

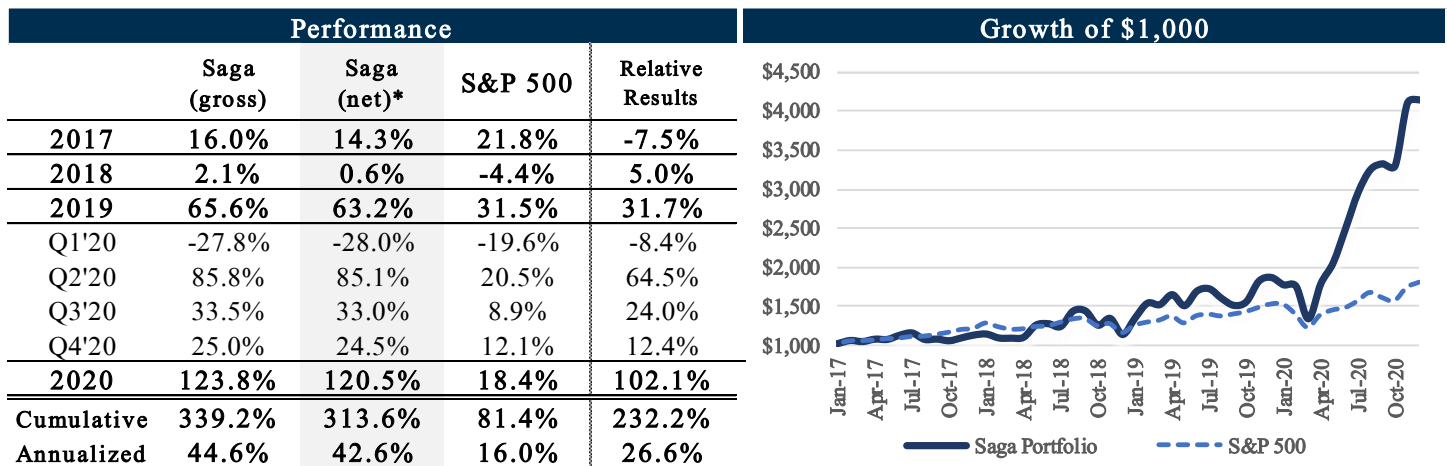


**SEMI-ANNUAL REPORT**  
**SECOND HALF 2020**

## Q4 2020 Results

During the fourth quarter of 2020, the Saga Portfolio (“the Portfolio”) increased 24.5% net of fees. This compares to the overall increase for the S&P 500 Index, including dividends, of 12.1%.

The cumulative return since inception on January 1, 2017 for the Saga Portfolio is 313.6% net of fees compared to the S&P 500 Index of 81.4%. The annualized return since inception for the Saga Portfolio is 42.6% net of fees compared to the S&P 500’s 16.0%. Please check your individual statement. Specific account returns may vary depending on timing of any contributions throughout the quarter.



\*Saga Portfolio serves as a model for client accounts. Net returns assume 1.5% AUM fee, or 0.375% applied to account balance at beginning of each quarter.

S&P 500 performance includes dividends.

Source: S&P Dow Jones Indices LLC

## Interpretation of Results

In 2019’s year-end letter I wrote, “those who believe 2019 returns can be achieved with any regularity are sure to be disappointed. I can say with confidence that a +66% year is a rare result and partially a subsequent reaction to timing of the steep sell off at the end of 2018.”

That shows how much weight you should place in my short-term forecasting abilities. Regardless, I’ll go out on a limb once again and say with even greater confidence that a +124% year is an absolute anomaly. Results reflect a large dose of luck from owning several companies pre-COVID that significantly benefitted from a black swan event that I neither expected nor predicted.

Little did I know going into last year we were about to go through the steepest crash in the history of the stock market resulting from a global pandemic, followed by the steepest market recovery in the history of the stock market, largely benefitting from unprecedented central bank and fiscal stimulus.

Trying to perfectly time the tops and bottoms of what has been a truly volatile year is not something I know how to do with any consistent accuracy. There is no rhyme or reason why stocks do what they do each day. That is why I have always preferred our results to be judged over the long-term and at the very minimum over a five-year period. Compounding capital in the public markets will never provide a perfectly straight line up and to the right. Results will come in intermittent fits and starts and 2020 saw both fits and starts to say the least.

We are now four years into our first five-year period. While still not statistically significant, we can begin to get a general sense of whether our investing philosophy has legs. Since launching the Saga Portfolio at the beginning of 2017, we have lived through a 10% “correction” during Q1’18, a 20% “bear market” in the Q4’18, and the most recent 35% “crash” during Q1’20. Going into each of these periods, the Saga Portfolio was fully invested. We did not know when these downturns would occur or how severe they would be. In each correction, the Saga Portfolio fell either inline or to an even greater extent than the general market. This is bound to occur when owning a handful of marketable securities that are marked-to-market by the second.

Despite these drawdowns, the Saga Portfolio’s performance is at or very near the top of any actively managed investment portfolio over the same period. There are ~1,800 U.S. equity mutual funds with a four-year track record on Morningstar’s database. The Saga Portfolio’s 42.6% annualized net return would rank 3<sup>rd</sup> out of the 1,800 funds. It is worth noting that these results have been achieved without the use of leverage, shorting, or options. The results have been earned the old-fashioned, boring way; through long-only contrarian stock picking.

You do not need to invest in complex, fancy ways to earn attractive long-term returns. You simply need to buy things for less than they are worth, not try to buy in and out of them based on unpredictable shifting macro sentiments, and manage emotions through the inevitable craziness that is bound to occur.

