GGHC GILDER GAGNON HOWE & CO.

Second Quarter 2021

July 27, 2021

Dear Client:

As the table at the end shows, we generally did okay in the second quarter. The dominant story remains the pandemic. However, we are sick of talking about that, so we have written about a big theme in consumer telecommunications that we have both benefited and struggled with for the last decade, and where we continue to find new ideas as the theme evolves.

Until recently, when a family moved into a new house, they chose a telecommunications provider that had the video channels they wanted at the best price, and they accepted the internet package as an afterthought.

For a bit of background: In the United States, video distributors like Comcast or Dish (long +15.5% during the quarter) sell video packages, agreeing to pay content owners like ViacomCBS (we covered in Q1), Disney, or Fox(short, -2.82%) a fee each month for each subscriber who has access to the channel. These payments range from pennies per month for small channels to 9$ per subscriber per month for Disney's ESPN. Further, not all distributors pay the same amount. A large distributor like Comcast might pay an aggregate of 50$ per month to all their content partners while a distributor that has tens of thousands of customers rather than tens of millions might pay 70$ per month to offer the same channels. Larger distributors like this because it gives them an advantage over smaller distributors.

Every few years these content deals are re-negotiated, with distributors almost always agreeing to pay a little more because they are terrified that if they drop a channel with fanatical viewership, like ESPN or Fox News, fans of those channels will switch video providers; even a small number of subscribers switching to a competitor is more painful than raising prices for everyone by a dollar a month, especially if you're confident that your competitors will face the same price increases when their time to negotiate comes the following year.

This rough economic structure has existed since John Malone[1] and others created the pay TV business in the 80s. In the last twenty years, while the content hasn't improved, and everything else in telecommunications has gotten cheaper, the price for pay television has almost doubled, to an average of about 100$ per month per household.

As you might already have guessed, we think the internet is completely upending this system and the roughly 100bn dollars a year that US households spend on pay TV is in the process of being redistributed.

Compare 2021 to 2000. In 2021, a family moving into a new house thinks about who has the best internet, and video has become the afterthought. Now a family is confident that they can

1 Mark Robichaux's book "Cable Cowboy: John Malone and the Rise of the Modern Cable Business" remains one of the best business books we've read.

assemble whatever video entertainment they want from a personalized combination of streaming services like Netflix and virtual linear television distributors like Google's YouTube TV or Fubo TV (short -45.2%), all delivered over the internet. We think that this has two big effects: 1) content owners no longer have the power that they once did to raise prices, because now distributors are less worried about losing the customer's low margin video business because they figure they will keep the higher margin internet business, and 2) large distributors like AT&T's U Verse (short +4.9%), who have been accustomed to operating as monopolies because it was difficult to compete with the scale of their video businesses, are facing upstart competition from small internet service providers who are offering customers better internet with better customer service -- and consumers know they can get their video over the top from someone else.

Two newer companies that we've invested in that benefit from enabling these trends are Calix (+37.0%) and Clearfield communications (+18%). Both companies enable smaller fiber optic internet service providers to build and operate their networks. Clearfield's products are used to install fiber optic cable to houses. As Cheri Beranek, Clearfield's CEO, recently explained to us, previously when these "overbuilders" pulled fiber down a street, they'd expect 20% of the houses to sign up for their superior internet service. Now they are seeing closer to 40% sign up, and the difference between 20% and 40% isn't just that twice as many neighborhoods make sense to overbuild -- it's more like ten times as many because they amortize the fixed costs over twice as many subscribers. On their recent earnings call, Cheri said they had achieved record revenue in the quarter and that bookings were up 300% YoY.

While Clearfield is used to install the fiber optic cable for networks, Calix sends the internet over that network of glass. Calix is a twenty year old company that has been working for the last five years to transform itself from selling hardware to selling subscription software. If they succeed, they'll be the operating system that runs their smaller, fiber-based ISPs customers' businesses. Their software handles everything from managing the network to support to marketing. Their basic proposition to their customers is, buy the hardware from us and pay us a dollar or two per subscriber per month in exchange for software that will improve the quality of your network and the customer service of your business while significantly reducing your operating expenses. ISPs that run Calix automated software and hardware benefit from automated diagnostics extending all the way from the core to the customer's wireless router. When a customer calls their ISP, using the Calix software, the service rep already knows exactly where the issue is.

We've also been active on the short side. As we earlier described, we think the decoupling of video packages from distribution is going to stop the most egregious content owners from further ransoming the TV-watching public. There is no better example of this than the regional sports networks, and there is no better example of a regional sports network than Sinclair Broadcast group (short -13.5%) Sinclair owns the rights for local sports video distribution for about half of NBA, NHL, and MLB games a year. In exchange for this, they've agreed to pay the teams -- with increases every year -- billions of dollars. We think their problem is that with television decoupled from the internet, they can no longer demand that distributors pay to distribute their content to all of their subscribers. Previously, Sinclair felt assured they'd be able to pass these fee increases (and then some) on to distributors because, what distributor in Los Angeles would risk losing the 10 - 15% of their customers who were serious Lakers fans? Now we think the distributors increasingly just don't care because the cable company in LA is pretty sure that even if 10 - 15% of their subscribers drop them video, those same subscribers will keep them for internet, switching to YouTube TV or Fubo or some other over-the-internet linear TV distributor that carries Sinclair's content. To make matters worse, Sinclair's contracts only get paid for active subscribers and one of the selling points of YouTube TV is how easy it is to cancel the service. With YouTube TV, it's totally reasonable for a customer to just subscribe during the Lakers season and then cancel, it means Sinclair gets half the money per year.

