0%, IHS Markit Ltd 2.8%. Securities named but not listed here are not held in the Funds as of the date of this report.

Portfolio holdings are subject to change without notice and are not intended as recommendations of individual securities. All information in this report, unless otherwise indicated, includes all classes of shares and is as of the date shown.

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