Crashes like the one we experienced last March can cause so much emotional pain that investors reach a point of capitulation. Investors will sell stocks regardless of price just to make the pain stop, even when any quick analysis would tell you that those assets are significantly undervalued. Of course, this is the exact point where one can make extremely attractive investments by reallocating from things that might be less undervalued to things that are selling for pennies on the dollar.

Before moving on, I want to emphasize the importance of having realistic expectations. As Charlie Munger often quotes, “the key to a happy life is low expectations.” Do not extrapolate the last four years’ results far into the future. If looking back in 20+ years from now and the Saga Portfolio’s results *after fees* beat the S&P 500 by more than 5% per annum, I would consider that a great success; one achieved by only a few investment managers. While I do not want to discount our recent performance, it is important to have realistic expectations. We will continually do our best to keep our heads down, not try to time the market, and pick the best opportunities we can find at today’s prices.

### **Disruption in Complex Adaptive Markets**

Several of the businesses in the Saga Portfolio could be considered “disrupters” because they are disrupting more mature companies in their market. Disrupters have gained increasing amounts of attention since it appears as though companies are being disrupted at an ever-increasing rate. According to Innosight’s article, [\*Creative Destruction is Accelerating\*](#), the average tenure of an S&P 500 company declined from 33 years in 1964 to 24 years in 2016, and is expected to shrink to 12 years by 2027. Half of all public companies disappear in 10 years and the speed with which new companies reach the Fortune 500 list today is twice as fast as twenty years ago.

The economy is an ecosystem. It is a complex adaptive system that is in a constant state of change as companies compete to provide solutions to problems that face customers. The economy is adaptive because it has the ability to learn over time as certain companies receive positive feedback and grow while others may receive negative feedback and decline, interacting in a complex web of natural selection. Trying to understand why certain companies succeed and others fail and what a business will look like over the long-term is essential to investing success.

Warren Buffett is famous for avoiding “technology” companies. This is true but not because a business may be classified as a technology company. Buffett does not invest in companies that he cannot predict the earnings power far into the future. That is his sole filter for any investment. It just so happens that companies that are often considered technology companies are susceptible to a lot of change and therefore harder to forecast long-term. While innovation is usually great for consumers and society as a whole, it is devastating to the owner of the company that gets disrupted. Therefore, it is reasonable as an investor to try to avoid companies that will be disrupted and become worthless in the future.

In the book *The Nature of Technology*, Brian Arthur defines technology as a means to fulfill a human purpose. Technology is simply a collection of devices, methods, or processes available to complete what Clayton Christensen calls “jobs to be done.” Humans have been using technologies well before the cognitive revolution ~100,000 years ago. Learning to manipulate fire, utilize a wheel, or whatever invention developed since is a technology that has made life easier by solving certain problems. The economy is nothing more than an elaborate organization of technologies that provides what people want and need through constantly trying out new solutions to problems. Using Arthur’s definition, Buffett’s railroad and insurance businesses are “technology” companies. However, the reason Buffett likes those businesses is because there is a low risk of future disruption to those technologies, in his opinion.

The more classic value investors have historically been uncomfortable with change. They look for consistency, such as, will people be drinking Coca Cola in 10+ years from now? This is applying the Lindy Effect to businesses and technologies, which states the future life expectancy of something is proportional to its current age, implying that the longer something has been around the more likely it will be around in the future. Applying this theory to forecasting profits makes a lot of sense since the value of any business is the future cash flows returned to owners over its remaining life. The longer a business has been around is potentially a reflection of its resilience and ability to survive the inevitable struggles that happen in a competitive environment.

However, Saga Partners has diverged from this classic value investor philosophy for two primary reasons. First, for businesses where the future is going to look much like the past, the market typically does a good job of discounting any potential excess returns in its stock price. There are obviously exceptions, such as when a company is going through a short-term problem that the market believes is longer term in nature. However, it has generally proven difficult to find an attractively priced company with a widely understood moat that generates a lot of cash relative to invested capital.

Second, there has been a fairly significant change to competitive dynamics throughout the economy, largely accelerated by the onset of the Internet. Businesses that were thought to have durable, wide moats have been disrupted by the changing environment around them. Businesses that have lived in a certain environment for a long period of time are typically well-adapted to survive in that specific environment. However, if the environment changes, those adaptations may no longer be an asset and can actually become a liability.

An analogy might be the great white shark. It has perfectly adapted over the last ~100 million years to thrive in its unchanged environment. It is hard to imagine how the great white shark could be any better adapted to its existing environment. However, a species can become so well-adapted to an environment that it fails to survive a change to that environment. The great white shark is at the top of the food chain in the ocean, plopping it in a desert and it becomes less well-adapted, let alone if you just put it in fresh water. The shark’s most perfected adaptations can become useless in a different environment.

Humans, on the other hand, have been so successful as a species because they are able to create innovations to survive in nearly any environment. They have been able to adapt the environment to their specific biological needs...thanks air conditioning. As we have witnessed this past year, humans are very resilient. In fact, it has been argued that humans are so much better at surviving and reproducing than other species that their very success could potentially lead to their own destruction, but we prefer to have a more sanguine view for investing purposes.

Businesses that are more resilient and adaptable will be more likely to succeed in changing environments. However, Clayton Christensen's research on disruption found adaptability is a rare trait for historically successful businesses. This is because established incumbent businesses succeed at what has made them successful in the past, not necessarily what it will take to be successful in the future.

According to Christensen, disruption can come from two types of innovation: sustaining innovations and disruptive innovations. Sustaining innovations improve upon existing products and services. They do not create new markets or value chains but develop from existing ones. They build upon the standards and infrastructure already in place. A faster, more efficient car, higher definition TV, or better cell phone service are all examples. Incumbent businesses have all the resources, processes, and incentives to succeed at sustaining innovations. They want to serve their existing customer base by offering better products.