Another company that we are short of is Fubo TV. We really like the product and recommend it to plenty of our friends who care about sports content, but we can't figure out how they can make a business out of it. As we wrote above, it's very hard to be a subscale linear TV distributor, because you'll pay more per subscriber than larger competitors. You can see this dramatically in Fubo's recent report they spent 92.1% of revenue on content, 9.5% of revenue on distribution and if you add those two together, a negative 1.6% margin before operating expenses at another 50% of revenue.

With both Sinclair and Fubo TV, we lost money as the stocks went up in the quarter as the market became excited about each companies plans to enter sports gambling. We are skeptical that they can be successful in this competitive nascent market because we think that sports betting is more likely to occur on mobile phones than TV remotes, but are continuing to monitor both companies' plans. Another stock that we lost money on in the quarter is Penn National Gaming (-3.8% during the quarter). Penn owns 44 casinos across the United States, but we are excited about their acquisition of the mobile first sports content company Barstool Sports and their plans to use Bar Stool to enter mobile gaming. While we lost money in the quarter we remain excited about their prospects to enable mobile betting.

We've been working on and learning about video distribution in the United States since before we started managing money a decade ago. We are attracted to complicated things with strange incentives. Early on, we benefited from and are still benefiting from our investment in Netflix, and more recently from our investment in Roku. In addition to the companies already mentioned in this letter, we are actively working on two or three other companies under the same theme.

Alex Derbes

We have always reported a single performance statistic, summarizing a range of results. Many factors affect where your account landed in that range. Accounts that missed one or more top performing stocks, or had a larger position in a poorly performing stock, can land at the bottom of the range. The performance of new accounts, smaller accounts and accounts that had significant deposits or withdrawals during the period is particularly variable. Even among the remaining accounts, there is a wide range from the aggregate performance we report[2].

We derive aggregate performance by totaling the equities in all of the accounts under management and calculating performance (net of commissions or wrap fees) as if we managed one account. This methodology weights large accounts more heavily and is not representative of any particular account. Therefore, we provide the worst performing account[3] in the relevant period to give an indication of the potential range in investment performance. Please look at your account statement for changes in value from one period to the next[4].

	Q2 2021 aggregate	Q2 2021 worst	FY 2021 aggregate	FY 2021 worst
Margin	11.4%	1.6%	8.5%	-0.5%
Cash	9.1%	7.7%[5]	9.0%	6.5%
Retirement	9.0%	6.1%	8.3%	5.1%
S&P 500	8.6%		15.2%	
Nasdaq	9.7%		12.90%	

The companies discussed in this letter were selected because they are representative of our thinking. Since GGHC manages individual accounts, some of the companies discussed in the letter are not necessarily held in every account.

Please remember our goal is to build your wealth by aggressively investing your capital over the long term. This approach carries considerable risk and is not for everyone. It requires tremendous patience and commitment in the face of large swings, and has the possibility of failure. At the same time, success can only be measured on an absolute basis. We do not invest with any particular benchmark in mind.

[2] All accounts, except for non-commission and non-fee paying accounts, are included in the calculation of aggregate performance. Past performance is not indicative of future results. Aggregate performance and the worst performing account are net of all fees, commission and expenses and includes the positive impact of reinvestment of dividends. At the end of Q2 2021, Alex Derbes managed 146 margin accounts, 12 cash accounts, and 80 retirement accounts.
[3] The worst performing account excludes accounts opened within the period, accounts with an equity of $1,000 or less, accounts that transferred between GGHC money managers during the period, and uninvested accounts.
[4] Non-retirement accounts pay a commission rate of 1.5% per equity trade. Retirement accounts pay an annualized wrap fee of 2.5% to 3% based on account size. See GGHC ADV for details.

5 Please note that aggregate account performance is across all accounts in the category, while worst account performance excludes accounts opened within the period, accounts with an equity of $1,000 or less, accounts that transferred between GGHC money managers during the period, and uninvested accounts.

While we provide comparative performance of various widely-reported indices to give you a sense of the overall market environment, you should not expect our results to track any one of them. There are material differences between GGHC accounts and the indices shown, as volatility, investment objectives and types of securities differ.

The Dow Jones Industrial Average is a price-weighted average of 30 significant stocks. The S&P 500 is a market-capitalization weighted index containing 500 widely held companies. The NASDAQ Composite is a market-weighted index that measures all stocks listed on the NASDAQ Stock Market. The Russell 2000 is an index of the smallest 2,000 companies in the Russell 3000 Index, as ranked by total market capitalization. All index results shown are calculated on a total return basis with dividends reinvested. Index results do not reflect the deduction of any fees or expenses.

You can access the GGHC Privacy Policy and our Firm Brochure, Part 2A of Form ADV and our Form CRS on our website at www.gghc.com. This letter is intended for you, our client. If you would like to share it, please contact us and we will gladly provide a copy to the intended person.