Disruptive innovations help create new markets and value chains. They offer benefits by introducing simplicity, accessibility, or affordability where complexity and high cost previously existed. This is when the environment changes and the paradigm shifts. Disruptive innovations can completely redefine an industry or even create a new one. It is the first car, first television, first cell phone. It is the paradigm transition from mainframe computers > minicomputers > personal computers > smart phones. Each successive disruptive innovation resulted in a new value chain where the incumbent winners often became the disrupted losers.

Historically, smaller, less capitalized, and less established startups develop disruptive innovations by addressing previously un-addressable markets with the new technology. The disruptive product is typically "not good enough" for the incumbents' established customers who have more demanding needs; therefore the disrupter is not viewed as a threat initially. Once the disruptive product gains a foothold in new or low-end markets, the improvement cycle begins and through sustaining innovations, the previous "not good enough" technology eventually becomes good enough to meet the needs of the more demanding customers in the old value chain. As this cycle occurs, the disruptors ultimately succeed over the incumbents who were previously viewed as invincible. This scenario has played out time-and-time again in the history books of business.

Going back to how value investors have typically looked for consistency in businesses, certain changes are inevitable as certain consistencies and in these predictable changes lie opportunities that the market may not fully appreciate. What is important is knowing how the environment is changing and then picking which species of company is most promising to thrive in that highly probable future environment.

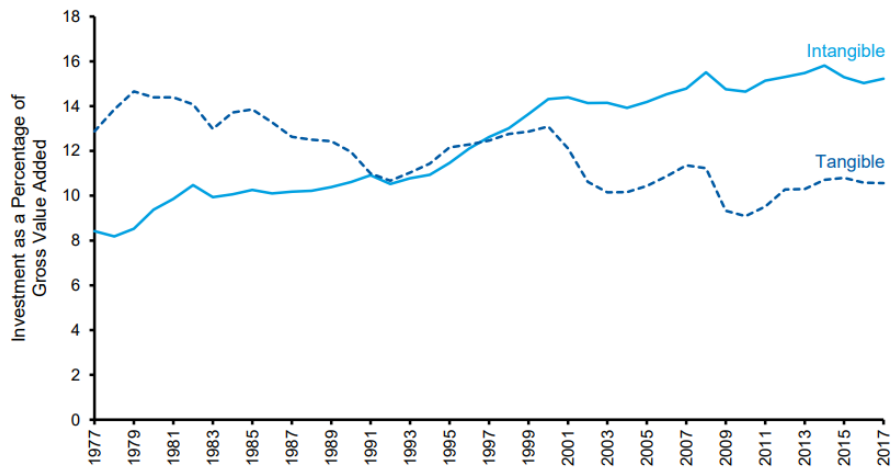
## **Evolution of the Digital Economy**

One significant change is the rise of the digital economy. It is even difficult for investors who historically shunned "tech companies" to ignore the meteoric rise and related returns of many within the sector. However, the rise is not simply an unjustified irrational exuberance like in the dot-com bubble but a genuine shift in where economic value is flowing. Understanding this tectonic shift in the economic landscape is crucial as it is affecting every industry throughout the economy.

Below is a chart taken from Michael Mauboussin's recent paper, [One Job: Expectations and the Role of Intangible Investment](#). The chart shows tangible and intangible investment as a percent of gross value added, a rough proxy for GDP, since 1977.

As their name suggests, intangible assets cannot be touched. They consist of computerized information (software, data), innovative property (R&D, intellectual property, patents), and economic competencies (business processes, brands, human capital). Since the beginning of the Information Age, the percentage of total investment that is intangible has grown steadily. The questions are therefore: why is this happening and what are the economic and investing implications?

**Exhibit 2: The Rise of Intangible Investments in the U.S., 1977-2017**



Source: Unpublished update to Corrado and Hulten (2010) using methods and sources developed in Corrado and Hao (2013) and in Corrado et al. (2016) and Corrado et al. (2017) for INTAN-Invest© and the SPINTAN project, respectively. The SPINTAN project was funded by the European Commission FP-7 grant agreement 612774.  
Note: Investment as a percentage of gross value added for the business sector.

The digitization of the world, and consequently the rise of intangible assets, is largely attributable to man's ability to manipulate electrons. Early computer hardware used vacuum tubes for computing that still faced the physical limitations of nature. They were bulky, unreliable, and generated a lot of heat. By the 1960s, people figured out how to move tiny electrons around by placing them on silicon. These early semiconductors were able to control the input and output of electron flows and therefore turn transistors on and off, providing the ability to communicate through the binary language that computers use today.

Semiconductors further enabled the miniaturization of computer hardware. Being able to pack an increasing number of transistors onto a tiny silicon chip brought enormous cost savings, reliability, and increase in processing power. The implications of having the ability to theoretically manipulate an infinite number of electrons are still unfathomable today. Eventually the hardware no longer becomes a limiting factor, and the potential of software becomes limitless. Processing and distribution costs effectively drop to zero. Data can live in this intangible world in the form of bits where the normal physical limitations of matter do not exist. Audio, video, text, image, any type of data can be stored, transmitted, processed, arranged, and combined.

One key outcome of this digital ecosystem is increased connectivity. As computers became faster and more powerful, it led to connecting them with wires and cables to form the modern-day Internet. When individuals begin to interact with each other and establish connections, they naturally form networks. Networks have important characteristics. The value of the network increases with each new member, forming a self-reinforcing mechanism that compounds its impact. As the number of connections grow linearly, the value of the network can



grow exponentially. This positive feedback makes the strong get stronger and the weak get weaker, leading to extreme outcomes, and often the dominance of a single firm or technology in a certain market.

Physical networks such as telephones, railroad stations, or airports have been around for a long time. They have real physical linkages connecting nodes. Alternatively, the linkages and nodes of virtual networks may be intangible although are no less important for market dynamics. The digitization of data and the connections powered by the Internet enabled virtual networks to proliferate in the form of operating systems, search engines, social networks, digital marketplaces, etc.

The traditional physical economy was driven by economies of scale. It is organized around production and based on scarcity. It is the paradigm of supply-side economics and *diminishing returns*. Production takes place within the linear reasoning of the supply chain. Inputs are combined and manipulated until they are transformed into certain outputs. The name of the game is efficiency and scale gains. An important competitive advantage in this linear world was supply-side economies of scale; the ability to reduce average costs as production increases. However, in this paradigm, increases in supply eventually face higher production costs or dis-economies of scale. This is when increasing unit production results in rising costs per unit; more becomes worse. This is one reason why a company like General Motors was never able to take over their entire market. Many industries compete in oligopolies rather than monopolies because traditional economies of scale end well before total market dominance.

Alternatively, the digital network economy is driven by the economics of networks, organized around the consumer and based on abundance. It is the paradigm of demand-side economics and *increasing returns*. Increased virtual connections, when combined with essentially zero marginal production, transaction, or distribution costs produce an environment of greater scalability.

This leads us to the platform business model that has grown in importance with the power of the Internet. Platforms are the middlemen between third party users and suppliers. Shopping malls, railroads, toll roads, newspapers, and the yellow pages are all platform businesses. They fulfill part of the distribution link to facilitate transactions within a value chain. The Internet has enabled an increasing number and much larger networks throughout the economy which has resulted in a growing number and greater importance of digital platform businesses.

Companies that have established themselves as the dominant platform in a certain space put them in a powerful position within a value chain. The third-party suppliers and users are forced to integrate with the platform's architecture, rules, and requirements in order for platform users to interact effectively, which has the effect of modularizing or standardizing features of the third parties. For example, an app developer on Apple's App Store or Google's Play Store must abide by the established guidelines if they want to have their app available on the platform. In the intangible platform world, this integration feature has led to platforms catering to consumers, commoditizing suppliers, and driving much of a value chain's profits to the platform that establishes themselves as the winner.

In the digital platform economy, the problem to solve is no longer access to supply but in filtering the infinite amount of supply. Platforms that create the best customer experience draw the most customers, which then attracts suppliers to access that demand, which increases the value proposition to customers, creating the virtuous cycle. The positive feedback dynamic and scalability of digitally powered platforms unsurprisingly leads to market dominance and winner-take-all effects. It is not unusual to find quasi-monopolistic platform companies. These

dynamics have fundamentally shifted power from the supplier to the consumer by changing scarcity into abundance.

From an investing perspective, it is possible to find these companies before they reach market dominance, and their competitively advantaged position is reflected in their financials. Before clearly establishing themselves as the winner, platforms will likely operate at a loss or require capital investment as they invest substantial amounts upfront to ensure they come out on top and then eventually be able to earn attractive profits. At these earlier stages, there can be evidence of a winning platform. Unit economics may continue to improve as the increasing value the platform generates provides improving returns on customer acquisition costs. While dominant platforms are generally attractive businesses, if one can find them before the market realizes their full potential, it could provide an attractive investment opportunity.

### Are we in a bubble?

Despite this new digital economic paradigm, it does not mean these companies have infinite value. It's apparent there is an increasing interest surrounding investments in high growth tech stocks. This interest has also flowed its way into high-priced IPOs that often double on their first trading day, an increasing number of SPACs (special purpose acquisition companies) that raise capital through a public offering with no existing operations, and ever-rising prices of Bitcoin and other cryptocurrencies.

Below is a list of some of the more famous bubbles throughout market history. Common patterns among bubbles are asset prices inflated by debt and increased liquidity (printing money), excitement surrounding a new technological revolution, and general euphoria, such as the belief that "no price is too high."

	Time Period	Bubble	Notes
1	1630s	Dutch Tulip Bubble	Tulip prices soared 20x in 1637, then plunged 99%. Considered world's first recorded speculative bubble.
2	1720	South Sea Bubble	Promised a monopoly of South Sea trade. Investors wanted to replicate East India Company success. Shares soared ~10x in 1720 before collapsing.
3	1719-1720	Mississippi Bubble	France tried to inflate away debt by printing money and issuing shares to the Mississippi Value triggering a speculative frenzy.
4	1840s	Railway Mania	Disruptive rail technology sparked speculation in British railways.
5	Late 1920s	Black Tuesday, Roaring 20s	New technology surrounding radio, autos, aviation, & electricity combined with buying stock on margin led to rising stock prices.
6	Early 1970s	Nifty 50	Following excitement for high growth stocks in 1960s "Go-Go" Years, a group of larger higher quality companies with durable growth became priceless.
7	1980s	Japan's Real Estate & Stock Bubble	At the peak in 1989, Imperial Palace in Tokyo was valued higher than California. Bubble burst in 1991.
8	1990s	Dotcom Bubble	Speculation in "new economy" tech stocks. Nasdaq soared 100x over the decade, peaked in 2000, then crashed 80%.
9	Late 2000s	U.S. Housing Bubble	U.S. home prices increased 2x between 2002-2006, then fell through 2009, losing 1/3 of their avg value.
10	2020s	High growth internet & software stocks, Bitcoin, SPACs, IPOs	???

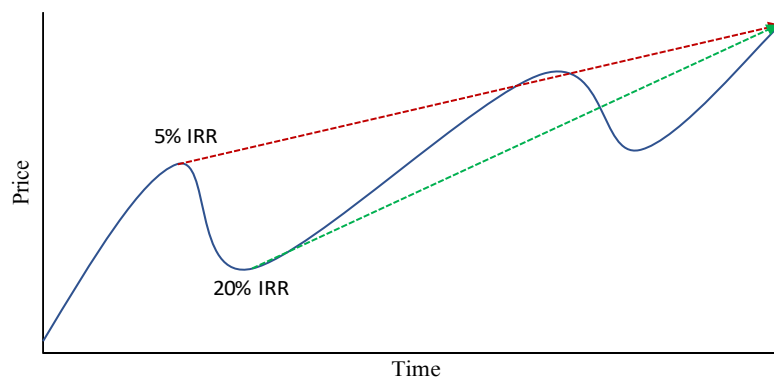


One can see similar patterns between past periods of euphoria and today's market. Most of the time markets do a fairly good job aggregating information and instantly updating different expectations which produce minor changes in prices. However, the human mind—which is what the market reflects—is wired in a way that makes bubbles and crashes an inevitability from time-to-time. It is wired to try to exert as little input to get as much output as possible. This makes a lot of sense when trying to allocate a finite amount of energy throughout one's day, but it leads to some interesting behavior. It is easier to copy others than to do something yourself from scratch, leading to things such as social proof, group think, and herd behavior. Fortunately, during normal times our prefrontal cortex is usually able to think for itself when something doesn't make sense. During times of stress and greater uncertainty, our prefrontal cortex functioning can break down, reducing independent thinking and leading to increased imitative behavior.

The financial market environment is especially vulnerable to imitating behavior since it permanently deals with an uncertain and unknown future. The greater the uncertainty and insecurity, the more people look to others for answers. Imitating behavior arises when similar opinions are repeated by analysts, commentators, and “experts” of different organizations, when questionable reasoning becomes generally accepted, and a strategy or style of investing takes over. As independent thinking fails, herd behavior and positive feedback prevail, leading to an excess of optimism (greed) or of pessimism (fear). After reaching a certain tipping point, the spread of ideas or behaviors is non-linear and decisions all take the same direction (correlations go to 1). As a result, extreme market price variations occur.

Bubbles have less to do with rising prices and more to do with shortening time horizons. Fear of missing out and fight or flight response reduce one's outlook to the immediate future. This can make sense if getting attacked by a predator but not so much when managing a retirement portfolio that you do not need for several decades. Bubbles form when the makeup of the investor base shifts to being mostly short-term. During the housing bubble, people were not buying houses to keep for the long-haul, they were buying them to flip at ever higher prices. Higher prices attract more buyers interested in rising prices, therefore pushing prices higher.

One framework we use to help protect us from our own psychological flaws is to move away from thinking about the market in terms of peaks and troughs, and booms and busts, but rather in terms of long-term expected internal rates of return or IRRs. Thinking in terms of long-term expected IRRs helps us lengthen our time horizon when everyone else may be shortening theirs. Stock price targets are arbitrary and can be misleading. Rather than thinking a company is selling for  $x\%$  below its estimated intrinsic value of  $\$y$ , it is more useful to think about the expected return of the asset over its life. Instead think, “the expected IRR of the asset is  $x\%$  over the next 10 years if purchased from today's price.” As the price rises, the future expected IRR falls, all else being equal. The opposite is true if the price falls. I know this may sound crazy, but I prefer buying stocks at lower prices than higher ones and this framework helps me do just that.



Thinking in these terms helps maintain a counter-cyclical view of the market at exactly the times others may be pursuing pro-cyclical actions. It changes the investing question from “what is the market going to do next?” to “what are the best opportunities available today at current prices?” Instead of spending time and effort to solve an unknowable question, one can spend it on things that are potentially knowable and therefore value adding.

Of course, one can never know with complete precision the future IRR of the general market or a specific stock. The exact future is unknowable and that will always be the case. Our job as analysts is to form as accurate an assessment surrounding a company’s potential prospects, weight the probabilities of those potential prospects compared to its current price, and then allocate the Portfolio based on one’s conviction in those outlooks and relative attractiveness to all the other opportunities available in the market at that time.

So, are we in a bubble?

Some may look at the valuations of certain companies today and think they completely parted from fundamental realities given the high multiples relative to recent fundamentals. This is too simple an analysis to really know if prices are overvalued or even in “bubble” territory. A top-down analysis based on historical average valuation comparisons will likely prove ineffective.

The only insight that comparing a company’s market price to its past year’s sales and cash flows provides is the ratio of the price to past sales and cash flows. Analysts have used these simple ratios as proxies or shortcuts to value a company, but as the definition of intrinsic value states it is the *future* net cash returned to owners that matters. There is no simple and replicable formula based on recent fundamental quantitative metrics to determine if something is over or under valued.

If every company within the market were an average business with the same future prospects, then this analysis could work, but that is not the world we live in. There is an enormous range of companies with different economic characteristics, qualities, and outlooks. The difference between an exceptional business with strong prospects and an average one with lackluster ones is huge.

While many of today’s high valuations may not live up to the expectations baked into their prices, some are likely more than justified by their future prospects, just as some companies with low multiples may be overvalued while others may be attractive. Only by assessing a company’s long-term outlook can one have a decent understanding of its intrinsic value. It reminds me of a passage from Phil Fisher’s 1958 book, *Common Stocks and Uncommon Profits*:

*"As it became obvious that the automobile was largely to displace the streetcar and the shares of the once favored urban railways began to sell at ever lower price earnings ratios, it would have been a rather costly thing just to be contrary and buy streetcar securities only on the grounds that because everyone thought they were in a declining age, they must be attractive."*

We are aware there may be areas in the market that appear speculative and certain categories of assets that look “bubbly.” Whether there are bubbles or not, all we can say is that we will continually strive to see the future as clearly as possible, look for value wherever it may be, and think like long-term owners of companies and not short-term renters of stocks.

## Portfolio Update

In the Q4'19 Investor Letter I stated that there are only two reasons why we will sell shares in a company: opportunity costs and mistakes. After reflecting on some of the mistakes I have made while managing the Saga Portfolio, it occurred to me that calling them mistakes made it harder to admit that a mistake was in fact made in the first place. For the purposes of thinking more clearly, I want to simplify our extensive "reasons to sell" list to just one: opportunity costs.

When I realize that a mistake has been made, all that really happened was that my long-term outlook for that specific company was different than I previously believed. The future was unfolding differently than anticipated. The revised expected IRR then became less attractive and therefore I reallocated the Portfolio to what I believed were more attractive opportunities.

Similarly, when the price of a company rises to a point that no longer makes the long-term expected return attractive relative to other opportunities available, I reallocate. Both situations are simply managing the Portfolio based on opportunity costs. Calling one a mistake and the other a success is just semantics and can distract from what is important. It does not matter whether one was right or wrong in the past, all that matters is that they try to get as close to right going forward with the information available today. When new information impacts the long-term outlook, the rational thing to do is adjust the portfolio accordingly. Therefore, I am combining Portfolio Update and Mistakes into one section to provide a general update on the changes and composition of the Saga Portfolio.

Below are some of the new Portfolio developments over the second half of 2020.

### Teladoc (formerly known as Livongo)

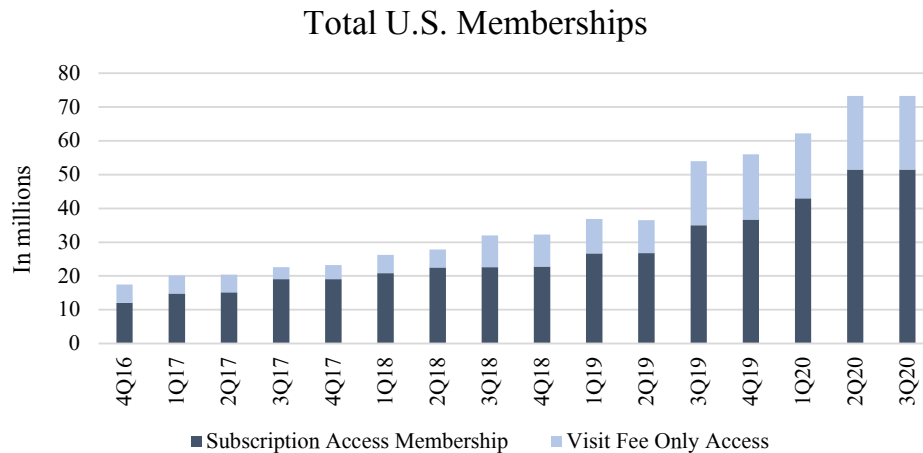
Livongo is a relatively new investment in the Saga Portfolio. Following our purchase, the company was subsequently acquired by Teladoc in October. The acquisition by Teladoc initially caught me by surprise, and now Livongo's prospects are tied to Teladoc which changes the investment's long-term outlook.

Many, myself included, consider telemedicine as a commodity-like service which is why the Saga Portfolio never owned Teladoc historically. There is little differentiation or switching costs between any HIPAA compliant video-enabled application that connects providers to patients. After regulatory easing during the COVID stay-at-home orders, healthcare providers utilized any available off-the-shelf products such as Zoom, Microsoft Teams/Skype, FaceTime, or Twilio in reaction to the skyrocketing demand for remote consultations and care.

It is no secret that U.S. healthcare costs have grown out of control over the last few decades and are expected to be ~18% of 2020 GDP. It is quickly approaching \$4 trillion in total spend while patient outcomes have not improved to the same magnitude. There are several reasons why this is occurring, most notably misaligned incentives between healthcare providers who are paid on fee for service basis. Middlemen insurance payers benefit from a system of blanket contracts between providers and employers that depend on opaque pricing. No single entity has had the ability or scope to reconfigure the pieces of the value chain in order to align interests with the patient, whose primary goal is to simply stay healthy, i.e. prevent the need for healthcare in the first place while guiding them to the best, most effective care when required.

Teladoc, with its telemedicine platform and Livongo with its remote patient monitoring and InTouch health system platform, potentially put together the pieces to create a scalable vertically integrated healthcare company that will be able to bend the cost curve of healthcare.

Despite little differentiation, Teladoc was historically successful in growing its userbase by selling into self-insured employers and health plans. It competed on providing scale and access to its network of contracted providers, not necessarily on its technological capabilities.



*Source: Company filings*

Livongo, on the other hand, was the industry leader in remote patient monitoring (RPM). It helped people, notably diabetics, manage their chronic condition through its connected devices, data analytics, and health nudges. Customer switching costs were higher as Livongo collected data on each of its members and provided personalized assistance based on each individual's specific situation and needs. Continuous remote patient monitoring for people with chronic conditions is a significant improvement from what was previously available. Each individual had to self-manage a condition that requires 24/7 monitoring and if something went wrong at an inconvenient time, would then go to an emergency room. Chronic conditions in aggregate are expensive, estimated to be ~90% of healthcare system costs. With remote monitoring, it is now possible to not only manage and improve chronic conditions, but to even prevent them in the first place.

Remote patient monitoring and the data it can collect opens up the ability to enable entire populations to better manage their health, predict who will need care, and prescribe the right care from a clinical, lifestyle, and cost standpoint for each specific individual. Historically, the body's ongoing vitals and general day-to-day health have been unknown. RPM provides a way to learn how patterns of behavior affect health and can provide personalized context-aware information in real time to prevent unnecessary and expensive trips to the emergency room or hospital. There is a powerful positive feedback loop from lifetime-accumulated data, owning the patient's health journey, and giving providers the ability to make value-adding insights.

With the acquisition of Livongo, Teladoc combined its ability to provide acute episodic care through its virtual telehealth platform (access to care when it is needed) and the ability to continuously monitor members (provide prevention, screenings, and chronic condition support). Together these pieces provide a more comprehensive offering that enables Teladoc to be the virtual healthcare access point and more importantly, the ability to align payer and provider incentives with those of the patient.

The combination of Teladoc and Livongo leads to the greenfield opportunity of virtual primary care. About 65 million out of the 250 million adults in the U.S. have no or inadequate access to primary care. More than half of millennials do not have a primary care physician. Absent convenient access to a primary care physician, individuals will most likely either not seek care at all or visit emergency rooms - the most expensive, and often inefficient settings for their primary care needs that ultimately leads to greater healthcare complications and expenses. Additionally, virtual primary care can improve the experience of those who already have a primary care physician by offering both the physician and patient a virtual hub for patient data and analytics to make better informed decisions. It will also provide a network of other sub-specialty providers, therapists, nutritionists, and coaches, to help guide the patient through the healthcare system based on their specific needs, and generally provide a holistic view of the patient over their entire life.

Virtual primary care can realign the incentives of the value chain with those of the patient. Initially management believes the payment structure for virtual primary care will vary, but ultimately Teladoc will be able to take on population risk in a value-based primary care capitation model since they will have the scope and breadth of services, both within and outside its contracted providers. By linking patient outcomes with provider profitability, value-based care will allow market forces to reward more efficient providers and penalize wasteful spending with lower income and a loss of patients. Employers and consumers are demanding that insurers find a solution to lower costs. Consumers and businesses are unable to afford the ever-growing costs and are demanding a solution. Health plans will increasingly find their members asking for a solution to remove wasteful spending and implement preventative care such as Teladoc's virtual primary care model.

### Bought Roku

Roku has been on my radar since its 2017 IPO given our investment in The Trade Desk. While I admired the company from afar, I was not comfortable with how it would successfully compete with the tech giants, particularly Amazon's Fire TV, Google's Chromecast, Apple TV, and to a lesser extent, the large TV manufacturers (OEMs) such as Samsung and LG trying to build their own TV operating systems. I also did not quite grasp Roku's competitive position in the advertising value chain relative to the Trade Desk. Would Roku, being another middleman in the advertising/content value chain, be able to earn attractive profits with The Trade Desk in the power position?

I watched from the sidelines as Roku's market share in streaming devices and TV operating systems continued rise. Roku has since increasingly become the default operating systems for TV and the largest aggregator of third-party TV streaming content in North America based on streaming hours with its 51 million active accounts. It has the largest market share of smart TVs in North America with 38% in the US and 31% in Canada. 49% of all programmatic connected TV ads go to Roku devices. When COVID opened the floodgates for the inevitable consumer and advertiser adoption of connected TV, I sharpened my pencil to better understand the dynamics that seemed to continue to play in Roku's favor.

Roku is winning market share from Google for a few reasons. Google has not made strong inroads in TV operating systems with OEMs for the same reason that Microsoft could not transition its dominance in the personal computer operating system to the mobile phone operating system. They were trying to reconfigure an operating system that was built for a completely different product, thereby making it less effective than if starting from scratch. Google's Android TV is primarily a smartphone platform that was stripped down to create a TV version. TV manufacturing is very price competitive. Google's stripped-down mobile operating system for a TV has a higher cost structure and puts them at a price disadvantage to Roku which has been purpose built for TV from the

ground up. The lower cost of materials required to run the Roku OS enables TV brand license partners to build more competitively priced products.

Amazon and Apple have also faced difficulties. Amazon has been successful in selling Fire Sticks but has not gained a lot of traction in licensing their TV operating system to OEMs. This is largely because retailers (most notably Walmart a significant seller of TVs) view Amazon as a direct competitor and do not want to carry Amazon consumer electronic products. The Apple TV is now a distant fourth in terms of streaming player unit sales. Apple has traditionally been resistant to licensing their operating system and has gone to market with a premium high priced hardware product and therefore has not made a lot of inroads in TV.

Most TV OEMs are beginning to license an operating system from a company such as Roku. However, there are TV OEMs such as Samsung and LG trying to build their own TV operating systems. Despite having sizeable TV sale market shares both have been facing consumer adoption headwinds. One reason is that TV OEMs historical core competency has been designing and manufacturing tangible products. Like what happened with mobile phone OEMs when the Android mobile operating system came out, it's difficult for an OEM to also focus on writing software to build a proprietary OS that competes with a company whose only focus is licensing its software. Additionally, there is a benefit to being TV OEM agnostic and therefore being available on any potential TV.

Roku is experiencing the operating system virtuous cycle; as Roku enters more households, it collects more data on viewers which helps advertisers target viewers, drawing in more content that can access users and monetize via ads on Roku, which provides more content and better viewer experience. Increasingly, people will prefer TVs that come with a Roku OS because they will have the best consumer experience which then motivates more OEMs to license the Roku OS.

Whoever controls the TV operating system is going to be in a powerful position in the TV value chain. Before streaming, the legacy cable operator controlled distribution and the direct-to-consumer relationship. In an Internet enabled world, Roku increasingly looks like the dominant company that is aggregating consumer demand, controlling the direct-to-consumer relationships, and displacing the legacy cable company position in the value chain.

Connected TV is a much better experience for both consumers and advertisers. Viewers can watch what they want when they want, and advertisers are better able to target viewers with the data Roku can collect. While cable operators monetize by collecting money each month from the consumer and then slicing it up among different content providers, Roku monetizes by taking a piece of the advertising, transactions, and subscriptions that occur over their platform.

The next question was what Roku's relationship would eventually look like relative to a potentially powerful player like The Trade Desk. As I've discussed in the past, The Trade Desk will eventually be the ultimate aggregator of advertising demand, helping allocate ad dollars across the global supply of ad inventory. They control the customer relationship (the advertiser) and are able to aggregate the highly fragmented supply of ad inventory around the world. The Trade Desk helps advertisers make the best return on their ad dollar based on their specific needs.

In the advertising sense, Roku will technically be a supplier of inventory as they help content owners monetize via advertising. As it becomes increasingly evident that Roku is winning as the TV operating system, they will



still be in a strong position for any advertiser that wants to reach consumers via TV, which has historically been a significant share of total ad dollars.

This may be a controversial comment for all the Netflix bulls out there, but I expect that at end state, content owners will increasingly be commoditized, Roku will be a powerful aggregator of TV viewers, and The Trade Desk will be an even more powerful aggregator of total advertising dollars. There's still a lot of steps before this dynamic unfolds and I will be watching closely. Companies like Netflix and Disney will likely continue to be large content producers because of the supply side economies of scale, but I suspect will lose their direct-to-consumer advantage. Subscription content services like Netflix will eventually try to monetize their content via advertising as paid subscription growth slows which they will then have to share with whoever owns the TV operating system direct-to-consumer relationship. No single company, not even Netflix, will be able to control/own the entire world's supply of TV content; and viewers will want help filtering all of the increasingly accessible content on demand.

The Trade Desk will be in the power position to allocate ad dollars to Roku based on the attractive ROI to advertise on TV. Advertisers will still go straight to The Trade Desk because only The Trade Desk will be able to compare the entire universe of available ad inventory on their platform. Advertisers will want to know what the ROI is on Spotify vs. Google vs. Roku vs. any other place to advertise in the world. Roku will never turn down demand from the Trade Desk since it will likely be a material amount of ad spend. If advertisers only want to advertise on TV, they will be able to bypass The Trade Desk and go straight to Roku; however, they will likely earn lower ROIs on their spend since similar ads can be sent outside of TV and only the Trade Desk will be able to provide the data/analytics on the most effective places to show those ads. Owning demand is a powerful place to be in the internet economy.

### Sold Dropbox

The Portfolio first purchased Dropbox in 2019. My thesis originally surrounded the idea that Dropbox was the winning independent file/content sharing and collaboration platform that could potentially aggregate the increasing number of third-party work applications. This would create a neutral hub/platform for knowledge workers to manage their content and workflows. Dropbox had a strong track record and what I believed to be an advantageous position with its 600 million registered userbase.

I thought an independent/neutral platform that could integrate the best third-party workflow applications would provide a better user experience than a bundled platform with less desired applications and therefore be able to drive attractive economics long-term. There were early signs that this might come to fruition when Dropbox launched their desktop "smart workspace" application. However, as COVID spread, one would think that Dropbox was favorably positioned to take advantage of the surge in remote working. While Dropbox did see an uplift in demand, what caught me by surprise was the more significant surge in usage of Microsoft Teams, Dropbox's primary competitor in the enterprise space.

In 2017, Microsoft bundled its collaborative business software into Teams, making it the primary communication platform for its enterprise clients. What I originally viewed as a disadvantage; a bundled product that favored its own applications ended up being an advantage. For businesses already subscribed to Microsoft 365 Business (Word, PowerPoint, and Microsoft's other apps), Teams is a free add-on instead of a separate bill. Microsoft does not break out its Teams revenue or paying userbase, but it has certainly seen strong growth since the onset of COVID.

Dropbox's desktop application that seamlessly integrates with the other most demanded third-party business applications may provide a better user experience, but it appears to not be "good enough" to break away from the Microsoft Teams bundle. Dropbox does benefit from a sticky userbase and will likely continue to grow paid users and upsell existing paid users, driving consistent cash flows and modest growth. However, I determined that Dropbox's long-term outlook is likely not as attractive as I originally anticipated as the strength of Microsoft's bundle became clearer post-COVID. Dropbox may still have a bright future, but when compared to other opportunities available, I made the decision to reallocate to what I believed to be more attractive opportunities.

### Other Holdings

The Saga Portfolio continues to own [Carvana](#), [The Trade Desk](#), [Facebook](#), [Trupanion](#), Wix, and LGI Homes. There is little new to report from an investment thesis perspective on the companies except that each company continues to execute and is only further along in its journey from our initial investment.

### **Conclusion**

I couldn't be happier with the investors that have joined our expanding group. It is truly an honor to manage our investors' hard-earned capital. Over the last four years, Saga Partners has built a strong foundation. In order to produce an attractive long-term record, one must be able to survive any scenario that may occur during the long-term. We never could have predicted all the events that happened since launching the Portfolio, which is exactly why we don't try to predict them going forward.

As always, please reach out if you have any questions or comments, I am always happy to hear from you!

Sincerely,

Joe Frankenfield

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